Poultry in Ethiopia:

a survey of production, value chain and marketing of commercial poultry in Ethiopia.
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From the Holland Africa Poultry Partners, we believe that there is a good future for poultry keeping in Ethiopia and we will support the growth through of the sector through a good collaboration with all stakeholders of the Ethiopian poultry sector.

Jan Kampschoer
Chairman Holland Africa Poultry Partners

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Preface

In February 2011 the Netherlands Africa Business Council organised a poultry trade mission to Ethiopia. Although the commercial poultry sector in Ethiopia is still small, the participants in the mission enthusiastically decided to continue collaborating with the poultry sector in Ethiopia. Back in the Netherlands, a consortium was formed consisting of companies in the poultry sector, knowledge institutes and NGO’s. The Government of the Netherlands decided to support the consortium and in April 2012 the 2g@there poultry Ethiopia project was officially launched.

The main objective of the consortium in this project is to strengthen the poultry sector in Ethiopia by carrying out research and training activities at all levels of the poultry value chain and to provide the necessary inputs needed to further professionalize poultry keeping in Ethiopia. The consortium will achieve this contribution to the poultry sector in Ethiopia through

1) Carrying out the necessary research and analysis identifying bottlenecks in the commercial production system in Ethiopia

2) Organising and providing training activities at all levels in the poultry chain in Ethiopia

3) Providing the necessary inputs needed for a sustainable growth of the Ethiopian poultry sector.

This report summarizes the findings of various surveys of the poultry sector in Ethiopia, undertaken by the consortium with its Ethiopian partners in the period September – December 2012. The conclusions from the survey have already been put into action such as a support programme to strengthen hatcheries, setting up a training and demonstration unit in which practical training programmes for Ethiopian poultry farmers can be carried out as well as a support programme for veterinary poultry services.

From the Holland Africa Poultry Partners, we believe that there is a good future for poultry keeping in Ethiopia and we will support the growth through of the sector through a good collaboration with all stakeholders of the Ethiopian poultry sector.
Executive summary

With a GDP growth rate of 8.5, Ethiopia has over the past years been one of the fastest growing economies in Africa. With a relatively low urban population (17%), agriculture is still the mainstay of the economy, contributing to 45% of the GDP and 61% of total exports. Through the Agricultural Growth Programme, the Government of Ethiopia stimulates enhanced market performance and value addition in various sectors.

Commercial poultry production is characterized by a large number of small scale farms, and a few medium to large scale poultry farms. Exact figures on the total volume of egg and broiler production are not available. Production is concentrated mainly in the Addis, Debre Zeit and Adama areas, with some small concentration around northern and southern rural towns. Of the 39 hatcheries in the country, 50% are not working presently, 40% perform below standards and only a few show good hatchability records.

Farms lack basic knowledge on good poultry keeping practices and the inputs needed (feed, vaccines, drugs, hardware such as drinkers and feeders) are scarcely available. The demand for poultry is growing in a market which is characterized by seasonally fluctuating prices as a result of religious fasting periods.

The value chain for both eggs and meat production has been analysed, showing poor chain integration, complicated procedures to get loans and credit, low organisation rates (e.g. cooperatives) and a high dependency on import of various necessary inputs. A training needs assessment has been carried out, identifying needs for training in every part of the value chain. Practical farmers training is necessary, but also training for hatchery staff, extensionists and entrepreneurial or business development training for investors in the poultry industry.

Maintaining good poultry health is essential for a good growth of the poultry sector. There is a public role for preventing infectious diseases through field monitoring activities and vaccination campaigns. Prevention and treatment of diseases on farm are part of practical training activities.

It can be concluded that poultry production in Ethiopia shows good perspectives. Demand is growing, the physical climate in the country is conducive, but many points in the value chain as well as government facilitation, still need addressing as part of a further professionalization of poultry production. Cooperation within the value chain needs improvement, also to overcome seasonal fluctuations in demand.

1 Ethiopia in brief: economic developments and government structure.

Author: Adriaan Vervoort.

1.1 Economic developments in Ethiopia

Ethiopia, with a population of about 84 million (2012), is the second-most populous country in Sub-Saharan Africa. At US$530, Ethiopia’s per capita income is much lower than the Sub-Saharan African average of US$1,165 in FY 2010, ranking it as the sixth poorest country in the world.

Agriculture is the mainstay of Ethiopia’s economy providing employment to 85% of the population whereas industry contributes about 5% and services 10%. Livestock and agriculture contribute about 42.5% of the GDP and 61% of total export. Industry contributes to 13.4% and services 43.1% of GDP.

While Ethiopia’s economy is expected to continue to grow at a healthy pace, its macro situation will remain under stress in the foreseeable future. Ethiopia made progress in tackling the 2008-2011 macroeconomic challenges, but the recent surge of inflation depicts the country’s vulnerable macroeconomic condition. The annual end-of-period inflation, which stood at 16.5% in February 2011, more than doubled reaching 36% in February 2012. The food inflation rate increased from 13% to 47% while non-food inflation, moderately decreased from 21% to 21% during the same period. It is unlikely that inflation will rapidly fall towards the GTP goals of single digits within 2012. Monetary factors played a key role in driving the inflation rate in Ethiopia. For instance, reserve money used by the National Bank as monetary policy anchor grew by 51% in February 2011. This was largely due to the accumulation of foreign exchange reserves without any offsetting mechanism and increased borrowing by public enterprises for infrastructure investment which in effect contributed to the increase in money supply.
The Government of Ethiopia's current five-year development plan (2010/11-2014/15), the Growth and Transformation Plan (GTP), is geared towards fostering broad-based development in a sustainable manner to achieve the MDGs. The GTP envisions a major leap in terms of not only economic structure and income levels but also the level of social indicators. Key goals include:

- Rapid economic growth, targeted for 11% per year at worst and, at best, to double the size of the economy by 2015, with GDP per capita expected to reach US$698 by 2025;
- Agricultural production is to double, to ensure food security in Ethiopia for the first time;
- An increased contribution from the industrial sector, particularly focused on increased production in sugar, textiles, leather products and cement;
- Foreign exchange reserves are projected to increase and the Birr is to depreciate by 5% against the dollar each year;
- Power generation capacity will increase from the current 2,000 MW to 8,000 MW, and the number of customers from the current 2 million to 4 million by 2015;
- Construction of 2,395 km of railway line; and,
- Achievement of all MDGs.

The plan also aims to reduce the maternal mortality rate by more than half from 590 per 100,000 to 267 per 100,000. While some aims are extremely ambitious, the directions of the GTP are consistent with the core priorities of the World Bank's strategy for Africa's future and respond to the needs of the country. This plan will become the anchor for the Bank's new Country Partnership Strategy which is expected to be finalized in third quarter of 2012.

The economic growth is largely driven by the agriculture and services sector. But also the rise in land prices (or rather the price of land/ exchange in a country where all land belongs to the government and is given out in long term leases) is one of the driving factors behind the economic growth and is related to the current building boom in the country. Furthermore, government income is also highly dependent on the high import tariffs posed upon the importation of a variety of goods. As these aren't strong pillars that economic growth can sustainably be based upon, it is expected to negatively impact the growth rate in the near future.

### 1.2 Ethiopia government

#### 1.2.1 Government structure

The Federal Democratic Government of Ethiopia is divided into nine Regional States and two Administrative states (Addis Ababa City administration and Dire Dawa city council). The national regional states as well as the two cities administrative councils are further divided into various zones with in total eight hundred woredas and around 15,000 kebeles (5,000 urban & 10,000 Rural).

The main legislative body is the house of people's representatives, with 547 delegates. Elections take place every five years.

In total there are 21 ministries, amongst the Ministry of Agriculture and Rural Development (http://www.moa.gov.et/), which includes livestock and veterinary affairs. Some further background information is available at the Ethiopian Agricultural Portal (http://www.eap.gov.et).

#### 1.2.2 Government Policies

The most important policy underlying agricultural development is the Agricultural Growth Programme (AGP). Apart from the AGP, the government has also formulated a plan for accelerated and sustained development to end poverty (PASDEP) by promoting, among other things, commercialization of agriculture and growth of private sector and infrastructure (especially roads, energy, and irrigation). Agriculture Growth Program (AGP) is aimed primarily at increasing agricultural productivity in a sustainable manner, enhancing market performance and facilitating value addition in selected targeted areas. AGP is a broad based program that attempts to improve the whole range of production, marketing and agro-processing of agricultural products through enhancing productivity, value addition, and market and irrigation infrastructure. The program will be implemented along the value chain dealing with stakeholders including producers, assemblers, traders, processors, distributors, exporters, and finally consumers. Bottom-up planning process will be practiced to give greater power to kebele and woreda-level development initiatives with particular attention to ensuring equal and active participation of both women and men. The programme will however work in selected areas only, due to financial resources available. Poultry improvement is also included and is implemented through the distribution of layer chicks and pullets.

The Ethiopian Government has recently initiated the Climate-Resilient Green Economy (CRGE) initiative to protect the country from the adverse effects of climate change and to build a green economy that will help realise its ambition of reaching middle income status before 2025. The plan: To follow a green growth path that fosters development and sustainability.

#### 1.2.3 Government extension service

The Ministry of Agriculture and Rural Development (MOARD, www.eap.gov.et) is responsible for developing and refining the overall national agricultural and rural development strategies and policies for the country, with input from the regions and other stakeholders. Within this strategy, the MOARD establishes the overall national extension policy, providing financial support for the extension system and supporting the regions with training and other capacity-strengthening activities.

The actual provision of public agricultural extension and advisory services has been decentralized.

### Table 1 Country facts

<table>
<thead>
<tr>
<th>Area</th>
<th>Total: 1,104,300 sq km (1,104,300 sq km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land use</td>
<td>Arable land: 10%</td>
</tr>
<tr>
<td></td>
<td>Permanent crops: 0.65 %</td>
</tr>
<tr>
<td>Population</td>
<td>85 M, of which 85 % rural population</td>
</tr>
<tr>
<td>Population growth rate</td>
<td>3.2 %</td>
</tr>
<tr>
<td>Agriculture</td>
<td>Coffee, cereals, pulses, oilseed, cotton, sugarcane, potatoes, qat, cut flowers, hides, cattle, sheep, goats.</td>
</tr>
<tr>
<td>Export commodities</td>
<td>Coffee, qat, gold, leather products, live animals, oilseeds</td>
</tr>
<tr>
<td>Import commodities</td>
<td>Food and live animals, petroleum products, chemicals, machinery, motor vehicles, cereals, textiles.</td>
</tr>
<tr>
<td>Industries</td>
<td>Food processing, beverages, textiles, leather, chemicals, metals processing, cement</td>
</tr>
<tr>
<td>Natural resources</td>
<td>Potash, salt, gold, copper, platinum</td>
</tr>
<tr>
<td>Export partners</td>
<td>China 10.9 %, Germany 9.75 %, Saudi Arabia 7.4 %, US 7.2 %, Netherlands 6.4 %, Switzerland 5.3 %, Sudan 4.3 %, Belgium 4.3 %</td>
</tr>
<tr>
<td>Import partners</td>
<td>China 17.7 %, Saudi Arabia 8.4 %, India 7.6 %, US 4.3 %</td>
</tr>
<tr>
<td>GDP (2009 est.)</td>
<td>$77.42 Billion</td>
</tr>
<tr>
<td>GDP per capital</td>
<td>$900</td>
</tr>
<tr>
<td>GDP growth rate</td>
<td>8.7 %</td>
</tr>
</tbody>
</table>

#### Table 2 Cities of Ethiopia

<table>
<thead>
<tr>
<th>Rank</th>
<th>City name</th>
<th>Region</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Addis Ababa</td>
<td>Addis Ababa</td>
<td>3,040,740</td>
</tr>
<tr>
<td>2</td>
<td>Mekelle</td>
<td>Tigray</td>
<td>273,601</td>
</tr>
<tr>
<td>3</td>
<td>Adama</td>
<td>Oromia</td>
<td>271,562</td>
</tr>
<tr>
<td>4</td>
<td>Dire Dawa</td>
<td>Dire Dawa</td>
<td>262,184</td>
</tr>
<tr>
<td>5</td>
<td>Gondar</td>
<td>Amhara</td>
<td>254,450</td>
</tr>
<tr>
<td>6</td>
<td>Awasa</td>
<td>SNPP</td>
<td>212,665</td>
</tr>
<tr>
<td>7</td>
<td>Bahir Dar</td>
<td>Amhara</td>
<td>191,015</td>
</tr>
<tr>
<td>8</td>
<td>Jimma</td>
<td>Oromia</td>
<td>149,166</td>
</tr>
<tr>
<td>9</td>
<td>Dessie</td>
<td>Amhara</td>
<td>147,592</td>
</tr>
<tr>
<td>10</td>
<td>Jijiga</td>
<td>Somali</td>
<td>147,882</td>
</tr>
</tbody>
</table>

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**Woreda Level**
The woreda (district level) Offices of Agriculture and Rural Development (OAARDs) are the main frontline administrative structures implementing agricultural extension.

The OAARDs are composed of five main sectors: agricultural development, natural resources, environmental protection and land administration, water supply and rural roads, and input supply and cooperative promotion. The largest sector, agricultural development, is responsible for extension services and is usually divided into crop production, livestock production, natural resource management, and extension teams (Gebremedhin, Hoekstra, and Tegegne 2006).

The OAARD represents a more operational level in terms of reaching smallholder farmers and pastoralists. They do so using a cadre of experts or subject matter specialists (SMSs, who are also found at the regional level). There are more than 700 urban and rural woredas (districts) in Ethiopia. There are, on average, about 30 to 40 agricultural officers in nine divisions or units within each woreda agriculture office, including (on average) about 10 or more SMSs who are expected to provide technical support and training to the DA staff at the kebele level. Most of these SMSs are assigned across the same technical areas as the DA staff, that is, crops, livestock, and NRH. In the past, most of the staff assigned to these SMS positions had begun their extension careers at least 5 to 10 years earlier.

**Kebele Level**
Currently, there are about 8,489 farmer training centers, FTCs, established at the kebele level, with roughly 3,500 of these FTCs reported to be fully functional at the present time (Ethiopia, MOARD 2009a). Established FTCs are those that have a building and DAs in place. However, they are not functional until they have started one component of training—either demonstration or training. The training may be modular training or may be short-term, based on demand. The target is to have one FTC per kebele.

In 2009 there were about 65,000 DAs currently on duty at the kebele level, of whom about 12 to 12 ½% are women, depending on the region (Ethiopia, MOARD 2009a). The number of frontline extension personnel is expected to increase to roughly 60,000 when all FTCs have been established and are fully functional. About 62,000 DAs have graduated from the ATVET as of 2008, with 12 of them being female (Ethiopia, MOARD 2009b). This overall total for FTCs trained compared to DAs currently serving (65,000) indicates that some ATVET graduates have left the extension system since graduating from the ATVET system.

**Programmatic Components of the Ethiopian Extension System:**
The four major components of the Ethiopian extension system put in place by the government as part of a five-year plan (2005-2010) for accelerated and sustained development to end poverty include the following:

- **Participatory Demonstration and Training Extension System (PADTES).** The system was introduced by the government in 1995 to provide a small amount of inputs through packages provided directly to farm households. Some 35 to 40 ½% of farm households are reached and served through the system with a low number of visits by public DAs.
- **Farmer Training Centers (FTCs).** Roughly 8,500 FTCs have been built at the kebele level. These centres are staffed with Development Agents (DAs) and are responsible for providing extension activities in rural areas.
- **Agricultural Technical and Vocational Education.** In 2000, the government invested in agricultural and technical vocational education and training (ATVET) centres to train DAs charged with carrying out agricultural extension activities with farm households. By the close of 2008, the program had trained over 63,000 DAs at the diploma level.
- **Institutional Coordination.** The rapid expansion of the extension system has brought with it an administrative model to support an extensive set of responsibilities, adapting to 32 agro-ecological zones and to support a DA corps of over 65,000.

Extension services in Ethiopia until about 2002 were focused on increasing production and productivity in view of achieving food security. However, it had become apparent around 1996 that without integrating farmers into the market, sustained growth in the agriculture sector would not be realized. Perhaps as a result, the government policy on agricultural development has recently started to emphasize the transformation of subsistence agriculture into market orientation as a basis for long-term development of the agricultural sector. Such policy emphasis on market orientation has led to the recent establishment of a State Ministry of Agricultural Marketing within the Ministry of Agriculture and Rural Development (MOARD). Within this State Ministry, specific emphasis is given to the role of co-operatives for the supply of credit and input/output marketing services. The extension service will have to make proper linkages with the co-operatives (ILRIPHMS, 2006).

