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The Poultry Market in Nigeria: Market Structures and Potential for Investment in the Market

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Abstract

High population growth and growing income lead to increasing demand for poultry products in Nigeria. The poultry industry has emerged as the most commercialized and fastest expanding segment in the animal husbandry subsector but still faces many problems. Private investment from foreign countries could help to facilitate this market. This paper reveals the opportunities and threats of a market entry for private investors based on a PESTEL analysis and a SWOT analysis.

Keywords: market potential, Nigeria, PESTEL analysis, poultry production, SWOT analysis

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Introduction

In 2013, six of the ten fastest growing economies in the world were in Africa. With an average annual growth in gross domestic product (GDP) of 5% in recent years, this situation is likely to continue (International Monetary Fund 2014). In Africa, agriculture and agro-industries account for more than 30% of national incomes on average, as well as for the bulk of export revenues. Nearly three-quarters of the African population depend on agriculture to secure their livelihoods (Oram 2012; Connolly 2014).

Due to the high population growth in Africa (World Health Organization 2010) and growing income, the demand for eggs and poultry meat has significantly increased in recent years across large parts of the continent. According to estimates by the USAID (United States Agency for International Development), this trend is very likely to continue over the next few years. Therefore, the consumption of poultry and eggs will increase by 200% between 2010 and 2020 for at least some countries in sub-Saharan Africa (Obi 2003; USDA 2013).

One African country where this trend can clearly be seen is Nigeria. Nigeria is one of the largest countries in Africa, with a total geographical area of 923,768 square kilometers (Manyong et al. 2005). Its estimated population was 174.5 million people in 2013, and its population growth rate is 3% per annum (USDA 2013). Nigerian economic statistics reveal annual economic growth rates that averaged over 7% in recent decades, making Nigeria one of the fastest growing economies in the world (Byerlee et al. 2013). Nonetheless, this growth has not reduced poverty or created much-needed jobs. Unemployment is still very high, and more than 60% of the population lives below the poverty line (African Economic Outlook 2012).

In contrast to the rapid population growth in Nigeria, food production has not followed suit over the last 50 years (Wiggins and Keats 2013). Nevertheless, the sector is particularly important in that it has generated employment and contributed to GDP and export revenue earnings. Hence, agriculture constitutes one of the most important subsectors of the economy, employing nearly three quarters of Nigeria's work force (Phillip et al. 2009; Adene and Oguntade 2006).

The Nigerian poultry industry in particular has been rapidly expanding in recent years and is therefore one of the most commercialized (capitalized) subsectors of Nigerian agriculture (USDA 2013; Adene and Oguntade 2006). The popularity of poultry production can be explained by the fact that poultry has many advantages over other livestock. Poultry birds are good converters of feed into useable protein in meat and eggs. The production costs per unit remain relatively low, and the return on investment is high. Therefore, farmers need a relatively small amount of capital to start a poultry farm. Furthermore, poultry meat is very tender and acceptability to consumers is high, regardless of their religious beliefs. Also, the production cycle is quite short, so capital is not tied up over a long period. Finally, eggs, one of the major products of poultry production, are more affordable for the common person than other sources of animal protein (Ojo 2003; Aboki et al. 2013).

Despite these positive aspects, poultry production has not been keeping pace with rapidly increasing domestic consumption. The domestic shortfall is estimated at 25,000 MT per annum (Rothschild 2002).

This lagging increase in domestic production can be explained by the fact that most producers in Nigeria still employ traditional rural poultry farming systems—although an increasing demand for poultry kept under modern and more hygienic conditions has been observed. Rural poultry farming is by convention a subsistence system comprising stocks of nonstandard breeds or mixed strains, types, and ages. A majority of the farmers operate in these traditional, small-scale structures. Often, these farming systems are characterized by outdated barn equipment and production techniques and inadequate hygiene management. In addition, producers suffer from a weak feed industry and poor market access as a result of inadequate infrastructure (Adene and Oguntade 2006; Alabi and Isah 2002).

In contrast, commercial poultry farming is characterized by higher demands on capital and labor, as well as on inputs and technology. Improvements in breeding, husbandry, and management are needed to increase the efficiency in chicken production, which will lead to lower production costs (Adene and Oguntade2006).

But even farmers using more commercial farming systems suffer from numerous problems. These problems include a low capital base, the resulting lack of equity capital, inefficient management, technical and economic inefficiencies, infection with diseases and parasites, high costs for feeds, poor quality of day-old chicks, and inadequate extension and training facilities (Alabi and Isah 2002; Bambgbose et al. 1998). Thus, there seems to be a large untapped potential for improvements in poultry production in Nigeria from both a production and an economic point of view.

To the best of our knowledge, there is hardly any literature so far that examines the existing market structures of poultry production in Nigeria, analyzes the potential of emerging new markets, and segments or explores the development of suitable strategies for the market entry of companies from foreign countries. Therefore, it is the aim of the present paper to contribute to the closing of this research gap. To this end, we describe Nigeria's economic development in detail, taking into account general economic indicators and the relative importance of animal husbandry. We pay special attention to the development of the poultry sector, analyzing in depth the market in laying hens and egg production, as well as the subsector of broiler production.

To analyze the environment and current state of the poultry market in Nigeria, we conducted a PESTEL (political, economic, social-cultural, technological, ecological, legal) analysis and a SWOT (strengths, weaknesses, opportunities, threats) analysis. Then, based on the SWOT analysis, we investigated the attractiveness of market entry from the perspective of a foreign direct investor.

Background

Foreign Direct Investment in Emerging Markets in Sub-Saharan Africa: The Example of Nigeria

In no other region is the potential for poverty reduction through the agricultural sector greater than in sub-Saharan Africa (Larsen et al. 2009), where 70% of the people live in rural areas and 90% of the rural population depends on agriculture as the main source of income (United Nations Economic Commission for Africa 2007). With the help of investments from sources around the globe, agribusiness began booming in the early 2000s, and it is projected to become a US \$1 trillion industry in the region by 2030 (Byerlee et al. 2013).

However, in comparison to other parts of the world, productivity levels in sub-Saharan African agriculture and industry are still extremely low, and consequently agribusiness development cannot keep pace with the rapidly growing population and increasing incomes. As a result, food imports have grown since the 1970s, and sub-Saharan Africa has become a net food importer (World Bank 2007a). In Nigeria, wheat is the largest single import. To safeguard local production, some import prohibitions have recently been passed. For instance, to protect the Nigerian poultry sector there is a total ban on importing poultry, whether dead or alive (Nicely 2013).

To establish sustainable agriculture, higher agricultural productivity plays a key role for growth and development in most African countries (Larsen et al. 2009). Even though there is plenty of room to increase the productivity and the technical and economic efficiency of Nigerian poultry producers, poultry production is already highly profitable for Nigerian farmers (Aboki 2013; Ohajianya et al. 2013). This gives cause to hope that even more farmers can improve their financial situation through poultry farming.

Innovation is a powerful means of addressing relatively low production and added value. Therefore, understanding how innovation takes place and developing policies and institutions that facilitate enhanced innovation are central to the progress of agricultural development in Africa (World Bank 2007b). Innovation in agribusiness provides the new inputs, expertise, and services needed for farm production; at the same time, it offers markets for farm products. Thus, it expands employment and entrepreneurial opportunities in rural and urban areas and can contribute to the growth of micro- and small enterprises (OECD 2007).

