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Overview

Demand for livestock products, including poultry, is expanding in West Africa as a result of population growth, increased urbanization, and rising incomes. 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. A 2005 analysis from the Pro-Poor Livestock Policy Initiative of the International Livestock Research Institute (ILRI) concluded that overall, West Africa did not have a comparative advantage in the global poultry trade.¹ The West African poultry sector faces high production costs, safety concerns due to lack of sanitary controls, and technical constraints in processing and marketing. In addition to biological issues, the lack of breeders, marketing, and processing technology present technical constraints to poultry sector growth.²

This report provides an overview of poultry market trends across West Africa and compares the opportunities for poultry sector development in Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, Niger, Nigeria, Senegal and Sierra Leone. *Appendix 1* presents country and poultry sector overviews in comparison with West African averages. *Appendix 2* provides an overview of enabling and constraining factors, prerequisites for market development and key opportunities. *Appendix 3* provides supporting detailed comparisons of enabling and constraining factors and opportunities for sector development. The accompanying EPAR Briefs numbers 83 through 89, 91 and 92, the *Poultry Market in West Africa* series, provide country-specific detailed poultry market analyses. The primary resources for these analyses included many reports prepared in response to the Avian Influenza epidemic, which may explain some of the emphasis on the importance of biosecurity in the available literature.

Comparative Poultry Market Trends in West Africa

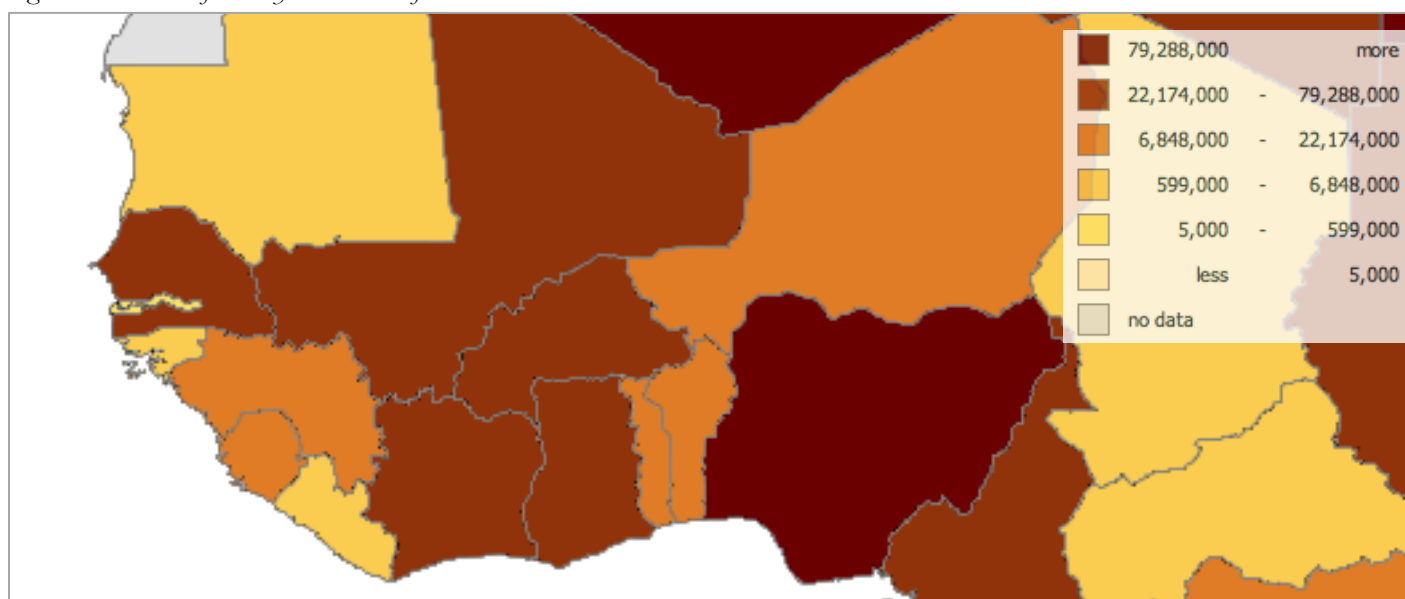
In West Africa, smallholder poultry raising is a common practice in most rural and some urban areas. It is an important source of nutrition (protein), food security and revenue for rural households. For example, small-scale poultry production is central to the daily survival of Burkina Faso's rural population.³ Similarly, poultry and egg production is an important source of nutrition and income for Beninese households.⁴ In Côte d'Ivoire, poultry raising is an important part of subsistence farming, and while it is generally not a primary economic activity, the sale of poultry generates revenue to pay for medical care and schooling, or to repay debts.⁵ The sale of poultry products is considered an important source of revenue in Mali's rural areas.⁶ Most rural households in Nigeria and Senegal as well as an average 59 percent of households in Sierra Leone are involved in poultry keeping as a source of food and financial security.^{7,8,9,10}

NOTE: The findings and conclusions contained within this material are those of the authors and do not necessarily reflect positions or policies of the Bill & Melinda Gates Foundation.

A commercial poultry industry also exists in all of the countries in this analysis, characterized by modern industrial or semi-industrial production. The size of the commercial industry varies greatly among countries. Among the West African Economic and Monetary Union (UEMOA) subset of Economic Community of West African States (ECOWAS) members, the modern poultry sector is largest in the coastal countries of Côte d'Ivoire and Senegal. It is least developed in Niger and Sierra Leone. The commercial poultry sector has experienced rapid growth, at eight to ten percent a year—almost twice the rate of overall economic growth in the region.¹¹

Figure 1 illustrates the size of poultry stocks in West Africa. In 2008, Senegal had the highest per capita concentration of chicken stocks at 3.22 birds per capita. Niger had the lowest concentration with only 0.74 birds per capita.¹²

Figure 1. Number of Poultry* in West Africa



Source: FAO Global Livestock Production and Health Atlas, 2007

*Poultry includes chickens, turkeys, ducks and geese

Common External Tariff

The introduction of the Common External Tariff (CET) in West Africa reduced the tariff rate applied in most countries. The reduction led to an influx of cheap poultry imports from Europe and decreased the ability of the regional sector to compete with imported products, although the extent of this factor varies across countries. The West African Economic and Monetary Union (UEMOA) states (Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo) adopted a CET in 2000. The remaining ECOWAS nations (Cape Verde, Gambia, Ghana, Liberia, Nigeria, and Sierra Leone) adopted the CET in 2005.

Under the CET, import tariffs on final consumer goods (including poultry) are set at 20 percent.^{13,14} The countries in this analysis use different definitions to determine the specific goods that fall under the 20 percent tariff. In addition, some countries have taken measures to protect their domestic poultry sectors. In Burkina Faso, live chickens, live hens and poultry meat are subject to the 20 percent tariff, however, live turkeys, day-old chicks, and eggs are only subject to a five percent import tariff. In Ghana, all live animals, poultry meat and eggs fall under the 20 percent tariff. In Benin, Niger and Sierra Leone, only live chickens and hens, poultry meat and eggs for consumption are included in the 20 percent tariff while live turkeys and other poultry, reproducers, and hatching eggs are subject to a five percent tariff.¹⁵ Nigeria and Senegal banned the import of all poultry products in 2002 and 2006, respectively.

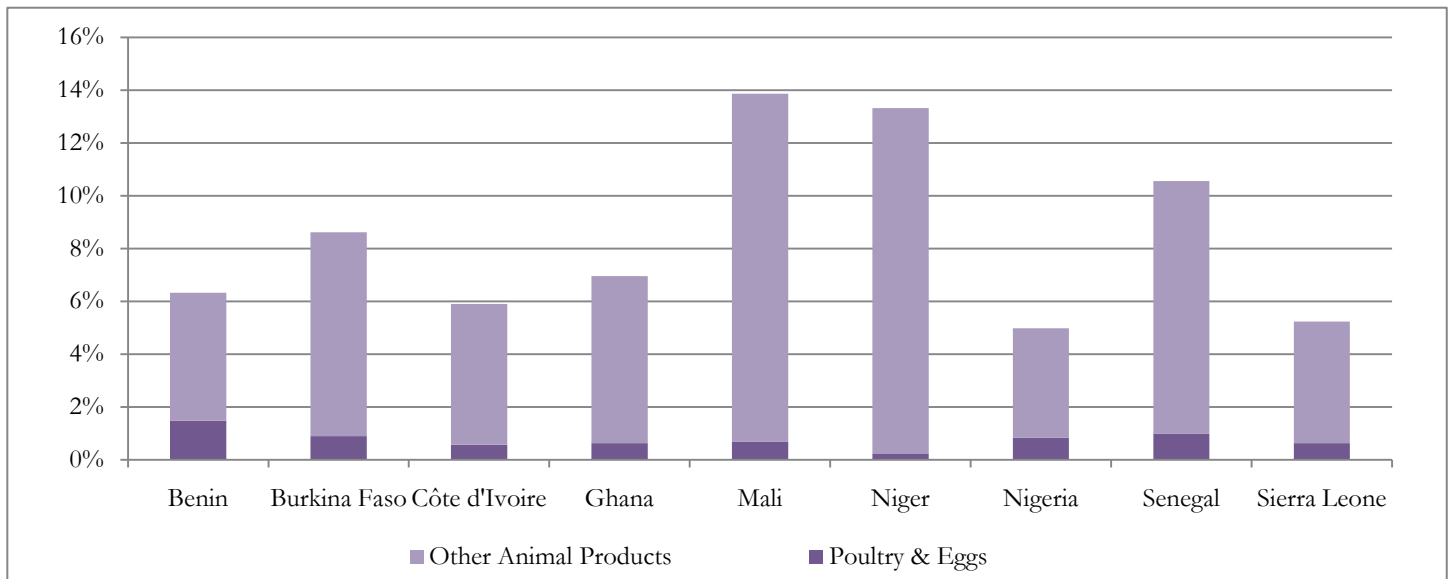
The consequences of this tariff varied significantly among countries. Most countries, including Benin, Côte d'Ivoire, Ghana, Nigeria, Senegal, Sierra Leone and to a lesser extent in Niger, experienced an influx of cheap poultry imports from Europe.

