



Projected demand and supply for various foods in West Africa: Implications for investments and food policy



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ABSTRACT

This paper (a) summarizes recent evidence of changes in dietary patterns in the 15 ECOWAS countries of West Africa over the past 30 years and the forces driving those changes (In this paper, the term “West Africa” refers to the 15 countries that are members of the Economic Community of West African States (ECOWAS): Benin, Burkina Faso, Cape Verde, Côte d’Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo); (b) uses expenditure-elasticity estimates derived from budget-consumption studies in 8 of these countries (Burkina Faso, Côte d’Ivoire, Ghana, Mali, Niger, Nigeria, Senegal, and Togo) and hypotheses about alternative income growth trajectories to develop scenarios about the evolution of demand for various foods over the period 2010–2040; (c) compares the projected demand growth with projection of production growth in key commodities to identify potential or increasing demand–supply gaps; and (d) derives implications for needed investments and policies regarding different commodities and components of the West African agrifood system, including identifying gaps in the current African Union-led Comprehensive Africa Agriculture Development (CAADP) programs. The analysis shows that in absolute terms, production shortfalls relative to demand for starchy staples (particularly rice and wheat) will continue to pose a major challenge for ECOWAS countries. In relative terms, however, imbalances between domestic production and demand will increase more quickly for foods with high income-elasticities of demand, such as meat, dairy products, seafood, fruits and vegetables and vegetable oils. Urban demand will grow two to four times faster than rural demand, depending on the commodity, putting increased pressure on already stressed urban food marketing systems. Substantial variations in supply–demand gaps across countries suggest that more fluid regional trade could help individual countries cope with these challenges. The findings also suggest that the focus of food policies in West Africa, historically on starchy staples (particularly cereals) needs to broaden to include a range of higher-value products for which demand is likely to increase very rapidly in the near future.

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1. Introduction

As in many other regions of the world, food demand has been growing rapidly and changing in its composition over the past 30 years in West Africa. Among the patterns that emerge from an analysis of changes in per capita food availability, as revealed by FAO food balance sheets (FBS) for the 15 ECOWAS countries between 1980 and 2009, are the following (Me-Nsope and Staatz, 2013; Hollinger and Staatz, 2015):

- Increases in calorie availability in 13 out of the 15 countries, ranging from 6% to 64%.¹ The increases were greatest among the countries that experienced the most robust economic growth, such as Ghana and Nigeria.
- Growth in protein availability, with some upgrading of protein quality (increasing share of animal protein and/or high-quality pulse protein) in those countries experiencing strong economic growth.
- Sharp growth in many countries in the per capita availability of fats, oils, and sugar.

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¹ The two countries that experienced declines in per capita calorie availability were Liberia and Côte d’Ivoire, which had among the highest per capita availability at the start of the period and which both experienced civil wars in the 1990s and 2000s.

- Increasing diet diversity, marked by increased per capita supplies of fruits, vegetables, and range of starchy staples.
- Substantial diversity in these patterns across countries, with increases often, but not uniformly, correlated with income growth and the absence of civil unrest.

While some of the changes in per capita food availability reflected in the FBS data may be an artifact of improved coverage over time of national agricultural statistical systems that generate the production figures incorporated in the FBS (Farnsworth, 1961), other sources of information corroborate this general pattern of dietary change. Household budget-consumption studies carried out in several of the countries in the region (summarized in Hollinger and Staatz, 2015, chapter 6) show patterns of increased and more diversified food expenditures over time, while other data indicate that the percentage of the ECOWAS population suffering from under-nutrition fell from 20% in 1990 to 10% in 2006/08 (FAO, 2011). Moreover, income-elasticities of demand for various food products estimated from these budget-consumption studies (discussed more below) often exceed unity, indicating that an increase in income leads to a more-than-proportionate growth in the demand for these products. These elasticities, when combined with strong per capita income and population growth, imply strong increases in food demand. This strong demand is also reflected in trade statistics. The food trade balance for West Africa, which had been in equilibrium from the mid-1980s, turned sharply negative, starting in 2000, as income growth increased in the region and demand outpaced supply (Fig. 1).

In addition to population and income growth, changes in lifestyles associated with globalization and the region's rapid urbanization appear to be major drivers of changing food demand in West Africa (Hollinger and Staatz, 2015). West Africa is the most urbanized part of Sub-Saharan Africa (with 45% of the population living in cities in 2015) and one of the most rapidly urbanizing areas of the world (UNDESA, 2014). A growing urban middle class (which the African Development Bank (2011) defines as those families living on more than USD 2 per capita per day), combined with increasing time pressures on all urban consumers due to congestion and increased labor-force participation of women outside the home, are boosting the demand for more convenient, processed and prepared foods that are easy to prepare and consume. There is also increasing demand, especially among the middle class, for product attributes such as consistent quality, healthiness and food safety (Bricas and Seck, 1994; Hollinger and Staatz, 2015).