Despite these potential benefits, the level of innovation adoption among poultry producers in Nigeria is still quite low (Ladele 2002). Aboki et al. (2013) show that the index of innovation adoption has a negative relationship with the inefficiency of family poultry production in parts of Nigeria. Innovations triggered by policies and private companies can therefore enhance the level of efficiency and improve the situation of poultry farmers.

Due to the liberalization of economies and the globalization of trade, the growth and development of agribusiness depend largely on international private sector initiatives or public policies (Larsen et al. 2009). The Nigerian government has therefore decided to liberalize competitive international trade (FAO 2014) in order to support the export of agricultural goods.

For Nigerian poultry producers, however, exports play only a minor role since poultry production is intended to meet the needs of the local population (Encyclopedia of the Nations 2014).

In this paper, we focus on private sector initiatives, as many transnational agribusiness companies have become involved in a number of aspects of food production in sub-Saharan Africa, including the agricultural input sector, farming, the food processing industry and the transportation and distribution of food (Dinham and Hines 1984). Meanwhile, soaring grain prices and global food inflation have strengthened investor interest in African agriculture, especially because Africa has the land availability and space for farm production to grow significantly (World Bank 2007b).

In recent years, many of the continent's governments have changed to more market-friendly policies and are committing more resources to the agricultural sector. Therefore, African agriculture's private sector investment is rising rapidly. African agriculture attracted more than US \$100 million in private equity investment in the first half of 2012, compared to US \$50 million for the whole of 2011 (e.g., foreign investments in feed, modern breeds, husbandry systems, management techniques) (World Bank 2007b). Nevertheless, introducing cost-effective agricultural development in the countries of sub-Saharan Africa is still a challenge. To succeed, companies that are willing to enter the African market will have to address numerous technical hurdles, such as limited availability of human resources, corruption, political pressures, shifting priorities, and inadequate infrastructure and market access (Sanghvi and Simons 2014).

Importance of Poultry Products in Sub-Saharan Africa

The challenges of food insecurity and hunger in developing African countries like Nigeria have caught the attention of experts and governments worldwide (Emaikwu et al. 2011; FAO 2003). Population growth, urbanization, and income improvements are the main drivers of increased demand for foods of animal origin in developing countries (Abdullah et al. 2011; Steinfeld 2003). The sufficient supply of animal protein is most critical in the global food basket crisis (FAO 1995). As a result, growing demand has led to a rise in the production of foods of animal origin all around the globe, especially from poultry and pigs (FAO 2010).

Poultry production plays an important role in rural incomes in sub-Saharan Africa; especially in Nigeria (Mengesha 2011; Van der Sluis 2007). A country's economic development is normally accompanied by improvement in its food supply and the gradual elimination of dietary deficiencies (WHO/FAO 2003; Thornton 2010). This raises global demand for animal products, thus offering potential opportunities for animal producers worldwide (Jabbar et al. 2011). The enforced demand for foods of animal origin could be satisfied especially by the production of poultry, as these products have seen the greatest increase in production in recent years (FAO 2011; Speedy 2003; Delgado and Narrod 2002).

For farmers in sub-Saharan Africa, poultry production plays an exceptionally important role; approximately 80% of rural households are engaged in smallholder poultry production (Kryger et al. 2010). But, although chicken production is likely to become the fastest growing agribusiness

sector in sub-Saharan Africa, it still faces problems of feed-food competition and dependency on the import of improved breeds (Aboul-Naga and Elbeltagy 2007).

In Nigeria, where the production of animal protein falls far short of meeting the demands of a rapidly growing population (Obi 2003), poultry is the most common livestock kept (Armar-Klimesu and Maxwell 2000). The poultry industry has emerged as the most dynamic and fastest growing segment in the animal husbandry subsector. It represents an important source of high quality proteins, minerals, and vitamins to balance the human diet (USDA 1999).

Methods

The results of this study are based upon a comprehensive analysis of the available national and international literature. As part of this research, it became apparent that the literature on this topic is very limited.

In our study we applied a stepwise approach. We began with a PESTEL analysis to identify the political, economic, social-cultural, technological, ecological and legal factors that could influence the market entry decisions of agribusiness companies from foreign countries. A PESTEL analysis is a strategic tool organizations can use when planning to launch a new product or service, explore a new route to market, or start selling to a new country or region. (Team FME 2013; Zingel 2009). PESTEL analysis is therefore a strategy for analyzing the attractiveness of markets and restricting the external risks of investment (Gassner 2009; Johnson et al. 2011). Every investment decision has its own PESTEL analysis depending on the relevant potential market. Table 1 lists the most important external factors that might influence a company's investment in poultry production in Nigeria.

Next, we conducted a SWOT analysis to investigate the strengths and weaknesses, as well as the opportunities and threats of an investment. SWOT analysis was introduced in the 1960s as a tool for supporting companies' strategy identification process (Wehrich 1982). With regard to the internationalization of business activities, this leads to market-entry strategies adapted to specific situations in different markets. Thus, SWOT analysis is a strategic management tool suitable for a detailed analysis of the environment in order to utilize existing market opportunities (Dyson 2004).

Since every company confronts a dynamic environment, the relative importance of strategic factors can be dynamically adapted; thus, a SWOT analysis is not permanent in nature (Houben et al. 1999). It usually investigates a company's internal strengths and weaknesses as well as the opportunities and threats of its external environment (Hill and Westbrook 1997). This paper uses a modified version of the SWOT analysis to determine the current strengths and weaknesses of the Nigerian poultry sector and to predict the future opportunities and risks of market entry. Therefore, all the criteria are external factors that are relevant for companies considering an investment in this market.

Based on the catalogue of PESTEL criteria listed in Table 1, we set up a SWOT matrix for the Nigerian poultry market, making its strengths, weaknesses, opportunities, and threats clearly visible. Specific potential for market entry can be derived through this study.

Table 1. Factors used in the PESTEL Analysis of the Nigerian Poultry Market

<i>Political</i>	Agricultural policy	Corruption
	Availability of micro-credits for farmers	Governmental structure Governmental stability
<i>Economic</i>	Capital base of farmers	Inflation
	Economic efficiency of production	Infrastructure
	Economic growth	Input costs
	Gross domestic product	Market price fluctuation
	Importance of agricultural sector	Marketing possibilities
	Income per capita	Profitability
<i>Social-cultural</i>	Age structure	Household size
	Availability of labor	Innovation adoption
	Education level	Management practice and know-how
	Employment rate	Membership in co-operative
	Extension and training agency	Population growth rate
	Farming experience	Poverty
	Health	Religious influences
<i>Technological</i>	Diseases and parasites	Level of automation
	Drugs and medication	Mortality rate of chickens
	Farm size	Quality of day-old chicks
	Flock size	Storage facilities
	Husbandry systems	Technical efficiency of production
	Hygienic conditions of poultry production	Use of modern breeds
		Vaccination
<i>Ecological</i>	Availability of Land	Availability of water
	Availability of energy	Climatic conditions
	Availability/Quality of feed	
<i>Legal</i>	Export regulations	Taxation regulations
	Import regulations	

Sources. Adapted from Gassner 2009; Johnson et al. 2011; Aboki et al. 2013; Esiobu et al. 2014; Ohayianya et al. 2013; Ojo 2003; Udoh and Etim 2009; Nmadu et al. 2014; Tijjani et al. 2012.