Burkina Faso and Mali, on the other hand, did not. In Senegal, the CET lowered the tariff from 55 to 20 percent, leading to a 30 percent decline in domestic industrial poultry production between 2000 and 2004.¹⁶ Côte d'Ivoire set a price floor on imported chicken, but domestic production still declined during the 2000-2004 period.¹⁷ The trade flows section below provides a more detailed comparison of trade flows across countries.

Consumption & Consumer Preferences

Growing populations and purchasing power are spurring demand for meat products in West Africa's urban areas. *Figure 2* illustrates the percentage of daily calories from all livestock and the portion of that coming from poultry and eggs. The domestic consumption calculations for Benin may be distorted because much of the documented imports are re-exported illegally. The World Bank estimates that 90 percent of Benin's poultry imports are informally re-exported to Nigeria.¹⁸ As a result, the domestic consumption calculations for Nigeria may under-represent consumption due to the magnitude of undocumented poultry imports into the country.

Figure 2. Percent of Daily Calories from All Livestock



Source: FAOSTAT and World Food Programme (2004–2006 average)

Across the region, poultry consumption increases during holidays and celebrations. In Ghana, Burkina Faso, Senegal, Nigeria, Côte d'Ivoire and Benin, demand for chicken and poultry meat increases at holiday times, particularly Christmas, Easter, Tamkharit (Muslim New Year) and Ramadan. In rural Niger, the slaughtering of household poultry is similarly reserved for festivities.¹⁹ Chickens are also commonly given as gifts in Ghana, Burkina Faso, Senegal, Nigeria, and Côte d'Ivoire.^{20,21,22} Similarly, poultry are commonly used in religious rituals. Chickens are used for sacrifices in Burkina Faso and Senegal; roosters are common sacrificial animals in Ghana.²³ Demand for poultry products in Benin is extremely active during funerals and religious ceremonies.²⁴

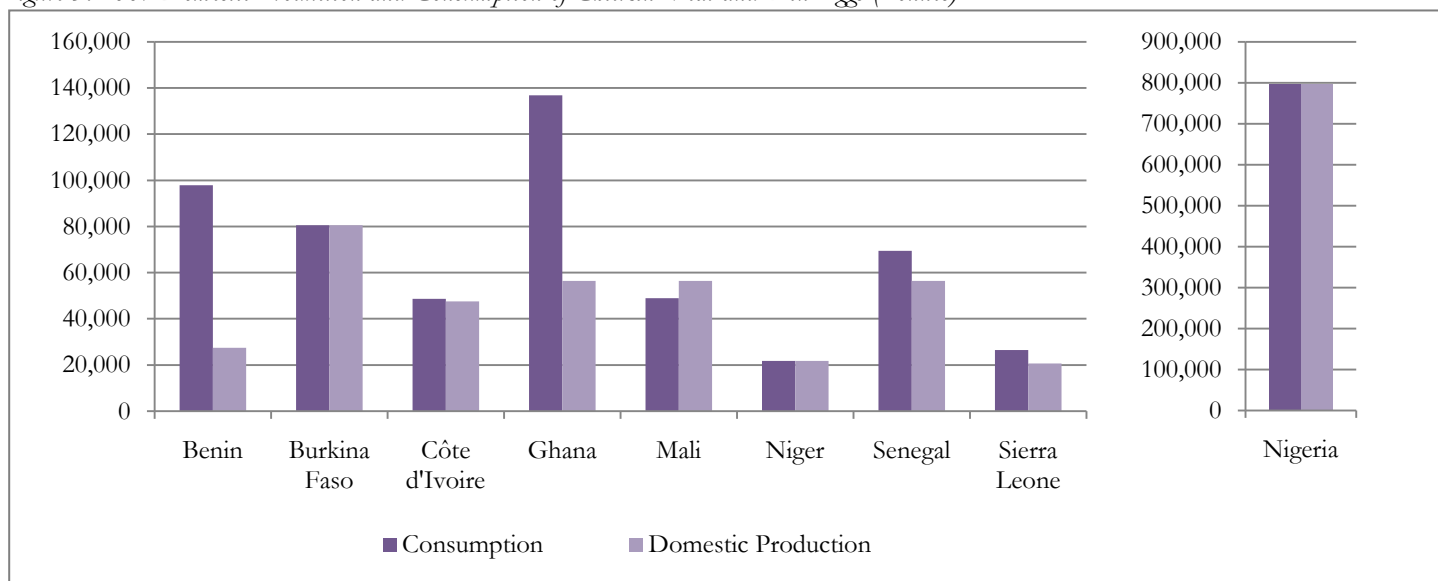
In most West African countries, consumers prefer indigenous and local poultry breeds. In Ghana and Senegal, traditional chicken varieties are preferred for religious rituals as well as for traditional cooking.^{25,26} In Burkina Faso, most consumers (even some up-scale hotels and expatriates) prefer traditionally produced poultry for its flavor.²⁷ In Nigeria, consumers prefer the tough meat that characterizes local varieties because most meat is used in soups and the non-local birds are too tender to hold up under long cooking times.²⁸ In Côte d'Ivoire, traditional smallholder and semi-intensive producers tend to prefer rustic and local multicolored chicken varieties.²⁹ Local varieties of chicken also predominate in Niger.³⁰ Although most countries demonstrate a preference for indigenous varieties, where imports are cheaper relative to locally produced varieties the low cost of (non-indigenous) imports likely supersedes preferences in poultry consumption choices.

While consumption trends and preferences are relatively similar across the countries in this analysis, Mali, Senegal and Niger demonstrate anomalies in egg preference. In Mali, the low ratio of egg to chicken meat production suggests that eggs are not widely consumed. Eggs raised in rural areas are used mainly for chicken reproduction, and not consumption.³¹ In Senegal, women have traditionally avoided eating eggs due to the perceived negative impacts on reproductive health, but this belief is gradually disappearing.³² In Niger, the production of Guinea Fowl eggs is especially important in the rainy season, suggesting a preference for Guinea Fowl egg consumption at least during that season.³³

Domestic Production

As *Figure 3* illustrates, most countries in this analysis produce enough chicken meat and hen eggs to supply the entire domestic market. However, Benin, Ghana and Sierra Leone rely on imported products to supply a significant portion of the market. Official statistics again fail to capture the undocumented trade between Benin and Nigeria.³⁴

Figure 3. 2007 Domestic Production and Consumption of Chicken Meat and Hen Eggs (Tonnes)

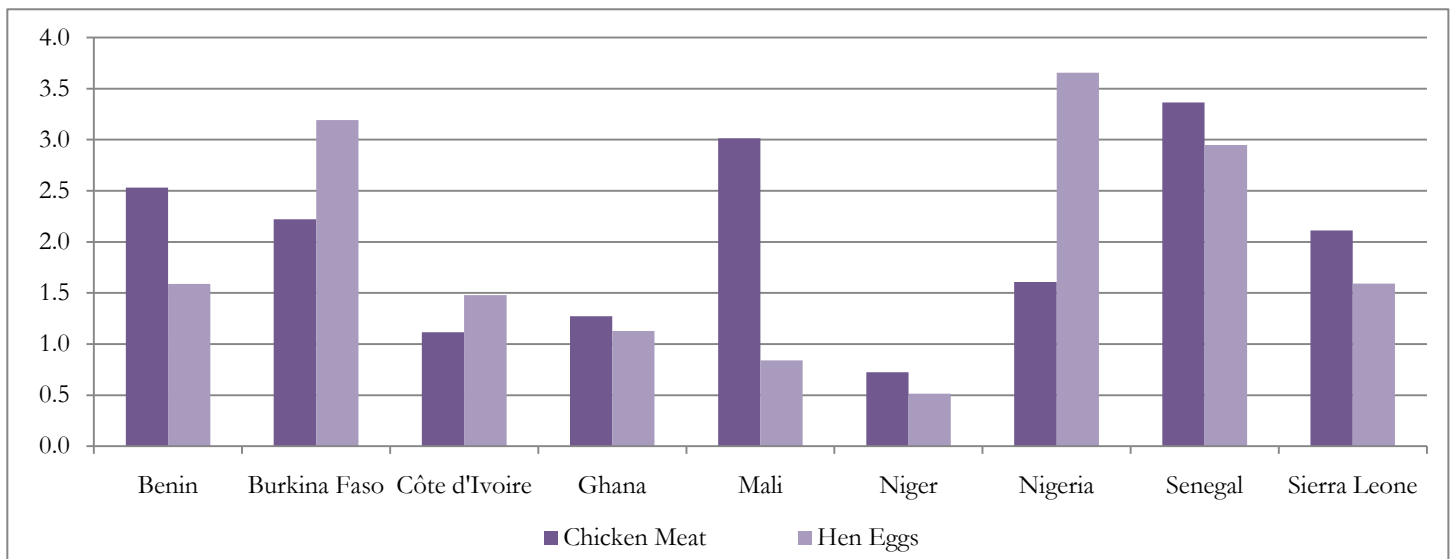


Source: FAOSTAT, 2007

*Nigeria is plotted separately because the scale of its poultry production is significantly larger than the other countries