**Farmer Based Organizations and Cooperatives**
Farmer cooperatives in Ethiopia do not provide extension services directly to their members; rather, they are a major source of both agricultural inputs and farm credits. They also provide grain marketing services and supply consumer good to members at prices that compete with local traders (Davis et al., 2009). Some cooperatives are involved in seed multiplication and distribution, training of members in para-veterinary services and distribution of veterinary medicines. Although the view among cooperative leaders is that these supposedly farmer-driven organizations are not free to set their own agendas since it is the government that sets the parameters within which cooperative programs operate (Mogues et al. 2009), these cooperatives have played a significant role in improving members’ welfare.

**Agricultural Research**
The Ethiopian Institute of Agricultural Research (EIAR) coordinates the decentralized agricultural research activities at federal and regional research centres, and through higher education institutions.

The Ethiopian Institute of Agricultural Research (EIAR) is the country’s main agricultural research agency. The semiautonomous EIAR has the mandate to generate, develop, and adapt agricultural technologies that focus on the overall development and needs of users.

EIAR is responsible for the coordination of decentralized agricultural research activities at federal and regional research centres, and through higher education institutions, including 7 regional and 15 federal agricultural research institutes. It operates at the federal and regional levels.

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**Literature:**


The Holland Africa Poultry Partners

2 Poultry production in Ethiopia.

Authors: Adriaan Vernooij, Alberto Giani, Ernst Beiter, Hilde Buns, Jessica Cornelissen.

2.1 Livestock production in Ethiopia.

The livestock population of Ethiopia is the largest in Africa and consists of 72 million cattle, 24 million sheep, 22 million goats, 6 million donkeys, 2 million horses, 0.4 million mules, 1 million camels and 45 million chickens (FAO/CrSA, 2012). The livestock sector contributes a considerable portion to Ethiopia’s economy, and is central to the economic development of the country. Livestock products and by-products in the form of meat, milk, honey, eggs, cheese, and butter supply the needed animal protein that contribute to the improvement of the nutritional status of the people. Livestock also plays an important role in providing export commodities, such as live animals, hides, and skins to earn foreign exchanges for the country.

The livestock population consists primarily of indigenous types that have not adequately been characterized and documented. They are mostly zebu. Main cattle breeds/populations identified and characterized include: Boran, Fogera, Horro, Sheko and the Mar. The Fogera and Horro, well known for their milk production, are reared around Lake Tana and Eastern Wellega regions, respectively. The Boran, a renowned beef breed/population, is found in the southern and eastern parts of the country, while the Sheko breeds/populations, which are considered to have tolerance to high testa challenge, are found in the southwest. European breeds, especially Friesian and Jersey, have been imported for many years and crossed with the indigenous cattle breeds. (NARC, 2006).

Livestock production are undertaken side-by-side complementing each other. The number of young animals sold from the highlands which are suitable for breeding or for further fattening is limited. The majority of the animals sold are old draught animals and barren cows. The highlands are a major source of sheep for slaughter in the cities.

The livestock population is situated in the Northern, North-eastern and central part of the country. It is featured by a mixed farming system where crop cultivation and livestock production are undertaken side-by-side complementing each other. The highlands are mostly zebu. Main cattle breeds/populations identified and characterized include: Boran, Fogera, Horro, Sheko and the Mar. The Fogera and Horro, well known for their milk production, are reared around Lake Tana and Eastern Wellega regions, respectively. The Boran, a renowned beef breed/population, is found in the southern and eastern parts of the country, while the Sheko breeds/populations, which are considered to have tolerance to high testa challenge, are found in the southwest. European breeds, especially Friesian and Jersey, have been imported for many years and crossed with the indigenous cattle breeds. (NARC, 2006).

The highlands are situated in the Northern, North-eastern and central part of the country. It is featured by a mixed farming system where crop cultivation and livestock production are undertaken side-by-side complementing each other. The number of young animals sold from the highlands which are suitable for breeding or for further fattening is limited. The majority of the animals sold are old draught animals and barren cows. The highlands are a major source of sheep for slaughter in the cities.

Livestock is kept on small-holdings in the highland crop–livestock mixed farming system where it provides draught power for crop production, manure for soil fertility and fuel, and serves as a source of family diet and source of cash income (from the sale of livestock and livestock products) particularly when markets for such commodities are not favourable. This part covers around 40% of the total land surface and is located 1,500 m above sea level (a.s.l.). The highlands are the most recent statistics on the number of poultry in the country come from the Central Statistical Agency (CRSA, 2012).

As in many other Africa countries, rural/village level or backyard production system in Ethiopia is not common in the lowlands of Ethiopia i.e. the Somali, Gambella, Afar and Benishangul-Gumuz Regional States, which collectively own only 3.2% of the total national chicken population. In 2005, a total of 736,000 doc’s were imported into the country.

2.2 Poultry production in Ethiopia.

The most recent statistics on the number of poultry in the country come from the Central Statistical Agency (CRSA, 2012).

Most indigenous chickens are kept in the highlands. Chicken rearing is not common in the lowlands of Ethiopia i.e. the Somali, Gambella, Afar and Benishangul-Gumuz Regional States, which collectively own only 3.2% of the total national chicken population.

The figures in the above table are mainly to be seen as indicative, given the daunting tasks of registering all poultry in a country as vast as Ethiopia. Furthermore, there is no indication of how commercially kept broilers are included, they cannot be distinguished from the classification types used by the Central Statistical Agency.

In 2005, a total of 736,000 doc’s were imported into the country.

2.3 Poultry production systems.

FAO classifies poultry production systems into four different categories (FAO, 2008):

Sector 1: Industrial integrated system with high level of biosecurity and birds/products marketed commercially (e.g. farms that are part of an integrated broiler production enterprise with clearly defined and implemented standard operating procedures for biosecurity).

Sector 2: Commercial poultry production system with moderate to high biosecurity and birds/products usually marketed commercially (e.g. farms with birds kept indoors continuously, strictly preventing contact with other poultry or wildlife).

Sector 3: Commercial poultry production system with low to minimal biosecurity and birds/products entering live bird markets (e.g. a caged layer farm with birds in open sheds; a farm with poultry spending time outside the shed; a farm producing chickens and waterfowl).

Sector 4: Village or backyard production with minimal biosecurity and birds/products consumed locally. This sector is by far the largest production system in Ethiopia.

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Sector 4: Village or backyard production with minimal biosecurity and birds/products consumed locally. This sector is by far the largest production system in Ethiopia.

As in many other Africa countries, rural/village level or backyard production in Ethiopia contributes significantly (approx. 96% according to the latest statistics) to the national egg and poultry meat consumption. However, very little research and development work has been carried out on indigenous chickens, despite its important contribution to protein supply.

Village level production aims have been described, in order of priority (Mulu, 2010):

- eggs used for home consumption
- farm gate sale of eggs for additional income
- meat consumption.

This production system is characterized as extensive scavenging management, absence of immunization programs, high risk of exposure of birds to disease and predators, and reproduction entirely based on uncontrolled natural mating and hatching of eggs using broody hens.

Farmers rate the adaptive traits of indigenous chickens, in particular the superior merits of indigenous chickens to high yielding exotic breeds, as most important. Reproduction traits, such as broody behaviour and high level of hatchability, were considered very important. The village production system is based on low input-output levels and is part of a balanced farming system that is economically efficient because although outputs may be low, inputs are even lower. Most important risks are high chick mortality, unsuccessful brooding, and disease pressure due to poor immunization.

Table 3 Estimated number of poultry by type and breed

<table>
<thead>
<tr>
<th>Type of poultry</th>
<th>All</th>
<th>Indigenous</th>
<th>Hybrid</th>
<th>Exotic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number(1000)</td>
<td>%</td>
<td>Number(1000)</td>
<td>%</td>
<td>Number(1000)</td>
</tr>
<tr>
<td>All poultry</td>
<td>44,893</td>
<td>100</td>
<td>142,304</td>
<td>36.66</td>
</tr>
<tr>
<td>Cocks</td>
<td>4,381</td>
<td>9.76</td>
<td>4,206</td>
<td>9.37</td>
</tr>
<tr>
<td>Cockereels</td>
<td>2.17</td>
<td>4.84</td>
<td>2,097</td>
<td>4.67</td>
</tr>
<tr>
<td>Pulletts</td>
<td>4.125</td>
<td>9.19</td>
<td>3.97</td>
<td>9.19</td>
</tr>
<tr>
<td>Non-laying hens</td>
<td>1,393</td>
<td>3.11</td>
<td>1,260</td>
<td>2.99</td>
</tr>
<tr>
<td>Chicks</td>
<td>18.000</td>
<td>40.11</td>
<td>17,530</td>
<td>39.05</td>
</tr>
<tr>
<td>Laying hens</td>
<td>16,814</td>
<td>33</td>
<td>16,158</td>
<td>31.54</td>
</tr>
</tbody>
</table>

Figure 2: Hay-box insulated brooder for first rearing of day old chicks.
The commercial sector in Ethiopia is divided over the three other sectors of the FAO classification.

There is a growing, though not exactly known, number of small- to medium-scale commercial (50 to 1000 animals) poultry keepers in the country. This system of production is rapidly growing in the urban and peri-urban areas. Using hybrid stock and relatively modern management practices, these are an important source of income for many families. They usually sell their eggs either directly or through middlemen to kiosks, hotels and supermarkets. Chicken are kept indoors permanently and contact with other poultry or wildlife is prevented. Biosecurity risks are moderate, depending on the strictness of hygiene measures applied. Farms are usually run as family businesses, but highly dependent on irregular market supplies for their input (one-day-old chicks, feed and medicines).

The total number of small scale commercial farms and their contribution to the national production is not known, but they do provide the largest share of eggs and poultry meat to the growing towns in Ethiopia (FAO 2008).

So far, there are only the following districts medium to large scale poultry farms that can be classified as sector 2 poultry farms, as they process and distribute their own broilers or eggs: Addis Ababa, Amhara, SNNPR, Mekelle, Nekelle, Mekane, Addis Ababa, Addis Ababa, Addis Ababa.

Recently (2015) a large scale high-tech broiler operation was started in Addis Ababa, concentrating only on export to Dubai. Also in Mojo, a plot of 700 ha has been allocated to Israeli investors for setting up poultry production and growing crops for feed supply.

The production systems are linked in various ways. Efforts to improve productivity of village level poultry have always been done through the dissemination of hybrid stock. Initially these came from the government multiplication centres, which are currently operating at a limited scale and several are in the process of privatisation. The supply of day old chicks has now to a great extent been taken over by those large scale producers who also own hatcheries. The small scale commercial farmers also depend on the larger companies for their inputs of day old chicks. Frozen commercial broilers can be found in supermarkets and parts, supermarkets, transport etc.

Branding risks: HPAI.

After the outbreaks of HPAI (Highly Pathogenic Avian Influenza) worldwide but in Egypt in particular in 2004-2006, contingency planning was also undertaken in Ethiopia. Various studies (Bush 2006, Demeke 2011, Pagani et al 2008) have been carried out to predict likely socio-economic impacts on farmers. Scenario studies and field interviews indicated that possible losses on the mainly opportunistic way socio-economic impacts on farmers. Scenario studies and field inter-

It appears that there are few farmers who entirely specialise and depend on poultry production. For small to medium scale farmers, the income from poultry product sales is insufficient to make a living. This problem is aggravated by the insufficiently and highly irregular availability of the feed. As docs must be ordered long time in advance and the date of delivery is not known, it is hardly possible for a family business just to rely on poultry production only.

Large scale poultry farms are mainly started by investors, who equally do not rely on poultry as their sole source of income. Sometimes sector related activities are carried out, such as feed milling, slaughtering birds from other producers, brokering birds, but in many cases money is also invested in completely different types of activities (e.g. car spare parts, supermarkets, transport etc.).
Vaccination is in virtually all cases done according to schedule. Some of the larger farms purchase their own vaccines from abroad, either directly or through local distributors. Locally made vaccines are only available from the National Vaccine Institute in Debre Zeit. Though no assessment could be made of the appropriateness neither of storage facilities, nor of the knowledge of proper vaccinate techniques, no major outbreaks of preventable diseases seem to occur on the commercial poultry farms in Ethiopia. There is however a permanent threat of new outbreaks of diseases from local birds in the surrounding. Outbreaks of ND regularly occur, neither is the country free from other diseases such as Gumboro.

The rearing management of layer pullets is usually up to standards, in most rearing farms that were visited.

Broiler keeping however does not go without difficulties. The quality and health of broiler doc’s is usually fairly good. However, due to a variety of reasons, after one or two weeks various problems start occurring on most of the farms: they appear to catch various diseases strongly affecting uniformity and growth rates. Well-kept broiler farms in Ethiopia are able to reach a live weight of over 2 kg in 45 days. In most cases, the fattening period takes one to two weeks longer. Most commonly occurring health problems are coccioides and pulmonary problems. Too many non performing sick birds are kept for too long in the sick bay, leading to a waste of feed but they are also a continuous source of infection for the healthy ones. Reasons for the disease pressured are various: temperature control, ventilation, flooring quality (often too wet in the end), feed quality, poor water quality. Furthermore available drugs in the country are of a doubtful quality.

Manure is sold mainly to dairy farmers, either per 100 kg per bag or by the pickup load (latter costing 400 Birr per load).

Various: water, electricity.

Feeding during rearing period 12-22 weeks, 6 kg á 9 Birr
Layers meal, per 60 weeks (60 x 7 days x 0.12 kg x 8 Birr)
Health (some medication, disinfection measures)
Various: water, electricity.
Litter costs approx. 25 Birr per bale (15 kg). Amount needed: 1 bale per 250 birds = 0.1 Birr per bird

Labour costs to construct a basic house for 3000 birds is estimated at 5000 Birr : 3000 = 5,1 Birr per bird : 1.7 kg slaughtered weight.

Cost price per kg (1.7 kg slaughtered weight on average)

Using these prices, a 3000 birds’house with ground floor system sells for approx. 3000 Birr.

### Table 4 Cost price of eggs

<table>
<thead>
<tr>
<th>Purchase price pullet</th>
<th>90 Birr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeding during rearing period 12-22 weeks, 6 kg á 9 Birr</td>
<td>54</td>
</tr>
<tr>
<td>Layers meal, for 60 weeks (60 x 7 days x 0.12 kg x 8 Birr)</td>
<td>403</td>
</tr>
<tr>
<td>Health (some medication, disinfection measures)</td>
<td>5</td>
</tr>
<tr>
<td>Various: water, electricity.</td>
<td>5</td>
</tr>
<tr>
<td>Litter costs approx. 25 Birr per bale (15 kg). Amount needed: 1 bale per 250 birds = 0.1 Birr per bird</td>
<td>5</td>
</tr>
<tr>
<td>Maintenance (2 Birr)</td>
<td>6</td>
</tr>
<tr>
<td>Equipment (5 Birr)</td>
<td>6</td>
</tr>
<tr>
<td>Labour</td>
<td>0.5</td>
</tr>
<tr>
<td>Total costs</td>
<td>553.5</td>
</tr>
<tr>
<td>Returns: selling price old hen</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>553.5</td>
</tr>
<tr>
<td>Cost price per egg</td>
<td>513.5 : 330 = 1.55 Birr</td>
</tr>
</tbody>
</table>

### Table 5 Cost price broilers

| Purchase doc | 22 |
| Feed, 5 to 6 kg á 9 birr | 50 |
| Health (vaccinations, medication) | 2 |
| Various costs: electricity, water, litter | 3 |
| Housing, equipment | 5 |
| Labour costs (staffing as with 6000 layer unit, but extra peak work for loading and cleaning make total daily wages 220 Birr) | 3 |
| Total | 85 |
| Cost price per kg (1.7 kg slaughtered weight on average) without labour costs | 50 Birr per kg slaughtered weight |

1. Housing costs were calculated based on the following prices for building materials:
   - 100.000 Birr. Using these prices, a 3000 birds’ house with ground floor system sells for approx. 3000 Birr.

2. A 6000 layer unit efficiently runs 4 day staff as poultry attendants (wages 25 Birr daily), 2 watchmen (20 Birr daily) and a manager (50 Birr daily). Total daily labour costs = 190 Birr x 360 days = 67,800 Birr. 6000 birds = 175 Birr per bird; 330 = 0.5 Birr per egg.

3. 220 Birr daily wages x 70 days = 15,400 Birr ; 3000 = 5,2 Birr per bird: 1.7 kg slaughtered weight = 3.5 Birr per kg slaughtered weight.
These cost prices are based on fairly well managed units. Given current price and return levels, both layer and broiler keeping are profitable businesses. However, performance levels are often much lower than these assumptions.