Results

Results of the PESTEL Analysis

Political Factors

Nigeria has a federal structure, with 36 states and a federal capital territory. Each of the states has its own political administration with a governor at the top. Even though Nigeria claims to be a federal republic, the central government in Abuja holds the majority of the political power, especially because it has exclusive rights to the country's oil revenues. Moreover, the president is enormously powerful because, in addition to his executive role, he also enjoys additional legislative powers (Agbaje 2004). Despite improvements over the last few years, Nigeria still ranks poorly in regard to corruption—placing 136 of 175 countries surveyed according to Transparency International—the global coalition against corruption (Transparency International 2014).

Large parts of the population are still very poor due to corruption, even though large oil reserves and the great variety of landscape and biodiversity offer enormous income generation opportunities for the urban population (Falola and Heaton 2008; Bergstresser 2010; Bach 2006). The political system in Nigeria seems to be relatively stable, as noteworthy political and economic reforms have been implemented. At the same time, the government does not effectively react to the threats of terrorism and the violent ethno-religious conflicts that have torn the country apart in recent years. Of course, there have been costly attempts to increase security. But because of the high corruption rate among high-level politicians, security officers, ex-military, and businesspeople, these efforts have triggered hardly any improvement (Bergstresser 2014).

Nevertheless, the more recent development of agricultural policies shows that there is a strong will to facilitate agricultural marketing, reduce agricultural production costs, and enhance agricultural product prices as incentives for increased agricultural production. The instruments used for this purpose include agricultural commodity marketing and pricing, input supply and distribution, input price subsidy, land resource use, agricultural research, agricultural extension and technology transfer, agricultural mechanization, agricultural cooperatives, and agricultural water resource and irrigation development (Manyong et al. 2005). Furthermore, several incentives have been implemented to encourage investment in the Nigerian agricultural sector:

- A zero duty on agricultural machinery
- Pioneer status incentive (three years tax holiday) for the agro-processing industry
- Export incentives available for manufactures in the agrarian sector
- Food import prohibitions to encourage local production (Nigerian Investment Promotion Commission 2014)

Poultry production in Nigeria is still characterized by low production levels due to the limited financing available for the procurement of basic equipment and materials. Many farmers are unable to increase their productivity by moving from small-scale poultry production to larger-

scale production because they face difficulties in credit and loan procurement. To enhance the commercialization of the poultry industry, it has been suggested that Nigerian government policy tackle the problem of credit procurement through expanding the provision of micro-credits and encouraging the formation of cooperative societies for farmers (Akanni 2007; Aromolaran Adetayo et al. 2013; Aboki et al. 2013; Esiobu 2014). In fact, there are already a few programs that seek to give farmers access to micro-credits (Aboki et al. 2013), representing a positive starting point.

Economic Factors

Nigeria's economy is characterized by strong economic growth (The World Bank 2014b).

Nonetheless, about two thirds of the population lives on less than US \$1 per day. This indicates that economic growth has not cut poverty or created necessary jobs. The inflation rate is comparatively high, but fell from 13.7% in 2010 to at least 8.4% in 2013 (African Economic Outlook 2012).

Despite the oil boom, agriculture is still the major sector in the Nigerian economy (Oji-Okoro 2011). Agriculture accounts for 35.2% of GDP and must therefore play a key role in unleashing inclusive economic growth, reducing poverty, and enhancing food security (African Economic Outlook 2012).

The agricultural sector is an important employer for the rural population, employing about 70% of the active labor force (Adene and Oguntade 2006).

Nigeria has a relatively advanced infrastructure, compared to many other African countries. Roads still lag far behind, but airports and ports have enjoyed considerable investment in recent years, resulting in good international portals. The government has also increasingly advocated the use of public-private partnerships; therefore, infrastructure networks cover extensive areas of the national territory. It is estimated that improving the country's infrastructure still further could boost annual real GDP growth by around four percentage points (PwC 2014).

Ohajianya et al. (2013) examined the economic efficiency of poultry production in parts of Nigeria. Their results show that, from an economic perspective, many producers manage their poultry farms inefficiently and therefore lose highly promising cost savings. As economic efficiency is a product of technical and allocative efficiencies, these factors should be improved to make poultry production even more profitable in the future. To be technologically effective, farmers need to invest in production factors. Inadequate funding hinders farmers from acquiring the necessary resources and technologies to assist them to produce efficiently and remain in production (Esiobu et al. 2014).

The costs of medication and vaccination and of feed constitute substantial input costs in production (Esiobu et al. 2014). A number of studies have shown that feed costs constitute one the highest variable costs in the poultry production process (Esiobu et al. 2014; Nmadu et al. 2014; Ohajianya et al. 2013; Tijjani et al. 2012). Moreover, in recent years, there has been a

rapid increase in the price of feed. This constraint makes it difficult for farmers to purchase the quantity of feeds needed for efficient poultry production. Up to now, no solution has been found for this problem, which continues to hinder the growth of productivity in poultry production.

Another important economic factor is the fluctuating market prices for poultry products in Nigeria. The price for poultry meat and eggs does not vary proportionately with the rising feed prices and other costs confronting producers. This generates considerable uncertainty for poultry producers (Murtala 2004).

In addition, many small-scale farmers suffer from marketing problems since they do not always have market access. Poor infrastructure leaves farmers unable to reach out to market outlets. Therefore, they can only resort to farm gate sales, which reduces their marketing efficiency and marketing margin. The establishment of agricultural co-operative groups could help them achieve better market access and obtain credit from government and other financial institutions (Esiobu et al. 2014; Tijjani et al. 2012).

Social-Cultural Factors

Nigeria is the most populous country in sub-Saharan Africa. About two thirds of the population lives on less than US \$1 per day, and the unemployment rate in 2011 was approximately 24% (African Economic Outlook 2012).

Ohajianya et al. (2013) showed that poultry production is heavily influenced by the cost of hiring labor and the availability of well-qualified labor. Labor costs are among the major cost factors of poultry production and, due to low education levels, qualified labor is comparatively rare (Ohajianya et al. 2013). However, not every farmer is dependent on hired labor. If a family is large enough, labor requirements can be met by family members, which reduces the extra cost of hiring labor (Emaikwu et al. 2011). Household size therefore exerts considerable influence on the profitability of poultry production (Emaikwu et al. 2011; Esiobu et al. 2014).

The government has been implementing education reforms since 2006 to improve access to education, increasing the literacy rate for the 15-to-24 age group by about 15% between 2000 and 2008 alone. Nonetheless, education quality is generally low and varies considerably across the country. In 2010, only 25% of the Nigerian population had completed elementary schooling in English, mathematics, and at least three other subjects (African Economic Outlook 2012). Since illiteracy has been shown to be a major limitation to technology adoption in livestock and crop production, increasing the overall educational level would enable farmers to access relevant information that will stimulate their production (Aboki et al. 2013; Esiobu et al. 2014; Onubuogu et al. 2013; Onubuogu et al. 2014).