Figure 4 illustrates the magnitude of domestic production per capita. Senegal produces the most chicken meat at 3.36 kilograms per capita while Niger produces the least at only 0.72 kilograms per capita. In hen egg production, Nigeria produces 3.66 kilograms per capita while Niger is again the lowest producer at only 0.51 kilograms per capita.³⁵

Figure 4. 2008 Poultry Production (Kilograms per capita)



Source: FAOSTAT, 2008

Production systems are similar across the nine countries in this analysis. In general, there is a divide between traditional (low-input) production systems and commercially-oriented, higher input production. There is also a geographic component to this division whereby most industrial and semi-industrial commercial producers are located in urban areas, especially around capital cities. Low input production is most common in rural areas, although it is also practiced by some urban households and similarly some rural households practice higher input production. In some areas, several different production sub-systems are practiced to varying degrees. The individual *Poultry Market in West Africa* briefs detail the specific production systems practiced in each country.

The degree to which smallholder poultry production is commercially oriented varies greatly and depends on individual, organizational, and political factors. Smallholder commercial production is most common in Burkina Faso, where smallholders produce over 70 percent of all poultry and semi-intensive production poses little competition.³⁶ Smallholders are least likely to be commercially oriented producers in the rural areas of Benin, Côte d'Ivoire, Ghana, Mali, Niger, and Nigeria, where poultry is raised primarily for household consumption.

Production Costs

Most rural poultry production is low input, with some farmers utilizing improved production practices that include providing regular feed, shelter and vaccines. Detailed production costs are available for Côte d'Ivoire on the *Interprofession Avicole Ivoirienne* (IPRAVI) website.³⁷ No similarly current information is available for production costs in the other countries in this analysis. Evidence suggests that 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 feed, chicks and vaccines, and face high costs and limited availability of veterinary services.³⁸ Furthermore, raising poultry is considered a high-risk activity by financial institutions, thereby increasing the cost of loans and further constraining producers' access to credit.³⁹

The cost of purchased feed varies within and among countries. For example, in Nigeria and Senegal, maize is the main feed ingredient and therefore production costs vary with the price of maize. In Niger, fluctuation in agricultural production leads to highly volatile prices for feed inputs and potential lack of availability. High production costs in Niger also result from the difficulty in procuring all other inputs.⁴⁰ Access to feed among commercial producers has become a major issue in Benin's poultry sector. The vast majority of feed producers are smaller businesses and as a result, the quality of feed varies significantly.⁴¹

Processing & Marketing

Processing poultry for sale is mainly limited to industrial producers in West Africa. Supermarkets are increasingly important suppliers of meat for urban consumers, offering new opportunities and challenges for domestic poultry producers. Without adequate resources and training, small domestic producers may be unable to provide consistent, high-quality products that are competitive with the products supermarkets can procure from imported sources.^{42,43} In most of the countries, poultry tend to be sold whole and often live, limiting access to the supermarket supply chain. Nigeria is the exception where about 90 percent of commercial broiler output is processed and sold frozen.⁴⁴ In Benin and Côte d'Ivoire some smallholders slaughter their own animals for personal consumption or sale to supermarkets and restaurants, though most sell live animals as is the most common practice in the region. In Ghana, Nigeria, and Sierra Leone, most smallholders sell their output live at the farmgate or in local markets.^{45,46} Informal market outlets are common in Niger and Senegal. In Niger, informal sale is most common so the volume of commercial trade in poultry is difficult to estimate.⁴⁷ In Senegal, most producers sell to relatives and close neighbors.⁴⁸

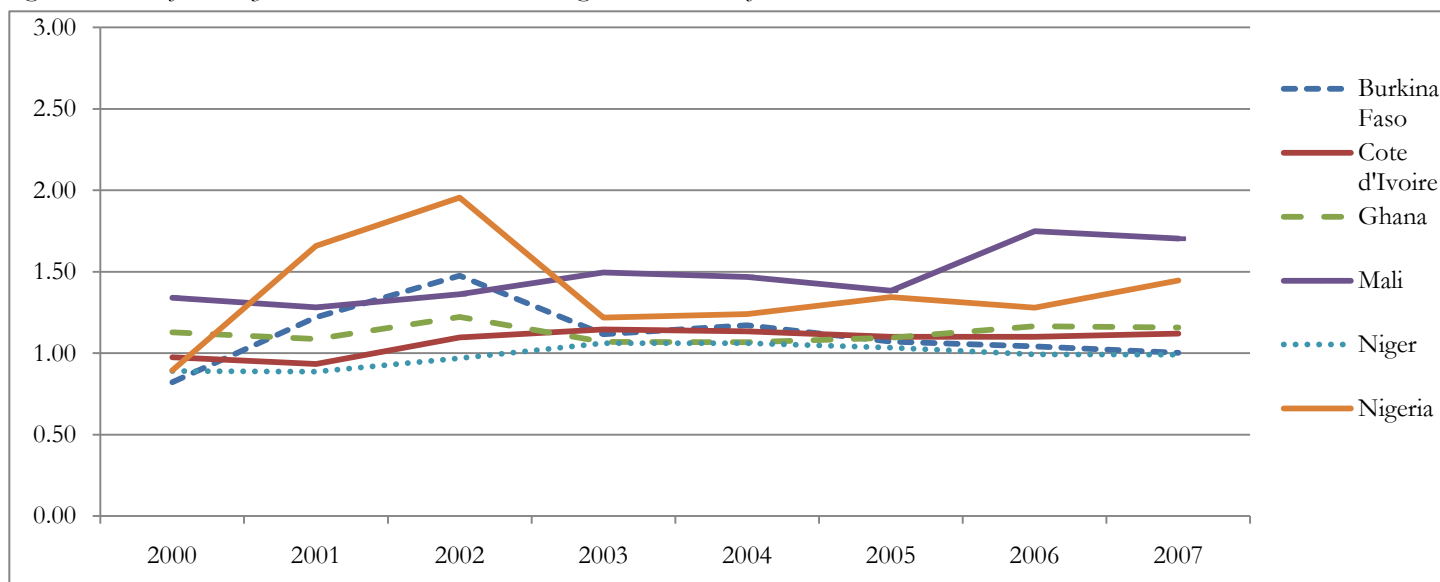
Marketing poultry is a gendered task in Côte d'Ivoire and Senegal. While women and children are largely responsible for rural poultry raising, men are typically responsible for selling birds.⁴⁹ Rural poultry production is also a woman's task in Burkina Faso and Nigeria. There is no information available regarding responsibility for marketing poultry in Burkinan and Nigerian households.

Producer Prices

Producer prices are only available for six of the nine countries in this analysis. Price information is not available for Senegal, Sierra Leone, or Benin. Sources suggest that imported poultry tends to be less expensive than domestically produced items in Benin and Sierra Leone, however exact figures are not available. *Figures 5 and 6* demonstrate the ratio of country producer prices for chicken meat and hen eggs relative to the world average price. Where the producer price is well above the world average, domestic producers will likely find it difficult to compete with imports until per unit production costs decline. Where producer prices are below or on par with world prices, there is more potential to compete in the international market.

