



Dynamics of food systems in Sub-Saharan Africa

Implications for consumption patterns and farmers' position in food supply chains

Siemen van Berkum, Thom Achterbosch and Vincent Linderhof



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This report investigates the dynamics in the food system in SSA countries. The African continent is rapidly urbanising and has shown significant welfare growth rates in recent years, conditions which are favourable for a nutrition transition that is featured by increasing demand for vegetables, livestock based and processed foods. Case studies reveal that in quite a number of SSA countries diets change, supermarkets formats emerge, and food processors and farmers/growers invest in integrating in supermarket value chains. Although literature points at sometimes rapid developments, the overall, general picture is that diet transitions are gradual, supermarkets' share in a country's total food sales remain limited, and food processors and farmers face many difficulties in their efforts supplying modern value chains. The report concludes with a research agenda aiming at improving our understanding of drivers and implications of food-system changes in SSA.

Key words: Sub-Saharan Africa, food systems, food consumption patterns, value chains, food imports

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Contents

1	Introduction	5
	1.1 Background and research objectives	5
	1.2 Approach	5
2	Drivers of change in the SSA food system	7
	2.1 Population and urbanisation trends	7
	2.2 GDP growth and the size of the middle class in SSA	8
	2.3 Changes in the food environment affecting food consumption	10
	2.4 Conclusions	11
3	Food consumption patterns in Sub-Saharan African countries	12
	3.1 General patterns in food consumption in SSA countries	12
	3.2 Food consumption trends in urban and rural areas in selected SSA countries	16
	3.3 Conclusions	17
4	A changing food retail and provisioning subsystem in SSA countries	18
	4.1 The emergence of supermarkets in SSA	18
	4.2 Consequences for the food retail market structure	19
	4.3 Food service development and food manufacturing modernisation	20
	4.4 Factors hampering the expansion of supermarkets in SSA	21
	4.5 Conclusions	22
5	Supply chain developments and inclusion of small farmers in local and regional chains	23
	5.1 Introduction	23
	5.2 Do supermarkets source from local small-scale farmers?	23
	5.3 Local food processing industries and supermarkets	25
	5.4 Conclusions	26
6	Transformation of SSA food systems and import dependency	27
	6.1 Introduction	27
	6.2 Trends in imports of food product categories	27
	6.3 Comparing imports of foods with what is domestically available for consumption	29
	6.4 Concluding remarks	30
7	Conclusions	31
	7.1 Major findings	31
	7.2 Research agenda	31
	7.2.1 Data requirements	31
	7.2.2 Market linkages for farmers in modern food systems' context	32
	References and websites	33
	Appendix 1 Sub-Saharan Africa	37
	Appendix 2 World Bank LSMS data on urban and rural consumption	38
	Appendix 3 SSA net trade in food	40

1 Introduction

1.1 Background and research objectives

In Sub-Saharan Africa, population growth remains significant and the urbanisation rate is fast in this region (UN WUP). This means that more and more people depend on food which is produced by others, and which is being delivered by a range of actors. Moreover, Africa's economic performance has improved greatly since the turn of the century, leading to notable gains in income per capita and a growing middle class (AfDB, 2014). Income increases and lifestyle changes (due to urbanisation) generally change consumption patterns that, in its turn, will affect food production. Compared to other global regions, food systems (activities of all actors in the food supply chain and how they relate to each other) in SSA are mainly characterised by small-scale operations, short local supply chains and market relations by spot exchange. Developments in income and urbanisation growth rates could well lead to a rapid transformation in SSA's prevailing food systems towards what has taken place in more developed countries some decades ago (Reardon and Timmer, 2012; Reardon et al, 2015; UNEP, 2016). There is however very little systematic research analysing food-system dynamics in the SSA region. This study aims at exploring available literature and data and identifying research and data gaps that need to be filled in order to improve our understanding of drivers and implications of food-system changes in SSA.

This paper looks into the dynamics in the food system in SSA countries, describing developments in drivers of the food system, analysing food consumption patterns in selected SSA countries, investigating the pace of change of the regional food retail formats and the impacts it has on how local production is connected to modern food retailers. More specifically, the research objectives are to:

- Depict the trends in population growth, urbanisation rates, income growth and the food-system environment as drivers of change in dietary patterns
- Investigate the trends in food consumption patterns in a range of SSA countries, with attention to differences between urban and rural consumption trends
- Illustrate the changing food retail and provisioning system in the SSA region with examples and data from selected countries
- Analyse the effects of modernising food systems on small farmers' position in local and regional supply chains and explore whether dynamics in the SSA food retail structure and consumption patterns have had implications for food import dependency in certain countries in the region.

1.2 Approach

The research is based on literature review, statistical analyses and case study results of own ongoing Wageningen Economic Research research projects. Due to time and budget limitations, this research has an explorative nature.

This research looks into changes in food systems of SSA. Food systems are defined as including all the elements (environment, people, inputs, processes, infrastructures, institutions) and activities that relate to primary producing, processing, distributing, preparing and consuming food. A food system therefore also encompasses the interdependent sets of enterprises, institutions, activities and relationships that collectively develop and deliver material inputs to the farming sector, produce primary commodities, and subsequently handle, process, transport, market and distribute food and other agro-based products to consumers (see HLPE, 2014:29-31). The analytical method to investigate those drivers of change and the outcomes in terms of social, economic and environmental effects is defined as the food-system approach. Hence, a food-system approach relates all the food-system activities (growing, harvesting, processing, packaging, transporting, marketing, consuming, and disposing of food and food-related items) to the outcomes of these activities (in socio-economic

and environmental terms). Food systems are therefore defined as both the food chain activities and outcomes of these activities. As a central thesis changes in food consumption behaviour are expected to cause food-system transformations. In analysing the links between the diet (composition and quality) and food systems, the Global Panel on Agriculture and Food Systems for Nutrition (2016) presents a circular framework (see Figure 1.1). This framework indicates that food consumption is influenced by purchasing power, but the way income is used is in turn influenced by the food environment which provides the options from which people make decisions about what to eat, circumscribe how income can be spent on food and contribute to shaping people's food preferences, attitudes and beliefs and food cultures more broadly (ibid, 2016:27). Food environments are in turn influenced by broader food systems (part of which is food retail and provisioning), which themselves are affected by many drivers of change. Figure 1.1 illustrates the complex interactions between consumers and the food supply system, which is more typical for a rich country and well-developed urbanised society than for an average African rural community where subsistence farming is standard.