The average age in Nigeria is 19.1 years, and life expectancy at birth is about 53 (World Health Organization 2014). Onyebinama (2004) and Esiobu et al. (2014) found that farmers with more years of farming experience are more efficient, have better knowledge of climatic conditions and the market situation, and are therefore able to run their enterprises more profitably. Thus, the

success of poultry production is significantly influenced by age and farming experience (Aboki et al. 2013).

Despite this, health and education indicators in Nigeria remain weak; the country ranked 156 out of 187 countries in the UN Human Development Report in 2010. Improvement with regard to social welfare indicators has been much slower than might be expected, given the country's economic growth. Nevertheless, social conditions such as education have shown continual improvement in recent years (Byerlee et al. 2013).

Nigeria is composed of more than 250 ethnic groups. Furthermore, the population comprises two main religious groups: Muslims (50%) and Christians (40%). The remaining 10% consists of followers of indigenous religions. This highly varied mix of ethnicities and religious groups has led to violent conflicts and terrorism. These conflicts are exacerbated by the poor socioeconomic conditions, high unemployment, and widespread poverty. The Northern region has always been very fertile ground for religious activism, but in recent years the fundamentalist religious group Boko Haram has transformed into a terrorist organization, threatening the country's security and economic development (Ajayi 2012).

Good management practices are not currently in widespread use in poultry production (Nmadu et al. 2014; Ameji et al. 2012). Farmers are not generally knowledgeable about biosecurity, disease prevention, and modern husbandry practices, such as adequate feeding, housing and stocking to avoid overcrowding, proper disposal of wastes, cleaning, and disinfection.

While it has been shown that adopting innovations can bring about significant improvement in the productivity of poultry farming (Ameji et al. 2012; Aboki et al. 2013), the level of innovation adoption among family poultry producers is low in Nigeria. Nevertheless, innovation adoption is vital to reduce inefficiency. Contact with extension agents could help farmers access technological information and improve production and productivity through the efficient use of available resources and improved technology. The government of Nigeria purchases programs at the national, state, and community level to train farmers on improved and modern rearing and production methods (Aboki et al. 2013), but up to now, this has not had a significant effect on the majority of rural poultry farmers.

Technological Factors

For an agribusiness firm making the decision to invest in the poultry market in Nigeria, an important element of the technological environment is production type. Poultry is kept in two conventional systems: rural and commercial. Rural poultry systems are generally of small-scale, household, or grass-root tenure and receive little or no veterinary inputs.

Commercial poultry systems are industrialized and, therefore, based on large, dense, uniform stocks of modern poultry hybrids. They demand more capital, input, and technology and are the target market for foreign agribusiness firms. They house their animals in open-sided coops and employ the deep litter method. This design is cheaper than closed, environmentally controlled designs, but it exposes poultry to the vagaries of climate and weather with negative

consequences for the productivity and health of stock. Tunnel ventilation fans, foggers, and cooling pads as well as shade trees are used to provide relief from overheating (Adene and Oguntade 2006). Watering and feeding is often manual, using troughs or buckets. More advanced integrated holdings use automated feeding and watering systems.

Eggs are mainly collected manually from nest boxes filled with straw or wood shavings. To keep out infections and minimize the need for medication, all-in–all-out systems are implemented on most commercial poultry farms. There are good housing, feeding, and husbandry standards, which especially entail daily standard cleaning and disinfecting of the environment, utensils, stock, and handlers to reduce the bacterial load. Vaccine application for disease prevention is also well established in Nigeria's poultry industry (Adene and Oguntade 2006).

However, most of the poultry is still kept in rural production systems, which are characterized by insufficient hygiene management. Even though many farmers would like to stock hybrids, which gain weight more quickly and are more disease resistant, their high mortality rates make hybrid production less profitable (Esiobu et al. 2014).

Furthermore, farm and flock size correlates significantly to the output of poultry farms. Large farm size increases productivity as well as technical, allocative, and resource use efficiency (Esiobu et al. 2014). Many poultry farmers still work at a subsistence, small, or medium-sized level mainly due to limited financial resources (Aboki et al. 2013). The above-mentioned micro-credits might help encourage farmers to expand their operations and therefore become more productive (Aromolaran Adetayo et al. 2013).

Ecological Factors

Nigeria has highly diversified agroecological conditions, making it possible to produce a wide range of agricultural products. About 40% of the land is arable, creating major agricultural opportunities (PwC 2014), but only 50% of the country's cultivable agricultural land is under cultivation. This land is cultivated mainly by smallholders and traditional farmers, who use rudimentary production techniques (Manyong et al. 2005). In spite the huge land reserves, adequate land and space is not always available for poultry farmers, some of whom see their expansion limited by the current land market (Aromolaran Adetayo et al. 2013).

Another constraint on Nigeria's poultry sector is the persistent scarcity and high cost of feed inputs, mainly corn and soybean meal. The irregular and limited supply of all raw materials grown in Nigeria presents serious problems for local producers. As a result, the majority of feed millers in the country are turning to imported soft wheat to satisfy their energy requirements in feed ratios as an alternative to corn (USDA 2002).

Most of the corn and soybean used is imported, as well, since the quantity and quality of the corn and soybean cultivated in Nigeria does not meet the demands of the population. But still, the scarcity and high cost of the imported feed force producers to reformulate the poultry diet in favor of low quality substitutes such as peanut cake, cottonseed, and palm kernel meal (World Poultry 2013).

Nigeria's energy sector also performs poorly; 54% of Nigerian manufacturers consider unreliable access to power the greatest constraint on efficient production. Outmoded transmission facilities, natural gas supply shortages, and gas pipeline vandalism in the Niger Delta are the primary problems. Although the government has poured more than US \$10 billion into the sector in recent years, service has continued to decline over that period. Most businesses rely on generators, making Nigeria one of the most energy-intensive countries in the world.

Nevertheless, Nigeria has the largest natural gas reserves in Africa, so if infrastructure and security improve, this could be a great opportunity for future investment (PwC 2014).

Climatic conditions in Nigeria are characterized by hot, wet weather. Most of the year, temperatures are above 30 degrees Celsius. The amount of rainfall varies greatly by region. Areas along the coast and some eastern areas receive large amounts of precipitation, while the semi-arid Sahel region in the North has to cope with very little rain (Our Africa 2014). Irrigation systems cover only about 3% of the total cropland, which exposes agricultural production to high seasonal precipitation variability (Ayinde 2010). Excessive flooding during past decades has hurt farming in coastal areas, while desertification is ravaging the Sahel (Apata 2011).

Nigeria has water resources in excess of 20 million hectares of water bodies. Nevertheless, the country faces severe water shortages for domestic and agricultural purposes mainly due to its inadequate water redistribution infrastructure, which limits water supplies, particularly irrigation. Fresh water is often polluted by industrial and domestic waste and oil spillage. Furthermore, climate variability and increasing temperatures due to global warming result in additional water loss. Moreover, inadequate management of water resources, especially of large bodies of water and irrigation technologies, increase water consumption.

The federal Ministry of Water Resources has developed a strategy to overcome these challenges. Research studies are being conducted and the education of professionals in this area is being expedited. The situation in northern Nigeria is receiving special attention due to the need for irrigation from the highly limited water resources in this area. About US \$500 million have been invested to complete and rehabilitate existing irrigation schemes and dams in order to improve the irrigation water management system (FAO 2013).