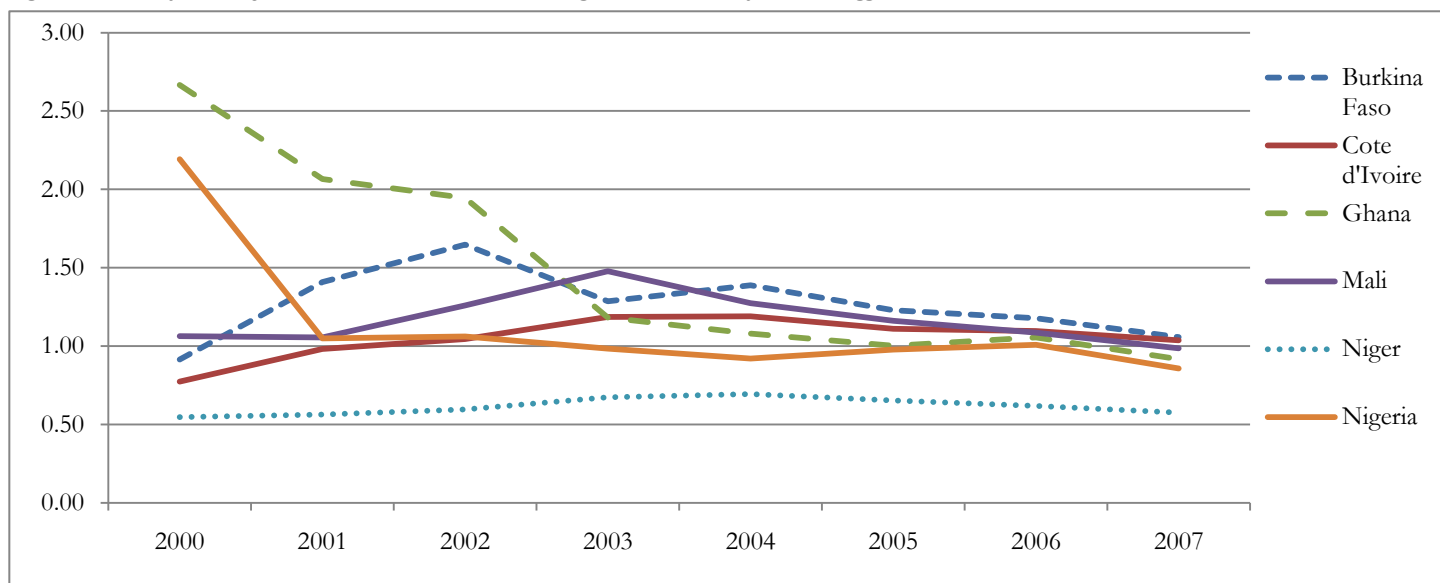
In the production of chicken meat only Burkina Faso and Niger appear to be competitive with the world price as of 2007. Prices in Cote d'Ivoire and Ghana are 12 and 16 percent above world levels, respectively. Prices in Mali and Nigeria are far above world levels at 70 and 45 percent. In contrast, eggs appear to be competitive in global markets in all six countries. Niger enjoys the greatest price advantage, 38 percent below the world average in 2007.

Figure 5. Ratio of Country Producer Price to World Average Producer Price for Chicken Meat



Source: FAOSTAT

Figure 6. Ratio of Country Producer Price to World Average Producer Price for Hen Eggs



Source: FAOSTAT

Safety Concerns

African livestock markets are limited by global concerns about product safety.⁵⁰ The current regulatory system does not adequately control the quality of inputs and poultry products. The persistence of animal disease outbreaks continues to limit domestic and export production potential.⁵¹

Lack of access to vaccines and veterinary services is a consistent problem for smallholders and some larger producers across West Africa. In Mali, vaccinations and veterinary care are nonexistent in traditional poultry production. In Nigeria, an estimated 65 percent of rural poultry producers have no access to veterinary services.^{52,53} Additionally, some rural producers in Nigeria rely on advice from unqualified veterinary imposters who charge low fees and visit many farms per day, raising the risk of spreading disease.⁵⁴ In Senegal the government partially subsidizes vaccines, but the prices still remain too high for most smallholders.⁵⁵

The 2006 outbreak of Avian Influenza in West Africa affected the poultry sectors of the entire region, even in countries such as Ghana and Senegal where the disease never entered. Nigeria was the site of the initial outbreak in the region and approximately one million birds died or were destroyed there. Although this was less than one percent of the country's poultry stock, consumers boycotted all poultry products and poultry prices fell 82 percent.^{56,57}

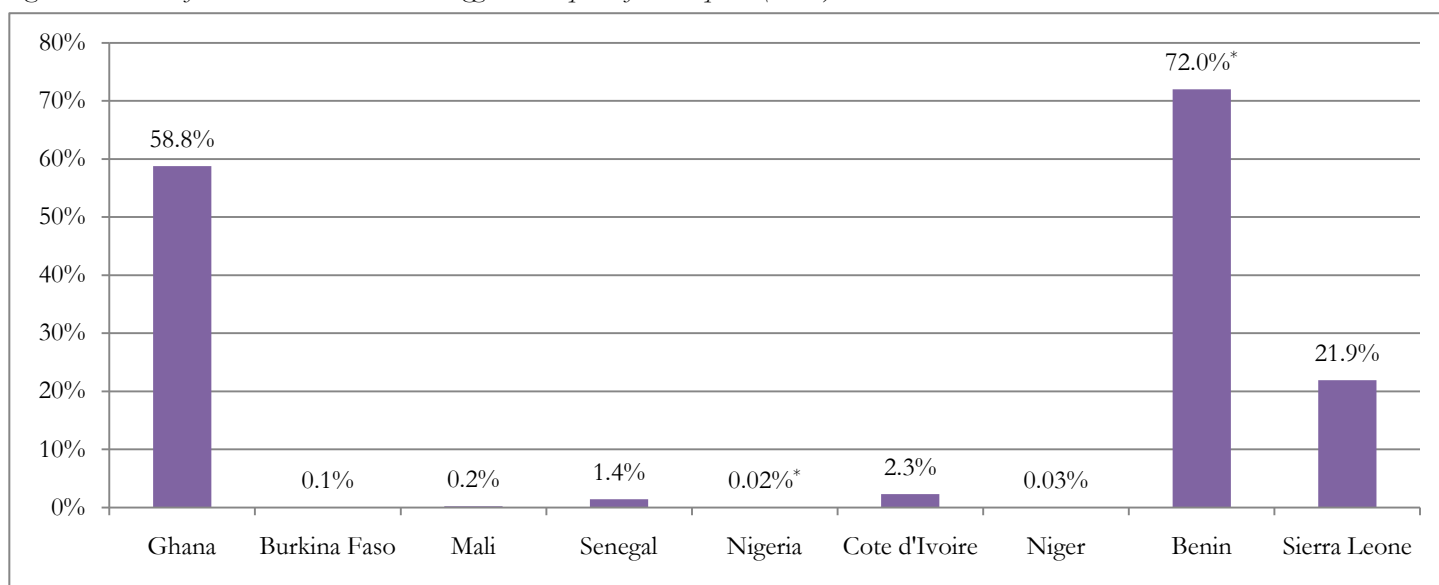
Poor biosecurity along the entire supply chain creates opportunity for the spread of disease. At the farm level, insufficient shelter leads to contact with wild animals and insufficient control of rodents and can contribute to the spread of disease.⁵⁸ For example in Benin, an estimated 40-50 percent of poultry specimens are lost due to disease or natural prey.⁵⁹ Transporting poultry also presents safety concerns. In Mali, for example, birds that perish during the journey are often left in the cages with live birds that will be sold.⁶⁰ Although this was mentioned specifically in the literature regarding Benin, Côte d'Ivoire, Mali, and Nigeria, it is likely a concern for the entire region. In Nigeria, frozen meat is often transported without refrigeration and up to 50 percent of eggs are estimated to spoil before reaching markets or consumers' kitchens due to conditions during transport.⁶¹

In the rural market centers of Côte d'Ivoire and Mali, improvised slaughter facilities and open slaughter and plucking areas provide an opportunity for the dissemination of infectious disease.^{62,63} Once animals have been slaughtered, maintaining the cold chain presents additional safety concerns. In Senegal, for example, improper refrigeration of slaughtered poultry amplified contamination that had occurred at previous stages.⁶⁴ Even when semi-industrial producers use some sanitary inputs and biosecurity measures in Côte d'Ivoire, the lack of training and widespread illiteracy among the workforce are major limitations to better safety and bio-security practices.^{65,66}

Trade Flows

West and Central Africa import a large quantity of frozen poultry products from the European Union. Between 1996 and 2003, chicken imports from the EU to ECOWAS countries increased from 125,000 to 860,000 tonnes. Benin was the main importer, followed by Ghana, Nigeria, Senegal, Togo, and Côte d'Ivoire.⁶⁷ Since 1990, Benin has imported more poultry products than all other countries in the UEMOA economic block combined. Most of those imports are then exported to other countries in Sub-Saharan Africa (SSA).⁶⁸ Benin's re-exports are sent mainly to Nigeria, and the remainder goes to the Democratic Republic of Congo, Angola, South Africa, Gabon, and Ghana.^{69,70} Figure 7 illustrates the percentage of poultry consumption from imported products. Poultry exports out of other West African countries are almost nonexistent.⁷¹

Figure 7. Percent of Chicken Meat and Hen Egg Consumption from Imports (2007)



Source: FAOSTAT, 2007

*Figures for Benin and Nigeria are likely distorted by the magnitude of undocumented imports entering Nigeria from Benin

Several countries have banned some or all poultry imports in an effort to protect the domestic industry or prevent the spread of disease, particularly Avian Influenza. Nigeria banned poultry imports in 2002 to reduce competition from foreign producers.⁷² Similarly, in 2006 Senegal banned the importation of all poultry products in response to the Avian Influenza outbreak. Benin banned all poultry imports from countries affected by the disease and in addition to a similar ban, Côte d'Ivoire also raised taxes on all other poultry imports.^{73, 74,75}

