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Poultry Market in West Africa: Cote d'Ivoire

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Overview

Demand for livestock products, including poultry, is expanding in West Africa as a result of population growth and increased urbanization. Trade liberalization has had differing effects on poultry markets in the region, with some countries experiencing large import flows of frozen poultry from the European Union and others receiving very little. This report provides an overview of poultry market trends in Cote d'Ivoire in comparison with trends in the wider West African region.

The West African poultry sector faces high production costs, safety concerns due to lack of sanitary controls, and technical constraints in processing and marketing. Production costs are higher in Africa due to the lack of an integrated and automated industrial poultry sector. Farmers lack reliable access to inputs, including chicks and feed, and face high costs for veterinary services.[1] African livestock markets are also limited by global concerns about product safety.[2] The persistence of animal disease outbreaks continues to limit domestic and export production potential.[3] In addition to biological issues, the lack of breeders, marketing, and processing technology present technical constraints to poultry sector growth.[4]

The introduction of the Common External Tariff (CET) in West Africa reduced the tariff rate applied in most countries, facilitating an influx of cheap poultry imports from Europe and decreasing the ability of the regional sector to compete with imported products. Under the CET, import tariffs on final consumer goods (including poultry) are set at 20 percent.[5,6] Côte d'Ivoire experienced an influx of cheap poultry products between 2000 and 2005, contributing to a significant increase in poultry consumption during those years. In 2005, Côte d'Ivoire banned imports from countries affected by Avian Influenza and increased taxes on all other imported poultry.[7,8]

The primary sources for this analysis are the FAO-Emergency Centre for Transboundary Animal Diseases (ECTAD) poultry sector review from 2008 and the information provided by the *Interprofession Avicole Ivoirienne* (IPRAVI) on their website. IPRAVI is the umbrella organization overseeing Côte d'Ivoire's poultry sector. Appendix 1 presents an overview of Cote d'Ivoire's poultry sector compared to other West African countries. An accompanying EPAR Brief number 82, *Poultry Market in West Africa: Overview* (forthcoming) provides detailed comparative analysis of the West African countries examined in this study.

Cote d'Ivoire

Figure 1. Cote d'Ivoire

Source: CIA World Factbook

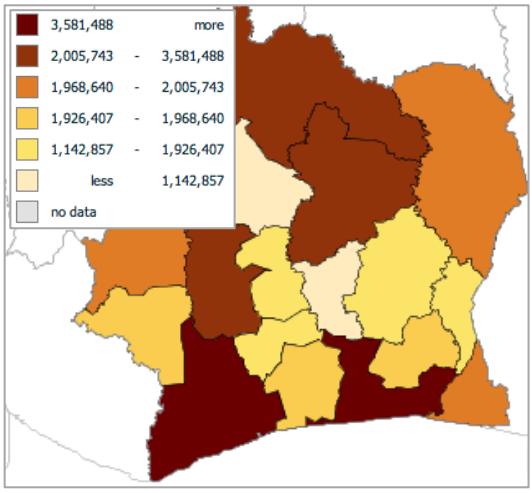
Poultry plays an important social and cultural role in Côte d'Ivoire. Demand for poultry is highest around holidays, especially Easter.[9] Poultry production is an important part of subsistence farming and, while it is generally not a primary economic activity, household sale of poultry generates revenue to pay for medical care, schooling, or to repay debts.[10]

Consumption & Consumer Preferences

Per capita consumption of poultry products (chicken meat and hen eggs) peaked in 2004 at 3.95 kilograms per capita, well below the West Africa regional average of 5.1 kilograms per capita. By 2007 (the most recent year for which there is data), per capita poultry consumption declined to 2.42 kilograms.[11] Relative to consumption of other animal proteins, poultry meat accounted for 20 percent of total meat consumption in 2005, after peaking at 25 percent in 2003.[12] In 2007, calories from all livestock composed 5.9 percent of daily caloric intake, well below the West Africa regional average of 9.5 percent. Chicken meat and eggs alone accounted for only 0.57 percent of daily calories, also below the regional average of 0.78 percent. [13]

