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FOOD PROCESSING IN GHANA: TRENDS, CONSTRAINTS, AND OPPORTUNITIES

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As a rapidly-urbanizing, lower middle-income country, Ghana is experiencing diet changes that are spurring a growing demand for processed foods. Recent surveys show significant presence of processed goods in retail shops, including milled rice, processed fruits and vegetables, and frozen meats, but only about a fifth of these products are processed locally. The main reason processing has failed to take off is not lack of policy: Ghana has always been interested in processing of tomatoes, has established a presidential initiative for processing cassava, and aims to process half of the cocoa produced locally. Rather, the main constraint to a vibrant processing sector is the low production and productivity, high cost, and poor quality of local raw materials. This brief describes these key constraints for growing a thriving domestic food processing sector and highlights some opportunities for growth[1].

INTRODUCTION

Ghana's changing demographics set the context for the observed changes in its food systems and resulting new demand for processed foods. These changes are consistent with those observed in other developing countries (Reardon et al. 2015; Tschirley et al. 2015). With an urban population share of 54 percent, Ghana is significantly more urbanized than most of Africa south of the Sahara, which has an urban population share of 37 percent. Due to time demands and growing preferences for convenience, Ghana's urban population is moving away from consuming meals requiring long preparation and cooking times and towards already-processed foods (Hollinger and Staatz 2015). Demand for processed foods should also be expected to increase in parallel with Ghana's growing middle-income status[2], as higher incomes lead to greater dietary diversity (Reardon, Henson, and Gulati 2010). The success of Ghana's agro-processing sector will be seen in part through its ability to take advantage of this observed rising demand for processed food as a source for significant growth in domestic agro-processing.

Policymakers in Ghana endorse agro-processing as an important component for transforming the country's agriculture-based economy into an industrial powerhouse. As expressed in policy statements, agro-processing is expected to expand produce markets for farmers, increase value addition for agriculture, and create employment in both agriculture and industry. A vibrant agro-processing sector with strong agriculture-industry linkages is one of the key goals of the second phase of Ghana's Shared Growth and Development Agenda (GSGDA II) for 2014-2017 (NDPC 2010)[3]. This can indeed be justified as the right approach, since models predict that economic transformation in Ghana, as in other African countries, will require a recognition of the importance of agriculture as a driver of growth, improvements in agricultural productivity, and expansion in both formal and informal manufacturing led by the private sector (Breisinger and Diao 2008). However, the challenge of how best to put this transformation agenda into practice has not been resolved.

Successive Ghanaian governments have practiced industrial policies in some form to direct the economy away from primary production in agriculture towards a vibrant food processing industry. Earlier policies were built upon state-run enterprises (Ackah, Adjasi, and Turkson 2014), but these failed largely due to the inefficiencies associated with state intervention. Recent policies recognize the need for private-sector led transformation, but, against the backdrop of arguments that the domestic sector is weak, have continued to provide state support for specific industries, such as tomato and cassava processing. While policies and programs focus on improving processing technology and capacity, less attention has been paid to the fact that primary agricultural activities do not have the high productivity levels required to feed agro-processing firms with adequate and reliable supplies of raw material.

HISTORY OF AGRO-PROCESSING IN GHANA

Much of the agro-processing in both the past and the present has taken place at the small-scale rural level, despite various attempts by government and private sector to promote it on an industrial scale. After independence in 1957, agro-processing in Ghana was dominated by state-owned enterprises under the Nkrumah government's import-substitution strategy (Ackah, Adjasi, and Turkson 2014). These included major factories for processing cocoa, sugar, tomatoes, meat, and canned fruits (Owoo and Lambon-Quayefio 2015). However, most of these factories were unproductive and poorly managed, which caused them eventually to be shut down or sold off to private investors during the structural adjustment era.