Farm gate prices for eggs vary from 1.6 Birr in remote areas to 2.2 Birr for large scale farms near Addis. Broiler prices vary highly throughout the seasons: form 50 to 66 Birr in fasting seasons up to 120 Birr during religious feasts.

Feed determines almost 80 % (layers) or 60 % (broilers) of the cost price. Feed prices are based on best quality feeds available, cheaper (but poorer) feeds can be obtained to cut costs. But production will also be affected negatively.

Laying % achieved in practice is often poorer than possible under proper management circumstances. One example of a 900 layer unit visited had 60 week old birds with a production of 700 eggs daily. Ideally, the production of such young hens should be 100 eggs per day higher than this. For this farm it means a loss of daily income of 100 eggs = approx. 200 Birr. The 100 non-laying birds will still consume 12 kg of feed daily á 8 Birr = 96 Birr, for which no return is obtained.

Figure 6: Most broilers are slaughtered on farm, and stored in containers turned into deep freezers.

2.7 Checklist farm visits.

The following checklist was used during farm visits.

Checklist poultry farm visits. (Layers)

Owner
Age, family size and composition,

Farm
location, infrastructures available (electricity, water, roads), availability of extensionists/vet services, access to markets

Animals
• number
• source: which hatchery
• availability
• prices

Housing
• type of housing: walls (type), ventilation, laying nests, watering points, cleanliness, storage space available, roofing type, electricity available,

Feed
• sources of feed
• what ratios being used

Health
• vaccinations
• disease monitoring
• treatments carried out

Production
• records being kept?
• laying % vs age of hens

Quality of daily management
• cleanliness
• adequate water available
• any dry hens?
• starting off young hens: facilities, temperature control, brooders available?
• mortality rates
• are records kept: laying % available?

Socio economy
• labor provision
• division of labor on the farm
• who owns the chicken

Sales
• to whom, buyers, how many at a time
• prices, seasonal variation
• market constraints?

Literature
FAO, 2008: Poultry sector country review.
NABC, 2010: Fact Sheet: Livestock Ethiopia. Livestock in Ethiopia and opportunity analyses for Dutch investment


Vernooij, Adriaan, 2011: Brief introduction to the poultry sector of Ethiopia. Internal report Wageningen UR.


3 Poultry Value Chain Analysis

Authors: Jessica Cornelissen, Adriaan Vernooij, Alberto Giani

3.1 Introduction

In the 2G@There Poultry Ethiopia program a range of Dutch investors in the poultry sector came together as the Holland African Poultry Partners. They wish to strengthen the country’s poultry value chain (VC) by working on the improvement of local knowledge in the Ethiopian poultry sector and the application thereof in practice. In doing so, the partners are convinced that this will yield business opportunities for their consortium in Ethiopia.

The program is started with an inventory phase, looking at the production system in use, the poultry VC and the market opportunities for broiler meat and table eggs of exotic origin. This inventory phase serves as the basis for the strategy for the full program.

This report deals with part of this inventory phase, namely the study on Ethiopia’s poultry VC. For the other topics we refer to parallel reports prepared as part of the 2G@There Poultry Ethiopia program.

Objective

The objective of this research is:

To analyse the poultry value chain of broiler meat and table eggs of exotic origin, describing the current state of supply and processing and institutional barriers and opportunities for development of the sector.

The analysis specifically focuses on the two poultry concentration areas in Ethiopia: 1) Addis/Debre Zeyt/Nazareth and 2) Tigray (Mekelle, Aksum).

3.2 Methodology

The VC analysis is based on an analytical framework for inclusive agrifood market development developed by Wageningen UR. This framework describes six activities of which the first two – mapping and understanding the value chain; mapping and understanding the institutional and policy environment – are performed in the current analysis.

Data is obtained through a combination of the following:

- Desk research of available reports on the poultry value chain in Ethiopia
- Field visits of value chain actors in the two poultry concentration areas; in total 52 stakeholders were visited during a two-weeks mission
- Consultation with stakeholders in a joint working session

*“Exotic” meat and eggs are those products that are derived from imported or modern poultry flocks of hybrid birds. Throughout this report we use the terms ‘exotic meat’ and ‘exotic eggs’ to indicate the products of these types of birds. The traditional and prevailing type of birds kept in Ethiopia are so-called ‘local birds’, producing ‘local meat’ and ‘local eggs’. Next to this, a variety of chicken branded ‘Kuroiler’ is introduced in Ethiopia (coming from India) in modest quantities. The Kuroiler chicken is meant for a resource-poor, foraging village environment and is kept for both its meat and eggs.

6 Separate reports are available on the field visits and the joint working session


Figure 7: Value Chain map for exotic broilers (top, blue boxes) and table eggs (middle, green boxes) in Ethiopia; the institutional and policy environment is displayed at the bottom of the image (orange boxes).
3.2.1 Value chain functions

Breading, multiplication and hatching

The input of DOCs shows a similar structure for both the VC of broilers and that of eggs. Most DOCs that enter the two VCs, both layers and broilers, are not bred in Ethiopia but obtained from multiplicationcentres in other countries such as the Netherlands, South Africa, Saudi Arabia or Egypt. The biggest importers of DOCs are the large and medium scale farmers. The minimum amount of DOCs that are import-ed at one time is 10,000 animals. Medium-scale farms that operatebelow that capacity join forces when purchasing DOCs.

Secondly, layer and broiler DOCs are produced in the country. This is done by large scale commercial farms and multiplication centres. An overview of hatching activity of these actors in the country is given in the Appendix.

Several large scale farms have their own hatching (and sometimes also multiplication) facilities to produce DOCs. They mainly operate for their own production, but also supply medium and small scale farmers. These farms have their own, imported parent stock. In some cases, though not structurally, hatching eggs are imported.

For the flow of DOC from large farms to rural farmers, Development Agents (DA) step up as an intermediary. This is part of government policy on rural empowerment, with which government ensures distribution of DOCs and other VC inputs throughout the country and sometimes offering the animals at a reduced price.

There used to be about ten multiplication centres producing DOCs throughout the country, but as a result of privatization only a few are currently operational. Multiplication centres have their own parent stock, which are produced in breeding farms abroad or sourced from the Ethiopian Institute of Agricultural Research (EIAR). The source of parent stock from the EIAR is very limited though and doesn’t reach commercial levels, since the EIAR’s main activity is to develop new or improved breeds of layers that are better adapted to the Ethiopian situation. The multiplication centres supply DOCs to medium and small scale farmers. Next to this, there is some activity in pullet rearing, for supply of layers to small scale farmers.

Next to these major sources of DOC, a few medium and small scale farmers have their own small incubators in which they hatch layer-DOCs themselves. They purchase the hatching eggs from multiplication centres and a few farmers are also rearing their own parent stock.

Production of broilers and eggs

For a full overview of the type of farms and their production systems, we refer to the farm systems analysis report that is part of the invento-ry phase of the 2G@There Poultry Ethiopia program.

A general notion on the production part of the VC is that the scale sizes of farmers differ a lot along the VC; there are farms that keep a few dozen layer chickens and there are farms that keep a couple of ten thousand. There are approximately 15 medium to large scale integrated farms that keep poultry and that process and distribute their products themselves, to name a few: EUFORA farms, Alema Farms, Maranatha Farms, Almaz Farm, Ab eyebrow Farm, Mekelle Farms and Genesis Farms. The number of players in exotic broiler production is much lower compared to exotic eggs production.

Recently, a few large-scale integrated farms that produce solely for the export market (e.g. Abu Diab) have been started.

All large scale layer farmers rear pullets themselves, mostly from their own or imported DOCs. However, some medium and most small scale farmers either choose to rear laying or for layer keeping. In order to provide layers for those who lack the ability or capacity to raise pullets in a proper way themselves, some multiplication centres keep some of their DOCs, raise them and sell them as layers.

Large and medium scale farms usually slaughter and process the birds themselves. Level of processing is low though; most birds are sold plucked, eviscerated and frozen and only some go into further processing. In general, we can say that some training on technical aspects of hatchery and climate systems.

For an analysis of consumption patterns and market opportunities of exotic broiler meat and table eggs, we refer to the market analysis report that is part of the inventory phase of the 2G@There Poultry Ethiopia program. Some general notions on the VC structure can be given though.

Vaccines and drugs

For an analysis of the veterinary health system in Ethiopia, we refer to a study performed in parallel with the 2G@There Poultry Ethiopia program.

Equipment

Poultry farm equipment is available through several farm equipment distributors. All equipment is imported as there is no production in Ethiopia. The distributors have close relationships with several companies abroad (based in multiple countries, such as Belgium, Italy, The Netherlands, India, China, etc.). Customers are farmers at all scales. Small and medium scale farmers mostly buy drinkers and feeders, while large scale farmers need more comprehensive solutions including hatchery and climate systems.

Training services

For an analysis of training services and training needs, we refer to the training needs assessment report that is part of the inventory phase of the 2G@There Poultry Ethiopia program (chapter 5 of this report).

In general it is safe to say that exotic broiler meat and table eggs only constitute a tiny portion of the market share of chicken meat and eggs in Ethiopia. Consumption of animal-derived products is low all-to-gether, because of the fasting regime (more than 200 days a year) the Orthodox Christian consumers follow and because many households cannot afford to buy multi animal products. If budget, tradition or religion allow animal protein to be eaten, preferences are for local eggs and for local chicken or other meat types than chicken.

Local eggs and local chicken are used in traditional dishes such as doro wat. It is generally felt that modern eggs and chicken are not suitable to prepare this dish. Exotic broiler meat and table eggs are mainly used by bulk consumers that serve an international audience such as hotels and restaurants. Exotic table eggs are preferred, also by Ethiopians, over local eggs for use in pastry.

3.2.2 Value chain inputs

Feed

There are a few commercial feed producers that produce specialised poultry feed in the country. Feed mills generally use locally produced raw materials. However, premixes and concentrates are usually import-ed since there is no or insufficient production of good quality premixes and concentrates in the country.

Rural empowerment

Ethiopia has a tiered government system consisting of a federal state, zones, districts (woredas), and neighbourhoods (kebele). This makes it possible to deliver policies, such as those on rural empowerment, up to the woreda and kebele level. Each kebele has its own develop-ment agents. These DAs are responsible for agricultural extension services. They facilitate e.g. distribution of DOCs and animal feed, sometimes DOC can be purchased by poor farmers at a reduced price.

Land tenure

When a farmer wants to start a farm, he need to apply for land at the district office. Land can be leased or rented for a long period (up to 99 years).

VAT registration

No VAT registration is required for a farmer to sell his products directly to consumers, he needs a VAT registration. These are expensive and therefore hard to get for most small and medium scale farmers. As a result they are depend-ent on brokers (primary collectors) in order to get their product to the market. These brokers charge a fee for their services, which precises on the farmer’s profitability.

Views on and status of poultry production

It is believed by many that anybody could start a poultry farm and keep chickens successfully. It is not seen as something that need skill, knowledge and training. Many people start a poultry farm without any knowledge or without a solid business plan and with the expectation to make quick and easy money. The result is that many of them fail in their efforts. Because of this, there is a high turnover of entrepreneurs in the poultry business which adds to market and chain uncertainties.

Eating traditions and preferences

As said before, exotic broiler meat and table eggs constitute a tiny portion of the market share of chicken meat and eggs in Ethiopia and consumption of animal-derived products is low all-together, because of the Orthodox Christian fasting regime and the weak buying power of many Ethiopians.
The preference for local chicken and eggs over the modern variety probably has its origin in the way chicken is prepared and eaten. There is one national traditional dish containing chicken meat and eggs, called doro wat. Outside doro wat, Ethiopians do not eat much chicken meat. Doro wat requires cooking the chicken meat for a long time. The traditional chicken, with its tougher meat-structure, is more fit to this. The dish is considered special; it is eaten on special occasions, it needs special attention in cooking and requires special (and expensive) ingredients. As a result of this status, chicken is not seen as something you can eat every day and which can be prepared simple, quick and easy. In addition to this, the more western modes of preparing chicken are not common in Ethiopia and chicken is not considered fast and cheap food as in many other countries. Since chicken can only be bought (or at least, mostly) as a whole animal, a fairly big investment is needed for this. Other types of meat, such as cattle, can be bought by the gram, making it possible for those with a smaller grocery budget to eat meat.

Demographic trends
The country sees a population growth and urbanisation. This might have an impact on the demand (types and quantities) for chicken products. Looking at past trends and other countries, increasing population, greater purchasing power and urbanization led to a rise in demand for livestock products and in many countries this demand was filled with pig and poultry products.

Food purchasing habits
Ethiopian consumers prefer to buy their groceries on the local market. They prefer to buy a live chicken and kill it themselves. Consumers perform extensive quality control on the product (chicken) they are about to buy, something which is more difficult in a modern supermarket on processed or dressed meat wrapped in foil.

Chain cooperation
There is little chain cooperation, there is not a chain approach and no chain director. There are a few very large companies with a very high influence on the sector and the market. They have the power to control prices and sometimes they dump products at a very low price on the market (an oligopoly).

3.4 Overview of hatcheries in Ethiopia

<table>
<thead>
<tr>
<th>Operational hatcheries</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alemna Farms</td>
<td>200,000</td>
</tr>
<tr>
<td>Suloita</td>
<td>55,800 + 19,200</td>
</tr>
<tr>
<td>Abibaw</td>
<td>28,080</td>
</tr>
<tr>
<td>Addis</td>
<td>22,000</td>
</tr>
<tr>
<td>ELEFRA</td>
<td>Unknown</td>
</tr>
<tr>
<td>Mekele Farms</td>
<td>Unknown</td>
</tr>
<tr>
<td>Awassa</td>
<td>Unknown</td>
</tr>
<tr>
<td>University Alemna Farms</td>
<td>Unknown</td>
</tr>
<tr>
<td>University Debra Zeyt</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hatcheries with unknown status</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gethu Alemna Farms Poultry Farms</td>
<td>38,000</td>
</tr>
<tr>
<td>Bahir Dar</td>
<td>22,000</td>
</tr>
<tr>
<td>Adele</td>
<td>18,090</td>
</tr>
<tr>
<td>Bedele</td>
<td>18,090</td>
</tr>
<tr>
<td>Fanta</td>
<td>16,000</td>
</tr>
<tr>
<td>Beke Poultry Farm</td>
<td>8,400</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hatcheries being established or expanded</th>
<th>Targeted capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samson</td>
<td>56,800</td>
</tr>
<tr>
<td>Golden Poultry Farm</td>
<td>10,500 + 56,800</td>
</tr>
<tr>
<td>Nagash</td>
<td>22,000</td>
</tr>
<tr>
<td>Elewe Farms (Fanta Terefe)</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-operational hatcheries</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genesis</td>
<td>64,000</td>
</tr>
<tr>
<td>Adama</td>
<td>32,000</td>
</tr>
<tr>
<td>University Awassa</td>
<td>37,000</td>
</tr>
<tr>
<td>Three Lakes Poultry Farm</td>
<td>22,000</td>
</tr>
<tr>
<td>University Ambo</td>
<td>18,000</td>
</tr>
<tr>
<td>Kombolcha</td>
<td>Very little production</td>
</tr>
<tr>
<td>University Jimma</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

All hatcheries have their own parentstock, which they import.

In general, the knowledge on hatching processes is low and management standards at most of the hatcheries are poor. This leads to low hatching percentages. E.g. one hatchery started off with 80 % initially one year ago, but gradually the hatching percentage went down 25 % early this year. With some provisional improvements the percentage has gone up to approx. 50 % again, still far too low.

Hatching results are influenced both by parentstock management as well as the management of the hatchery itself. Managing parentstock is more difficult than managing layers or broilers. E.g. feeding broiler parentstock is rather sensitive, as they need to be fed strictly according to schedule to prevent them growing too fat. The parentstock farms observed clearly lacked good management: animals were not always uniform, cocks often too fat, dry hens are not culled and many birds suffer from diseases and external parasites.

On most of the parentstock farms, there is no candling equipment available to test fertility of the eggs. Furthermore, hatching of both layer and broiler parentstock are often put together in the same batch, which is far from ideal, as layer hatching eggs are more sensitive to disturbances in the hatching process.

A structural problem with all the hatcheries in Ethiopia is the altitude on which they are built. All are on higher altitudes, where the oxygen concentrations are lower. This leads to higher mortalities between days 15 and 20 of the hatching process, when chicks gradually need more oxygen.

The total output of the hatcheries currently is too low to meet the demand for doc’s. This leads to long waitings lists for poultry keepers and empty, unoccupied houses for periods sometimes up to 7 months or longer. This makes poultry production a risky venture and as a result, many people drop out of poultry keeping and turn to other ways of income.