The imported poultry products are not evenly distributed within countries or across the region. In Ghana, fewer poultry imports are sold in poorer northern regions farther from coastal ports.⁷⁶ Similarly, frozen poultry imports did not have a significant impact on the domestic market for poultry in Burkina Faso, likely due to its distance from the closest port.⁷⁷ Several countries also experience undocumented flows of poultry products. Côte d'Ivoire officially imports some poultry from neighboring countries and additional quantities likely enter over the borders illegally due to the ease of avoiding border posts by transporting imported poultry on trails.⁷⁸ Similarly, illegal imports continue to enter Nigeria via land borders.⁷⁹

Several countries depend on imported inputs for poultry production. Although six of the nine countries produce enough chicken meat and hen eggs to supply their entire domestic markets, three depend on imported eggs and day-old chicks to replenish poultry stocks. Between 2000 and 2007, Mali imported more than half of the hatching eggs and day-old chicks to support poultry stocks from France and Senegal.⁸⁰ Niger also imports day-old chicks from Europe, Nigeria, and most recently, Mali.⁸¹ In Senegal, as of 2004, the country's ten hatcheries imported three-quarters of their fertilized eggs. Under the current import ban, egg imports are prohibited but day-old chick imports for reproduction are allowed.^{82,83} Senegal also imports the majority of feed (maize) for commercial operations.⁸⁴

Policy & Organizational Environment

Appropriate policies and effectively enforced regulations are needed to mitigate the risks and negative impacts of the livestock sector on public health and the environment.⁸⁵ Experience in both developed and developing countries has shown that in the absence of effective policies, many of the negative externalities of increased livestock production are eventually charged to governments and the public. These costs include mitigating negative environmental impacts and fending off threats to veterinary and human public health.⁸⁶

Four groups of policy and organizational environments emerge among the countries in this analysis. Countries with strong government support for the poultry sector include Ghana, Mali, Senegal, and Nigeria. Countries with well-organized producers organizations include Benin, Côte d'Ivoire, Burkina Faso, and Senegal. Current NGO interventions in the poultry sector are under way in Ghana, Mali, and Senegal. Finally, Niger and Sierra Leone have little organizational structure favorable for the development of the poultry sector.

Government Support

Four of the nine countries in this analysis enjoy government support for the poultry sector. In Ghana, the government has supported the domestic poultry sector by creating the Poultry Development Board in 2006 and promoting increased processing and marketing of domestically produced broiler birds and increasing provision of veterinary care.⁸⁷ In Mali, the government founded the *Programme de Développement de l'Aviculture au Mali* (PDAM) in 2001 to increase poultry production to contribute to the country's self-sufficiency in animal protein and to increase poultry productivity.^{88,89} In Nigeria, the publicly funded National Animal Production Institute and National Veterinary Research Institute are responsible for studying poultry production practices, diagnosing and investigating poultry diseases, and developing improved breeds and vaccines.⁹⁰ In Senegal, the government supports the poultry sector with training, day-old chick import controls, industry statistics, and enforcement of regulations through the *Centre National d'Aviculture*.⁹¹

Producer Organizations

Producer organizations are active in four countries. In Burkina Faso, the producer organizations are concentrated in urban and peri-urban areas and are largely the domain of elite stakeholders. However, the advocacy efforts of these associations have positive side-effects for smallholders by influencing policy to support the domestic poultry sector.⁹² Similarly in Senegal, existing producer associations represent the needs of commercial producers. Unlike Burkina Faso, their gains to date have benefited industrial operations more than traditional producers.⁹³ The Poultry Association of Nigeria, on the other hand, includes producers of all scales and promotes production and hygiene standards and facilitates communication in the sector.^{94,95} In Benin, poultry producers generally form professional organizations on their own, sometimes with the guidance of NGOs. Currently three main producer organizations are operating.⁹⁶ In Côte d'Ivoire, professional organizations in the poultry sector are not-for-profit and are organized under the umbrella of the *Interprofession Avicole Ivoirienne* (IPRAVI). Producer organizations serve individual farmers, commercial producers, and poultry sector suppliers.^{97,98} Producer organizations are less active in Niger, with the only operational association currently serving actors in and around the capital and no organization coordinating large-scale private sector producers at the national level.⁹⁹

Organizing traditional poultry producers presents several challenges. In Burkina Faso, smallholder poultry producers are spread across almost the entire country, making coordination exceedingly difficult.¹⁰⁰ In Senegal, smallholder poultry producers are similarly geographically dispersed, produce only a small amount of output for sale, and in general do not identify primarily as poultry farmers and therefore have inadequate incentive to organize a producer organization.¹⁰¹ Many of these challenges likely hold for smallholders in other West African countries as well.

NGO Interventions

Several countries also have current NGO programs supporting the poultry sector. In Ghana, several domestic and international NGOs, including World Vision and Heifer International, are actively promoting poultry development in eight of

the country's ten administrative regions. NGO interventions include providing rural poultry vaccinations and supporting smallholder layer and exotic chicken production.¹⁰² In Mali, the FAO Special Program on Food Security has been under implementation since 2004 and aims to increase food security by promoting rural poultry production, particularly targeting women and children.¹⁰³ Several NGOs are active in Senegal's poultry sector, including Catholic Relief Services, OXFAM, and the African Development Foundation. As of 2006, at least 21 poultry development projects were underway.¹⁰⁴ In March 2010, the Red Cross issued an emergency appeal for aid to Niger, including a plan in coordination with the World Food Programme and the FAO to increase traditional poultry farming for household egg production.¹⁰⁵

Unfavorable Environment for Poultry Sector Development

Niger and Sierra Leone have the least favorable environments for poultry sector development due to lack of government support and organizational infrastructure. In Niger, there has been no government support for the resurgence of the private commercial poultry industry and the four state-owned poultry operations have nearly ceased to function, with the main station turned over to foreign, private management.¹⁰⁶ While the government has intervened to support the poultry sector in Niger, its efforts have largely been poorly implemented and therefore unsuccessful.¹⁰⁷

In Sierra Leone, the civil conflict from 1991–2002 destroyed key livestock infrastructure that, as of 2006, had not been rebuilt or re-equipped.¹⁰⁸ After the Avian Influenza outbreak in 2006 the government instituted the Avian Secretariat and Technical Committee on Bird Flu to implement its emergency action plan against Avian Influenza.¹⁰⁹ Aside from this initiative, evidence suggests there have been no other investments in the poultry sector. The government's three-year poverty reduction plan includes a food security strategy centered upon support for small-scale subsistence farmers.¹¹⁰ The plan specifically refers to interventions in agriculture and fisheries but does not mention any livestock or poultry initiatives.¹¹¹

Opportunities for Poultry Market Development

While poultry markets in Burkina Faso, Côte d'Ivoire, Mali, and Niger are comprised almost entirely of domestic producers, imports have played an important role in the markets of Benin, Ghana, Nigeria, Senegal and Sierra Leone. Opportunities exist to develop the sector in all nine countries. Increasing overall domestic production and improving rural production practices to increase productivity are the most common opportunities. *Appendix 3* provides detailed descriptions of poultry sector opportunities for each country and a summary of key points is provided below.

Consumption

Evidence from seven countries suggests that there is immediate capacity to increase meat consumption. Increasing domestic production will likely increase meat consumption in Benin, Burkina Faso, Côte d'Ivoire and Sierra Leone by lowering the cost to consumers and thereby increasing access to poultry products. Similarly, increasing the productivity of rural poultry systems will also contribute to increased consumption in Benin, Côte d'Ivoire, Mali, Niger, and Nigeria, where rural smallholders raise poultry primarily for household consumption.

Production Capacity

Based on the available literature, Côte d'Ivoire, Sierra Leone and Benin appear best positioned for investments to increase overall domestic poultry production. Mali, Senegal and Sierra Leone have the potential for increased commercial poultry production. In Senegal there is specifically an opportunity to increase production of eggs for consumption and to increase the percentage of commercially oriented smallholders. In addition, increasing production of hatching eggs and day-old chicks would decrease the dependence on imports of these goods in Mali and Côte d'Ivoire. Similarly, Senegal and Côte d'Ivoire would benefit from increased domestic production of feed and smallholder access to feed. Nigeria is currently the only country positioned to produce poultry products for export but insufficient transport infrastructure currently constrains the potential for intra-regional trade. Evidence from Nigeria and Ghana suggests that there is investment opportunity in the market niche of producing indigenous chicken varieties, and this is likely an opportunity in the other countries with a

consumer preference for indigenous varieties as well. Increasing production in Ghana's northern region also presents a market opportunity since that geographic niche is not currently served by imports.