Legal Factors

Because the agricultural sector is crucial for economic growth and the reduction of poverty, the Nigerian government is promoting investment in this sector. Companies engaged in agriculture-related businesses are not liable for minimum tax. Furthermore, companies entering the market are exempted from income tax for the first three years with a possible two-year extension.

There is no restriction on the capital allowances that can be claimed by such companies up to 66% of assessable profit, and the interest earned from agricultural loans is tax exempt, provided the moratorium is not less than 18 months and the rate of interest is not more than the base lending rate at the time of loan (KPMG 2013).

The surging food demand in sub-Saharan Africa has pushed food imports to a record high. In 2011 the region's total agricultural imports from all suppliers reached US \$43.6 billion. Wheat was Nigeria's largest single import, reaching nearly US \$6 billion. In fact, Nigeria is the main importer of wheat in sub-Saharan Africa. However, as noted above, the government has also passed certain import prohibitions, such as poultry, to safeguard local production. (Nicely 2013).

To promote the export of agricultural goods, the government has decided to minimize administrative controls on external trade through trade liberalization and to promote competitive international trade. Nigeria is a member of the World Trade Organization and abides by agreements reached on international trade (FAO 2006). Continuing low prices on world markets have had a discouraging effect, and, as a result, agricultural exports (including manufactured food and agricultural products) have decreased in recent decades. This and the fact that Nigerian poultry production is intended to meet the needs of the Nigerian population mean that exports play a minor role in this particular agribusiness subsector (Encyclopedia of the Nations 2014).

Results of the SWOT Analysis

All the above-named factors influence the investment decision of agribusiness companies in the Nigerian poultry market and have been sorted into a SWOT matrix depending on whether they represent strengths, weaknesses, opportunities, or threats (Figure 1). A PESTEL factor is categorized as strength if it has the potential to positively influence a market entrant's business but as a weakness if its effect is likely to be negative. Furthermore, a factor creates an opportunity if its influence is expected to stay favorable or to improve in the future; it is considered a threat if no improvement or even deterioration is expected in the future.

The SWOT analysis shows that most of the external factors are categorized as present weaknesses but also as future opportunities. This means that their current state is unfavorable but that their development shows great promise for future improvement. Twenty-eight factors can clearly be assigned to this quadrant. In the strengths–opportunities quadrant, there are 10 factors. These factors already constitute strengths and therefore already have the potential to attract foreign investors into poultry production. Seven factors could not be definitively classified and straddle the line between strengths and weaknesses. These factors are well on the way to becoming strengths but still have some weaknesses or need more consistent practical implementation.

In the weaknesses–threats quadrant, there are only two external factors. Another three factors could not be clearly classified and are therefore located between the weaknesses–opportunities and the weaknesses–threats quadrants. No external factors were assigned to the quadrants strengths–threats or weaknesses–threats, but one straddles the line between them. The factor governmental stability could not be placed in a specific category and therefore appears in the center of the SWOT matrix.

SWOT Analysis		Present Situation			
		Strengths		Weaknesses	
Future Situation	Opportunities	Agricultural policies	Automation		Age structure
		Economic growth	Breeds		Capital base
			Cooperatives		Day-old chicks
		Export	Gross domestic product		Disease / parasites
		Farming experience		Economic efficiency	Education
		Household size		Extension agency	Employment rate
				Husband systems	Farm size
		Importance of agricultural sector	Infrastructure		Feed
			Labor		Flock size
			Land availability		Income per
		Micro credits	Inflation		
	Governmental stability		Innovation		
		Technical efficiency	Input costs		
	Taxes		Management		
		Vaccination	Marketing		
		Governmental structure	Market price		
		Energy	Medication		
		Water	Mortality rate		
		Health	Storage facilities		
			Poverty		
			Corruption		
		Climatic conditions	Religious Influences		
	Threats				

Figure 1. SWOT Analysis of the Nigerian Poultry Market

Discussion

The PESTEL and SWOT analyses show that the market for poultry products in Nigeria cannot be assessed as clearly positive or negative but reveals a mixed picture. It is often the case in emerging and developing economies that there are some promising aspects, such as favorable agricultural policies, strong GDP growth, and growing demand, but also challenges, such as poverty, high unemployment, and corruption. Agribusiness firms internationalizing their business activities often perceive these weaknesses as major impediments to the successful implementation of their internationalization strategies (Theuvsen et al. 2010).

Many environmental factors influencing a market situation constantly change over time. Unforeseeable future events always lead to significant uncertainty for investors. The SWOT analysis shows that there are many factors that currently represent strengths and may create even more promising opportunities in the near future. These factors are primarily of an economic, political, sociocultural, or legal nature. Economic and population growth will lead to high demand for poultry products (Abdullah et al. 2011; Steinfeld 2003). The government has reacted to this and is attempting to support private investment through the liberalization of agricultural policies. Taxes on investments in the agribusiness sector are often reduced or entirely suspended, while exports (with a few exceptions) are strongly encouraged through various incentives (Nigerian Investment Promotion Commission 2014). Participation in farmer co-operatives, extension and training facilities for farmers, and availability of micro-credits for smallholders are already supported by the government but need even more widespread implementation in the near future (Aboki et al. 2013).

All these factors are important for market development and encourage the market entry of international investors. Prospective changes in factors that are currently perceived as weaknesses provide huge opportunities for the poultry market in Nigeria. These weaknesses are the high poverty rate, high unemployment, low education levels, and health problems (African Economic Outlook 2012; World Health Organization 2014; Byerlee et al. 2013). Many factors that are directly linked to poultry production currently remain weak, but are well on the way to improvement in coming years. Even though the technological development of many production factors lags behind international standards, poultry production is already highly profitable for many farmers in Nigeria (Aboki et al. 2013; Nmadu et al. 2014; Ohajianya et al. 2013).

Difficulty in improving the status quo and the risk of unforeseen changes, for instance, with regard to important policies, the political framework, and internal security, require careful risk management on the part of international investors. One way to mitigate the risks a multinational company faces is regional diversification. Agribusiness firms also need to look for local strategies that could help reduce their exposure to risks; such strategies include collaboration with local investors, who have a better understanding of the local PESTEL situation, know how to deal with local authorities, and contribute a dense social network (Mhlanga 2010).

Most poultry production is done on a rural, backyard basis. Efforts are underway to commercialize the poultry sector and increase its efficiency (Adene and Oguntade 2006). Some of the weaknesses have already been addressed, including major work on infrastructure, the use

of modern breeds, and the implementation of a democratic federal government. These factors have been significantly improved in recent years but need further advancement if they are to be converted into strengths that can help attract foreign direct investments into the Nigerian agribusiness sector.

Some factors represent weaknesses at this point in time, and it cannot be clearly foreseen whether these weaknesses will turn into opportunities or become major threats in the near future. This is especially true of the health status of the population and the reliability of the energy and water supplies (PwC 2014). Therefore, these factors will need to be reevaluated in the future to see whether they become opportunities or threats for the Nigerian poultry market.