Traditional poultry accounts for a larger portion of total poultry consumption than industrially produced or imported poultry. Poultry raised under the family production system consists of rustic varieties (local breeds and mixes).[14] While information regarding the distribution of poultry varieties is unavailable, data from the Korhogo region suggests that traditional chicken varieties account for over 75 percent of poultry production in that region, followed by Guinea Fowls (15 percent), ducks, pigeons and turkeys.[15] Semi-intensive family producers usually raise only a single species and tend to prefer local multicolored varieties.[16] Smallholders sometimes also raise Guinea Fowl, which are given as gifts and considered a sign of respect.[17] *Figure 2* illustrates the distribution of backyard chickens in Côte d'Ivoire.

Figure 2. Number of Backyard Chickens in Cote d'Ivoire (2001)



Source: FAO Global Livestock Production and Health Atlas

Domestic Production

Family production in both urban and rural areas accounts for the majority (over 70 percent) of Côte d'Ivoire's poultry.[18,19] As *Figure 3* demonstrates, households in all regions of the country raise backyard poultry to some extent. In rural areas, 90 percent of the population raises at least some poultry.[20] In general women are responsible for most of the work caring for family poultry. Men are typically responsible for financial management and ultimately decide whether the output will be consumed or sold.[21] Most rural chicken production is destined for own consumption; however some production is sold when output exceeds household consumption needs.[22]

The type of shelter and level of input use characterize three different sub-systems of smallholder chicken production.[23] Low input production systems include extensive free range and extensive confined production. Higher input use characterizes semi-intensive production.

Under extensive free-range production, families raise several different species and animals of various ages together. They generally do not use feed, veterinary, or sanitary inputs. Birds forage for their own food and mix with other animals. Poultry raised under this system are small and produce so few eggs that nearly all are hatched to replenish stocks.[24] Under extensive production where birds are confined, families provide some supplementary feed and rudimentary shelter. Families raise between 20 and 100 birds of various species and ages, and no particular family member is responsible for their care. After own consumption, surplus eggs and live animals are

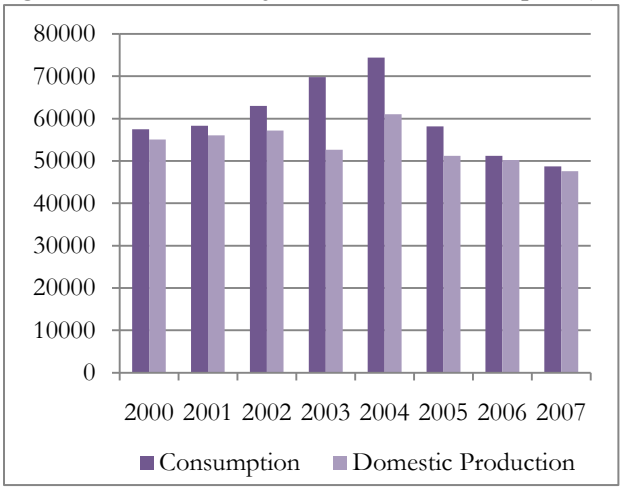
sold to collectors who peddle them to other villages. Extensive confined production is the most common family production system, especially in the northern part of the country.[25]

Under semi-intensive production, families generally possess between 100 and 500 animals. They raise only one species but keep animals of various ages together. Animals either hatch from existing stocks or are purchased as chicks in a local market. Birds are confined at all times and feed and water are provided regularly inside the animals' shelter to avoid contamination. Feed contains a variety of products including grains, animal offal, and food scraps and is generally mixed by the producer.[26] Poultry may be a primary economic activity for families practicing semi-intensive production.[27]