After liberalization and privatization, foreign companies and a few large Ghanaian firms began to dominate domestic agro-processing. The manufacturing sector, of which food processing is a major component, experienced rapid growth for five years after the Economic Recovery Programme was adopted in 1983. The partial liberalization of Ghana's cocoa sector saw the entry into Ghana's agro-processing sector of major players such as ADM, Cadbury, and Cargill (Kolavalli et al. 2012), all of which process cocoa to a semi-finished state in Ghana. Much of the palm oil sector is dominated by formerly government-owned

[1] The authors gratefully acknowledge Shashi Kolavalli and Todd Benson for comments on earlier drafts and Seth Asante for research assistance. We take full responsibility for any remaining errors.

[2] Per capita nominal gross domestic product (GDP) increased from about US$ 1,100 in 2009 to more than US$ 1,400 in 2014.

[3] This is a long-standing policy goal. The first phase of the GSGDA 2010-2013 (NDPC 2010) also emphasized the need to accelerate manufacturing by linking agriculture and industry.

firms acquired by private investors. Other major food processors, such as flour mills, canneries, and beverage manufacturers are mostly private firms with a mix of local and foreign owners (Sutton and Kpentey 2012).

However, in recent years, the manufacturing sector has been declining in its importance to the Ghanaian economy relative to extractive industries and informal services (Ackah, Adjasi, and Turkson 2014). Between 2006 and 2015, the manufacturing sector's share of GDP declined from 10.2 to 4.7 percent (GSS 2015). Meanwhile, the real value of processed food imports grew rapidly by 13 percent per annum from 2000 to 2013, which constituted 81 percent of total food imports over that period (FAO 2016). Nevertheless, the state continues to be heavily involved in the Ghanaian agro-processing sector. Major privatized firms in which the government is a significant shareholder include the Cocoa Processing Company (CPC), Cowbell, and Fan Milk. There also have been attempts or plans are being developed to revive many of the defunct Nkrumah-era factories, such as the Pwalugu tomato factory and the Komenda sugar factory.

KEY RESEARCH FINDINGS

This section is divided into three parts. First, we provide recent evidence on the performance of domestic agro-processing in Ghana. Secondly, we suggest some underlying lessons on the constraints to the expansion of domestic agro-processing. Lastly, we identify some emerging opportunities for the sector.

Competitiveness of agro-processing

As a measure of Ghana's progress in agro-processing, Ghanaian brands account for between 20 and 30 percent of processed and packaged food products in Accra and other urban centers (Andam et al. 2015). Except for wheat and barley products, most of the imported products are processed from crops that are widely grown in Ghana. Some pertinent examples are found with tomato and poultry. In a GSSP field survey in 2016, only between 6 and 14 percent of the processed tomato products in the large urban markets of Kumasi, Sekondi-Takoradi, and Tamale were manufactured domestically. By most accounts, domestic poultry production in Ghana now accounts for less than 10 percent of the country's poultry meat consumption (USDA 2013). In an inventory of major markets, only one out of 24 packaged chicken products identified was produced by a domestic firm. Killebrew and Plotnick (2010), citing Eurostat data, estimate that imports to Ghana of frozen chicken from the European Union (EU) alone increased by over 450 percent over ten years (2000-2010). Ghana is the third largest chicken meat importer in Africa south of the Sahara.[4]

These findings hold across a range of food categories, including milled grain products (e.g., rice) and processed starches (e.g., plantains and cassava products). This result is also seen across a range of store types from open-air markets to chain supermarkets, suggesting that Ghanaians across all income groups are in the market for processed food items. These findings indicate that there may be opportunities for agricultural value addition through domestic food processing. These agro-processing opportunities are becoming more apparent as Ghana is undergoing an urbanization process that is resulting in an expanding middle class with changing diets that are likely to enlarge markets for processed food. An ensuing question is whether domestic agro-processing can take advantage of these expanding markets in line with policymakers' goals of modernizing Ghanaian agriculture. Doing so has proven not to be a straightforward process. The next section examines several factors that account for the slow growth of domestic agro-processing.