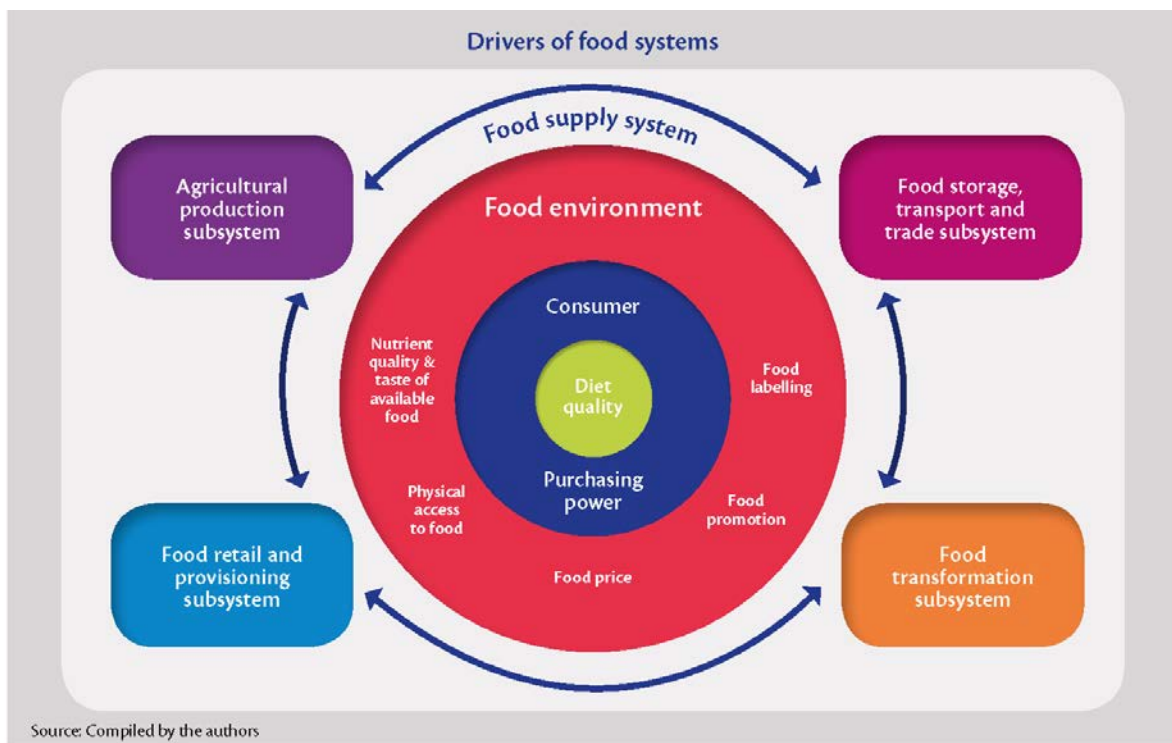


Figure 1.1 Conceptual framework for the links between consumption patterns and food systems
 Source: Global Panel on Agriculture and Food Systems for Nutrition, 2016.

This research does not pretend to cover in depth all food chain activities and outcomes as indicated in Figure 1.1¹ but applies the food-system lens in order to highlight the interdependencies of the actors throughout the food supply chain and will mainly focus on how changes in socioeconomic drivers affect food consumption patterns, food retail actors and farmers' position in the supply chain in this region. The paper continues in describing first developments that have an impact on key features of the food system (Section 2), and then the changes in consumption patterns that are affected by these drivers (Section 3). Drivers and changing diets have consequences for the food retail (Section 4) and agricultural production subsystems and the value chain relations (Section 5), although - as Figure 1.1 illustrates this is not a linear process of cause and effects. Section 6 provides specific attention to import dependency in food (section 6). Section 7 concludes.

¹ For instance, diet quality as an outcome of food systems is not (much) discussed.

2 Drivers of change in the SSA food system

Food demand is expected to increase and change drastically in composition over the coming decades due to the increasing population coupled with increased wealth, and ongoing urbanisation, especially in regions outside the developed countries (e.g. Reardon and Timmer, 2012; UNEP, 2016). Wealthier, urban populations consume more animal based and processed products, which call for more industrialised and lengthy food supply chains. This chapter indicates the pace of population, urbanisation and income growth in SSA countries, as drivers of changes in food consumption patterns in SSA, and adds some other factors shaping the food environment (the physical and social surrounding the influence what people eat) influencing people's food choice and consumption.

2.1 Population and urbanisation trends

Trends in population and urbanisation growth show that population growth rates in SSA countries are still relatively high and urbanisation rates are rising. As a consequence of rapid population growth, in many African countries more than half of the population is under the age of 25, and they live increasingly in cities. UN figures indicate that in SSA, the urbanisation rate increased from 11.2% in 1950 to 24.1% in 1980, and reached 36.4% in 2010 (UN World Urbanisation Prospects). The UN forecasts that SSA's urbanisation rate will increase up to 46% by 2030 and 57% by 2050. The urbanisation rate is fast in Western Africa whereas in East Africa it is much lower than in the rest of SSA, see Figure 2.1. Note that although the urbanisation rate continues to increase, the absolute number of rural population is also growing in all SSA regions except for Southern Africa.