As of 2007, commercial production comprised only 30 percent of total poultry production.[28] Commercial production is most developed around urban areas, particularly in the Lagunes (especially around Abidjan) and Moyen Comoé regions.[29] There are only a few industrial poultry firms, mainly hatcheries and feed factories, with the majority of commercial poultry produced under the semi-industrial system.[30] Semi-industrial firms produce hatching eggs, broiler chickens, and eggs for consumption.[31]

As *Figure 3* demonstrates, domestic production has accounted for the majority of consumption with the exception of the period from 2003–2005 when inexpensive imported poultry was widely available.[32] In 2007, domestic production accounted for over 97 percent of poultry consumption.[33]

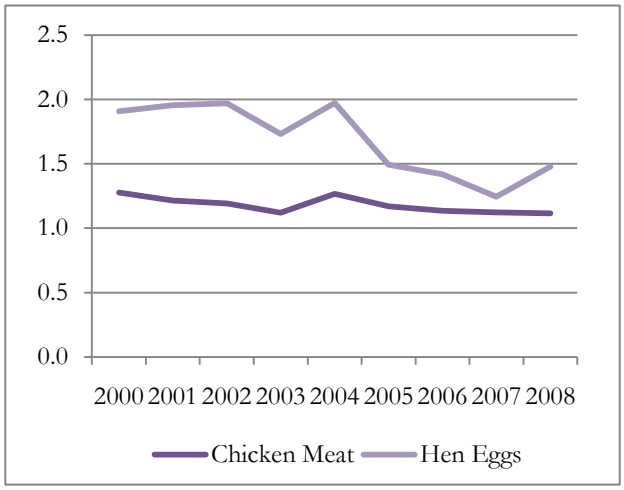
Figure 3. Domestic Poultry Production & Consumption (Tonnes)



Source: FAOSTAT

Fluctuations in chicken meat production over the last decade mainly reflect changes in broiler chicken production. Production of meat from spent hens (laying hens who are past their egg-laying prime) has remained relatively constant.[34] As *Figure 4* demonstrates, per capita production of chicken meat remained relatively constant between 2000 and 2008, while per capita egg production showed larger fluctuations and declined over the period.[35]

Figure 4. Domestic Chicken Meat and Egg Production (Kilograms per Capita)



Source: FAOSTAT

Production Costs

Family poultry producers use locally available inputs, if any are used. The main production costs for commercial producers include chicks, feed, and veterinary inputs. In 2008, IPRAVI estimated the cost of producing a commercial broiler chicken at 1,409 FCFA (US$2.93) and the estimated revenue from sale at 1,705 FCFA (US$3.54).[36] IPRAVI provides more recent prices for production inputs on its website. As of January 11, 2010 the average cost of broiler chicks was 385 FCFA (US$0.85), hen chicks averaged 525 FCFA (US$1.15), and rooster chicks average 150 FCFA (US$0.33). Poultry feed averaged 232.4 FCFA (US$0.51) per kilogram. More specifically, feed corn averaged 136 FCFA (US$0.25) per kilogram as of May 22, 2010.[37] No prices are listed for veterinary inputs.

Processing & Marketing

Family poultry is firstly for own consumption and any additional output is sold locally or regionally.[38] Some family producers slaughter their own animals for sale to supermarkets and restaurants, though most sell live

animals. Transport systems for family poultry are more developed in the northern regions to move birds to major cities. Transport systems in other regions are less developed because higher population density keeps trade much more locally concentrated. Traditional poultry marketing mechanisms include local markets and mobile salesman ("*collecteurs*").[39] *Collecteurs* purchase live animals at the farmgate and transport them to other villages or markets. They provide the only market access for many smallholders who therefore have little power to negotiate favorable prices.