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The Holland Africa Poultry Partners

Author: Ivo Claassen, with assistance from Hilde Duns.

4.1 Introduction

This chapter reflects the findings of a survey the author conducted in Ethiopia from 6-13 July, 2012.

4.2 Summary of main findings.

In parallel with the development of the Ethiopian poultry industry the veterinary health systems that are necessary to support poultry health should be developed. Currently the commercial poultry sector in Ethiopia is very small, and of minor economic importance, especially in relation to the cattle and small ruminant sector. As a consequence, there is limited knowledge on poultry management, disease diagnosis and disease control systems.

From discussions with Ethiopian researchers, veterinarians and representatives of international organizations, in combination with own observations the following can be concluded:

- There are 14 regional laboratories that are responsible for diagnosis of veterinary disease. They are linked to the Agricultural bureaux. The diagnostic possibilities of the laboratories are varying and limited. Training programs by NAHDIC exist as well as annual meetings of the managers of these laboratories.
- Disease surveillance is largely based on passive surveillance. There are some programs on monitoring for HPAI in wild birds.
- NVI produces a number of vaccines for poultry. Live and inactivated Newcastle disease, IBV, fowl pox, and Fowl typhoid. Other important vaccines are not available from local producers. Vaccination programs are nonexistent but commercial producers do have regular vaccination against the most important diseases.
- There is no data available on the efficacy of vaccination in the field. There is no organized cold chain management. Vaccination is used as a control tool during outbreaks of disease.
- Research on poultry in Ethiopia seems to focus on the selection of robust cross breeds and on feed composition. ILRI has some research projects focusing on animal health issues in village and backyard poultry.
- AU-PANVAC plays an important role in vaccine testing. This institute has excellent facilities for vaccine analysis and the development of reagents. It has the potential to play an important role for improving vaccine quality on the African continent. However the institute is lacking a good mandate and appears to be understaffed. It tests approximately 10 vaccine batches per year, whereas many more are produced. Import and used on the African continent. The following recommendations can be made on the basis of the findings:

- Development of a training program for interested government and industry veterinarians on poultry health issues.
- This program could be developed in cooperation with local partners such as industry or universities.

- Improve and increase diagnostic capacities to diagnose poultry infectious diseases. The responsible institute NAHDIC is the reference institute and therefore the most logical target for this activity. However, it is important that commercial farms are involved as well.
- Start monitoring programs for infectious diseases, especially in commercial farms and surrounding areas.
- Training on vaccination protocols and vaccine administration.
- Training of farmers/owners on poultry health issues and infectious diseases.
- The default reaction of farmers is to use antibiotics if they suspect a disease problem. There are diagnostic possibilities of the problem is not made in most cases.
- The focus of this mission has been very much on the technical capability of the Ethiopian veterinary infrastructure to diagnose and control poultry infectious diseases that are relevant for commercial poultry development. Universities have not been visited so the information on research and the quality of education stems from secondary sources. It is therefore recommended that future visits of experts include visits to universities and regional diagnostic laboratories to complete this picture.

In summary, poultry health management in Ethiopia can only be described as weak at all levels. There exist ample opportunities for improvement and the recommendations made in this report can serve as a basis to set priorities.

4.3 Key players in poultry health.

National Veterinary Institute (NVI), Debre Zeit
The NVI produces vaccines to protect Ethiopian livestock against infectious diseases. According to the information provided they produce approximately 10 vaccine doses annually. The majority of these vaccines are intended for cattle and small ruminants. Animal facilities and the research laboratory were visited. The actual production building was only seen from the outside but from the explanation it can be concluded that many different types of vaccines are produced in a single building. Bacterial and viral vaccine production is separated within the building.

Development of vaccines is limited and there are no intentions to develop poultry vaccines at this moment.
The vaccines are sold on site to the customers. There is no guaranteed cold chain after the vaccines leave the NVI. Also there are no data available on the quality of vaccines used in the field. Also NVI does not investigate the effectiveness of the vaccination programmes.

Vaccination is usually carried out during outbreaks. Poor vaccine quality and or poor vaccine application in the field are serious concerns and they would go unnoticed in the absence of preventive vaccination programs.

All vaccine batches are tested at AU-PANVAC. A small laboratory for process development was built with EU funding and can support the vaccine production. The institute and therefore the most logical target for this activity. However, it is important that commercial farms are involved as well.

- Start monitoring programs for infectious diseases, especially in commercial farms and surrounding areas.
- Training on vaccination protocols and vaccine administration.
- Training of farmers/owners on poultry health issues and infectious diseases.
- The default reaction of farmers is to use antibiotics if they suspect a disease problem. There is a national research program on poultry.

International Livestock Research Institute (ILRI), Addis Ababa
ILRI recommends that veterinary health training is set up as ToT (training of trainers) program, and works closely with researchers and existing education systems in veterinary schools. Also they recommend that training is focused on “serious” companies, for which ILRI can provide a list. Basic veterinary health skills should be trained to both veterinarians and poultry managers.

PANVAC was originally founded in 1986 for the independent Quality Control of Rinderpest vaccines. Nowadays the institute is responsible for testing all vaccine batches that are produced, imported and used on the African continent. It is unlikely that they are actually reaching this goal since only 100 batches per year are tested. Other activities include training, reagent and diagnostic kit development and harmonization of testing protocols. OIE guidelines are leading. Testing focuses on safety, stability, potency and identity testing and is in principal a repeat test of what the manufacturer is doing. However, PANVAC claims that they also test vaccines from the field and from outdoors.

PANVAC is being funded by the African Union and it can be seen everywhere that funding is apparently not an issue. There are good facilities for laboratory testing (Bacteriology, Virology, and Molecular Biology), reagent development, and a one year old state-of-the-art BSL3 laboratory. The animal facilities include breeding facilities for rabbits, mice and guinea pigs. The premises are clean and well organized. The scientific staff is of high quality.

PANVAC ambitions are high but they appear to be underfunded, with only 15 people including management. As everywhere else, the focus appears to be on cattle and small ruminants not on poultry.

The staff was very open and willing to discuss future collaboration.

The staff was very open and willing to discuss future collaboration.
Improvement of poultry health delivery services in Ethiopia.

Introduction.

Poultry production is rapidly growing in Ethiopia due to the strong rise in demand. Demand concerns both rural chickens at village level, but also in growing urban centres. These are mainly supplied by small scale producers operating near population concentrations in the urban centres. Both eggs and poultry meat are in high demand and the current level of production is insufficient to meet the demand.

A future rise in production will inevitably lead to higher densities of chickens on individual farms but also in sub(urban) areas. This growth in poultry production creates new challenges, not the least for monitoring of poultry diseases. Furthermore, more inexperienced people will get involved in the poultry sector, who are not adequately trained in poultry management, and certainly not in preventing, diagnosing or treating diseases. Therefore, there is a clear need to improve on poultry health delivery services.

Present situation.

Currently, there are various elements of an infrastructure providing poultry health delivery services in place in Ethiopia. NVI provides a large number of vaccines for all animals, including poultry. PANVAC is responsible for quality control testing of all vaccines that are produced, imported and used in the African continent. National Animal Health Diagnostic and Investigation Centre are in a position to do post mortem diagnosis, also for poultry. Limited laboratory diagnostic assays are available. However, not much use is being made of this facility due to a lack of awareness, and a lack of local veterinary staff monitoring the poultry health situation and stimulating diagnosis.

The effectiveness of the present poultry health delivery services is limited due to a lack of awareness amongst farmers, inadequately trained veterinary staff which leads to a suboptimal functioning of the system. Outbreaks of diseases are common, certainly amongst non-vaccinated local poultry, which can lead to losses up to 70%. Inadequate diagnosis has led to a fear of HPAI (Avian Influenza) outbreaks in the country, which however turned to be Gumboro, a preventable disease. Newcastle disease and Gumboro are common diseases amongst rural and commercial poultry.

Vaccination programmes do not exist and vaccination is used as a tool to control disease during outbreaks. There are no comprehensive systems to guarantee cold chain storage and handling of vaccines. Data on field effectiveness of vaccination are not available.

Steps forward.

In order to improve the situation, focus should be in several areas:

- effective vaccination campaigns
- improving diagnosis of diseases.
- Training of veterinarians on poultry health issues

Improving effectiveness of vaccination campaigns.

Currently enough vaccines, against NCD, Gumboro, Fowl pox and Fowl typhoid are produced at the NVI to meet the demand of commercial poultry producers. Other vaccines for poultry have to be imported. Vaccines can only be obtained at the Institute in Debre Zeit, but poultry farmers from all over the country do buy vaccines, either through local government services and where these lack, they usually organise themselves to send a representative to Debre Zeit to obtain the vaccines. Individual private poultry advisories are also active in organising vaccinations campaigns.

Local birds are however hardly reached at all. This poses a threat to outbreaks of diseases putting commercial producers at risk and reducing potential food and income for local families. The NVI intends to start an awareness and training programme to reach more local village level poultry in 2012. Discussions have started on how the Dutch poultry initiative can collaborate in carrying out these awareness campaigns and trainings on vaccinations.

Improved monitoring will also lead to potentially lower use of antibiotics in poultry production in Ethiopia.

Improving disease monitoring.

Effective disease monitoring is necessary to register potential outbreaks in number poses certain risks of spreading poultry diseases and laboratories, but more adequately trained staff able to recognise diseases at an early stage, both on farms, on markets and in slaughter-houses. Diagnostic capabilities, knowledge of epidemiology, extension to poultry farmers are all equally important components of a strategy to improve disease monitoring.

The planned activities will be fully planned with and embedded in existing veterinary infrastructure in Ethiopia. No new organisations of facilities will be set up by this programme.

Planned activities.

The following activities will be implemented:

1. Inventory mission: Gap analysis.

Assessments will be made of available knowledge and infrastructure at the Ministry of Agriculture, veterinary services, diagnostic laboratories, vaccine production/distribution/imports, veterinary research, general veterinary training, registration/distribution veterinary drugs, cold chain facilities, available epidemiological knowledge, present and targeted surveillance, consultation with donors and other support programme targeting veterinary health in Ethiopia.

2. Veterinary services including training epidemiology, risk assessment and prioritisation.

Two training missions will be organised to train the veterinary services in epidemiological methods and in a work shop set-up to determine a risk assessment of most important diseases. This will lead to a possible strategy to prioritise the combat of most important diseases.

3. Laboratory training including Quality management, test protocols and field diagnostics.

Trainings will be organized to strengthen veterinary services and veterinary laboratories. Field staff will be trained to recognise and diagnose diseases, good vaccination practices, extension to poultry keepers.

Laboratory training will a.o. focus on improving laboratory quality systems with on-site trainings.

Working out proposals for a system of local disease management.

A mission will be dedicated to the proper use of vaccines and the development of vaccination schedules.

Final report and drafting 3 year development plan for veterinary service.

A final report will be drafted this report will include proposal for a 3 year development plan to strengthen the veterinary infrastructure of Ethiopia as well as the Ethiopian poultry sector.
5 Training needs assessment for the Ethiopian poultry sector.

Authors: Ernst Beitler, Helmich van Rees.

5.1 Introduction.

The technical and economic performance of the small scale poultry farmers’ entrepreneurs need improvement and are currently below professional standards. This is amongst others due to poor availability of day old chicks and a lack of good quality feed, together with a poor underdeveloped poultry health system and extension service. Management levels of small scale farmers is poor and they do not use the full potential of their poultry.

Poultry keeping knowledge and management levels require intensive support to raise production and subsequently family income levels. Therefore a sub-study focussing on the need for training and training delivery services was conducted.

The original objective of this survey was to make a first assessment of training needs in the commercial poultry sector in Ethiopia and to assess training needs and training delivery capacity both on farm and in the poultry value chain.

The study can be divided into four different sub-objectives:

1. To assess on-farm training needs
2. To assess farm management training delivery capacity
3. To assess poultry chain training needs
4. To assess poultry chain oriented training delivery services

The results of the assessments will be used to strengthen on-farm production levels and to strengthen various parts of the poultry chain. The results of the assessments will be used to strengthen on-farm production levels and to identify one or more organizations in Ethiopia which are able to invest in training / production facilities for the poultry production chain.

5.2 Approach

The training needs survey aimed at identifying the needs for training and to identify one or more organizations in Ethiopia which are able to invest in training / production facilities for the poultry production chain and which organisations and trainers are involved.

On-farm training needs:

- assess knowledge levels on poultry farming of small scale, medium scale and large scale commercial farms of both farm owners and workers/family members. What are the general education and literacy levels, how many farmers have received practical training on poultry keeping
- assess management levels by observing on-farm performance levels
- analyse division of labour on farm
- how much training is needed on other aspects apart from practical farm management
- what part or percentage of poultry farmers do receive some form of training support

Farm management oriented training delivery services,

- available in Ethiopia: government, NGO’s, from commercial companies
- what kind of training activities are carried out currently and which organisations and trainers are involved.
- in which areas are most training activities carried out
- on what locations are poultry training activities carried out
- which international organisations are active in poultry training programmes in Ethiopia
- what poultry training activities are currently (or have been in the recent past) carried out by consortium members

Poultry chain training needs. (part of the chain analysis)

- as part of the poultry chain analysis, describe management performance levels of the various key players in the poultry chain
- analyse the need for training support; to what extend do they need to know more about poultry keeping, do they require support at other levels such as general management, financial administration, logistics etc.

To assess poultry chain oriented training delivery services.

- identify training parties active in service delivery aspects of the poultry chain: hatchery, animal health/vaccination, business development.

The required information in this training needs assessment has been gathered through chain analysis, field visits, farm reports, information from government officials etc.

5.3 Identified Training Needs around Debre Zeit

Introduction

To carry out the survey, the Debre Zeit and Addis Ababa (town and surroundings) areas were visited from 2 to 7 July 2012.

Description of Target Area

The main geographical areas of the first part of the analysis/assessment are the poultry and feed production sites located in the city of Debre Zeit and surroundings. The location of this area is in the East Shewa Zone of the Oromia Region, and has a latitude and longitude of 8°45′ North 38°59′ East with an altitude of 1,920 meters. Oromia Region has the largest size and one of the 9 ethnically based administrative regions, which covers 253,652 square kilometers extend from the western border, curving to the southwestern corner of the country. The central part of the country is almost entirely covered by this region.

Poultry developments and knowledge gap identified

The number of commercial poultry farmers in the area is very high, though unknown, also by government statistics. Most farmers do have a medium size farm between 500 and 6000 birds. The limitation for farm development is mainly due to the absence of day-old-chicks and the poor availability and high price of good feed. During the assessment phase it was established that farmers are mainly focussing on maintaining and caring for their current flock, but are not operating as entrepreneurs. They need to be further trained in farm economics and analysis.

What is needed to upgrade the skills of farmers/ participants and to improve their theoretical knowledge and above all their practical skills in modern poultry production?

- in transferring adapted knowledge and new technologies and in upgrading skills, a practical approach is strived to improve skills and competencies for farmers at any level.

The practical training concept needs well equipped training facilities so to enable the management and training staff to offer optimal practical training to its target groups.

The training facilities should be adapted to the objectives of the different training programmes (such as professional / educational level of the participants and farmers) and should be representative of the Ethiopian poultry production chain, taking into consideration current and expected developments.

- most likely there are different target groups to be trained and educated in Ethiopia when NGOs, agricultural research and universities offer training programmes at different levels. Although the principles are the same, each group (full-time students and professionals) requires a specific approach, methodology, and training programme and facilities.

There are some large scale farms, like Genesis Farm, Maranatha farm and Alena farms and they know how to source the necessary knowledge and skills even from abroad. The workers on their farms however also need to be further trained in modern poultry keeping before they are able to work in modern poultry farms. It is possible, albeit with certain limitations, to make use of the facilities of the large scale farms to conduct a training for farmers and extension workers in the poultry sector.

Small scale farms is backfarm farmers with a number 5-50 of chickens are many. In all cases, poultry is not the main source of income. Agricultural services like the Ethiopian Institute for Agricultural Research (EIAR) and NGOs like PassionConnect do provide training to farmers on the basic managerial aspects of poultry keeping before the farmers do get some chickens (needing pullets of 12 weeks old) through the government at subsidized prices. In some cases the farmers are monitored by the agricultural extension worker. Technical and economic knowledge about commercial poultry keeping is virtually absent in case of most rural farmers.

EIAR and agricultural livestock extension staff focus on small scale farming and not so much on medium or large scale farming. Poultry is 2nd in terms of importance of livestock species in Ethiopia and thus the level of involvement of the government is limited as compared to cattle and other ruminants.

The EIAR has facilities for layers, broilers, parent stock, hatchery and feed mill and some are used for training. They do have a well trained staff concerning poultry production.