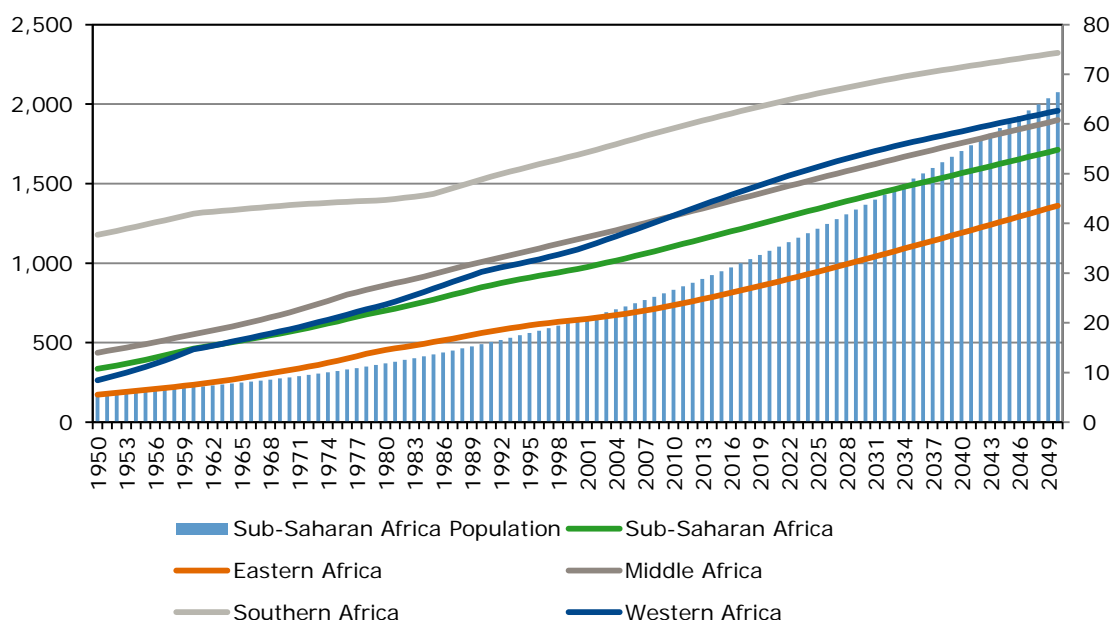


Figure 2.1 Population in SSA (vertical lines, absolute numbers, in millions, on left-hand vertical axis) and share of urban in total SSA population, per SSA region (% on right-hand axis)
Source: UN World Urbanisation Prospects 2014 Revision (www.esa.un.org/undp/wup).

Rates of urbanisation are indeed variable across countries, with for example urbanisation rates in population-rich countries like Ethiopia, Democratic Republic of Congo and Nigeria of 20%, 30% and 40% respectively. Yet, in most of SSA countries capital cities account for a significant share of total

population. Next to that, many already huge African capital cities are expected to rapidly increase in the coming decade (Figure 2.2).

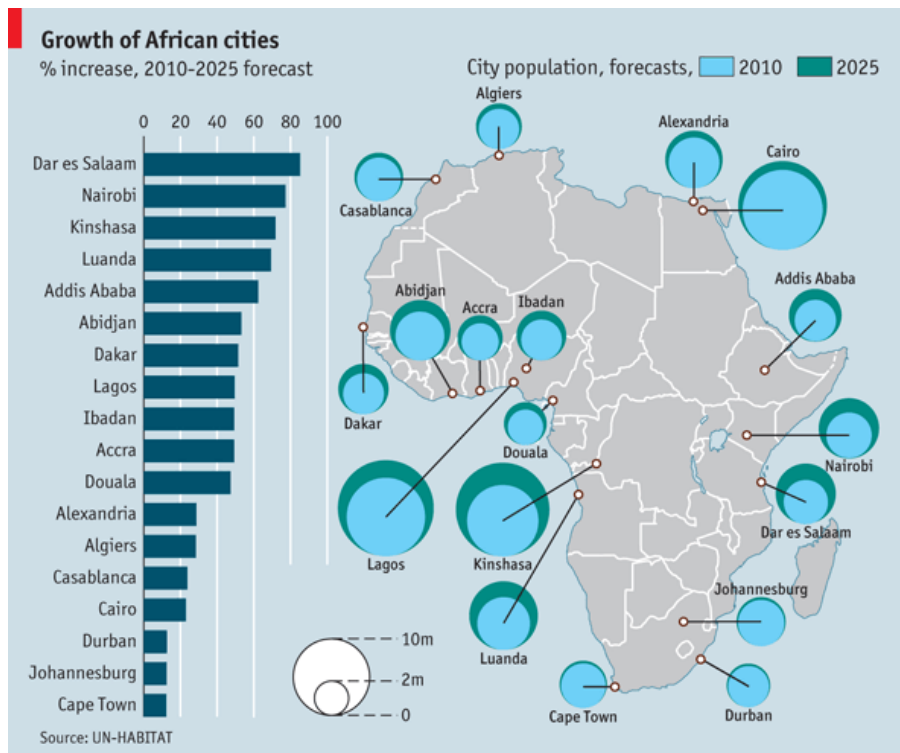


Figure 2.2 Growth of African cities
Source: *The Economist online*, 13 December 2010.

2.2 GDP growth and the size of the middle class in SSA

Africa's economic performance has improved greatly since the turn of the century, leading to notable gains in GDP per capita and lower levels of poverty. During 2001-2013, the SSA economy grew at an average rate of 6.3% p.a. in real terms, according to the International Monetary Fund (IMF), compared to 2.9% p.a. during the previous 13-year period (IMF, 2016). Annual GDP per capita growth has been fluctuating greatly but (different from earlier decades) were positive in all years since 2000. The economic growth meant that the regional average GDP per capita rose from USD 1,190 in 2001 to USD 1,660 by 2015 after having declined during the previous two decades (see World Bank Development Indicators website, GDP per capita in constant 2010 USD). The expansion coincided with an improvement in business environments and a reduction in political risk, although a commodity boom also played a significant role in the increase in real GDP. In addition, several African countries are expected to be among the fastest growing in the world over the next decade. For the years up to 2019 World Bank's real GDP per capita forecasts are most positive for Cote d'Ivoire, Ethiopia, Ghana, Rwanda, Senegal and Tanzania, with projected 7-8% annual growth (World Bank, 2017: 174). With the positive economic developments poverty rates steadily declined in the region (see Bicaba et al., 2015, for estimates of poverty rates in SSA since 1990 and projections for 2015-2030) and the number of people that have an income of above USD 2/day has increased significantly. The latter can be referred to as middle class. An increasing size of the African middle class is important to food markets as it provides spending power to shift from subsistence to marketed foods.