The governments of all 15 ECOWAS member states and ECOWAS as a regional organization have increased their policy emphasis on agricultural growth since the food price spikes of 2008. All are in the process of adopting new investment programs and policy changes aimed at stimulating agricultural growth and food system transformation as part of CAADP. In addition, starting in 2015 ECOWAS countries began instituting a common external tariff (CET), which aims at providing a uniform schedule across member countries of taxation of imported food products. The rapid evolution of food demand in West Africa, however, raises serious questions about how well West African agrifood systems will respond to the changing demand, quantitatively and qualitatively, over the coming 25 years, even with the new ECOWAS CET. If they cannot, the region will become increasingly dependent on food imports and/or face higher domestic food prices. In crafting improved policies and investments for the agrifood sector, it is therefore critical to have a better understanding of how demand is likely to evolve and compare this with likely trends in domestic supply.

The objective of this paper is to provide such information. It compares projected rates of growth in expenditures for major food items, in rural and urban areas, with projected rates of growth in the supply of those items. These projections are made for the

ECOWAS region as a whole and for individual West African countries over the period 2015–2040, relative to the baseline of 2010. The comparison is done in five-year increments from 2010 to 2040. This comparison allows us to identify (a) the shifting relative importance of rural and urban areas in total food demand and (b) food items where significant production shortfalls relative to demand may lead to burgeoning imports and/or increases in real prices. Such information will suggest possible areas where current food system development efforts (e.g. in the context of ECOWAP/CAADP) will need to be modified.

2. Literature review and knowledge gap

Economists have long noted that rising per capita incomes and urbanization typically lead to striking changes in dietary patterns (e.g. Bennett, 1954). West Africa is no exception. Since the 1980s, policy makers in the region have been concerned about how urbanization and rising incomes were leading to substitution of rice and wheat—largely imported—for locally produced starchy staples, particularly cereals such as millet and sorghum (CILSS and OECD, 1989). This substitution led to worries that the region's import-dependence for basic staples could reach financially unsustainable levels, and to proposals in the mid-1980s to increase import barriers in order to create a “regional cereals protected zone” (Gabas et al., 1987).

The policy concerns stimulated analyses in the 1980s and early 1990s of the factors driving these shifts (e.g. Delgado and Miller, 1985; Reardon et al., 1998; Delgado, 1989; Rogers and Lowdermilk, 1991). A major conclusion from these analyses was that while declining relative prices for the imports relative to locally produced staples played some role in stimulating the substitution (particularly in the CFA franc countries, where the currency was becoming increasingly overvalued during the 1980s and early 1990s, making imports cheaper for domestic consumers), much of the shift was prompted by urban consumers' desire for convenience. Wheat products (bread, pasta, etc.) are practically ready-to-eat, and rice is much quicker to prepare than traditional West African starchy staples (e.g. millet, sorghum, yams and cassava) when the time-consuming pounding and milling—often by hand—are taken into consideration. Time-pressed urban consumers, many of whom turned to street foods for lunches when urban congestion prevented them from returning home for their noon meal, increasingly also shifted their consumption toward these “convenience foods”. Although processed forms of the traditional staples (e.g. packaged millet and sorghum flours and “instant” processed yams) have appeared in West African markets in recent years to try to capture some of this demand, their market share remains small relative to rice and wheat products (Hollinger and Staatz, 2015).

During the 1990s and early 2000s, analysts' attention broadened beyond starchy staples to examine other forms of dietary diversification, including increased consumption of fruits, vegetables, animal products and processed foods, particularly in urban areas, and increased attention to product quality (e.g., Cour and Snrech, 1998). The OECD/Sahel and West Africa Club was particularly active in sponsoring studies examining the possible impacts of urbanization on the structure of West African agriculture and its likely capacity to compete with imports (e.g., OECD, 2014). While some recent studies (OECD, 2014; Bricas et al., 2013; Hollinger and Staatz, 2015) have drawn insights from budget-consumption studies to discuss changing patterns of rural and urban food consumption, none have used income-elasticity estimates from such studies to make quantitative projections of future demand for different food products in West Africa or assess their implications for agricultural policies.

In contrast, Tschirley et al. (2013, 2015) have recently conducted such analyses for East and Southern Africa. Their studies

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