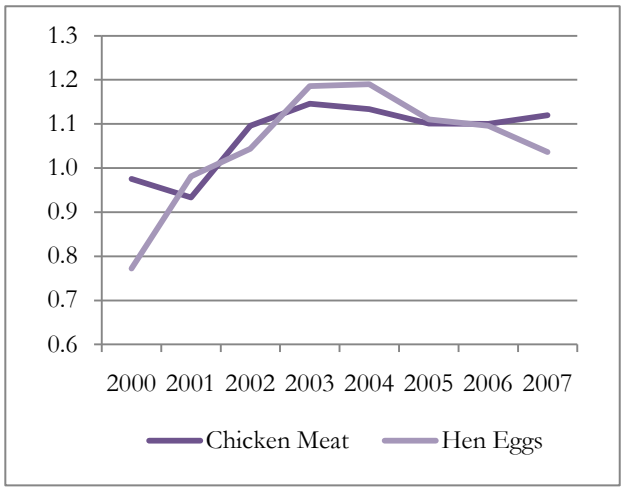
Distribution networks for eggs are more structured than for live animals. Traditional marketing mechanisms include small-scale pedestrian or cycling resellers as well as resellers in local markets.[40] Traditional markets and direct household sales trade 60 percent of the nation's eggs, with formal wholesale and sale to restaurants and supermarkets trading the remainder.[41]

As of 2008, there were 1,500 firms engaged in slaughter, wholesale of eggs and meat, and production of processed poultry products.[42] The country's only industrial slaughter facility and about twenty poultry-specific butchers are located in Abidjan.[43]

Producer Prices

The IPRAVI website contains up-to-date producer and consumer prices for poultry products and production inputs organized by geographic region. According to the most recent data (May 22, 2010), producer prices averaged 1895 FCFA (US$4.10) for whole chickens and 1591.5 FCFA (US$3.45) for a carton of 30 eggs.[44] While no comparable data is available for current average world prices, historical data in *Figure 5* show that producer prices per kilogram of chicken meat and hen eggs in Côte d'Ivoire remained above world average prices for every year between 2002 and 2007.

Figure 5. Ratio of Cote d'Ivoire's Producer Price to World Average Price for Chicken Meat & Hen Eggs



Source: FAOSTAT

Safety Concerns

Bio-security measures tend to be poor or non-existent in extensive family poultry.[45] Poultry roaming freely often come into contact with other wild birds and animals, leaving them vulnerable to predators and disease.[46] Semi-intensive producers tend to construct shelters from soil, bamboo, or wood, which are difficult to disinfect.[47] Semi-industrial producers use some sanitary inputs and bio-security measures. Lack of training and widespread illiteracy among the workforce are major limitations to better safety and bio-security practices.[48,49] Similarly, few bio-security measures or sanitary practices are used in the transport of live animals or eggs.[50] Merchants in the poultry markets also fail to take bio-security measures leaving slaughter and depluming areas open.[51]

Trade Flows

Poultry imports were banned in 2005 from any countries affected by Avian Influenza, however, imports from other countries remain legal.[52] Côte d'Ivoire officially imports some chicken meat and live poultry from neighboring countries and additional quantities likely enter over the borders illegally.[53] Controlling poultry imports from surrounding countries presents several challenges due to the lack of border posts in the North resulting from the war, the fact that the most important post (Tiébissou) is far from the border, and the ease of avoiding border posts by transporting imported poultry on trails.[54] As *Figure 3* demonstrates, imports accounted for only 5 percent of all poultry consumed in 2000 but increased to over 25 percent

by 2003. This percentage declined to 12 percent by 2005. Most imports between 2000 and 2005 were frozen chicken from Europe and Latin America. Though imports consist mainly of chicken meat, turkey meat accounted for about one third of total poultry imports, on average, between 2000 and 2007.[55] In addition, Côte d'Ivoire imports all veterinary medicines and more hatching eggs than it produces domestically.[56,57]