The size of the African middle class is, however, much disputed, with estimates ranging from 18 million to approximately 300 million. One of the arguments behind claims that middle classes are developing slowly is that, where African societies have an extreme scale of inequality in income and wealth, income growth in many SSA countries is driven by narrow growth in the natural resources

sector, which contributes very little to urban employment and broad-based urban income growth (see e.g. Melber, 2016; Mwitwi, 2015; and Jayne et al., 2014, for a discussion). Moreover, quantifying the size of the middle class is not easy, among others, because there is no commonly accepted definition of the middle class in African countries. Roughly defined, the middle class constitutes the part of the population that is not-so-poor and no-so-rich, which can then be specified in relative and absolute terms. In relative terms, the middle class refers to households between the 20th and 80th percentile of the income distribution. Tschirley et al. (2015) follow the absolute approaches with fixed lower and upper bounds; they define the middle class as the population in income brackets above USD 2 and below USD 20 per capita per day in purchasing power parity (PPP) terms. The bounds of the definition are taken from African Development Bank analysts Ncube and Lufumpa (2014) and Ncube (2010) for all of Africa, which divides the middle classes into three strata: the 'floating' or vulnerable middle class (USD 2-4), the lower-middle class (USD 4-10) and the upper-middle class (USD 10-20). Using 4 point estimates of annual consumer expenditures between 1980 and 2010, Ncube and Lufumpa indicate the considerable expansion of the middle classes over time, from 147.2 million in 1980 to 373.2 million people in 2010 (see Table 2.1). The bulk of this expansion is due to the population growth over these decades. Nevertheless also changes in the income distribution have benefited the middle classes: the share of population in the middle class income brackets rose from 31% in 1980 to 36% in 2010.

Whether the floating classes should be included in the middle classes is a relevant issue given that 237 million people are in the income brackets of USD-2-4 per day (Table 2.1). A review by Tschirley et al. (2015) on the implications of the rising middle classes for food-system transformation brings an interesting argument for including the floating class into the middle classes. Food consumption by the floating class already entails a substantial drive for food-system transformation because, despite low levels of expenditure, consumption of the floating class features a shift from basic and home-produced food to processed food.

This is demonstrated with some straightforward computations. Households earning USD 3 per capita per day spend on average 54% of expenditure on food; if one values this expenditure at going market prices for maize meal - that is consumption of maize that has undergone the minimal processing into meal that is ready for processing into porridge or other basic meals - this expenditure supports an average consumption of 3,500 kcal/day (ibid, p. 631). This purchasing power goes beyond the recommended intake of 2,000 kcal/day. By implication, Tschirley et al. infer that vulnerable consumers have the choice to divert a share of their expenditures towards a more diverse diet (as well as to other categories of spending). Typically this is a choice for products that enrich a staple-based diet (e.g. vegetable oil, fish, meats and dairy products), making it more nutritious and more varied. Tschirley et al. analyse the substantial implications of this consumer choice, limited in scope but massive in terms of scale, in East and Southern Africa for food supply chains and logistics in these regions. The analysis also reflects on the often-overlooked dynamics in rural consumption. The paper's main findings are:

1. 55 per cent of the region's middle class - 37 per cent of the 'non-vulnerable' middle class - are rural
2. 61-83 per cent of the middle class's food are purchased
3. processed food² accounts for 70-80 per cent of the class's food expenditure, with similar shares in urban and rural areas;
4. perishable products account for 44-55 per cent of the class's food expenditure.

Based on the household survey data, Tschirley et al. found evidence for the economic law (Bennett's law) that states that consumers will move, in a relative sense, away from staples (in the Africa case cereals and tubers) as their income rise, and towards meat, fish, oils and fresh produce. Findings add that (both the vulnerable and the non-vulnerable) middle class households have already moved towards increasingly processed foods and have already done so to a degree not widely appreciated. Moreover, the authors project that based on the already substantial size of the current middle class (with those in the 'vulnerable' middle class range also purchasing at least some processed foods and fresh perishable food items) and expecting a continuation of its growth, the rise of the middle class will rapidly drive the transformation of the African food system towards more processing and activities related to perishables such as cold chains.

² Processed foods are defined as food with low value added as a result of basic stages of processing (such as cutting, milling, cleaning and packaging) and processed products with high value added due to more advanced processing, branding and quality control.

Table 2.1 *Distribution of Africa's population by subclass, 1980-2010*

year	Floating class a)	Lower-middle b)	Upper-middle c)	Middle class without floating class		Middle class with floating class	
	000s	000s	000s	000s	%	000s	%
1980	81,629	55,309	10,290	65,599	14	147,228	31
1990	128,612	65,545	1,938	67,482	11	196,095	31
2000	164,880	82,935	13,659	96,594	12	261,474	32
2010	236,608	115,933	20,629	136,562	13	373,170	36

a) Floating class (USD 2-4); b) Lower-middle class (USD 4-10); c) Upper-middle class (USD 10-20).

Source: Tschirley et al. (2015), based on AfDB Statistics Department.