Two factors currently present major problems for the country and have the potential to cause major threats. First of all, Nigeria is still one of the most corrupt countries in the world, meaning that revenues are not handed down to the population, significantly slowing growth in their prosperity (Falola and Heaton 2008; Bergstresser 2010; Bach 2006). For foreign companies, corruption can create problems, especially when they are first trying to enter the market. In this case, local acceptance of corruption often comes into conflict with governance and compliance rules in the agribusiness firms' home countries or with the expectations of nongovernmental organizations and the wider public concerning compliance with good management practices (Mhlanga 2010). The second major risk stems from the wide variety of religious and ethnic groups, which continue to represent a huge potential for conflict (Ajayi 2012). In particular, the activities of the Boko Haram terrorist network create a severe security risk for the whole country and for foreign investors, as well. At present, there are no comprehensive solutions for the abatement of corruption and terrorism, making them the most restricting factors for market investment.

Nonetheless, even if there are significant restrictions on a problem-free market entry for investors from foreign countries, the SWOT matrix clearly illustrates that most of the external factors have the potential to fuel an expansion of the Nigerian poultry market and make it more attractive for private investors. In the areas of feed, breeding, husbandry systems, automation of workflows, hygiene, medication, and vaccination, Nigeria depends predominantly on products from developed countries. Furthermore, specialized knowledge is needed to successfully implement new technologies and production methods (Adene and Oguntade 2006). These core areas constitute potential entry opportunities for agribusiness companies from developed countries.

Conclusions and Implications

This paper has provided a detailed overview of the conditions of poultry production in Nigeria. The PESTEL analysis describes 52 political, economic, sociocultural, technical, ecological and legal external factors that influence the Nigerian poultry market and therefore play a decisive role in investment decisions.

These factors were analyzed and sorted into the SWOT matrix categories of present strengths and weaknesses as well as future opportunities and threats. It has become obvious that the

Nigerian poultry sector offers potential investors various possibilities when entering the market. Nevertheless, there are also risks, especially because of corruption and terrorism, which carry unforeseeable implications for Nigeria, the Nigerian poultry market and private investors. The unsteady security situation should be given special consideration when making decisions about investing in this country (Ajayi 2012).

A PESTEL analysis in combination with a modified SWOT analysis constitutes a suitable methodology for acquiring an overview of relevant information about a potential market and for analyzing the opportunities and threats of market entry. However, the database for an in-depth analysis of the Nigerian poultry market is partly obscure, and the procurement of relevant information is very time consuming. The more precise and accurate the data that are fed into the PESTEL and SWOT analyses, the more specific and reliable the recommendations for investment decisions will be. In this paper, it was possible to collect the most important factors that influence a market entry decision despite the various obstacles that had to be overcome. Nevertheless, the SWOT analysis could be even more finely tuned if more information were publicly available. Furthermore, since its external conditions are constantly changing, the Nigerian poultry market should be reexamined regularly. Political and legal factors in particular may change in the short term and should be reexamined on a case-by-case basis.

Nevertheless, the results of these preliminary PESTEL and SWOT analyses already show interesting implications for agribusiness companies looking for new business opportunities. The results parallel earlier findings, which showed that African countries have increasingly come into the focus of European and other Western agribusiness firms (Theuvsen et al. 2010; Connolly 2014; von Rooyen 2014).

The sub-Saharan region constitutes a part of the world where economic and population growth is high. As a result, these countries offer interesting investment opportunities for private investors all over the world. However, political, economic, social, technical, ecological, and legal conditions differ significantly among these countries. It would be interesting to conduct a comparison of all African countries where poultry production has been increasing, so that investment decisions might be made on the basis of these expanded data and a cross-country comparison.

Finally, the study of best practice examples from multinational companies successfully serving African markets could generate empirical insights into successful designs of future market entries even better adapted to prevailing circumstances. These will most likely be found in other agribusiness subsectors where experienced investors have already successfully entered various African markets and established local subsidiaries, such as the brewing industry (Klein and Woecke 2007).

References

- Abdullah, R.B., W.K. Wan Embong and H.H. Soh. 2011. Biotechnology in animal production in developing countries. Proceedings of the 2nd International Conference on Agricultural and Animal Science, Singapore, November 25-27, 2011.
- Aboki, E., A.A.U. Jongur and J.I. Onu. 2013. Productivity and Technical Efficiency of Family Poultry Production in Kurmi local Government Area of Taraba State, Nigeria. *Journal of Agriculture and Sustainability* 4(1):52-66.
- Aboul-Naga, A.M. and A.R. Elbeltagy. 2007. Animal biotechnology: Applications and implications in the near East and North Africa (NENA) countries. <http://aaaid.ae/pdf/magazine5/Ani%20Biotechnology%2086-93.pdf> [accessed July 2, 2014].
- Adene, D.F. and A.E. Oguntade. 2006. The structure and importance of the commercial and village-based poultry systems in Nigeria. FAO.
- African Economic Outlook. 2012. Nigeria 2012. <http://www.africaneconomicoutlook.org/fileadmin/uploads/aeo/PDF/Nigeria%20Full%20PDF%20Country%20Note.pdf> [assessed August 24, 2014].
- Agbaje, A. 2004. Nigeria: Prospects for the fourth Republic. In *Democratic Reform in Africa*, edited by E. Gyimah-Boadie, 201-233. London, UK: Lynne Rienner Publishers.
- Ajayi, A.I. 2012. 'Boko Haram' and terrorism in Nigeria: Exploratory and explanatory notes. *Global Advanced Research Journal* 1(5):103-107.
- Akanni, I.A. 2007. Effect of Micro-Finance on Small Scale Poultry business in South Western Nigeria. *Emirate Journal of Food and Agriculture* 19(2):38-47.
- Alabi, R.A., A.O. Isah. 2002. Poultry Production Constraints. The case of Esan West Local Government Area of Edo State, Nigeria. *African Journal of Livestock Extension* 1(1): 58-61.
- Amar-Klemesu, M. and D. Maxwell. 2000. Urban Agriculture as an asset strategy: Supplementing income and diets in growing cities. In *Growing cities, growing food, urban agriculture on the policy agenda. A reader on urban agriculture 2000*, edited by N. Bakker, M. Dubbeling, S. Gundel, U. Sable – Koschella and H. De Zeeuw, 183-208.
- Almas, L.K. and O. Obeme. 2014. Agribusiness Model in Africa: A case study of Zambeef Products PLC. *International Food and Agribusiness Management Review* 17 (Special Issue B): 111-116.