Reasons for failures in agro-processing

Policymakers often wonder why Ghana is importing processed products of crops produced domestically, or in the case of chicken meat, why the local poultry industry cannot compete with frozen imports. The research findings summarized below offer some underlying considerations.

Low productivity and high cost of production: Ghanaian tomatoes, for example, cannot compete with imports because of farmers' high unit cost of production resulting from low yields (10 mt/ha in Ghana compared to 40 mt/ha in major tomato processing countries). According to Robinson and Kolavalli (2010) farmers may need to triple their yields in order to supply processors with tomatoes at a competitive price. Likewise for poultry, the cost of processing is around 40 percent higher than in the EU due to the high cost of live birds. Behind this is the high cost of feed, much of which comes from imported yellow maize. While poultry farmers in countries such as Brazil and the United States face lower production costs due to significantly higher maize and soybean productivity levels (Davis et al. 2013), Ghanaian feed millers report that the high cost and unreliable supply of these commodities are key factors driving the high domestic cost of poultry feed.[5]

Issues of production costs often lead back to failures in agricultural input markets. For example, the majority of maize farmers are using outdated, low-yielding varieties, and, while the fertilizer subsidy has increased adoption of fertilizer, farmers are still applying it at below the recommended rates. Similarly, while rice production is mostly profitable, yields are still quite low and production is only enough to supply about 40 percent of the processing capacity of the major mills in Ghana (BMGF 2012). This is largely a result of lack of irrigation, low availability or use of certified seeds, high cost of mechanization, and insufficient use of improved agricultural practices (Ragasa and Chapoto 2016).

Scarcity of preferred varieties and poor quality: Tomato farmers are not growing the right varieties of the necessary quality in sufficient quantities for profitable commercial processing of tomatoes in Ghana (Robinson and Kolavalli 2010). Many farmers still prefer local varieties, but these are characterized by high water content, large numbers of seeds, poor color, and low brix (sugar content), which make them unsuitable for commercial processing. In the rice value chain, most farmers still use low-yield uncertified seed of varieties that are not preferred by consumers. Moreover, the high-yielding rice varieties currently available to farmers in Ghana do not have many of the characteristics consumers demand, such as aroma and long grain (Ragasa and Chapoto 2016). The majority of Ghanaian rice is low-grade due to poor milling, which is affected by poor threshing at the farm level, resulting in a high percentage of broken grains (USAID 2009). As mentioned above, there is a deficit of the yellow maize demanded by the poultry industry, although it can be produced in Ghana.

[4] Source: UN Commodity Trade Statistics Database; Global Poultry Trends 2013 (Available at: http://www.thepoultrysite.com/articles/2972/global-poultry-trends-2013-chicken-imports-rise-to-africa-stable-in-oceania/.) Accessed August 23, 2016.

[5] Source: IFPRI-GSSP field survey, July 2016.

Figure 1. Locally-processed and packaged *banku* mix for quick meals made of domestically-produced maize and cassava

Source: Inventory of processed foods in Accra, 2015

Transaction costs, transport and infrastructure: According to Afful-Koomson et al. (2014), transport costs are a major issue affecting profitability for agro-processors, according to small-scale food processors. Processors obtain their raw material from smallholders who are scattered in rural areas connected by poor feeder roads and who produce small surpluses of many crops. Meanwhile, most of Ghana's large-scale agro-processing capacity is located near the ports in Accra or Tema, making it easy for larger-scale agro-processing firms to rely on imported raw materials rather than those produced by small farmers up-country (Sutton and Kpentey 2012; Hollinger and Staatz 2015). This decreases the competitiveness of small-scale processors of domestically produced crops.

Failure of contract farming and vertical integration as an alternative to imports: Contract farming has made a number of inroads in Ghana, especially for export crops, but is not yet a viable solution for stimulating domestic agro-processing. The main factors preventing it from being so are seasonal gluts and shortages of production, difficulties in enforcing contracts, and high spot-market prices encouraging farmers to side-sell (Hollinger and Staatz 2015). These constraints are especially binding for perishable commodities like tomato and, to some extent, cassava (Robinson and Kolavalli 2010).