2.3 Changes in the food environment affecting food consumption

Food consumption is affected by many more factors than only income; access to food is highly determined by the food environment, which is comprised of the physical and social surroundings that influence what people eat. More formally, food environments are defined as the collective physical, economic, policy and socio-cultural surroundings, opportunities and conditions that influence people's food and beverage choices and consumption (Swinburn et al., 2014; Herforth and Ahmed, 2015). Food environments thereby encompass the availability, affordability, acceptability and desirability of food for individuals or groups, and include aspects as food prices, composition, safety, labelling, promotion and food trade policies (see also Figure 1.1). In this broad context of sketching trends for the SSA region, here the focus is on price developments, trade and food safety policies.

Food price levels and especially the instability of prices affect affordability and therefore access to and use of food. Unsteady prices can hamper consumers' ability to buy enough food for their families. Food price stability is a concern, in particular for the low-income households that spend a large share of their budgets on food. Food prices in SSA countries generally fluctuate a lot, not only from year to year but also on a seasonal basis (FAO, 2011; Minot, 2014). Price volatility affects household incomes and purchasing power and hence food security (FAO, 2011).

Government interventions can help stabilising domestic prices - for instance via building food stocks or reducing import tariff. However, in response to recent price developments at international markets, many SSA governments have used temporarily trade policies in the form of export bans and import tariff reductions to support consumers, which may have had further price distorting impacts both on domestic and international markets (Meijerink et al., 2011; Kalkuhl et al., 2016). The role of (intra-region) trade in reducing price volatility is recognised by the African Union in its Malabo Declaration (in 2014) on accelerated agricultural growth, which committed to boosting intra-African trade in agricultural commodities and services (www.tralac.org). Reductions in barriers to regional trade offer an inexpensive means of reducing domestic prices and hold enormous potential to improve food security in the region (OECD/FAO, 2016). However, in daily practice interregional trade in SSA is distorted and impeded by discretionary trade restrictions applied by governments, informal trading charges, burdensome border regimes and limited transportation infrastructure (see Torres and Van Seter, 2016, on ECOWAS in West Africa; Morrison and Sarris, 2016 on East and Southern Africa). These impediments and rather unpredictable rules-based systems are hampering potential gains trade could bring about in terms of price stability and food security. Both price stability and food security are enabling a business environment that promotes investments enhancing economic development.

Consumer concerns about food safety, health and environmental impacts have led in developed countries to more stringent standards on, among others, hygiene, quality and pesticide use. This process of rapidly growing and tightening food standards and regulations has had significant impacts on the food systems in developed countries as compliance with standards involves investments in production and marketing methods, as well as liability agreements among market actors. Through international trade SSA countries have become increasingly involved in the quest for managing food safety. There is a body of empirical literature showing that also in SSA, farmers and traders have been

able to comply with international (public and/or private) standards that allow them to participate in global trade (Vandeveldt et al., 2016). However, most examples are from the horticultural sector and a limited number of countries (e.g. Senegal, Kenya, Madagascar). Leake (2015) reports that while all SSA countries do have food laws and food safety standards, they mainly range from very few and rudimentary standards to antiquated standards developed during the colonial times. Most countries are members of the World Trade Organisation WTO and the FAO Codex Alimentarius Commission (CAC) though. Hence, the Codex Alimentarius standards should be the minimum standards countries should comply with for conducting international trade and also for providing safe and nutritious domestic food, but Africa is much in a development trajectory (with South Africa, as most developed country on the continent, having the most advanced legislation in terms of food safety).

Well-functioning national food safety control systems are a major challenge in many SSA countries as most of the animal source foods and fresh fruits and vegetables (causing most concerns from a food-borne disease perspective) are produced by smallholders and sold in informal markets (street markets). This makes control and inspection difficult tasks (Grace, 2015; Roesel and Grace, 2014; Lamuka, 2015). Literacy rates among farmers and food traders is generally low, leading to a lack of awareness of standards and rules to comply with. Moreover, due to costs trading places are not equipped to deal with food safety in a scientific and sustainable manner and testing laboratories are inadequate and expertise for making analyses is lacking. The existing food safety standards are poorly enforced as most SSA countries have a weak surveillance system. Lamuka (2015) points at the lack of funding for investment to upgrade the administrative, technical and scientific capacities to comply with food safety standards, and a weak extension system that is not able to improve farmers' knowledge and awareness of food safety issues. Diet quality is not much enhanced by SSA's current food safety systems. There is, however, a need for governments to give priority to establishing effective food safety systems, not only from the quality and food security³ perspective but also because as consumer concerns with food safety increases, and standards ratchet upward, there is a risk that poor producers and value chain actors will be displaced from rapidly growing domestic markets (Roesel and Grace, 2014).

2.4 Conclusions

The SSA region shows a rapidly growing population and urbanisation rate. GDP growth has translated into per capita income increases, which has contributed to a growth of the size of the middle class. The exact size of the middle income class is much disputed, but research indicates that households earning USD 3 per capita per day may already divert a share of their income to more diverse diets containing also processed products. Through its changing food demands, a growing middle class in SSA is expected to result in changing food systems in the region in a similar way as happened in developed countries in previous decades. The question is whether these drivers of change in diet patterns are strong and sustained enough to already impact the other actors of the supply chain. The food environment in most SSA is featured by fluctuating prices and ad-hoc trade interventions, which may not be very conducive to rapidly modernising supply chains: fluctuating food prices make low-income households vulnerable in terms of access to food, and farmers and processors prone to delaying and/or reducing investments due to high risks. Due to these characteristics of the food environment, a rapid shift to consumption and domestic production patterns with the generally more expensive animal and processed products may be unlikely in the SSA region. The next chapter shows some of the key features of past developments in food consumption patterns in SSA countries, whereas Chapter 4 and 5 discuss the dynamics in the rest of the food supply chains (retail, processing and farming).