In 2005 after the outbreak of Avian Influenza, Côte d'Ivoire banned poultry imports from any country affected by the disease and raised the price floor on imported poultry originating outside the West African Economic and Monetary Union (UEMOA) from 500 to 1000 FCFA per kilo to support domestic production. As a result, imports accounted for only about 2 percent of total poultry consumption in 2006 and 2007.[58,59] IPRAVI reports that this policy did not result in a price hike for poultry products in the domestic market or widespread shortage. However, FAOSTAT data show a decrease in total poultry consumption beginning in 2005.[60,61] After the price floor on imported poultry rose in 2005, investment in the domestic poultry industry increased by US$11 million over four years, and the total value of the domestic poultry industry reached $110 million in 2009.[62] News accounts from February 2010 report that the government intends to maintain this price floor.[63]

Policy & Organizational Environment

Professional organizations in the poultry sector are not-for-profit and are organized under the umbrella of the *Interprofession Avicole Ivoirienne* (IPRAVI), founded in 1995. These organizations play a critical role in protecting the interests of poultry sector.[64] IPRAVI's main partners are the *Union des Aviculteurs de Côte d'Ivoire*, created in 1989, and the *Association Nationale des Aviculteurs de Côte d'Ivoire*, created in 2005. These producer organizations serve individual farmers, broiler chicken producers, and producers of eggs for consumption. In 2008, the *Union des Aviculteurs de Côte d'Ivoire* (UACI) producer organization contained 545 members, over half of whom were concentrated around Abidjan.[65] The second highest concentration of UACI members was in the Bouaké region.[66] IPRAVI also partners with the *Association des Industriels de la filière avicole ivoirienne* (INTERAVI), a producer organization of a dozen poultry sector suppliers including feed and egg packaging manufacturers, slaughterhouses, and hatcheries.[67]

In 2007, IPRAVI established the *Système d'Information sur le Marché Avicole* (SIMA) to improve market access for poultry products and inputs by improving information and communication between different links in the supply chain. This initiative includes collecting statistical and economic information from all actors in the sector, creating a central database, facilitating access to the database via IPRAVI's website, and providing business advice to individual producers.[68]

Opportunities for Poultry Development

Since the imposition of restrictions on imported poultry, overall consumption of poultry products has decreased. Imported products are less expensive than domestically produced poultry, suggesting that consumption increases between 2000 and 2005 were a response to the availability of less expensive poultry. Consumption would likely increase again if the cost to consumers were lower, as could be achieved through increased, lower cost domestic production.[69]

Dupaigre et al (2004) project Côte d'Ivoire to have a production deficit of poultry meat in 2020. Specifically, Côte d'Ivoire will likely produce 53,000 fewer tonnes of poultry meat than Ivoirians will consume that year.[70] Challenges facing the development of the poultry sector in Côte d'Ivoire include the lack of available feed and veterinary products, the high cost of day-old chicks, and lack of access to credit for producers. Lack of access to information, advisory services, and veterinary inputs discourage existing firms from investing in improved practices.[71] Insufficient quantity of industrial hatcheries, poor organization of chick distribution, failure to distinguish hen chicks from broiler or rooster chicks, and varying quality, size, and health standards constrain the market for day-old chicks.[72]

FAO analysis, however, suggests that the necessary human and logistical resources are available for the development of the poultry sector. Improving the productivity of family poultry production can increase food security and nutrition for Ivoirians, especially in rural areas.[73,74] Achieving this goal requires promoting already existing poultry development and improvement programs, introducing a thermostable vaccine against Newcastle disease that can be produced locally, and organizing family producers and merchants into associations or cooperatives.[75] The FAO analysis recommends that interventions aim to improve

feed with local products at low cost and increase productivity per bird.