Prospects and opportunities for Poultry farmers experience a good market for their products in the vicinity of Addis Ababa and anticipate a fast growing market. Most of their product are bought by middle man selling eggs and meat in Addis Ababa and Debre Zeit. Some farmers supply the local market and some producers do have their own shops for meat and eggs around Addis Ababa.

PassionConnect Ethiopia is an NGO in the region. The training facilities for horticulture and the hotels are located 9 km from Debre Zeit. The head office is in Debre Zeit. To supplement the practical training facilities they have built a hostel for 30 participants and have a conference room. They do have serious plans to construct a house for layers. Apart from that, they intend to start a training unit for pullets. This development will have a good prospect for the poultry business because next to a lack of capital, knowledge and skills in poultry production are the biggest challenge.

Several times during the year prices of meat and eggs fluctuate due to fast period and religious celebrations. Since the government wants to stimulate poultry development and reduce on the number of cattle, mentioned in the strategic plan for 2012 through 2020, it seems to be very promising to start and invest in poultry farming. Farmers should not get experience by the “trial and error method” but by proper training and monitoring of farmers. In this region prospects for poultry are very promising.
Present level of knowledge and skills on poultry production
The visits that were made to poultry farmers in this region and other stakeholders like a chicken broker, local feed mill, processing plant, hatchery e.g. confirmed that there is a big knowledge gap in technical (practical) knowledge and skills and in entrepreneurship in poultry production and poultry feed at every level.

Poor production results, high mortality and relatively high uses of antibiotics are more rule than exception. On large scale farms and poultry enterprises the results are better than on the medium scale farms as far as records are present and can be analysed.

A start into mail scale poultry farming is subsidized and promoted by government but the result of this programme, providing 5 chickens only to a rural farmer has limited effect on the knowledge and management level of his poultry.

Training needs
As mentioned before the training needs are felt on every level of education. A complete curriculum designed for every target group with their specific needs and points of attention would be appropriate. From the medium scale farmer up to the large companies. From the college graduate up to the Bachelor and Master level.

Target groups
The target groups for the training activities are various, and come from different levels:

- Entrepreneurs in poultry production, broilers, layers, hatchery and feed milling
- Farm managers and poultry farm workers; active and potential poultry producers
- National Agricultural research Centre, extension officers.

Bureau of Agriculture; extension officers and veterinarians

Potential Training Partners
The 4 potential partners below all have an interest in developing the poultry sector in the region and have strong links with the farming community.

- National Agricultural research Centre; have already 5 day courses for farmers who wants to start the small business. They do have research facilities which are used for practical training. They also have training on marketing of agricultural products
- Passion connect Ethiopia who has a strong link with passion connect in the Netherlands, has already training facilities and had experience in organizing training for local farmers with other stakeholders. They do have a training in value chain.
- Addis Ababa University, Faculty of Veterinary Medicine. Has training and education up to DVM level including a module on poultry production. A small poultry unit for research is present.

Bureau of Agriculture; home of the government veterinarians and extension workers

5.4 Identified Training Needs around Shire

Introduction
In the context of 2g@there Ethiopia, the woreda of Shire (town and surroundings) was visited from 8 to 10 July 2012. The town of Shire has about 50,000 inhabitants and is located one hour's drive from Axum to the East.

The area receives heavy rainfall during June, July and August, after which rainfall is absent for nine months. Since a few years however, farmers are constructing wells and an indication for the positive effect of these can be seen on the large number of new wells appearing everywhere in the landscape.

The area appears to be rich in iron and gold and recently mining company are settling in the area. The road infrastructure is also recently improved and some entrepreneurs are anticipating trade opportunities with the nearby countries Sudan and Eritrea.

Poultry developments
The number of commercial poultry farmers in the area is limited to a few dozen at most. The number of chickens on these farms does not exceed a few thousand at the moment. The limitation is mainly due to the absence of day-old-chicks and feed.

Farmers experience a good market for their products and anticipate a fast growing market, now that the income is increasing in the area because of the wells.

Prospects and opportunities for poultry
Probably the only active NGO in the region, the Well foundation (www.thewellfoundation.nl), is constructing a feed mill that will also produce poultry feed. Apart from that it is has a suitable rearing unit for pullets and has plans to construct a hatchery as well.

The vice-president of Aksum University, that has a branch in Shire as well, is Dr. Aklilu Hailemichael, who is an active promoter of poultry. At Aksum University he initiated poultry units and intends to start a modest feed mill for his poultry as well. Both him and Dr. Seane Tabeje Desta, the Dean of the College of Agriculture of the branch of Aksum University in Shire, intend to consider the farming community in their academic programmes.

These developments together with the economic development in the region indicate that prospects for poultry are promising.

Present level of knowledge and skills on poultry production
The visits that were made to poultry farmers and other stakeholders confirmed once more that practical knowledge and skills are absent, resulting in poor production results, high mortality and abuse of antibiotics. There was one exception however, a farmer who had been working in poultry production in Saudi Arabia. Not just the farmers were lacking knowledge and skills, but also local extension workers and veterinarians admitted to lack knowledge and skills on poultry.

Training needs
Considering the present level of knowledge and skills in and around Shire a complete poultry curriculum for many would be most appropriate. Below the suggested target groups are mentioned and the most urgent topics are listed.

Target groups
- Farm managers and workers; active and potential poultry producers
- Teaching Staff of Aksum University, Agricultural College; those teaching to students and to farmers
- Bureau of Agriculture; extension officers and veterinarians

Potential training partners
- The three potential partners below all have an interest in developing the poultry sector in the region and have ties with the farming community.
  - Aksum University & Agricultural College; have already courses for farmers, there student also link with the farming community.
  - The Well Foundation; has training facilities and had experience in organizing training for local farmers with other stakeholders
  - Bureau of Agriculture; home of the government veterinarians and extension workers

Topics to be included in training programmes:
- Health and hygiene
- Basic bio-security principles and practices
- Vaccination techniques
- Disease diagnosis
- Feed
- Poultry nutrition
- Feeding broilers, pullets, layers
- Raw materials
- Housing
- Capacity
- Design
- Climate control
- Equipment
- Recording
- Design of recording system
- Calculating technical parameters
- Analysing technical parameters
- Improvement plan
- Economics
- Cost price calculation
- Analysis economic result
- Improvement plan
- Applied Management
- Daily, weekly and periodic work plan
- Acquisition of specific skills
The Holland Africa Poultry Partners

The current situation in the poultry industry in Ethiopia can be summarized in the following SWOT analysis. The SWOT analysis applies to both the layers as well as the broiler chain. Focus is both on the internal environment (within the value chain) as on the external environment (external factors affecting the value chain).

### Internal environment

**Strengths**
- Poultry keeping well known (be it on village level only)
- Good source of income for small scale farmers
- Investment opportunities exist
- Conducive physical climate
- Poor management on farm leading to high morbidity and mortality
- Credit is inadequately available
- Lack of competition in the value chain (monopoly position of the National Bank of Ethiopia)
- Lack of knowledge on all types of management factors (health care, feeding and growing chicks)
- No reliable statistics and market information on poultry production and demand.
- Lack of trained workers, little training capacity available
- Poultry development policies at village level not adapted to circumstances.
- No veterinary monitoring
- Poor management on farm leading to high morbidity and mortality
- The lack of know-how for the use of technical equipment like Hatcheries
- Lack of knowledge on all types of management factors (health care, feeding and growing chicks)
- Lack of marketing options and market access
- Lack of knowledge of regulations and requirements for getting a loan to invest**
- Lack of competition in the value chain (monopoly position of some big farms)
- There are many small scale producers, a lot of which are at distant locations from services and supplies
- The importance of quality feed for growing quality chicken and eggs is often unrecognized
- No national production of premixes and concentrates, these need to be imported
- EPPA is dormant/not yet operational
- Many small and medium scale farmers are dependent on primary collective/middlemen to get their product to the market, as they have no means/money to obtain a VAT registration
- No formal registration of production of veterinary drugs and vaccines.
- Some large scale farmers dump their products on the markets without prior knowledge or experience. As a results many start-up a business and fail after a while. This leads to a high turnover of entrepreneurs in the poultry business which adds to market and chain uncertainties.

**Weaknesses**
- Irregular supply of one day old chicks (irregular supply from abroad, low national production)
- Poor catching conditions and management.
- No statistical data and market information on poultry production and demand.
- No lack of trained workers, little training capacity available.
- Poultry development policies at village level not adapted to circumstances.
- No veterinary monitoring
- Poor management on farm leading to high morbidity and mortality
- The lack of know-how for the use of technical equipment like hatcheries
- Lack of knowledge on all types of management factors (health care, feeding and growing chicks)
- Lack of marketing options and market access
- Lack of knowledge of regulations and requirements for getting a loan to invest**
- Lack of competition in the value chain (monopoly position of some big farms)
- There are many small scale producers, a lot of which are at distant locations from services and supplies
- The importance of quality feed for growing quality chicken and eggs is often unrecognized
- No national production of premixes and concentrates, these need to be imported
- EPPA is dormant/not yet operational
- Many small and medium scale farmers are dependent on primary collective/middlemen to get their product to the market, as they have no means/money to obtain a VAT registration
- No formal registration of production of veterinary drugs and vaccines.
- Some large scale farmers dump their products on the markets without prior knowledge or experience. As a results many start-up a business and fail after a while. This leads to a high turnover of entrepreneurs in the poultry business which adds to market and chain uncertainties.

20 Poultry farming is seen as an activity that anybody could do without prior knowledge or experience. As a results many start-up a business and fail after a while. This leads to a high turnover of entrepreneurs in the poultry business which adds to market and chain uncertainties.

21 Non-formal production of veterinary drugs and vaccines.

22 Some large scale farmers dump their products on the markets without prior knowledge or experience. As a results many start-up a business and fail after a while. This leads to a high turnover of entrepreneurs in the poultry business which adds to market and chain uncertainties.

### External environment

**Opportunities**
- Export opportunities to Middle East (although: competition)
- Feed ingredients adequately available in the country (although export of ingredients is growing)
- Large and growing domestic (urban) market (but a rise in demand will only emerge if consumption patterns/preferences change in favour of modern eggs and chicken)
- Good feed conversion as compared to beef (intensive production)
- The use of modern eggs in pastries and cookies (non-table eggs)
- Bulk consumers (hotels, restaurants, etc.) show a growing tendency to purchase modern eggs and chicken, this group is growing
- Support and attention from (business) development programs, both national and from abroad
- Current farms can potentially have a big increase in efficiency/output by applying rather simple management measures
- EIF is searching for breeds that are adapted to the local situation
- Broad outreach to rural farmers through DA’s

**Threats**
- Poor cooperation amongst farmers and lack of representative farmer organisation
- Strategies of chain actors are rather short term (actors are not likely to invest big sums for profits that are to be expected over a longer period of time, actors are not likely to take big risk in investing in their business)
- Illiteracy among primary producers
- No possibilities to evaluate feeding value of raw materials, most feed used in unvariable and uncontrolled quality
- Credit is inadequately available
- Bureaucratic procedures for investors require good knowledge of administrative and regulatory affairs and building up good relationships.
- Water and electricity inadequately available
- Poor coordination in value chain.
- Land tenure system: no title deeds can be obtained.
- Fluctuation in demand, especially the fasting periods bring down drastically. In January 2005 it was possible for people to buy 4 eggs for 1 Ethiopian Birr and at these times the price of one chicken at the local market would go from 20 up to 25 Ethiopian Birr. At that time bread could be bought for 0,50 Ethiopian Birr and 1 kilo of tomatoes for 7.2 Ethiopian Birr.

### 7 Consumer research and chicken eggs.

#### 7.1 Background

Ethiopia is a landlocked country in East Africa, surrounded by Eritrea, South Sudan, Kenya, Somalia and Djibouti. The country currently contains around 82 million people of which 15% is living in urban areas. In recent years the Government of Ethiopia decided to strongly focus on economic development in order to fight poverty and meet the Millennium Development Goals. Through a clear guideline it is also possible for foreigners to invest in Ethiopia as a foreign company, or in partnership with an Ethiopian national as a joint venture. As Ethiopia has been closed from the outside world for many years, a lot of business opportunities have opened up in various sectors. One of these sectors is the poultry industry, an industry that is very underdeveloped. For this purpose the Holland Africa Poultry Partners would like to obtain more information about this specific sector in Ethiopia, as well as on customer behavior. Having a clear idea about opportunities for investments in this specific sector will also need a clear overview of the Potentials on the domestic market.

#### 7.1.1 Scope of the research

The research conducted by North South Consulting should provide:
- Information on the usage (both quantitative and qualitative data) of chicken and eggs in Ethiopian culture for: a) Ethiopian Orthodox b) Muslims c) Protestants
- Additional information a) Information from vendors b) Consumers of chicken and eggs c) Consumer preferences d) Inflation/evaluation of the product e) High season and low season

#### 7.2 Methodology used

In order to obtain this information 3 different questionnaires have been developed (ANNEX 1) in order to abstract the information at local markets. Due to time constraints we were limited to do a short research in Addis Ababa. The data collectors were able to cover 6 local markets questioning at each market 20 customers and 15 traders in 2 weeks.

Furthermore, the data collectors were asked to find information from some known hotels, restaurants and pastries in Addis Ababa to understand more about quantities needed and problems that are being faced in supplies if there are.

Additionally, in order to obtain some final consumer information another slightly adjusted questionnaire was designed (ANNEX B).

For the part of the research, we selected 2 different local markets in Addis Ababa and at each of them we questioned 20 consumers on their consuming behavior of poultry products, which added another 40 questioned respondents to this market research.

#### 7.3 Limitations

Traditional fasting days have been a limitation on the practical data collection on local markets, as no chicken sellers or consumers are present on the market on these days. Moreover, a non compulsory fast- ing period of two weeks took place during the data collection period.

The study was limited to Addis Ababa; moving through the country obtaining data from local markets in a similar way needs a proper preparation of data collectors and would need more time and additional finances.

Setting up a network in poultry for Ethiopia is also time consuming, and will need more effort in the future.

#### 7.2 The culture of chicken and eggs in Ethiopia

In the past the prices of chicken and eggs have been increasing drastically. For example in January 2005 it was possible for people to buy a chicken for 1 Ethiopian Birr and at these times the price of one chicken at the local market would go from 20 up to 25 Ethiopian Birr. At that time a bread could be bought for 0,50 Ethiopian Birr and 1 kilo of tomatoes for 7.2 Ethiopian Birr.

It is common knowledge that in Ethiopia the economic development is facing inflation of the currency and on top of this deflation. It means that as well the value of money is reducing while at the same time prices of various food items are rising.
7.2.1 Relevant traditions in the Ethiopian Orthodox Church related to food.

In the Ethiopian Orthodox Church the people are living according to the strict rules of the Old Testament, which implies that there are restrictions on the food they eat. Ethiopians eat only chicken, fish, beef, goat or sheep; no other animals should be eaten. In some areas some types of bird are eaten, as they are related to chicken.

Ethiopians living according to the rules of the church are fasting around half the time of the year. If they are very strict, this fasting is a vegan diet. They are not allowed to consume meat, dairy products or eggs during fasting time. The longest consecutive fasting period is the one before the Ethiopian Easter (1 week after Western Easter), when people fast for 56 days. Another relevant fasting period starts around 45 days before the Ethiopian Christmas, which is on 7th January. In the evening of breaking the fasting, people spend the night in the church, while at home the mothers with their oldest daughter are preparing the Ethiopian specialty ‘Doro Wat’, a chicken stew, which has a preparation time of around 7 hours. During the fasting period, people will fast on every Wednesday and Friday.

7.2.2 Eggs in the Orthodox Church

In general the egg is very important in the Orthodox Church as it symbolizes fertility. This is related to the connection that exists between the Russian, Greek and Ethiopian Orthodox Church, which all constitute the same root. In the Russian Orthodox church, Filigraine and nicely decorated eggs are very famous and can be seen in the collection of the Hermitage in St. Petersburg and Amsterdam. In the Greek Orthodox church eggs are being used as a symbol of fertility, just as in the Ethiopian Orthodox Church.

In Ethiopia you can find the 7 ostrich eggs on the roof of the Orthodox churches, as representation of the Heavenly and Earthly angels. Some authorities claim that they are used in recognition of the fact that the ostrich always guards its eggs most solicitously, and their eggs, it is hoped, will similarly at all times protect the faithful. During special holidays people visit monasteries and provide each other with presents; these can be very beautifully painted ostrich egg.