³ Food safety has become recognised as an essential component of food security. Many cereals, nuts, fruits and other important food crops are susceptible to infection by fungi that produce toxic secondary metabolites (mycotoxins). *Aspergillus* mycotoxins are estimated to contaminate 25% of the global food supply. The growing aflatoxin problem is a silent threat to SSA food security. See <http://hub.africabiosciences.org/activities/research/299-capacity-and-action-for-aflatoxin-reduction-in-eastern-africa-caarea-capacity-building>

3 Food consumption patterns in Sub-Saharan African countries

Sub-Saharan Africa is, geographically, the area of the continent of Africa that lies south of the Sahara desert. The area encloses 50 countries (see Appendix A) with a population of 1 billion in 2016. There is much variation across countries in terms of climatic and natural conditions, and in economic features, particularly between resource and non-resource rich countries. Many of the SSA countries are classified as least developed countries, but in recent years Africa has been one of the fastest growing regions of the world. Economic growth has driven food demand in the continent, as well as population growth which has been 2.7% on an average annual basis for the SSA region as a whole, which are far above growth rates of other regions in the world.

This chapter's objective is to provide an overview of long-term trends in SSA countries' food consumption patterns, based on data from FAO Food Balance Sheets for ten SSA countries with the aim to provide empirical evidence of changing dietary trends in SSA countries towards more animal protein, fresh vegetables and processed products. FAO data are supplemented by World Bank LSMS data of four selected countries, to indicate rural-urban specific differences in food consumption.

3.1 General patterns in food consumption in SSA countries

Figure 3.1 and 3.2 show food availability⁴ in ten SSA countries in terms of kcal per capita per day, indicating the trend in the average per capita food energy available (the subdivide of the ten countries in two figures is done for practical reasons of readability of the graphs). There are remarkable differences between the countries, both in trends and levels. Figure 3.1 shows an increase in food availability in Cameroon, Ethiopia and Ghana since the second half of the period 1960-2013. On the other hand and despite some improvements in recent years, food supply per capita in Cote d'Ivoire and Kenya is not exceeding levels reached in earlier times. Levels in Cote d'Ivoire (and Ghana), though, are relatively high compared to what is available in other SSA countries.

⁴ Food availability data are taken from FAO Food Balance Sheets and a popular proxy for actual food consumption. FAO FBS shows for each food item the sources of supply (production, imports, stocks variation) and its utilisation (export, feed, seed, waste, manufactured for food use and non-food uses, and food supplies available for human consumption). The per capita supply of each such food item available for human consumption is then obtained by dividing the respective quantity by the related data on the population actually partaking of it. Data on per capita food supplies are expressed in terms of quantity and - by applying appropriate food composition factors for all primary and processed products - also in terms of caloric value and protein and fat content.

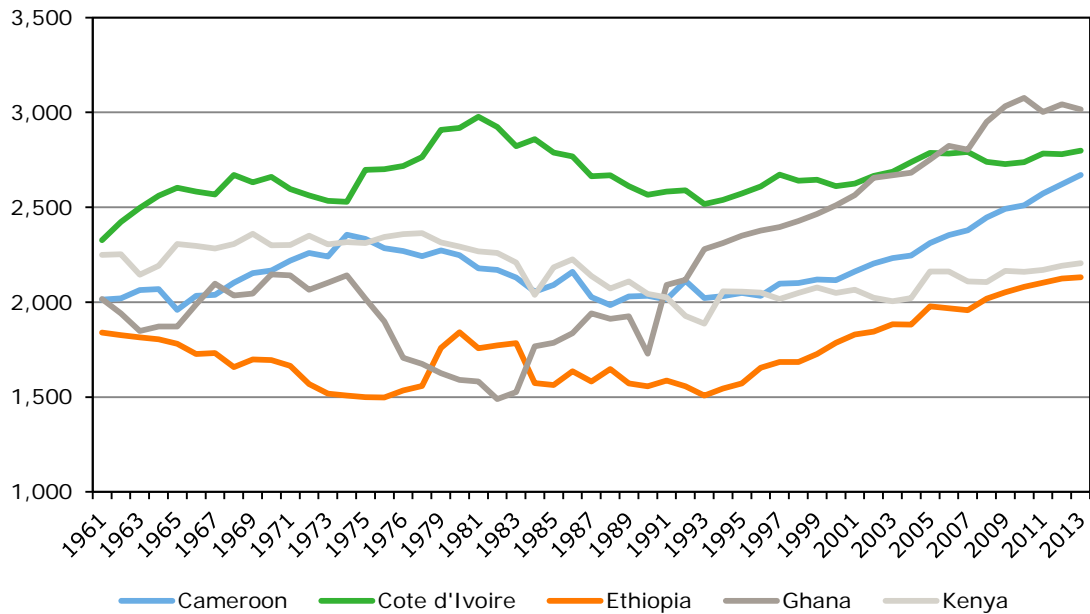


Figure 3.1 Food availability (in kcal/capita/day) in five SSA countries

The food availability situation in the five SSA countries presented in Figure 3.2 also shows a diverse pattern. In Nigeria, the most population rich country of the continent food availability has improved significantly, with food supply in South Africa - where food availability was already on a high level in the 1960s - showing a slight increase over the whole period. For Uganda, Tanzania and Zambia in particular, developments have been less positive, with Zambia's food availability falling below 2,000 kcal/capita/day since end of the 1990s.