Improving productivity also requires policy-level changes. FAO analysis recommends reinforcing regulations regarding collection, transport and slaughter of poultry, better dissemination of bio-security information, and a comprehensive census of existing poultry operations.[76] Professionals in animal health, including veterinarians and wholesalers of veterinary products, would benefit from closer collaboration with IPRAVI. Better coordination among IPRAVI, the *Association des Vétérinaires Privés Practiciens de Côte d'Ivoire* (AVPPCI), and the *Groupement des Vétérinaires Grossistes* (GVG) would result in better design of poultry production programs and disease prevention plans. It would also better combat epizootic diseases by ensuring adequate availability and efficient use of medicines.[77]

A long running African Development Bank (ADB) poultry improvement project highlights areas for intervention to improve production outcomes. Between 1984 and 2000, the ADB project encouraged farmers in several regions to adopt improved techniques for family poultry production. These techniques consisted of constructing or improving habitats to segregate poultry, ensuring capability for vaccination administration at the village level, and introducing improved varieties of roosters to improve the genetic stock of village poultry.[78] Farms adopting these improvements demonstrated a decrease in the mortality rate from 50 to 10 percent, an increase in average egg production per hen from 36 to 80 eggs per year, and improved body weight gain by decreasing time to gain 1.2 kilograms from 180 days to between 90 and 120 days.[79]

The FAO, in conjunction with the International Atomic Energy Association (IAEA), conducted a study in 1999–2000 to evaluate the difference in production outcomes between traditional family production and the use of improved techniques. The study took place in two villages in the Agnéby region. On farms using traditional techniques, birds produced 30 eggs per year, on average, with a hatching rate of 80 percent. Body weight gain was low and the survival rate was 40–60 percent. Improved techniques included farms providing vaccinations against Newcastle disease, anti-parasitic treatment, and shelter to protect chicks from predators. Farms using improved techniques experienced a 90 percent survival rate for chicks, and nearly 100 percent of those who survived into youth reached adulthood. In addition, animals receiving supplementary feed had an increase in body weight gain.[80]

Conclusion

Smallholders produce the majority of poultry in Côte d'Ivoire. Common production practices lead to low productivity, poor bio-security, and limited distribution opportunities. With the influx of cheap poultry imports between 2000 and 2005, Ivoirians demonstrated an increased demand for poultry. Overall consumption of poultry has since declined along with imports, suggesting significant market potential for domestic poultry products. Evidence from the African Development Bank and the FAO highlight specific areas for intervention to improve poultry productivity. Furthermore, analysis from the FAO suggests there is sufficient infrastructural capacity to expand the sector and increase smallholder productivity.

Please direct comments or questions about this research to Leigh Anderson, at eparx@u.washington.edu

Appendix 1. West African Poultry Market Comparison

		West Africa*	Burkina Faso	Ghana	Mali
Demographic Overview	Population[1]	291,266,000	15,234,000	23,351,000	12,705,700
	Percent rural population[1]	59%	80%	50%	68%
	GDP per capita[1]	$807	$522	$713	$688
	Percent annual GDP growth[2]	4.9%	4.5%	7.3%	5.0%
	Major urban areas	N/A	Ouagadougou, pop. 1,475,000[3] Bobo-Dioulasso, pop. 490,000[3]	Accra, pop. 1,847,000[4] Kumasi, pop. 1,170,000[5]	Bamako, pop. 1,475,000[6] Segou, pop. 490,000[6]
Consumption & Preferences	Per capita consumption of poultry products[9]	5.1 kg/capita	5.5 kg/capita	6.0 kg/capita	3.94 kg/capita
	Percent of daily calories from poultry and eggs[8]	0.78%	0.89%	0.60%	0.69%
	Percent daily calories from all livestock[8]	9.5%	8.4%	6.6%	14.8%
Domestic Production & Market Structure	Per capita poultry production[9]	4.4 kg/capita	5.5 kg/capita	2.5 kg/capita	3.93 kg/capita
	Producers	Varies by country	Mostly rural smallholders and peri-urban, semi-industrial producers	Dominated almost exclusively by urban, industrial production	Mostly traditional rural production, industrial sector produces at most 10% of domestic total
	Smallholder Production Share	--	--	--	90–96%[10]
	Percent of consumption** supplied by domestic production[9]	86.3%	99.94%	41.7%	99.7%
*Trade Flows****	Imports[9]	0.68 kg/capita	0.004 kg/capita	3.52 kg/capita	.011 kg/capita
	Exports[9]	.001 kg/capita	.0002 kg/capita	.002 kg/capita	.002 kg/capita
Policy & Organizational Environment		Common External Tariff of 20%; growing need to address negative externalities of livestock production	Non-profit producer organization (MDA) working to increase the domestic poultry sector	International and domestic NGOs promoting poultry development in eight of ten regions	Several producer organizations at all levels of the supply chain supporting industrial production