7.2.3 Cultural decorations

The role of chicken is very relevant as women in the Northern parts of Ethiopia do like to decorate themselves with different tattoos for religious purposes. People are for example decorated with crosses on their face, around Gondar, North Wollo and Bahir Dar. In addition, the women have tattoos which show a pattern of chicken feathers around the neck. The tattooing is an ancient tradition performed by few elderly people in the community. They use a little needle to make small incisions and then rub it with charcoal to get the color in. Often women also tattoo their gums to make their teeth look more white. All these traditions of body decorations are painful, but do have their own traditional function. In local traditional societies one of the aspects to value the women are these decorations.

7.2.4 Cultural dance and chicken

In the local traditional dance from the North, especially Gondar but also some of the other areas around Lake Tana, the dance of women is to imitate the behavior of a chicken. She is doing this by holding a scart and waving her skirt or scart pretending to be the wings and moving her shoulders accordingly, which is giving the effect of a chicken shaking its feathers. Moreover she will shake and move her head like a chicken that is trying to drink water or pick grain. The chicken in the traditions described above are related to fertility rituals.

7.2.5 Traditional sayings

The saying ‘okechebe, embela be igyu yehedal’ means: slowly the egg will get legs and will start walking. This is a saying used in many, many different situations to express the concept of time. Things do not happen at once and then they will go by themselves, as not everything should be pushed too hard.

7.2.6 Traditional food

As in every country, also in the Ethiopian traditional kitchen there is a first class dish, which is made of chicken. The preparation time of this dish takes around 7 hours and is called ‘Doro Wat’ (chicken stew, recipe ANNEX 21). The cooking by itself is full of different rituals which start with the slaughtering of the chicken, while prayers should be said and the chicken should be killed by a mature man (never by a woman).

Buying a chicken alive is very important as it is the only guarantee for a family that slaughtering follows the appropriate customs. Cleaning the chicken and cutting it into 12 pieces is the work of the women. Preparation of onions, spices and spiced butter to cook in also takes time, which makes the process for preparation long.

7.2.7 Current situation on chicken and eggs

During the Ethiopian Orthodox holidays (ANNEX 3) all orthodox Ethiopians prepare ‘Doro Wat’, which needs a minimum of 1 chicken and at least 1 egg for every person in the household. In many situations these holidays are also celebrated by protestants and in some situations Muslims as well, as these are normally national holidays. As Ethiopia has a population of currently around 82 million citizens, with around 6 people per household, there are around 800,000 households of which 60% are orthodox, 25% are Muslim, 10% are Protestant and 5% have another religion. This means that the need for chicken and eggs is high throughout the year with a peak around the special holidays. The low season is during the fasting period in the orthodox religion, when there is a fasting period of two consecutive months (56 days).

In Ethiopia the share of exotic chicken in total annual poultry meat and egg production has increased by 118% over the last 20 years. While during the 1970s and 1980s 5% consisted of imported exotic breeds, the estimation was that in 2004.2.16% of the total national poultry population consists of exotic chicken (CA, 2004-2005).

According to Solomon Demelke (FAO, Animal production and health division, 2008), the total poultry population has been declined by 64% over the last 50 years. This decline has mainly been caused by periods of epidemics, when mortality rates as high as 80% have been recorded among the local poultry population (Yami and Dessie 1995). As a consequence, the share of exotic imported chicken used for commercial production has relatively grown. Although the total poultry population declined, demand especially for exotic fertile eggs, chicks, culled layers and pullets + cockerels is very high (FAO, Animal production and health division, 2008).

Except for Addis Ababa, the greater part of the poultry production (and potential) consumption takes place in these areas. Addis Ababa, Debre Zeit and Nazreth, all situated in the region of Oromiya, cover 95% of commercial poultry production of the country. In total, Oromiya region has around 34,4% of the national chicken population and contributes 36% of the annual national egg and poultry production (FAO, Animal production and health division, 2008).
This shows 16 fasting days with all the additional 96 Wednesdays and Fridays, except for 6 weeks after the Easter fasting. The total amount of fasting days for strict Ethiopian Orthodox people is around 242 days, which leaves the people with 14 days of non-fasting.

For the Muslim people the Ramadan is everywhere in the world and restricts people during 1 month from eating at daytime, but they do eat in the evening all dishes they like.

The people that are Protestant in Ethiopia, they do not participate in fasting, they can eat meat, dairy, eggs and so on the whole year through.

General national holidays, not related to religion:

8th December: Nations, Nationalities & People day
2nd March: Victory of Adwa
1st May: International Labour Day
5th May: Patriots Victory Day
28th May: Downfall of the Derg regime

Source: Tesfa Ethiopian Calendar 2005 E.C.

7.3.1 General information on Addis Ababa

Addis Ababa is the Federal capital of Ethiopia and a chartered city; it is the capital of the Organization for the Unity of Africa, for which the capital of the Netherlands is Amsterdam. Addis Ababa is the Federal capital of Ethiopia and also has a large international community.

7.3.2 Religion

The participants that have been questioned reflect the religious devia-
tion in Ethiopia. From all participants 62% is Ethiopian Orthodox, 25% Christian and 13% is Muslim. One market shows a higher population of Ethiopian Orthodox people and on another market you see a higher population of Christian. For example Saris has a high population of Ethiopian Somalians, while in north Addis Ababa there are more Christian churches.

7.3.3 Characteristics of the participants

In total four different groups of people have been questioned about their preferences and ideas about purchasing chickens and eggs. The biggest group of respondents were 160 local customers and 120 family members. The local customers were available on the local markets to provide information. Within these 10 days they had to consider the fasting days, which reduced the amount of days collecting data to around 6 days, when respondents were available on the local markets to provide information.

During data collection the research team has been facing problems which directly relate to and are relevant for the outcomes of the research, most prominently two fasting days a week from the Ethiopian Orthodox church, on Wednesday and Friday. Just before and on the fasting days hardly any people were available to sell chicken or eggs (and consequently also hardly any buyers of poultry products). Some of the non-orthodox people asked during these fasting days would have liked the products for them to be available.

Another big problem for the research team has been the fear people have to provide information on prices and amounts sold because of the behavior of the Ethiopian Inland and Revenues offices. On the local markets a traditional system of selling is still in place, in which people do not pay tax over the goods that are being sold. Since last year the government has been hunting people that are trading goods without having a Tax Identification Number (TIN) and don’t pay taxes by putting them in prison or charging them huge amounts of money in fines.

7.3.3.1 Customers local markets

The n=6 individual customers questioned can be divided in religion, educational background and home situation. The religion has a huge impact on the consumers’ behavior in the poultry industry. Educational background provides an indication on the income level of a person or household and related opportunities of having a better paid job. The home situation indicates the amount of children, and how many households are accepting additional relatives living within the household. Housekeepers that are living with families have not been included, as they are not participating as a family member outside the household. The amount of additional relatives living within a household indicates the spending capacity of the household. Also information on the differences in price and availability can be provided for the different locations. Moreover, all customers asked on the local markets were Ethiopian women, as it is in the Ethiopian tradition that women select the chicken and eggs to be bought on markets.

In figure 1 some general information has been provided on the people that are buying chicken and eggs. This is a random impression of 8 markets in different areas of Addis Ababa. Some of the areas are visited by the more well off people, while other markets have more customers from the lower economic segments of society.

The majority of the participants (62%) stated to be housewives with a husband generating income. Another 14% of buyers was part of a family in which both partners are having an income, working most often as merchants, civil servants or some sort of private employment. This private job implies most often being a maid or having a small other job over which no income tax is paid. The amount of family members on average adds up to 3, with a family that stated to have 9 children in Cherkos and 2 families with 8 children in Cherkos and Simien Shola.

Of all the participants, 33% attended secondary education, 24% have a diploma, 16% attended primary education, 14% obtained a degree and the other 14% stated to have no education.

The participants that have been questioned reflect the religious devia-
tion in Ethiopia. From all participants 62% is Ethiopian Orthodox, 25% is Muslim and 13% is Protestant. One market shows a higher population of Ethiopian Orthodox people and on another market you see a higher amount of Muslim people. This can be explained by the location, as for example Saris has a high population of Ethiopian Somalians, while in Kera and around Shola you find some of the main Ethiopian Orthodox churches in Addis Ababa.
The Holland Africa Poultry Partners

3.3.2 Local market sales person

In this chapter general data of chicken sellers and small shop owners is provided. The small shops in general sell eggs beside all kind of other products. On local markets in Ethiopia you see a huge amount of fixed little shops, while during daytime you will also find on special open areas temporary salesmen, only coming to the markets if they have something to sell. At local markets, chickens are sold by people that don’t have a permanent shop. Often, these chicken sellers also sell eggs in big hand-woven baskets.

Eggs are being sold in many different ways. There are shops that always sell eggs at the side of their assortment of food and household items. Then there are irregularly people coming to local markets to sell a basket full of eggs.

Table 7 General information local market salesperson

<table>
<thead>
<tr>
<th>Market</th>
<th>Kera</th>
<th>Gurd Shola</th>
<th>Cherkos</th>
<th>Sheromeda</th>
<th>Simien Shola</th>
<th>Shola</th>
<th>Saris Market</th>
<th>Akaki Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many chicken sellers at this market</td>
<td>11</td>
<td>9</td>
<td>10</td>
<td>20</td>
<td>15</td>
<td>20</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>How many egg sellers at the market</td>
<td>only eggs</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>10</td>
<td>4</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>little shop with many other items</td>
<td>10</td>
<td>many</td>
<td>15</td>
<td>10</td>
<td>20</td>
<td>10</td>
<td>many</td>
<td>10</td>
</tr>
<tr>
<td>From where do you get the chicken?</td>
<td>small local farmers</td>
<td>50%</td>
<td>70%</td>
<td>80%</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>big organization</td>
<td>0%</td>
<td>0%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>60%</td>
<td>60%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

The markets visited do have fixed shops, of which many of them are selling eggs on the side. Adequate information on prices, supply and quantities will be obtained from this group of participants. Most of the egg sellers are getting their supplies from different individual local farmers; there is one market in Saris that gets all its supply from a large organization. At some of the markets the supply comes through middlemen from the countryside. There are also shops that have some of their supply via middlemen and the rest of supply through direct contact with local farmers.

When asked what major problems are being faced on the supply side, most of the sellers stated:

1. Eggs are broken upon arrival. This is due to transport problems; the eggs are not being properly packed. Most of the eggs arrive in big handmade baskets.
2. Eggs are rotten. The moment eggs have been collected upon the time they are being provided to the market has taken too long. No cooling is being used.
3. There are not enough eggs provided. Sometimes sellers only get half of the amount they ordered due to lack of produce.

4. Chickens arrive dead, also due to transport problems. Chickens are being hanged upside down on the side of public transport means, or being carried in special cages, with too many in one case.
5. Chickens that arrive have diseases. See point 4.
6. Sometimes the sellers don’t get chicken at all, as the middlemen have run out of supply. This one was the case at the Akaki market and could be the case for some other markets at the outskirts of Addis Ababa.

7.3.3 Larger consumers of chicken and eggs

Besides the local consumers and sellers it is important to identify the larger consumers that do need a steady supply for their business. Different groups of larger consumers have been identified. For this research we approached 6 different hotels as they do provide breakfast with eggs. Also 5 known cafés were included that provide products to their customers in which they use eggs or chicken. Then there are 8 different restaurants which provide different types of international food in order to understand the regular supply that is not depending on the Ethiopian calendar.

Addis Ababa is known for its international character of restaurants. It is possible to taste international cuisine on an acceptable standard. In recent years many restaurants have been added of which a couple are specialized in preparing chicken. For this research we selected the Chicken Hut, but also restaurants as Zebra Grill and Mama’s Grilled Kitchen are known for their grilled chicken.

In Ethiopia it is not possible to find a franchise of McDonald’s or Kentucky Fried Chicken, as the chicken meat that is being provided to restaurants, hotels and to supermarkets does not carry the HACCP certificate. At the moment of research no abattoirs or meat processing factories have been established that are able to fulfill the HACCP criteria. One entrepreneur does have the intention to construct this facility and start producing HACCP certified meat, but this is currently in a preliminary stage.

Table 8 General information hotels and cafés

<table>
<thead>
<tr>
<th>Name organization</th>
<th>Hotels 6x</th>
<th>Cafés 5x</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name organization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amsterdam Restaurant</td>
<td>2005</td>
<td>2009</td>
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<tr>
<td>Shanghai Restaurant</td>
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How many branches

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<td>2005</td>
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As spending power is growing as a consequence of economic growth in recent years (ANNEX 5), more people are attending supermarkets. For this purpose many supermarkets have been expanding their existing facilities, started a branch, next to the sprouting of new supermarkets in Addis Ababa. One of the most famous and older supermarkets is Bambi’s, mainly because of their large amount of foreign imported items. They attract a large amount of the expat community and the diaspora as customers. Some other supermarkets also started importing goods. All supermarkets sell chicken and eggs and provided sufficient information on prices and customer preferences.

### 7.3.4.1 Consumers preferences

As in Ethiopia it is tradition for people to kill their own chicken following the necessary rituals in order to make an excellent Doro Wat, it can be assumed that people prefer to buy chicken alive. Also, there seems to be a clear preference for local eggs. In general a capital city of a country will show the first change in traditions, so people deciding to buy dead and cleaned chicken saving time, seems most likely to happen in Addis Ababa. We asked respondents where they prefer to buy their chicken as well as their eggs.

Ethiopians are known to be conservative in the way they prepare their food and in their use of basic ingredients. One of the assumptions is also that Ethiopians prefer to buy Ethiopian chicken with less meat, and local eggs, which are smaller and have a relatively dark yolk.

### 7.3.4 Research outcomes

Above some basic relevant information on the supply chain of chicken and eggs has been provided together with information about the participants in this research. It shows the attitude towards these products for Ethiopia. In this part we will go into more detail on preferences of customers and the prices that have been paid before and are being paid currently.

All customers agreed that local eggs are more tasteful than larger commercial eggs. For chickens, the same principle applies; rather small and with a lot of bones instead of larger and more meat. This implies that people find taste more relevant than quantity. Of all the people asked, 89% is purchasing chicken alive, while 11% buys chickens that are dead and cleaned. Around 13% of all respondents sometimes buy chicken alive and sometimes already dead and cleaned. In Cherkos at least 30% of the questioned people are always purchasing dead and cleaned chicken. In other areas this percentage is lower, although in Akaki 45% of the questioned people stated to buy sometimes alive chickens and sometimes chickens that are dead and cleaned.

People stated that they would like to buy chicken dead and cleaned on more occasions throughout the year as it saves them a lot of time preparing food. Most of these respondents are both working fulltime. It was also noted that non-orthodox respondents commented on the lack of availability of poultry during orthodox fasting times, as they would like to buy poultry products also in these periods.

In general 97% of respondents prefer to buy their chicken on the local market, while eggs are equally bought at the local market as well as in local shops. During holidays on average 13 eggs per family were bought. Some respondents stated that if the products would be cheaper somehow, they would buy more, but also more regularly. Some respondents select to celebrate their holidays only once or twice a year by preparing Doro Wat; throughout of the year they can not afford to prepare this special dish.

### Table 10 General information supermarkets

<table>
<thead>
<tr>
<th>Name organisation</th>
<th>New York Supermarket</th>
<th>Belonias Supermarket</th>
<th>Fantu Supermarket</th>
<th>Bambi’s Supermarket</th>
<th>Central Supermarket</th>
<th>Fresh Corner</th>
<th>Adabo Supermarket</th>
<th>Day to Day Supermarket</th>
<th>Fresh Supermarket</th>
<th>Friendship Supermarket</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many branches</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 11 Customer preference local markets

<table>
<thead>
<tr>
<th>You buy chicken mostly at</th>
<th>local market</th>
<th>90%</th>
<th>100%</th>
<th>100%</th>
<th>100%</th>
<th>100%</th>
<th>100%</th>
<th>100%</th>
<th>97%</th>
</tr>
</thead>
<tbody>
<tr>
<td>local shop</td>
<td>0%</td>
<td>0%</td>
<td>30%</td>
<td>30%</td>
<td>25%</td>
<td>5%</td>
<td>0%</td>
<td>0%</td>
<td>13%</td>
</tr>
<tr>
<td>Supermarket</td>
<td>10%</td>
<td>5%</td>
<td>0%</td>
<td>0%</td>
<td>5%</td>
<td>15%</td>
<td>0%</td>
<td>0%</td>
<td>5%</td>
</tr>
<tr>
<td>You buy eggs mostly at</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>local market</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>local shop</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Supermarket</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grow own chicken</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You buy eggs mostly at</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>local market</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>local shop</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supermarket</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amount of eggs for the holiday</td>
<td>Range</td>
<td>2 - 20</td>
<td>5 - 20</td>
<td>5 - 30</td>
<td>5 - 25</td>
<td>5 - 30</td>
<td>10 - 40</td>
<td>8 - 20</td>
<td>5 - 16</td>
</tr>
<tr>
<td>Mediate</td>
<td>10,7</td>
<td>13,01</td>
<td>15,05</td>
<td>12,5</td>
<td>13,65</td>
<td>13,8</td>
<td>13,85</td>
<td>9,6</td>
<td></td>
</tr>
<tr>
<td>Buy chicken</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>alive</td>
<td>95%</td>
<td>100%</td>
<td>76%</td>
<td>85%</td>
<td>85%</td>
<td>95%</td>
<td>90%</td>
<td>95%</td>
<td>89%</td>
</tr>
<tr>
<td>dead and cleaned</td>
<td>10%</td>
<td>10%</td>
<td>50%</td>
<td>20%</td>
<td>20%</td>
<td>10%</td>
<td>30%</td>
<td>45%</td>
<td>24%</td>
</tr>
</tbody>
</table>
The majority of hotels, cafés and restaurants are using the ferenj chicken. The main reasons given for this choice:
1. More meat on the chicken
2. Hygiene, as the local chickens are not always properly cleaned or might have had a disease.