Productivity

The most prominent constraints facing the poultry sector across West Africa include low productivity of rural and traditionally raised poultry and low productivity of the sector as a whole due to poor biosecurity and poor production practices along the supply chain. Disseminating improved production practices including proper shelter, regular feed and vaccination against disease could increase rural smallholder productivity in all nine countries, with Burkina Faso, Mali, Senegal, Nigeria, Sierra Leone, and Niger positioned to experience the greatest gains. In addition, investments to increase biosecurity along the supply chain including proper transport infrastructure, refrigeration, slaughter facilities, and access to veterinary services could similarly improve poultry productivity for commercially oriented producers of all scales in all nine countries. In Ghana, Senegal and Nigeria, investments in processing, storage and transportation infrastructure could increase biosecurity substantially. While there is concern that stronger safety controls could edge smallholders out of the market, some evidence suggests that vertical integration models can potentially support stronger biosafety controls and standards while shielding smallholder production from the impact of any higher costs of complying with new standards.¹¹² The provision of veterinary services by large vertically integrated firms for their contracted smallholder producers can increase animal health and food safety, however, there is a need for more information regarding the effect of contracting smallholders on vertically-integrated livestock commodity industries in developing countries.¹¹³

Smallholder Market Access

Increasing the percentage of commercially-oriented smallholders presents an opportunity to expand the poultry sector in Benin, Niger, Nigeria, and Senegal. However, lack of infrastructure and organization constrains market access for smallholders in several countries. Senegal and Sierra Leone would particularly benefit from better transportation and a stronger marketing infrastructure. In addition, organizing the rural smallholder sector in Burkina Faso, Côte d'Ivoire, Niger, and Sierra Leone could improve market access. Côte d'Ivoire, Niger, and Senegal demonstrate a need for better organization of intermediary actors and producers at different stages of the supply chain to strengthen their domestic poultry sectors, which could also improve market access for smallholders. In Niger, better access to information and credit could improve market access for all producers.

Biosecurity

Improving biosecurity is important in all nine countries. Biosecurity measures tend to be better among commercial producers, although this is not the case in Niger or Sierra Leone, where the commercial sector is particularly underdeveloped. Opportunities to improve biosecurity include policy changes and implementation to improve regulations and standards as well as access to biosecurity inputs such as veterinary services, information about improved practices, and especially vaccines. Other opportunities for improving biosecurity infrastructure such as hygienic slaughter facilities, refrigerated transportation, and veterinary medicine technology and capacity are especially important in Benin, Côte d'Ivoire, Niger, and Nigeria. Increasing access to veterinary inputs, and vaccine use in particular, is a key opportunity to increase smallholder productivity in Burkina Faso, Mali, Niger, and Senegal. Of the nine countries in this analysis, biosecurity standards, access to inputs, and vaccine use are strongest in Ghana.

Comparative Analysis of Enabling and Constraining Factors

The nine countries in this analysis demonstrate different combinations of enabling and constraining factors for poultry market development. Since the relative importance of these factors may affect the potential return on investment from poultry sector interventions, this section summarizes similarities and differences across the countries. *Appendix 2* presents a summary of the environment for poultry sector development. *Appendix 3* provides detailed descriptions of the enabling and constraining factors at play in each country, a summary of which is provided below.

Enabling Factors

Key enabling factors include strong market demand, good productivity in existing production systems, sufficient infrastructure for market access, strong biosecurity standards and practices, and a policy and organizational environment favorable for development of the market. Market demand is strongest in Benin, Burkina Faso, Ghana, and Nigeria. Smallholder productivity is generally weak across the region. Nevertheless, widespread use of improved practices by commercially-oriented smallholders has increased productivity in Côte d'Ivoire and Ghana. In the commercial sector, productivity is greatest in Nigeria and Senegal where intensive commercial production is most developed. Like productivity, market access is generally poor for smallholders in the region. Smallholder market access is best in Burkina Faso, Côte d'Ivoire, Mali, Niger, and Senegal while market access for commercial producers is best in Ghana. As mentioned above, overall biosecurity is also best in Ghana. Finally, the policy and organizational environment is most favorable for poultry sector development in Burkina Faso and Mali due to strong producer organizations in both countries.

Constraining Factors

Key constraining factors include low market demand, high cost of production, low productivity, lack of market access, poor biosecurity and a policy and organizational environment unfavorable for development of the market. Market demand is lowest in Niger. Production costs are a significant constraint for commercial production in Burkina Faso, Mali, and Niger. The high cost of inputs such as feed, chicks and vaccines greatly reduces their use by smallholders in all nine countries and, consequently, contributes to low productivity. Smallholder productivity is poorest in Benin, Burkina Faso, Niger, Nigeria, Senegal, and Sierra Leone. Even commercial productivity is poor in Niger. Smallholders face the strongest constraints to market access in Benin, Ghana, Nigeria, and Sierra Leone. This constraint is most significant for commercial producers in Niger and Sierra Leone. As mentioned above, biosecurity measures present a significant constraint to smallholders in all countries except Ghana. Finally, the policy and organizational environment is least favorable for poultry sector development in Niger and Sierra Leone due to the lack of successful government support, infrastructure, or organization among producers.

In addition to country level constraints, similar factors constrain the potential for trade among West African countries to fully supply the regional market. In their 2004 study of the competitiveness of agricultural sectors in the ECOWAS region, Dupaigne et al project that though West Africa will have a 24,000 tonne surplus of chicken and eggs in 2020, several countries will not meet demand with domestic production. Mali, for example, is projected to have a deficit 1,449 tonnes, which amounts to 3 percent of 2007 consumption. This deficit is smaller than that of Senegal, projected to have a deficit of 8,425 tonnes (about 12 percent of 2007 consumption). Countries with projected surplus range from 2,011 in Benin (7 percent of 2007 domestic production) to 23,152 tonnes in Côte d'Ivoire (48 percent of 2007 domestic production).¹¹⁴ Analysts suggest that there is potential for an industrial poultry trade in the region, but such potential is very limited at present – primarily because of the high cost and poor quality of transport.¹¹⁵ Specifically in the market for chicks, although there is sufficient potential capacity in the region to fully supply the market, inadequate transport and sanitary controls limit access and lead several countries to import chicks from Europe.¹¹⁶

Conclusion

Poultry plays an important food and financial security role throughout West Africa. Investing in the region's poultry sectors can provide new economic opportunities and improve nutrition. Despite the differing domestic production pictures, most countries in this analysis offer some opportunities to expand poultry production. Based on the available evidence, Burkina Faso, Côte d'Ivoire, Ghana, Mali, and Senegal appear to exhibit potential for the highest return on investment in the poultry sector. Smallholders likely stand to benefit less in Senegal than in the other four countries. While this analysis offers an initial overview of the sector, the most recent resources available are several years old. Further information regarding current conditions is necessary to determine the most promising investment opportunities in the region.

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*	Benin ¹¹⁷ (Brief 91)	Burkina Faso (Brief 84)	Cote d'Ivoire (Brief 88)
<i>Demographic Overview</i>	Population ¹	291,266,000	8,662,086	15,234,000	20,591,300
	Percent rural population ¹	59%	59%	80%	51%
	GDP per capita ¹	\$807	\$771	\$522	\$1,137
	Percent annual GDP growth ²	4.9%	5.1%	4.5%	2.2%
	Major urban areas	N/A	Cotonou, pop. 818,100 ⁷ Abomey, pop. 114,800 ¹⁵	Ouagadougou, pop. 1,475,000 ³ Bobo-Dioulasso, pop. 490,000 ³	Abidjan, pop. 3,576,000 ¹³ Bouake, pop. 574,000 ¹³
<i>Consumption & Preferences</i>	Per capita consumption of poultry products ⁹	5.1 kg/capita	2.0-5.14 kg/capita ¹⁸	5.5 kg/capita	2.42 kg/capita
	Percent of daily calories from poultry and eggs ⁸	0.78%	1.48%	0.89%	0.57%
	Percent daily calories from all livestock ⁸	9.5%	6.32%	8.4%	5.9%
<i>Domestic Production & Market Structure</i>	Per capita poultry production ⁹	4.4 kg/capita	3.27 kg/capita	5.5 kg/capita	2.37 kg/capita
	Producers	Varies by country	Mostly smallholders	Mostly rural smallholders and peri-urban, semi-industrial	About 70% family production, 30% semi-industrial
	Smallholder Production Share	--	90%	--	70% ¹⁷
	Percent of consumption ^{**} supplied by domestic production ⁹	86.3%	28.02%	99.94%	97.7%
<i>Trade Flows***</i>	Imports ⁹	0.68 kg/capita	8.29 kg/capita	0.004 kg/capita	.056 kg/capita
	Exports ⁹	.001 kg/capita	Less than .001 kg/capita ¹⁹	.0002 kg/capita	Less than .001 kg/capita
<i>Policy & Organizational Environment</i>		Common External Tariff of 20%; growing need to address negative externalities of livestock production	Limited government involvement; producer organizations and NGOs working to improve the domestic poultry sector	Non-profit producer organization (MDA) working to increase the domestic poultry sector	IPRAVI coordinates the sector, umbrella for producer organizations and connection to government

*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; -- indicates no data; see endnote¹¹⁸ for sources