		West Africa*	Senegal	Nigeria	Cote d'Ivoire
Demographic Overview	Population[1]	291,266,000	12,211,200	151,212,300	20,591,300
	Percent rural population[1]	59%	58%	52%	51%
	GDP per capita[1]	$807	$1,087	$1,370	$1,137
	Percent annual GDP growth[2]	4.9%	3.3%	6.0%	2.2%
	Major urban areas	N/A	Dakar, pop. 1,009,300[7] Touba, pop. 451,300[7]	Lagos, pop. 8,030,000[12] Kano, pop. 2,993,000[13]	Abidjan, pop. 3,576,000[13] Bouake, pop. 574,000[13]
Consumption & Preferences	Per capita consumption of poultry products[9]	5.1 kg/capita	5.84 kg/capita	5.39 kg/capita	2.42 kg/capita
	Percent of daily calories from poultry and eggs[8]	0.78%	1.00%	0.83%	0.57%
	Percent daily calories from all livestock[8]	9.5%	10.1%	4.98%	5.9%
Domestic Production & Market Structure	Per capita poultry production[9]	4.4 kg/capita	5.76 kg/capita	5.39 kg/capita	2.37 kg/capita
	Producers	Varies by country	Both traditional, rural producers and semi-industrial producers in urban areas	Traditional, rural producers; semi-commercial backyard producers, and large-scale industrial facilities	About 70% family production, 30% semi-industrial production of chicken meat and eggs
	Smallholder Production Share	--	47%[11]	69%[16]	70%[17]
	Percent of consumption** supplied by domestic production[9]	86.3%	98.6%	99.98%[9]	97.7%
*Trade Flows****	Imports[9]	0.68 kg/capita	.094 kg/capita	.001 kg/capita	.056 kg/capita
	Exports[9]	.001 kg/capita	.012 kg/capita	--	Less than .001 kg/capita
Policy & Organizational Environment		Common External Tariff of 20%; growing need to address negative externalities of livestock production	Ban on poultry imports from all countries since 2006	Ban on poultry imports from all countries since 2002, but illegal imports continue to enter the country	IPRAVI coordinates the sector, umbrella for producer organizations and connection to government

Sources: [1]World Development Indicators, 2008; [2]World Development Indicators, 2007 – 2008, based on constant 2000 U.S. dollars; [3]Encyclopædia Britannica Online, 2006; [4]Encyclopædia Britannica Online, 2003; [5]Encyclopædia Britannica Online, 2000; [6]Gale Virtual Reference Library, 2006; [7]Encyclopædia Britannica Online, 2004, [8]World Food Programme, 2004 – 2006, FAOSTAT, 2004 – 2006; [9]FAOSTAT, 2007; [10]Dupaigre, 2004; [11]USDA, 2005; [12]Encyclopædia Britannica Online, 2002; [13]Encyclopædia Britannica Online, 2005; [14] Encyclopædia Britannica Online, 2001; [15]Oxford Reference Online, 2002; [16] Obi, T. W., Olubukola, A., & Maina, G. A., 2008; [17]Kone & Danho, 2008; -- indicates no data *Includes Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo **Chicken meat & eggs, ***Chicken meat, turkey meat, duck meat, canned chicken, hen eggs

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