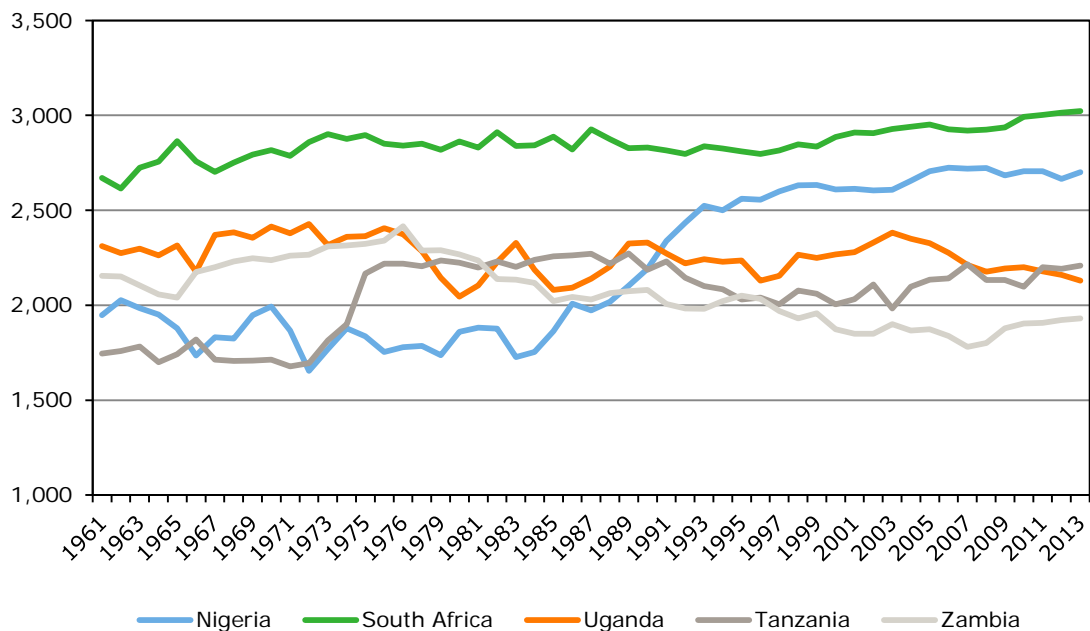


Figure 3.2 Food availability (kcal/capita/day) in five SSA countries

Growth in population size and income per capita leads to increasing demand for food *and* a shift from starch-rich towards more sugar/fat-rich foods. As income per capita rises, people's diets change from one that is largely rich in carbohydrates to a diet which is richer in calories, sugars, fats and to more livestock based products and vegetables (UNEP, 2014).

However, whether this pattern of diet change also catches on in SSA is not clear from the FAO FBS data: looking in more detail at availability patterns of major food categories gives a diverse picture of how diets in these ten countries have changed over time. Table 3.1 provides a concise overview of consumption features and patterns in the selected countries. The second column of the table present the levels of nutrition energy in each of the selected countries in 2013. Next columns show the share (in percentage) of each of the selected product categories in the country's average kcal/capita/day, with the first figure representing 1990-shares and the second shows the 2013-share, indicating the trend over this period.

Data in the table lead to a number of observations. First, crop products heavily dominated diets in 1990 in all countries, with 2013 shares close to the 1990 number.⁵ Only in South Africa and Uganda, animal products account for a higher share in total food in 2013 compared to 1990. Second, cereals and starchy products together remain suppliers of 60-70% of all food calories (in Kenya and South Africa in the range of 55-60%), with little change in the shares over time except for Tanzania and Zambia (where shares fall) and Uganda (where shares for cereals go up, which more than compensates the fall in shares for starchy products). Third, the more detailed decomposition of cereal consumption shows a shift away from traditional cereals like maize, millet and sorghum to non-traditional cereals like wheat and rice in almost all countries.⁶ Fourth, sugars, (fresh) fruits & vegetables, and meat all have low shares in total food calories in these countries, and changes over time (1990-2013) are small for these categories (with only a few exceptions: e.g. Ghana shows a 13% share of vegetables and fruits in 2013 compared to 8% in 1990). Fifth, the contribution of pulses (proteins supplier) is rather stable, except for the significant growth in consumption share in Cameroon and Ghana. And finally, the share of oil crops and vegetable oils contributing to energy intake is on average rather stable, yet it has gone up in South Africa, Tanzania, Uganda and Zambia. Overall, the conclusion is that the data used indicate a gradual shift from traditional (maize, millet, sorghum) to non-traditional cereals (wheat and rice) in most countries, yet that for other product categories there is no indication of significant changes in consumption patterns in these ten SSA countries over the period 1990-2013, although in some cases for some countries for some food product categories small shifts in consumer trends can be noted.

Table 3.1 *Calories supplied by selected product categories, as %-share in total kilocalories per capita per day*

	kcal/ capita/ day (2013)	Crop pro- ducts	Wheat	Rice	Other cereals	Starchy pro- ducts	Sugars	Pul- ses	Oil crops and veg. oils	F&V	Meat
Cameroon	2671	93-95	4-6	5-9	28-22	20-16	3-4	2-8	12-14	11-10	3-2
Cote d'Ivoire	2799	94-96	5-6	20-21	9-8	31-30	4-4	0-1	12-13	9-7	3-2
Ethiopia	2131	93-94	14-13	0-1	50-50	13-13	2-3	7-7	5-4	0-1	3-2
Ghana	3016	94-95	6-4	6-10	15-10	39-39	3-5	0-3	12-9	8-13 b)	2-2
Kenya	2206	86-88	8-12	1-6	46-32	7-10	10-7	6-6	8-8	4-5	3-3
Nigeria	2700	97-96	1-6	10-11	39-27	17-23	2-4	3-4	15-13	5-5	2-2
S-Africa	3022	86-84	16-16	3-6	33-29	2-2	13-11	1-1	8-11	3-2	8-11
Tanzania	2208	93-93	2-5	8-9	37-28	23-14	2-5	7-9	6-14	4-6	2-2
Uganda	2130	93-91	0-4	1-2	18-22	27-17	1-5	10-10	8-13	21-14 b)	3-4
Zambia	1930	94-94	3-5	1-2	60-52	27-17	1-5	1-1	6-13	2-2	3-3
SSA	2463	92-92	6-8	8-10	35-29	15-16	5-5	4-5	10-11	5-5	3-3

a) The first number in each column (except the first) is %-share in total kcal/capita/day in 1990; The second number is the percentage of total kcal/capita/day in 2013; b) Plantains (member of the banana family) are a major component of this category in Ghana and Uganda.

Source: FAO Food Balance Sheets.

⁵ For comparison: in the Netherlands animal products supply one-third of human calorie intake.