		West Africa*	Ghana (Brief 83)	Mali (Brief 85)	Niger (Brief 89)
<i>Demographic Overview</i>	Population ¹	291,266,000	23,351,000	12,705,700	14,704,300
	Percent rural population ¹	59%	50%	68%	84%
	GDP per capita ¹	\$807	\$713	\$688	\$364
	Percent annual GDP growth ²	4.9%	7.3%	5.0%	9.5%
	Major urban areas	N/A	Accra, pop. 1,847,000 ⁴ Kumasi, pop. 1,170,000 ⁵	Bamako, pop. 1,475,000 ⁶ Segou, pop. 490,000 ⁶	Niamey, pop. 708,000 ¹⁴ Zinder, pop. 171,000 ¹⁴
<i>Consumption & Preferences</i>	Per capita consumption of poultry products ⁹	5.1 kg/capita	6.0 kg/capita	3.94 kg/capita	1.54 kg/capita
	Percent of daily calories from poultry and eggs ⁸	0.78%	0.60%	0.69%	0.24%
	Percent daily calories from all livestock ⁸	9.5%	6.6%	14.8%	13.31%
<i>Domestic Production & Market Structure</i>	Per capita poultry production ⁹	4.4 kg/capita	2.5 kg/capita	3.93 kg/capita	1.53 kg/capita
	Producers	Varies by country	Dominated almost exclusively by urban, industrial production	Mostly traditional rural production, industrial sector produces at most 10% of domestic total	Mostly smallholders
	Smallholder Production Share	--	--	90–96% ¹⁰	97%
	Percent of consumption** supplied by domestic production ⁹	86.3%	41.7%	99.7%	99.97%
<i>Trade Flows***</i>	Imports ⁹	0.68 kg/capita	3.52 kg/capita	.011 kg/capita	Less than .001 kg/capita
	Exports ⁹	.001 kg/capita	.002 kg/capita	.002 kg/capita	--
<i>Policy & Organizational Environment</i>		Common External Tariff of 20%; growing need to address negative externalities of livestock production	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	Weak due to political instability, GAP/CUN/E organizes producers around the capitol

*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; -- indicates no data; see endnote (118) for sources

		West Africa*	Nigeria (Brief 87)	Senegal (Brief 86)	Sierra Leone (Brief 92)
<i>Demographic Overview</i>	Population ¹	291,266,000	151,212,300	12,211,200	5,559,853
	Percent rural population ¹	59%	52%	58%	62%
	GDP per capita ¹	\$807	\$1,370	\$1,087	\$352
	Percent annual GDP growth ²	4.9%	6.0%	3.3%	5.5%
	Major urban areas	N/A	Lagos, pop. 8,030,000 ¹² Kano, pop. 2,993,000 ¹³	Dakar, pop. 1,009,300 ⁷ Touba, pop. 451,300 ⁷	Freetown, pop. 772,900 ⁷ Bo, pop. 150,000 ⁷
<i>Consumption & Preferences</i>	Per capita consumption of poultry products ⁹	5.1 kg/capita	5.39 kg/capita	5.84 kg/capita	4.89 kg/capita
	Percent of daily calories from poultry and eggs ⁸	0.78%	0.83%	1.00%	0.63%
	Percent daily calories from all livestock ⁸	9.5%	4.98%	10.1%	5.24%
<i>Domestic Production & Market Structure</i>	Per capita poultry production ⁹	4.4 kg/capita	5.39 kg/capita	5.76 kg/capita	3.8 kg/capita
	Producers	Varies by country	Traditional, rural producers; semi-commercial backyard producers, and large-scale industrial facilities	Both traditional, rural producers and semi-industrial producers in urban areas	Mostly rural backyard, some commercial operations ¹⁸
	Smallholder Production Share	--	69% ¹⁶	47% ¹¹	90% ¹⁸
	Percent of consumption** supplied by domestic production ⁹	86.3%	99.98% ⁹	98.6%	78.09%
<i>Trade Flows***</i>	Imports ⁹	0.68 kg/capita	.001 kg/capita	.094 kg/capita	1.07 kg/capita
	Exports ⁹	.001 kg/capita	--	.012 kg/capita	--
<i>Policy & Organizational Environment</i>		Common External Tariff of 20%; growing need to address negative externalities of livestock production	Ban on poultry imports from all countries since 2002, but illegal imports continue to enter the country	Ban on poultry imports from all countries since 2006	Avian Secretariat established in 2006

*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; -- indicates no data; see endnote (118) for sources

Appendix 2. Enabling Factors, Constraining Factors & Key Opportunities At-A-Glance

		Benin	Burkina Faso	Côte d'Ivoire	Ghana	Mali	Niger	Nigeria	Senegal	Sierra Leone	
<i>Enabling & Constraining Factors</i>	Market demand	Strong	Strong	Medium	Strong	Medium	Weak	Strong	Medium	Medium	
	Comparative advantage to increase production	Smallholders (chickens); Commercial producers (eggs & inputs)	Smallholders	Semi-intensive smallholders	Smallholders in North, Commercial producers in South	Smallholders	Smallholders	Commercial producers	Commercial producers	Smallholders	
	Productivity	Smallholder	Weak	Weak	Weak/Medium*	Medium	Weak/Medium*	Weak	Weak	Weak	Weak
		Commercial	Medium	Medium	Medium	Medium	Medium	Weak	Strong	Strong	Medium
	Market access	Smallholder	Weak	Medium	Medium	Weak	Medium	Medium	Weak	Medium	Weak
		Commercial	Medium	Medium	Medium	Strong	Medium	Weak	Medium	Medium	Weak
	Biosecurity	Smallholder	Weak	Weak	Weak	Medium	Weak	Weak	Weak	Weak	Weak
		Commercial	Medium	Medium	Medium	Medium	Strong	Weak	Strong	Strong	Strong
	Policy & organizational environment	Weak	Strong	Medium	Medium	Strong	Weak	Weak	Medium	Medium	
<i>Prerequisites for significant market development</i>		Stronger regulations and enforcement to control illegal trade	--	Reinforced biosecurity regulations regarding collection, transport and slaughter of poultry	Stronger regulation to reduce competition from imports	--	Coordination and organization of the sector, technological capacity for improved biosecurity	Stronger regulations and enforcement to control illegal imports	--	Rebuilding infrastructure and re-equipping existing facilities	
<i>Key Opportunities</i>		Increase domestic production through increased rural productivity & support expansion of existing commercial sector	Improve rural production practices to increase productivity, especially increasing use of veterinary services	Increase domestic production through improved practices & increased smallholder semi-intensive commercial production	Increase domestic production of both inputs & poultry products	Increase the productivity of existing operations through dissemination of improved practices, and increase percentage of commercial smallholders	Improve the enabling environment to increase smallholder production & use of improved practices	Increase domestic production through expansion of commercial sector and improved production practices & transport infrastructure	Better organization of the supply chain to connect smallholders and small commercial enterprises to existing infrastructure	Improve rural production practices to increase productivity	

* Smallholder production is divided between those who use improved production practices and have medium productivity and those using few or no inputs having weak productivity

Appendix 3. Comparison of Poultry Market Enabling Factors, Constraining Factors & Opportunities

	Benin (Brief 91)	Burkina Faso (Brief 84)	
<i>Enabling Factors</i>	Strong market demand	Domestic production does not supply the entire market	Some unmet demand during holidays Limited supply rather than limited demand constrain consumption
	Comparative advantage in production	Smallholders manage 90 percent of poultry stocks	Smallholders produce 70 percent of all poultry and the commercial sector presents little competition
	Productivity	Small commercial sector uses modern techniques	--
	Market access	--	Well developed informal marketing system to move poultry from small-scale producers to consumers
	Biosecurity	--	--
	Policy & organizational environment	--	Strong organization of commercial sector, with smallholders benefitting from many of their efforts
<i>Constraining Factors</i>	Low market demand	--	--
	Cost of production	Large firms are fully integrated, but small and medium producers purchase imported inputs or from larger firms Significant competition from cheap imported products High cost of feed	High cost of veterinary inputs results in low use (esp. low vaccination rates) by smallholders
	Low productivity	Low productivity among traditional producers due to use of unimproved varieties and low input usage	Smallholders lack access to veterinary inputs
	Market access	Smallholders produce mainly for household consumption	Lack of marketing infrastructure limits potential to supply regional market Few market incentives for private veterinary sector to serve rural poultry market
	Biosecurity	Poor or non-existent biosecurity measures among traditional producers	Disease-related animal losses constrain ability to meet market demand
	Policy & organizational environment	Significant quantities of illegal trade (particularly undocumented exports)	--
<i>Opportunities</i>	Consumption	Increase domestic production and overall productivity to lower cost to consumers, likely increasing consumption	Increase consumption through increased supply of poultry products
	Production Capacity	Increase organization in feed market to lower cost and increase quality Increase organization of producers Increase domestic production of hatching eggs and day-old chicks	Decrease cost of veterinary inputs (domestic production, organize smallholders to facilitate wholesale purchase) Support MDA work organizing wholesale input purchases for semi-industrial producers
	Productivity	Promote use of improved production practices through technical training Improve access to feed and veterinary services	Improve infrastructure and equipment for processing and marketing to increase capacity to supply a wider (potentially regional) market
	Smallholder Market Access	Increase percentage of commercially-oriented smallholders	Increase organization of smallholders to facilitate economies of scale for access to inputs
	Biosecurity	Increase biosafety controls, regulations and enforcement	Increase vaccine use among smallholders