Cafés and restaurants only require specific parts of the chicken, while 17% of the hotels are purchasing the whole chicken.

7.3.4.2 Prices of chicken and eggs
In recent years many prices of basic food products have been rising quickly, while at the same time the value of money went down. This problem of devaluation and inflation has been managed by the Ethiopian government by fixing exchange rates and introducing price caps, by for example setting maximum prices for staple food products, tomatoes and onions.

Understanding the increase of prices in relation to the emotions of consumers is part of this research. The data collectors asked about prices of last year, so had to depend on their respondents memories and their concomitant feelings about the perceived price rise.

<table>
<thead>
<tr>
<th>Table 14</th>
<th>Prices paid by consumers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>€1,00 = 22 Ethiopian Birr (July/August 2012)</td>
</tr>
</tbody>
</table>

### Table 12 Customer preference according to local market vendors

<table>
<thead>
<tr>
<th>What is the best chicken?</th>
<th>Local</th>
<th>Fereng</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who is buying chicken?</td>
<td>100%</td>
<td>10%</td>
</tr>
<tr>
<td>Local buyers</td>
<td>100%</td>
<td>10%</td>
</tr>
<tr>
<td>Foreigners</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Restaurants/hotels</td>
<td>0%</td>
<td>10%</td>
</tr>
</tbody>
</table>

### Table 13 Customer preference large consumers

<table>
<thead>
<tr>
<th>What is the best egg?</th>
<th>Local</th>
<th>Fereng</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who is buying eggs?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local buyers</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Foreigners</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Restaurants/hotels</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Table 13 Customer preference large consumers

<table>
<thead>
<tr>
<th>What does the customer prefer?</th>
<th>Local</th>
<th>Fereng</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who is buying chicken?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local buyers</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Foreigners</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Restaurants/hotels</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Table 14 Prices paid by consumers

<table>
<thead>
<tr>
<th></th>
<th>€1,00 = 22 Ethiopian Birr (July/August 2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>€1,00 = 22 Ethiopian Birr (July/August 2012)</td>
</tr>
</tbody>
</table>
During the research we received different information concerning the prices for chicken and eggs. As prices on local markets are never fixed, the prices people pay are related to their own negotiation skills as well as the type of chicken they buy. There are younger and older chickens for sale, as well as bigger and smaller ones, which all influences the price. This is why besides showing the median price of chicken and eggs per market we also show the minimum and maximum prices paid to help understand the range and the prices people are willing to pay. Some markets have customers from higher income classes, while at other markets many consumers from the lower income classes are purchasing their goods. The information related to last year’s prices is according to respondents’ memory, which is less reliable. Additionally, we have been able to retrieve information on inflation rates which is attached in ANNEX 5 in order to understand the last year’s increase of prices, monthly increase of prices and also the expected increase of prices in the future. During the holidays prices of chicken and eggs are skyrocketing and consumers sometimes pay double prices for a chicken in comparison with regular days on which chicken is available. Ethiopians do complain about this, but at the same time pay the necessary amount of money as being stated. As salaries are still low in Ethiopia, it has to be understood that not everybody can afford to purchase a chicken for each holiday. Respondents identified scarcity of poultry products as one of the major reasons why prices during holidays go up, while the greediness of merchants is provided as a second explanation for temporary increases of prices.

For this research it was relevant to obtain sales prices from sellers as well. They provided prices that show no big difference from what consumers stated to be paying. In addition we wanted to check the explanation of scarcity, which at some markets has not been a problem, while at other markets it certainly has. Most sellers stated that during holidays there are serious problems of supply of chicken and eggs and that they sell out too quickly.

In one market it was stated that as they are the last point to be supplied by the merchants, they sometimes don’t get any chicken or eggs to be sold at all. Concerning greediness, some of the local small sellers are making only small profits, because of transport expenses and bad products (rotten eggs, dead chicken etc.); this has to be taken into account when calculating the price. As they are also confronted with price fluctuations they sometimes have to sell their products below the prices they bought them for, while at other instances making a nice profit. Many of the temporary sellers obtain a small loan or micro credit in order to purchase eggs and chickens to start up their sales business.

Table 15 Prices and sales indication local sellers

<table>
<thead>
<tr>
<th></th>
<th>1 Kera</th>
<th>2 Kera Dolea</th>
<th>3 Cherkos</th>
<th>4 Dimeketea</th>
<th>5 Hijniy Dolea</th>
<th>6 Dolea</th>
<th>7 Sales Market</th>
<th>8 Abba Yami</th>
<th>9 Jemar</th>
<th>10 Shola</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicken sellers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum sold per day</td>
<td>8,8</td>
<td>8,6</td>
<td>12,4</td>
<td>18,5</td>
<td>33,5</td>
<td>37</td>
<td>8,4</td>
<td>14,5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum price chicken</td>
<td>106,5</td>
<td>116,00</td>
<td>119,00</td>
<td>117,00</td>
<td>114,00</td>
<td>132,00</td>
<td>89,00</td>
<td>146,50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum price egg</td>
<td>2,19</td>
<td>2,275</td>
<td>2,48</td>
<td>2,555</td>
<td>2,48</td>
<td>2,19</td>
<td>2,2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enough chicken for selling</td>
<td>70%</td>
<td>80%</td>
<td>100%</td>
<td>0%</td>
<td>50%</td>
<td>0%</td>
<td>50%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enough eggs for selling</td>
<td>80%</td>
<td>70%</td>
<td>60%</td>
<td>80%</td>
<td>60%</td>
<td>80%</td>
<td>0%</td>
<td>50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local shops (eggs only)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum price egg</td>
<td>1,68</td>
<td>2,4</td>
<td>2,6</td>
<td>12,5</td>
<td>2,53</td>
<td>2,42</td>
<td>2,37</td>
<td>1,36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enough eggs for selling</td>
<td>20%</td>
<td>0%</td>
<td>20%</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>60%</td>
<td>60%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 16 Prices and sales indication large consumers

<p>| | | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Large consumers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicken per day (sales/usage)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign</td>
<td>10</td>
<td>6.3</td>
<td>50</td>
<td>79</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price of chicken</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign</td>
<td>62</td>
<td>76</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eggs per day (sales/usage)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local</td>
<td>0</td>
<td>100</td>
<td>25</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign</td>
<td>233</td>
<td>350</td>
<td>25</td>
<td>305</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The larger consumers do sell their products regularly throughout the year, being less influenced by traditional holidays. Their prices are in general higher than on the local markets, although the price of dead and cleaned chickens are below the prices of chicken that can be bought alive on local markets. This is one of the most remarkable outcomes of this research. The larger consumers did not have any problem with supply as they are supplied mainly by Alema or Effrifa farms, which are able to guarantee a continuous supply of chicken and eggs. There are a few large producers (ANNEX 6) of chicken and eggs working on a professional level to provide for the local market. Based upon the information Mrs. R. Duns obtained during her research, it was found out that for these larger producers it is not interesting to intensify production to increase profits. They reason that if they intensify production, prices of their products will go down, while their production costs stay the same.

7.5 Prices of chicken, chicken meat and eggs in Debre Zeyt and Nazareth

For a comparison on prices between Addis Ababa and other larger cities in the Oromiya region, Mrs. R. Duns acquired additional data in Debre Zeyt and Nazareth. Figure 12 and 13 give an overview of the prices of commercial and local chicken (meat) and eggs among different groups in the retail sector in these cities. Prices are stated in the last weeks of July 2012, just after the Ethiopian Orthodox fasting time in which there is possible demand increase. It has to be noted that in case of the price of chicken (meat), the price is identified per whole chicken and not per kg. To give an indication of the weight of local and commercial chicken, the slaughter weight at 12 months for a local chicken is on average 1.5 kg while the slaughterweight at 8 weeks for a commercial chicken is already 1.8 kg. In case of eggs, average weights for respectively local and commercial eggs are 38 and 56 grams (CACC 2003 and Alemu Yami 1997).

Figure 12 shows that the commercial cleaned and frozen chicken is relatively cheap compared to the alive local chicken sold on the local market. Figure 13 shows that in supermarkets, commercial eggs are often cheaper than local eggs, although in Debre Zeyt and Nazareth it does not beat local eggs on the local market. When compared with Addis Ababa prices, it becomes clear that they are a little lower in Debre Zeyt and Nazareth. Furthermore, in Debre Zeyt and Nazareth no local clean and frozen chicken were found. During field research in Awassa (begin July 2012), which is located 270km south of Addis Ababa and has a population of 258,806 (CSA,2007), cleaned and frozen chicken were found in several shops. Several women from Awassa established their own trade in cleaned and frozen local chicken. These women made part of their house available for freezers in which they kept frozen local chicken. Supermarkets, hotels, restaurants and Ethiopian households buy these.
4.3 Research outcomes

In this part we will go into more detail on preferences of customers and price that are currently being paid. The first research has already shown more extensively the increase of price for chicken and eggs in recent years. This research will focus more on the quantity of poultry products people state to consume per month or year. We differentiated the participants according to religion because the expectation is that consumer behavior between the different religious groups can be significant.

4.3.1 Consumers preferences

Ethiopians are known to be conservative in the way they prepare their food and what they use as basic ingredients. Moreover, the assumption is that Ethiopians prefer to buy local chickens (with less meat) and local eggs (which are smaller, but have a more colorful yolk).

The same data collectors as in the first research were involved to obtain the information from these markets. They only surveyed consumers, which reduced the amount of work and the amount of days they needed in order to finalize the data collection. In this report we will display the average outcomes of this research. Moreover, we will display the average outcomes of the first research in the last column of every table.

7.4.2 Characteristics of the participants

This additional research has been covering 7 local market places in Addis Ababa, where at every market 20 female buyers have been questioned according to the instructions and questionnaire provided. The 7 individual customers questioned can be again divided in religion, educational background and home situation.

The religion has a huge impact on the consumers’ behavior in the poultry industry. Educational background provides an indication on the income level of a person or household and related opportunity to having a better paid job. The household situation indicates the amount of children, and additional relatives living within it. Housekeepers living with families have not been included, as they are not participating as a family member inside the household. The amount of additional relatives living within a household indicate the spending capacity of the household. Furthermore, information on price differences and availability can be provided for the various markets. Moreover, all customers asked on the local markets were Ethiopian women, as it is Ethiopian tradition that women select and buy chickens and eggs on local markets.

In figure 1 some general information has been provided on consumers of poultry products in Addis Ababa. This is a random impression of 7 markets in different areas of Addis Ababa. Some of the areas are visited by more well off people and other markets have more customers from the lower economic segments of society. In addition, we calculated the average of these 7 markets and reflected this with the average of the other 2 markets from the 1st research.

The majority of participants 62% stated that in their household, husband and wife are both working and generating incomes, with 39% running a household in which only the man gains an income. This is a slight difference with the 1st research and can be explained by the city’s outskirts locations of the markets. The average amount of family members was approximately 2, with a maximum of 5 children per family. Of all participants 21% attended secondary education, 31% have a diploma, 8% attended primary education, 16% obtained a degree and the other 24% stated to have no education. The respondents reflect religious deviation in Ethiopia; 59% is Ethiopian Orthodox, 33% is Muslim and 8% is Protestant.

7.4 Additional Consumer Research

In order to obtain final consumer information a slightly adjusted questionnaire was used to also gain data on the quantities of purchased poultry products. We selected 7 different local markets in Addis Ababa, and at each of them we questioned 20 consumers on their consuming behavior of poultry products, which added another 140 questioned respondents to this market research. This research clarifies the buying behavior of poultry products, which added another 140 questioned respondents to this market research. This research clarifies the buying behavior of poultry products in Addis Ababa. This is a random impression of 7 markets visited in October 2012 and is extended to cover 7 more local markets from the 1st research. The same data collectors as in the first research were involved to obtain the information from these markets. They only surveyed consumers, which reduced the amount of work and the amount of days they needed in order to finalize the data collection. In this report we will display the average outcomes of this research. Moreover, we will display the average outcomes of the first research in the last column of every table.

Table 17 Prices of local and commercial chicken in Debre Zeyt and Nazareth, July 2012

<table>
<thead>
<tr>
<th>Debre Zeyt</th>
<th>Nazareth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local chicken (alive on local market)</td>
<td>74 - 78</td>
</tr>
<tr>
<td>Commercial chicken (cleaned and Frozen)</td>
<td>87</td>
</tr>
</tbody>
</table>

Table 18 Prices of local and commercial eggs in Debre Zeyt and Nazareth in Birr, July 2012

<table>
<thead>
<tr>
<th>Debre Zeyt</th>
<th>Nazareth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local egg on local market</td>
<td>1,95 - 2,17</td>
</tr>
<tr>
<td>Local egg supermarket/minimarket</td>
<td>2,6 - 2,82</td>
</tr>
<tr>
<td>Commercial egg supermarket/minimarket</td>
<td>2,39 - 2,6</td>
</tr>
</tbody>
</table>

Table 19 General data on market customers

<table>
<thead>
<tr>
<th>Education</th>
<th>No education</th>
<th>Primary school (grade 1 up to 7)</th>
<th>Secondary school (grade 8 up to 12)</th>
<th>Diploma (+1 and up)</th>
<th>Degree from University</th>
<th>Religion</th>
</tr>
</thead>
<tbody>
<tr>
<td>husband</td>
<td>40%</td>
<td>35%</td>
<td>20%</td>
<td>35%</td>
<td>20%</td>
<td>orthodox</td>
</tr>
<tr>
<td>wife</td>
<td>0%</td>
<td>0%</td>
<td>15%</td>
<td>20%</td>
<td>10%</td>
<td>muslim</td>
</tr>
<tr>
<td>both</td>
<td>60%</td>
<td>65%</td>
<td>65%</td>
<td>50%</td>
<td>40%</td>
<td>protestant</td>
</tr>
</tbody>
</table>

7.4.1 Organizational research

The 7 additional markets visited in October 2012 were Bethel, Koflo, Geji, Bole Rwanda, Asco, Lafto and Simien Masegadga, which can also be found on the map in ANNEX 4. The markets are spread through-out the city, which created a good addition to the location of the first research and has provided for a strong coverage of Addis Ababa. The richer and poorer areas of Addis Ababa have been included more or less equally in order to provide a proper reflection on differences between markets.
All customers agreed that local eggs are more tasteful than larger commercial eggs and backyard chickens more tasteful than dead and cleaned commercial chickens. This seems to imply that people find taste more relevant than quantity. Of all respondents, 86% stated that, if poultry products are available at local markets, they would be somehow cheaper they would buy more, but also more regularly. Some people select only one or two holidays to prepare Doro Wat, as for them it is too expensive to prepare it each holiday.

During holidays people buy on average 17 eggs per family (in the first research this was 13). Respondents stated that, if poultry products were somehow cheaper they would buy more, but also more regularly. Some people select only one or two holidays to prepare Doro Wat, as for them it is too expensive to prepare it each holiday.

It was also noted that people commented on the lack of availability of poultry during orthodox fasting times. In general 89% of respondents prefer to buy their chicken on the local market, while 38% stated to sometimes buy chicken in the supermarket. Chicken is hardly bought (and available) at local shops. Foreggs, 95% are bought at local shops, 25% of participants stated to buy them also at local markets and 25% mentioned to sometimes buy eggs in the supermarket. In this second round of market research, more specific questions were asked in relation on the amount of chicken and eggs that people are using. The numbers obtained from consumers are estimates and some of the consumers actually were not able to provide exact amounts, as they had no accurate idea of how many poultry products they are consuming. Some participants again stated that the consumption of poultry products is related to their financial situation and income security.