Emerging opportunities in agro-processing

Four findings from recent surveys to inventory processed foods in urban markets suggest that domestic agro-processing can take advantage of growing demand for processed foods in Ghana.[6] The first piece of evidence is that in Ghana modern retailers stock more domestic products than do traditional retailers.[7] While only a tenth of products sold by traditional retail outlets were produced by domestic firms, for modern retail outlets about a third of the processed products sold were domestic. This shows that, while in general changes in food systems may lead to more modern retail and thus a change in the sources of food (Timmer 2009), in Ghana this change has the potential to yield benefits for domestic processors, because modern retailers are diversifying to stock more domestic products than traditional outlets have done.

Secondly, although imports dominate for some product types, such as milled rice, tomato paste, and chicken meat, the inventories also showed a broad range of products manufactured from domestically-available ingredients, such as maize, soybean, groundnut, plantain, and cassava.

These findings suggest a potential for widespread use of locally-grown crops to prepare traditional meals in formats suitable for urban lifestyles, such as quick breakfast meals, weaning foods, and quick dinners (e.g., Figure 1).

A third point of interest is the spatial distribution of domestic processors. Processing is concentrated in the urban areas of Accra/Tema, Kumasi, and Sekondi-Takoradi, which alone account for the production of more than 80 percent of domestic products. This geographic concentration can be attributed to firm location decisions based on availability of electricity, ease and cost of transport to urban markets, and tax policy (Ackah, Adjasi, and Turkson 2014). This finding suggests that, given the right infrastructure and policies, domestic agro-processing could move closer to the sources of agricultural products, such as to secondary urban centers in the middle belt and the northern regions of Ghana.

Lastly, by comparing measures such as quality of packaging and presence of nutrition information, the field inventories showed that domestic processors are already making efforts to improve the quality of presentation of processed foods to urban customers, with 'complex' packaging being use for between 60 and 77 percent of the products inventoried. This reflects domestic processors' drive to compete with imports in selling products to middle-class customers. To the extent that packaging quality drives purchasing decisions, as reported by Hollinger and Staatz (2015) from surveys of consumers in Accra, these findings suggest the presence of a domestic processing sector that can increasingly meet, in part at least, the growing demand for processed foods in Ghana.

CONCLUSION: IS GHANA MISSING OUT ON OPPORTUNITIES FOR AGRO-PROCESSING?

The available evidence shows that for some of the processed and packaged foods that are now popular in diets in urban areas—rice, tomatoes, and chicken meat, most notably—imports are dominant against domestic products. This dominance is likely continue, given the relative quality and cost of raw material and processing for foreign processers relative to domestic processers. At the same time, however, domestically-processed foods are increasingly available based on domestically-produced primary ingredients, such as cassava, groundnuts, and plantain. More importantly, these domestic products have found their way into modern retail outlets, so shifts in food retail to supermarkets may end up providing a source of growth for Ghanaian agriculture. Whether Ghana's agro-processing sector takes advantage of these emerging opportunities will depend in part on policies to address factors driving competitiveness, such as productivity and production costs of primary agricultural activity that provides inputs for the sector, the cost and availability of transport and energy for processers, which are factors that influence firm growth and location decisions, and the overall macroeconomic environment within which domestic food processors operate and compete with imported products.

[6] The findings reported in this section are for processed products using milled grains, roots, and tubers, found in retail outlets in Kumasi, Sekondi-Takoradi, and Tamale.

[7] The study classified retailers as 'traditional' if they operated from stalls in open-air markets, had small self-service shops, or were street vendors. 'Modern' retail includes grocery stores with at least one register, local non-chain supermarkets, and chain supermarkets (local or international) with two or more registers.

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