	Côte d’Ivoire (Brief 88)	Ghana (Brief 83)	
<i>Enabling Factors</i>	Strong market demand	Some unmet demand during holidays Limited supply rather than limited demand constrain consumption	Domestic production does not supply the entire market
	Comparative advantage in production	Semi-intensive smallholder producers practice improved production using locally available inputs	--
	Productivity	--	Widespread use of veterinary inputs
	Market access	Well developed transport systems for smallholders, especially in the North where distance to markets is greater	--
	Biosecurity	--	Improved veterinary services and vaccination efforts have reduced the threat of disease in recent years, Avian Influenza never entered
	Policy & organizational environment	--	Strong history of government and NGO interventions in the sector
<i>Constraining Factors</i>	Low market demand	--	Existing hatcheries and feedmills operate below capacity due to limited demand and currently supply only small to medium operations
	Cost of production	Some competition from imports High cost of day-old chicks Lack of access to credit for producers	Producers face competition from cheap imports Costs of production have increased since 2001 without a comparable increase in sale price High electricity costs
	Low productivity	Lack of available feed and veterinary products Lack of access to information, advisory services and veterinary inputs discourage private investment in the sector	--
	Market access	Collecteurs are the only market outlet for some rural producers who therefore have little power to negotiate favorable prices Transport systems are less developed outside of the Northern region because trade is more locally concentrated	--
	Biosecurity	Poor biosecurity measures among rural smallholders, during transport and slaughter and in local markets	--
	Policy & organizational environment	Some illegal imports over land borders Poorly enforced regulations	Cheap imports undercut the domestic market
<i>Opportunities</i>	Consumption	Increase domestic production and overall productivity to lower cost to consumers, likely increasing consumption	--
	Production Capacity	Increase domestic production of day-old chicks and improve organization in day-old chick market Increase domestic feed production and improve organization in feed market to lower cost to producers	Increase commercial production of poultry meat building on existing infrastructure of large-scale vertically integrated egg producers Increase domestic production of hatching eggs to supply large commercial operations Increase processing and storage infrastructure
	Productivity	Expand existing semi-intensive smallholder production (commercially-oriented, improved production practices) Promote and/or expand existing poultry development and improvement programs	Geographic niche for commercial production in northern regions Product niche for increased commercial production of the preferred indigenous varieties
	Smallholder Market Access	Increase smallholder access to information technologies for market information Increase organization among smallholder producers	Increase small-scale commercial egg layer units that have expanded in rural areas in recent years
	Biosecurity	Produce Newcastle vaccine domestically	--

	Mali (Brief 85)	Niger (Brief 89)	
<i>Enabling Factors</i>	Strong market demand	Demand in high in rural areas	--
	Comparative advantage in production	Smallholders using improved production practices have comparative advantage as production costs are high for industrial producers	Smallholders have comparative advantage because environment is unfavorable for intensive commercial production
	Productivity	Smallholders using improved production practices have higher output and survival rates	--
	Market access	--	Smallholders dominate the market for broiler chicken meat
	Biosecurity	--	--
	Policy & organizational environment	Several producer organizations exist at all levels of the supply chain	--
<i>Constraining Factors</i>	Low market demand	No demand for eggs for consumption Rural populations consume meat rarely due to its high cost	In very remote areas, poultry meat consumption is rare
	Cost of production	High costs of imported hatching eggs and day-old chicks	High production costs result from significant losses High cost of feed Economic environment for intensive commercial production is unfavorable Commercial producers face competition from lower cost traditional producers
	Low productivity	Low input use constrains productivity of traditional poultry production	Low input usage and improper shelter in traditional poultry production results in low productivity
	Market access	Veterinary sector effectively supplies only farmers and herders in areas with strong effective demand	--
	Biosecurity	Significant losses during transport from rural farmgate to market Unsanitary transport and slaughter practices	Disease is the primary constraint to traditional poultry production development
	Policy & organizational environment	--	Government poultry strategy largely unsuccessful, state-owned facilities have nearly ceased to function No government support for private sector developments Political instability limits effectiveness of government-supported projects
<i>Opportunities</i>	Consumption	Increase rural poultry consumption	Increase productivity of rural production systems to increase poultry consumption
	Production Capacity	Increase domestic production of hatching eggs and day-old chicks, potentially through smallholder production Increasing overall domestic production can lower production costs through better organization and economies of scale in input sectors	--
	Productivity	Expand the percentage of commercially-oriented smallholders Increase use of improved practices among smallholders	Increase access to veterinary services Promote improved production practices among smallholders Improve the genetic stock of poultry
	Smallholder Market Access	Increase smallholder access to existing modern industrial processing chain	Increase organization of the sector to expand upon smallholders existing competitive advantage in meat and egg production Increase access to credit, for smallholders and to promote private sector investment in the poultry market
	Biosecurity	Build on existing private veterinary sector to increase smallholder (especially rural) access to inputs	Increase disease prevention infrastructure (veterinary equipment, technology, human capital, dissemination of vaccines and veterinary services)

	Nigeria (Brief 87)	Senegal (Brief 86)	
<i>Enabling Factors</i>	Strong market demand	Domestic production does not supply the entire market	--
	Comparative advantage in production	Full vertical integration gives large commercial firms a competitive advantage	Semi-industrial commercial producers supply over 50% of all poultry
	Productivity	Commercial producers employ established modern practices, presumably resulting in high productivity	
	Market access	Commercial producers have multiple market outlets and modern transportation infrastructure	Large scale producers deliver processed products directly to clients
	Biosecurity	Commercial producers follow established biosecurity measures and established vaccination schedules Private sector adequately supplies veterinary services for commercial operations	Avian Influenza never entered
	Policy & organizational environment	Some favorable government policies, although successful implementation is questionable Strong producer organization (PAN) supports producers of all scales	Government support for the sector through national center Strong producer organization for commercial producers History of NGO interventions in the sector
<i>Constraining Factors</i>	Low market demand	Poultry meat and eggs are still considered luxury foods for many Nigerians, especially in rural areas	--
	Cost of production	Competition from cheap, illegal imports	Fewer commercial operations raise laying hens because of the larger investment required Majority of day-old chicks are imported to supply the commercial sector Feed accounts for over 50% of production costs
	Low productivity	Productivity of smallholders is low due to use of unimproved varieties and low availability of feed and veterinary inputs	Smallholders lack access to veterinary services and adequate feed Vaccine prices are too high for most smallholders
	Market access	Significant losses result from unsanitary conditions during transport	Poor infrastructure limits distance of markets accessible to rural smallholders
	Biosecurity	Low use of veterinary services and biosecurity measures among rural and semi-commercial producer Pervasiveness of veterinary imposters	Unsanitary conditions on farms and in slaughter facilities and improper refrigeration present potential for contamination
	Policy & organizational environment	Significant quantities of illegal imports enter Exports negligible despite favorable policies	--
<i>Opportunities</i>	Consumption	Increase rural consumption by increasing productivity of poultry systems Expand commercial sector	Reduce sale price by better organizing intermediary actors in the supply chain
	Production Capacity	Organize smallholders to increase access to input and output supply chains, decrease cost through wholesale purchase or opening economies of scale network for suppliers	Increase domestic production of hatching eggs and day-old chicks Increase domestic feed production, potentially utilizing alternative feed sources such as groundnuts and rice Improve organization among intermediary actors in the supply chain
	Productivity	Increase commercial production, potentially also by smallholders and for export Increase smallholder access to veterinary services, improved varieties and feed Promote improved production practices	Increase smallholder access to veterinary services and vaccines Promote increased egg production, by smallholders and commercial producers, to guarantee that domestic production continues to supply the entire market
	Smallholder Market Access	Improve transportation and storage equipment to improve market access and return on investment for rural producers by expanding available markets and decreasing loss during transport	Increase smallholder access to export market Increase percentage of commercially-oriented smallholders Improve transportation and marketing infrastructure
	Biosecurity	Expand existing equipment for sanitary and refrigerated transport	Improve smallholder access to veterinary care and inputs

Sierra Leone (Brief 92)

<i>Enabling Factors</i>	Strong market demand	Domestic production does not supply the entire market
	Comparative advantage in production	Smallholders have comparative advantage; few commercial operations currently suggest high initial investment would be required to expand the commercial sector
	Productivity	No data
	Market access	No data
	Biosecurity	Commercial operations have high biosecurity
	Policy & organizational environment	--
<i>Constraining Factors</i>	Low market demand	--
	Cost of production	Competition from cheap imports
	Low productivity	No data
	Market access	No data
	Biosecurity	Rural production has low biosecurity
	Policy & organizational environment	Civil conflict destroyed most infrastructure, few government investments in sector to prevent spread of Avian flu but no other organizational structures favorable for sector development
<i>Opportunities</i>	Consumption	Increase consumption through increased supply of poultry products
	Production Capacity	Increase facilities for animal rearing and slaughter Increase commercial production
	Productivity	Promote improved production practices among rural producers
	Smallholder Market Access	Organize supply chain to improve market access for smallholders
	Biosecurity	Improve smallholder access to veterinary care and inputs

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