- Ameji, O.N., P.A. Abdu, L. Sa'idu and M. Isa-Ochepa. 2012. Knowledge of poultry disease, biosecurity and husbandry practices among stakeholders in poultry production in Kogi State, Nigeria. *Sokoto Journal of Veterinary Science* 10(2): 26-31.
- Apata, T.G. 2011. Effects of Global Climate Change on Nigerian Agriculture: An Empirical Analysis. *CBN Journal of Applied Statistics* 2(1): 31-50.
- Aromolaran Adetayo, K., I.O. Ademiluyi and O.J. Itebu. 2013. Challenges of Small Poultry Farms in Layer Production in Ibadan Oyo State Nigeria. *Global Journal of Science Frontier Research Agriculture and Veterinary Science* 13(2): 4-11.
- Ayinde, O.E. 2010. Empirical Analysis of Agricultural Production and Climate Change: A Case Study of Nigeria. *Journal of Sustainable Agriculture in Africa* 12(6): 275-283.
- Bangbose, A.M., R.M. Sani, M. Sanusi and U.S. Rufum. 1998. Major constraints of poultry production in Bauchi Metropolis. Proceedings of 3rd Annual ASAN Conference, Ikeja, Lagos.
- Banch, D.C. 2006. Inching towards a country without a state: Prebendalism, violence and state betrayal in Nigeria. In *Big African States*, edited by Clapham, C., J. Herbst and G. Mills, 63-96. Johannesburg, South Africa: Wits University Press.
- Bergstresser, H. 2010. *Nigeria: Macht und Ohnmacht am Golf von Guinea*. Frankfurt, Germany: Brandes & Apsel.
- Byerlee, D., G. F. Andres, A. Giertz and V. Palmade. 2013. Growing Africa: Unlocking the potential of Agribusiness. AFTFP/AFTAI. The World Bank. <http://documents.worldbank.org/curated/en/docsearch?query=75663> [accessed March 23, 2015].
- Connolly, A. J. 2014. A Glimpse into the Future: A Lens through Which to Consider 'Africa's Rising'. *International Food and Agribusiness Management Review* 17(Special Issue B): 9-18.
- Costa, N.D. 2009. Climate change: Implications for water utilization in animal agriculture and poultry, in particular. Proceedings of the 20th Annual Australian Poultry Science Symposium, Sydney, Australia, February.
- Daghir, N.J. 2009. Poultry production in hot climates: Book reviews. *Journal of Applied Poultry Research* 18(1): 131-134.
- Delgado, C.L. and C.A. Narrod. 2002. Impact of changing market forces and policies on structural change in the livestock industries of selected fast growing developing countries. IFPRI. FAO. <http://www.fao.org/WAIRDOCS/LEAD/X6115E/x6115e00.htm> (accessed August 13, 2014).

- Dinham, B. and C. Hines. 1984. *Agribusiness in Africa. A study of the impact of big business on Africa's food and agricultural production.* Trenton, N.J.: Africa World Press.
- Dyson, R.G. 2004. Strategic development and SWOT analysis at the University of Warwick. *European Journal of Operational Research* 152: 631-640.
- Emaikwu, K.K., D.O. Chikwendu and A.S. Sani. 2011. Determinants of flock size in broiler production in Kanduna State of Nigeria. *Journal of Agricultural Extension and Rural Development* 3(11): 202-211.
- Encyclopedia of the nations. 2014. Nigeria-Agriculture. <http://www.nationsencyclopedia.com/Africa/Nigeria-AGRICULTURE.html> [accessed July 12, 2014].
- Esiobu, N.S., G.C. Onubogu and V.B.N. Okoli. 2014. Determinants of Income from Poultry Egg Production in Imo State, Nigeria: An Econometric Model Approach. *Global Advanced Journal of Agricultural Science* 3(7): 186-199.
- Falola, T. and M. Heaton. 2008. *A History of Nigeria.* Cambridge, England: Cambridge University Press.
- FAO. 2010. *Agribusiness Handbook: Poultry meat and Eggs.* Investment Centre Division. FAO. Rome, Italy.
- FAO. 2011. Mapping supply and demand for animal-source foods to 2030. Animal production and health working paper No. 2. <http://www.fao.org/docrep/014/i2425e/i2425e00.pdf> [accessed July 12, 2015].
- FAO. 2013. *FAO Country Programming Framework (CPF) Federal Republic of Nigeria.* ftp://ftp.fao.org/TC/CPF/Countries/Nigeria/CPF_Nigeria_2013_2017.pdf [accessed July 2, 2014].
- Farrell, D. 2010. The role of poultry in human nutrition. Poultry development review. FAO. <http://www.fao.org/docrep/013/al709e/al709e00.pdf> [accessed August 23, 2014].
- Gassner, M. 2014. PESTEL-Strategie zur Beherrschung externer Risiken? http://www.symposion.de/kapitel33630101_WERK7001009.html#PESTEL_-_Strategie_zur_Beherrschung_externer_Risiken%3F [accessed June 24, 2014].
- Hill, T. and R. Westbrook. 1997. SWOT Analysis: It's Time for a Product Recall. *Long Range Planning* 30(1): 46-52.
- International Monetary Fund. *Regional Economic Outlook.* 2014. April. <https://www.imf.org/external/pubs/ft/reo/2014/afr/eng/sreo0414.pdf> [accessed September 12, 2014].

- Jabbar, M., D. Baker and M. Fadiga. 2011. Animal-source foods in the developing world: Demand for quality and safety. Livestock Exchange Issue Brief 16. International Livestock Research Institute (ILRI).
- Johnson, G., K. Scholes, R. Whittington. 2011. Strategisches Management. Eine Einführung. Analyse, Entscheidung und Umsetzung. Pearson Studium, Munich Germany.
- Klein, S. and A. Woecke. 2007. Emerging Global Contenders: The South African Experience. *Journal of International Management* 13(3): 319-337.
- KPMG. 2013. Nigeria Fiscal Guide 2012/13. http://www.kpmg.com/Africa/en/KPMG-in-Africa/Documents/MC9197_Fiscal%20Guide_Nigeria.pdf [accessed June 25, 2014].
- Kryger, K.N., K.A. Thomsen, M.A. Whyte and M. Dissing. 2010. Smallholder poultry production - Livelihoods, food security and sociocultural significance. Smallholder Poultry Production. FAO. <http://www.fao.org/docrep/013/al674e/al674e00.pdf> [accessed August 22, 2014].
- Ladele, A.A.. 2002. Beyond training and visit: A sustainable extension approach from Africa through phased participatory extension education system. Proceedings of the 5th biennial African Crop Science Conference, Lagos, Nigeria, October. 805-810.
- Larsen, K., R. Kim, L. Theus. 2009. Agribusiness and Innovation Systems in Africa. World Bank, Washington D.C.
- Liwack, J. 2013. Nigeria Economic Report. No. 1. <http://documents.worldbank.org/curated/en/2013/05/17708026/nigeria-economic-report> [accessed March 23, 2015].
- Manyong, V.M., A. Ikpi, J.K. Olayemi, S.A. Yusuf, B.T. Omonona, V. Okoruwa and F.S. Idachaba. 2005. Agriculture in Nigeria: Identifying opportunities for increased commercialization and investment. IITA.
- Mengesha, M. 2011. Climate change and the preference of rearing chicken constraints and traditional management practices in Jamma District, South Wollo, Ethiopia. *Journal Livestock Research Rural Development* 23(2).
- Mhlanga, N. 2010. Private sector investment in sub-Saharan Africa. Agricultural Management, Marketing and Finance Working Document 27. FAO. <http://www.fao.org/docrep/016/k7443e/k7443e.pdf> [accessed September 22, 2014].
- Murtala, N., U. Hamna, S. Abdurahaman M.Y. Qwaram, O. Suleiman. 2004. Cost and Return Analysis of Poultry Eggs Marketing: A Case Study of Bauchi State. Paper presented at the Annual Conference of the Nigerian Association of Agricultural Economics Zaria, Nigeria, November.