Table 20 Customer preference local markets

<table>
<thead>
<tr>
<th>You buy chicken mostly at</th>
<th>Average</th>
<th>Average 1st research</th>
</tr>
</thead>
<tbody>
<tr>
<td>local market</td>
<td>57%</td>
<td>89%</td>
</tr>
<tr>
<td>local shop</td>
<td>6%</td>
<td>13%</td>
</tr>
<tr>
<td>Supermarket</td>
<td>37%</td>
<td>38%</td>
</tr>
</tbody>
</table>

Table 21 Amount of chicken and eggs bought per household

<table>
<thead>
<tr>
<th>How many chicken do you buy a year</th>
<th>Range</th>
<th>Average 1st research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>1-160</td>
<td>28 28 12 14 11 12 19</td>
</tr>
<tr>
<td>Average 1st research</td>
<td>39 35 10 5 6 5 10</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How many eggs do you buy per month</th>
<th>Range</th>
<th>Average 1st research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>1-160</td>
<td>24 27 12 14 11 12 19</td>
</tr>
<tr>
<td>Average 1st research</td>
<td>39 35 10 5 6 5 10</td>
<td></td>
</tr>
</tbody>
</table>

Table 22 Consumption per religious group

<table>
<thead>
<tr>
<th>Table 22 Consumption per religious group</th>
<th>Chicken per year</th>
<th>Eggs per month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orthodox</td>
<td>18</td>
<td>57</td>
</tr>
<tr>
<td>Muslim</td>
<td>20</td>
<td>66</td>
</tr>
<tr>
<td>Protestant</td>
<td>13</td>
<td>58</td>
</tr>
</tbody>
</table>

Table 23 Specified overview on usage per religious group

| Table 23 Specified overview on usage per religious group
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Bethel</td>
<td>2 Kolfe</td>
<td>3 Gerji</td>
<td>4 Bole Rwanda</td>
<td>5 Asco</td>
<td>6 Lafto</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------</td>
<td>-----------------</td>
<td>-----------------</td>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>% ch egg</td>
<td>% ch egg</td>
<td>% ch egg</td>
<td>% ch egg</td>
<td>% ch egg</td>
<td>% ch egg</td>
</tr>
<tr>
<td>orth</td>
<td>33</td>
<td>30</td>
<td>31</td>
<td>32</td>
<td>24</td>
</tr>
<tr>
<td>musl</td>
<td>32</td>
<td>28</td>
<td>30</td>
<td>26</td>
<td>20</td>
</tr>
<tr>
<td>prot</td>
<td>33</td>
<td>29</td>
<td>25</td>
<td>30</td>
<td>25</td>
</tr>
</tbody>
</table>
### Table 24a Chicken consumption

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Orthodox</th>
<th>Muslim</th>
<th>Protestant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 years</td>
<td>70-100</td>
<td>60-95</td>
<td>50-100</td>
</tr>
<tr>
<td>3-4 years</td>
<td>80-100</td>
<td>70-100</td>
<td>60-95</td>
</tr>
<tr>
<td>5-6 years</td>
<td>90-120</td>
<td>80-110</td>
<td>70-100</td>
</tr>
<tr>
<td>7-8 years</td>
<td>80-110</td>
<td>70-100</td>
<td>60-95</td>
</tr>
<tr>
<td>9-10 years</td>
<td>70-100</td>
<td>60-95</td>
<td>50-100</td>
</tr>
</tbody>
</table>

### Table 24b Egg Consumption

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Orthodox</th>
<th>Muslim</th>
<th>Protestant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 months</td>
<td>70-100</td>
<td>60-95</td>
<td>50-100</td>
</tr>
<tr>
<td>3-4 months</td>
<td>80-100</td>
<td>70-100</td>
<td>60-95</td>
</tr>
<tr>
<td>5-6 months</td>
<td>90-120</td>
<td>80-110</td>
<td>70-100</td>
</tr>
<tr>
<td>7-8 months</td>
<td>80-110</td>
<td>70-100</td>
<td>60-95</td>
</tr>
<tr>
<td>9-10 months</td>
<td>70-100</td>
<td>60-95</td>
<td>50-100</td>
</tr>
</tbody>
</table>

### Table 25 Prices paid by consumers

<table>
<thead>
<tr>
<th>Market</th>
<th>1st Research</th>
<th>Average</th>
<th>Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addis Ababa</td>
<td>53</td>
<td>55</td>
<td>70-100</td>
</tr>
<tr>
<td>Bole Rwanda</td>
<td>40</td>
<td>45</td>
<td>60-100</td>
</tr>
<tr>
<td>Gerji</td>
<td>30</td>
<td>35</td>
<td>50-100</td>
</tr>
<tr>
<td>Kolfe Muslim</td>
<td>20</td>
<td>25</td>
<td>40-60</td>
</tr>
<tr>
<td>Kolfe Orthodox</td>
<td>25</td>
<td>30</td>
<td>50-100</td>
</tr>
<tr>
<td>Lafto</td>
<td>15</td>
<td>20</td>
<td>30-50</td>
</tr>
<tr>
<td>Simien Masegadga</td>
<td>10</td>
<td>15</td>
<td>20-40</td>
</tr>
</tbody>
</table>

7.4.3.4 Prices of chicken and eggs

We also asked salesmen and large consumers to provide us with prices of poultry products in order to verify people’s feelings and thoughts about price rises. Also in Ethiopia traditions are slowly eroding and the government is stricter on controlling VAT payments. More often people are punished when not fulfilling their tax obligations. However, when implementing and starting to enforce taxation laws, the Ethiopian government did not provide time or proper information to local sellers, which creates uncertainty and anxiousness among them.

When the research was carried out different information about prices for poultry products was gathered. As prices on local markets are never fixed, the prices people pay are determined by their own negotiation skills as well as the type of chicken they buy. Moreover, variables like age and size of the chicken influence the price. There, besides median prices also the minimum and maximum prices paid per market are presented.

During holidays prices of chicken and eggs are skyrocketing and people do pay sometimes double prices for a chicken compared to non-holidays. As salaries are still low in Ethiopia not everybody can afford to purchase a chicken each holiday. People identify scarcity and anxiousness among them.

### 7.5 Conclusion

This consumer research aims to provide a better insight in the different types of consumer in Addis Ababa and the attitude towards buying chicken and eggs. Different cultural traditions in which chicken and eggs are playing a crucial role have been discussed. The research furthermore shows market prices and what people are willing to pay. Different indications for improvement have been provided by final consumers, as well as by final sellers. This might contribute to a more professional poultry industry in Ethiopia. On different parts of the value chain suggestions have been provided, which could be added to the Value Chain Analysis performed by the Wageningen University & Research Centre.

7.5.1 Local markets

For this consumer research, information has been collected from Ethiopian consumers on their consumption patterns of chicken and eggs from the local markets. They also provided information on preferences, and their opinion on the current situation as well as the quality of poultry products.

For each town district, we were able to identify the demographic composition. For every market we specified an average consumption of poultry products, related to religion. A diverse picture was gathered, in some markets orthodox consume most chickens and eggs, while in other markets, Muslims or protestants are consuming most poultry products.

We took the total averages of these 7 markets and divided it into the different religions. For both chicken and eggs it is clear that the Muslim population is a relatively high consumer of both products.

It is important to keep in mind that during the orthodox fasting season and when religious holidays are approaching, it is very hard for people to obtain chicken. Eggs are available throughout the year, although around holidays scarcity exists as more people want to buy eggs.

### 7.5.1 Poultry usage

In Ethiopia there are an estimated 13,500,000 households, of which around 830,000 (6 million people) are based in Addis Ababa. Consumer behavior for poultry products differs per market area, religion and even per family. It is related to cultural customs, buying power or income security.

Through a calculation based upon population rates and this research, estimations on household usage can be made. In a regular month, an Ethiopian family in Addis Ababa uses around 6 eggs. Eggs are not only used for boiling or frying, but in Ethiopia it is very normal that people use their eggs for homemade pastries as well.

For holidays, some people purchase 2 or 3 chickens in order to prepare enough food for their family, while others can only afford it for 1 or 2 holidays a year. From the 8 different markets the median of all of them was taken, which led to an estimated average of 1.5 eggs per household per holiday.

In one year an Ethiopian family in Addis Ababa consumes around 18 chickens. This is an average of all religious groups taken together. In the Figure below we were able to specify the usage of chicken and eggs per religion, in order to provide a clear insight in different customs. Muslims use on average most poultry products. This is obviously to a large extent caused by fasting customs among orthodox Ethiopians. For the difference with protestants no clear explanation could be found.

For one orthodox holiday in Addis Ababa, if all orthodox inhabitants (60% of the population) would decide to make Doro Wat, 498,000 chicken and 6,474,000 eggs are needed (based upon 13 eggs per preparation as a mediate amount). There are around 5 big Orthodox holidays (Meskel, Epiphany, Christmas, Easter and New Year) throughout the year when people try to obtain a chicken and all necessary ingredients to prepare Doro Wat. Of course not all households will be able to do so and many will select one or two holidays per year for preparing this special dish.

A national orthodox holiday in Ethiopia takes the lives of 8,100,000 chickens and needs around 105,500,000 eggs in order to make sure that there is enough for Orthodox Ethiopians to celebrate this holiday with the famous Doro Wat.

A normal orthodox family eats around 12 chicken stews (4 chickens) and 312 eggs throughout the year. Many Ethiopians started to prepare also other dishes with chicken and eggs.
7.5.1.2 Customs in a regular Ethiopian family

People in Ethiopia are willing to pay a reasonable price for a good product. Eggs are being sold, even if people have to pay 3 Ethiopian Birr (€ 0,14) per egg, while you can buy a bread for 1,20 Ethiopian Birr (€0,06) only.

In Ethiopian culture it is very important to buy chicken alive, for which people are willing to pay up to 170 Ethiopian Birr (€ 7,39) for a healthy animal. In certain occasions people are slowly starting to use chickens that are already dead and cleaned, even amongst Orthodox Ethiopians. A dead and cleaned chicken can be bought for 85 Ethiopian Birr (€ 3,70) and even when the chicken is cut into pieces and ready for use, the price is still 90 Ethiopian Birr (€ 3,9) only.

Besides a preference for local chicken, the respondents in this research also prefer the local chicken and eggs more than the so called ‘ferenj’ products. Almost all participants stated that they preferred the taste of local chicken and eggs, as it has more flavor. Moreover, the color of the ‘ferenj’ egg is white inside, while the color of the local eggs has a nice yellow egg yolk.

7.5.1.3 Opinions about scarcity

Many respondents stated that not enough chicken and eggs are available, especially during the holidays. They also see this as the explanation for the price increase of poultry products on these occasions.

They also mentioned that chicken farmers might produce more, but are not willing to do so in order to keep prices high. They stated that in the future an increase of production would be good for both the producer as the customer. Respondents hoped the government will intervene strongly in the industry to break the monopoly of merchants and wholesalers.

Sellers of poultry products on the local market lastly mentioned several transport problems. Especially transport of living animals has not been properly developed in Ethiopia, as animals are for example being transported on top of (mini)buses or trucks for long distances.

7.5.2 Larger consumers

The international community is buying their poultry products mainly in supermarkets rather than at local markets. Also various restaurants prefer supermarkets or retailers rather than local markets. Main reasons mentioned are related to the quality of the product and hygiene.

As for some of the restaurants chicken is their main dish supply and quality need to be guaranteed. Most of the restaurants questioned are providing to the international community or Ethiopians from the higher income segment.

Larger consumers also stated that for them it is relevant to have a regular supply throughout the year, since they are much less depending on the Ethiopian Orthodox tradition. The Hotels, restaurants and café’s prefer Ferenj poultry product because of their larger volumes and their higher quality standards. In contrast with local markets, prices from large producers do not fluctuate so much, which guarantees less risks of having to revise prices on menu’s too often.

Companies like McDonalds, Kentucky Fried Chicken and others are not able to establish a franchise in Ethiopia yet, due to lack of HACCP qualified meat production facilities. An initiative is being established in the near future which will attract the big food chains to set up franchise businesses in Ethiopia as well.

7.6 Questionnaires

1. a Consumer Research

<table>
<thead>
<tr>
<th>Market Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
</tr>
<tr>
<td>husband</td>
</tr>
<tr>
<td>wife</td>
</tr>
<tr>
<td>Family size</td>
</tr>
<tr>
<td>children</td>
</tr>
<tr>
<td>additional relatives</td>
</tr>
<tr>
<td>Subcity &amp; Kebele</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>Current job</td>
</tr>
<tr>
<td>Religion</td>
</tr>
</tbody>
</table>

7 You buy chicken mostly at

| local market |
| local shop |
| supermarket |
| grow own chicken |
| other |

8 You buy eggs mostly at

| local market |
| local shop |
| supermarket |
| grow own chicken |
| other |
### Consumer Research 2

**Market Name:**

1. *Income*
   - husband
   - wife

2. *Family size*
   - children
   - additional relatives

3. *Subcity & Kebele*

### Education

### Current job

### Religion

### You buy chicken mostly at:
- local market
- local store
- supermarket
- grow own chicken
- other

### You buy eggs mostly at:
- local market
- local store
- supermarket
- grow own chicken
- Other

### How much do you pay for a chicken now?

### How much did you pay last year for a chicken?

### What is the maximum you paid for a chicken?

### How much do you pay for an egg now?

### How much did you pay last year for an egg?

### How much is the maximum of eggs you need during holidays?

### How much do you pay for an egg now?

### How much did you pay last year for an egg?

### How much is the maximum of eggs you need during holidays?

### How do you use chicken?

### How do you use eggs?

### Do you have chicken at home?

### When yes, for what do you use them?
  - eggs
  - meat
  - other

### Other remarks

---

THANK YOU FOR YOUR COOPERATION!
1. Vendor Research

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name market</td>
<td>Subcity</td>
</tr>
<tr>
<td>How many chicken sellers at the market</td>
<td>only eggs</td>
</tr>
<tr>
<td>How many egg sellers at the market</td>
<td>little shop with many other items</td>
</tr>
<tr>
<td>From where do you get the chicken?</td>
<td>dbt local farmers</td>
</tr>
<tr>
<td></td>
<td>big organisation</td>
</tr>
<tr>
<td></td>
<td>other</td>
</tr>
<tr>
<td>Maximum sold in 1 day</td>
<td></td>
</tr>
<tr>
<td>Maximum price received for a chicken</td>
<td></td>
</tr>
<tr>
<td>Maximum price received for an egg</td>
<td></td>
</tr>
<tr>
<td>Who is buying chicken</td>
<td>local people</td>
</tr>
<tr>
<td></td>
<td>foreigners</td>
</tr>
<tr>
<td></td>
<td>restaurants/hotels</td>
</tr>
<tr>
<td>What is the best chicken</td>
<td>local</td>
</tr>
<tr>
<td></td>
<td>fenjen</td>
</tr>
<tr>
<td>What is the best egg</td>
<td>local</td>
</tr>
<tr>
<td></td>
<td>fenjen</td>
</tr>
<tr>
<td>When do you sell most of the chicken</td>
<td></td>
</tr>
<tr>
<td>When do you not sell chicken</td>
<td></td>
</tr>
</tbody>
</table>

**THANK YOU FOR YOUR COOPERATION!**
1. Name organisation main or branch:

2. Year established:

3. How many branches:
   - only AA
   - also other areas in Ethiopia

4. From where do you get your supply?

5. Who is buying from you your eggs?
   - foreigners
   - diaspora
   - ethiopian higher income

6. Who are the major customers for chicken?
   - foreigners
   - diaspora
   - ethiopian higher income

7. Can you get enough chicken regularly?
   - yes
   - no (why?)

8. Can you get enough egg regularly?
   - yes
   - no (why?)

9. What does the customer prefer?
   - local chicken
   - ferenj chicken

10. Do customers by a whole chicken or specific parts?

11. What are problems in consumption for:
   - eggs
   - chicken

12. How many chicken do you sell per day?
   - local chicken
   - ferenj chicken

13. What is the price of a chicken at the moment?
   - local chicken
   - ferenj chicken

14. How do you see the future of selling chicken?

15. How do you see the future of selling eggs?

16. How many eggs do you sell per day?
   - local egg
   - ferenj egg

17. What is the price of an egg at the moment?
   - local egg
   - ferenj egg

18. Other comments to be added
7.7 Research site

**Research 1**
1. Kera
2. Gurd Shola
3. Cherkos
4. Sheromeda
5. Simien Shola
6. Shola
7. Saris
8. Akaki

**Research 2**
9. Asco
10. Simien
11. Koffe
12. Bethel
13. Bole Rwanda
14. Gerji
15. Lafto