- Nicely, Russ. 2013. Nigeria Food Processing Ingredients. Nigeria Food Processing Ingredients Market (2013). USDA Foreign Agricultural Service. Gain Report.
- Nigerian Investment Promotion Commission. 2014. Agriculture. The New Nigerian Agricultural Policy. [ww.nipc.gov.ng/opportunities.html](http://www.nipc.gov.ng/opportunities.html) [accessed July 20, 2014].
- Nmadu, J.N., I.O. Ogidan and R.A. Omolehin. 2014. Profitability and Resource Use Efficiency of Poultry Egg Production in Abuja, Nigeria. *Kasetsart Journal (Social Sciences)* 35: 134-146.
- Obi, C.I. 2003. Game production: An alternative beef cattle production in Southern Nigeria. *Academic Forum* 4:36-40.
- Ohajinya, D.O., J.U. Mgbada, P.N. Onu, C.O. Enyia, A. Henri-Ukoha, N.G. Ben-Chendo and C.C. Godson-Ibeji. 2013. Technical and Economic Efficiencies in Poultry Production in Imo State, Nigeria. *American Journal of Experimental Agriculture* 3(4): 927-938.
- Oji-Okoro, I. 2011. Analysis of the contribution of agricultural sector on the Nigerian economic development. *World Review of Business Research* (1):191-200.
- Ojo, S.O. 2003. Productivity and Technical Efficiency of Poultry Egg Production in Nigeria. *International Journal of Poultry Science* 2(6): 459-464.
- Onubuogo, G.C., S.Chidebelu and E.C. Eboh. 2013. Enterprise Type, Size and Allocative Efficiency of Broiler Production in Imo State, Nigeria. *International Journal of Applied Resources and Technologies* 2(6): 10-19.
- Onubuogu, G.C., N.S. Esiobu, C.S. Nwosu, C.N. Okereke. 2014. Resource use efficiency of smallholder cassava farmers in Owerri Agricultural Zone, Imo State, Nigeria. *Scholarly Journal of Agricultural Science* 7(8): 142-152.
- Onyebinama, U.A.U.. 2004. *Farm Business Management for Smallholder Farm Firms in Nigeria*. Nigeria: Owerri Alphabet Nigeria Publishers.
- Oram, Julian. 2012. A New Direction for Agriculture. Greenpeace. <http://www.greenpeace.org/international/Global/international/publications/RioPlus20/New-Direction-for-Agriculture.pdf> [accessed August 26, 2014].
- Our Africa. 2014. Climate and Agriculture. <http://www.our-africa.org/nigeria/climate-agriculture> [accessed August 24, 2014].
- Phillip, D., E., Nkonya, J. Pender and O. A. Oni. 2009. Constraints to Increasing Agricultural Productivity in Nigeria: A Review. Nigeria Strategy Support Program (NSSP). Background Paper No NSSP 006, September.

- PwC. 2014. Future prospects in Africa for the transportation & logistics industry. Africa gearing up. http://www.pwc.com/en_M1/m1/publications/africa_gearing_up_-_transport_and_logistics_industry-web.pdf [accessed July 23, 2014].
- Rotschild, J. 2002. Nigeria Poultry and Products Poultry Update. Gain Report #NI2025.
- Sanghvi, S., R. Simons and R. Uchoa. 2014. Four lessons for transforming African agriculture. Chicago and London: McKinsey&Company.
- Speedy, A.W. 2003. Global production and consumption of animal source foods. *Journal of Nutrition* 133(11): 4048-4053.
- Steinfeld, H. 2003. Economic constraints on production and consumption of animal source foods for nutrition in developing countries. *Journal of Nutrition* 133(11): 4054-4061.
- Team FME. 2013. PESTLE Analysis. Strategy Skills. <http://www.free-management-ebooks.com/dldebk-pdf/fme-pestle-analysis.pdf> [accessed June 23, 2014].
- Theuvsen, L., C. Janze, M. Heyder. 2010. Agribusiness in Germany 2010. On the Way to New Markets. Hanover: Ernst&Young GmbH.
- Thornton, P.K. 2010. Livestock production: Recent trends, future prospects. *Philosophical Transaction of the Royal Society London B: Biological Science* 365(1554): 2853-2867.
- Tijjani, H., B.A. Tijani, A.N. Tijjani and M.A. Sadiq. 2012. Economic analysis of poultry egg production in Maiduguri and environs of Borno State, Nigeria. *Scholarly Journal of Agricultural Science* 2(12): 319-324.
- Transparency International. 2014. Corruption Perceptions Index 2014. <https://www.transparency.org/cpi2014/results#myAnchor1> [accessed July 15, 2015]
- Udoh, E.J. and N.A. Etim. 2009. Measurement of Farm Level Efficiency of Broiler Production in Uyo, Akwa Ibom State, Nigeria. *World Journal of Agricultural Science* 5(S): 832-836.
- United Nations Economic Commission for Africa. 2007. Africa Review Report on Agriculture and Rural Development. United Nations Economic Commission for Africa, Addis Ababa.
- United States Department of Agriculture (USDA). 2013. International Egg and Poultry Report.
- USDA. 1999. Summary, Layers and Egg Production. Economic Research Services/ USDA India poultry sector Development and prospect/WRS-04-03.
- USDA. 2014. Grain and Feed Annual Report. http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Grain%20and%20Feed%20Annual_Lagos_Nigeria_3-13-2014.pdf [accessed August 21, 2014].

- Van der Sluis, W. 2007. Intensive poultry production. *World Poultry* 23(12): 28-30.
- Weihrich, H. 1982. The TOWS Matrix: A Tool for Situational Analysis. *Long Range Planning* 15(2): 54-66.
- WHO/FAO. 2003. Diet, nutrition and the prevention of chronic diseases: WHO technical Report Series 916. Report of a Joint WHO/FAO Expert Consultation, Geneva.
- Wiggins, S. and S. Keats. 2013. Leaping and Learning: Linking smallholders to markets in Africa. Agriculture for Impact. Imperial College London and Overseas Development Institute.
- World Bank. 2007a. World Bank assistance to Agriculture in Sub-Saharan Africa: An IEG Review. The World Bank, Washington D.C.
- World Bank. 2007b. World Development report 2008: Agriculture for Development. The World Bank, Washington D.C.
- World Bank. 2014a. World Development Indicators Nigeria. <http://databank.worldbank.org/data/views/reports/tableview.aspx> (accessed August 23, 2014).
- World Bank. 2014b. GDP per Capita. <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD> (accessed September 2, 2014).
- World Health Organization. 2010. World Health Statistics.
- World Health Organization. 2014. WHO African Region: Nigeria. <http://www.who.int/countries/nga/en/> [accessed August 22, 2014].
- World Poultry. 2013. Feed Prices stunt Poultry industry growth in Nigeria. <http://www.worldpoultry.net/Broilers/Markets--Trade/2013/3/Feed-prices-stunt-poultry-industry-growth-in-Nigeria-1190867W/> [accessed March 20, 2015].
- Zingel, H. 2009. Strategisches Controlling: Das Grundkonzept der PESTEL-Analyse. <http://www.bwl24.net/blog/2009/05/10/strategisches-controlling-das-grundkonzept-der-pestel-analyse/> [accessed July 15, 2015].