⁶ This confirms Demont's findings that in Africa consumers have been gradually shifting from traditional to non-traditional grains (wheat and rice) due to urbanisation (Demont, 2013).

Calories are a measure of nutritious energy that the food eaten provides. FAO data on fat and protein supply is a way to shed light on the nutritious content of the diet. In Figure 3.3, FAO's data on protein supply per capita per day are presented to indicate how the protein part of the diet has developed and to what extent food consumption in SSA show a higher intake of proteins from animal products (meat, fish, eggs, dairy products). Proteins can have a plant and an animal source. Yet, the thesis is that as national income rises, the proportion of calories from starches and plant-source proteins declines, and the proportion of calories from animal fats and proteins and from sweeteners increases. This is known as the nutrition transition (Herforth and Ahmed, 2015, and referenced literature). Hence, the observed GDP growth in SSA countries is expected to have an increasing effect on the intake of animal proteins.

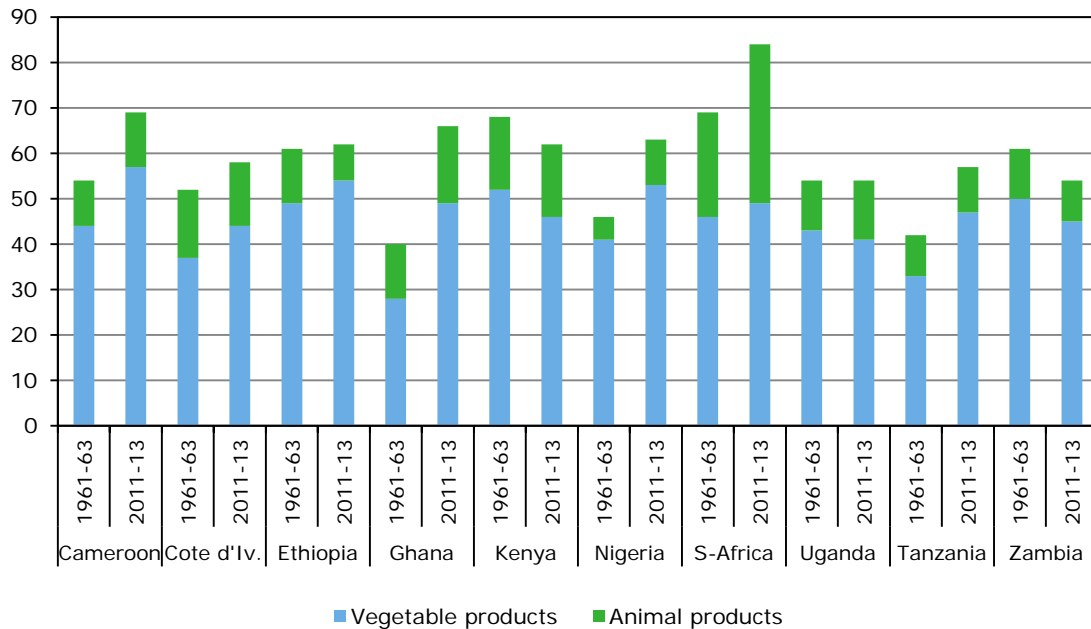


Figure 3.3 Per capita protein supply from vegetable and animal origin (average 1961-63 and average 2011-2013)

Source: FAO Food Balance Sheets.

Figure 3.3 shows the trends in daily protein per capita intake for ten SSA countries over the last 50 years. In six of these countries - Cameroon, Cote d'Ivoire, Ghana, Nigeria, South-Africa, Tanzania - protein intakes have been (much) higher in the years 2011-2013 compared to the early 1960s. Two countries - Kenya and Tanzania - show lower levels and in Ethiopia and Uganda the level of protein intake has been the same as the 1961-63 average. It is clear from the figure that vegetable products (e.g. beans, lentils, nuts) deliver most proteins of the peoples' diets, over three quarters or more of all daily protein intake, except for South Africa where it is almost 60% in 2011-13. Data also highlight that over the period presented the share of animal products has increased only in Kenya, Nigeria, South-Africa and Uganda, which in the case of Kenya and Uganda is not because of more animal protein grams/day consumed but due to less vegetable protein intakes per capita. The FAO data used for Figure 4.3 indicate no clear nutritional transition pattern has happened (yet) in the ten SSA countries for which the data have been presented. Stronger conclusions should be built on more in-depth analytical and quantitative research linking for instance income features of households with their food consumption behaviour, taking into account their social, cultural and institutional local context.

3.2 Food consumption trends in urban and rural areas in selected SSA countries

While national averages of SSA countries do not provide much evidence of shifting consumer trends towards diets with more sugar and meat, household surveys collecting food expenditures may deliver more detailed insights into consumption trends. The World Bank Living Standards Measurement Study (www.econ.worldbank.org) provides such household data from a nationally representative sample for (among others) eight SSA countries and allows investigating consumer trends differentiating between urban and rural areas. These data may be used to give evidence to the general assumption that urbanisation affects consumption trends in several ways: through income (higher than in rural areas), different food environment (more supermarkets, restaurants and other out-of-home eating opportunities in urban areas) and changing preferences that are linked to lifestyle, improved (female) labour market opportunities and increased exposure to global eating patterns (Herford and Ahmed, 2015).

Table 3.2 presents World Bank LSMS survey data for Ethiopia, Nigeria, Tanzania and Uganda,⁷ showing shares of major food items in total food consumption of urban and rural households.

Table 3.2 Share of food items or groups in the average consumer food budget (%) in four SSA countries (total population in million in brackets)

	Ethiopia a)		Nigeria b)		Tanzania b)		Uganda b)	
	Urban (17.5)	Rural (76.6)	Urban (76.4)	Rural (92.4)	Urban (14.9)	Rural (32.9)	Urban (5.8)	Rural (30.5)
Cereals	49	57	27	32	19	36	16	15
Starches	8	6	15	17	3	15	20	31
Sugar	7	6	1	2	14	3	6	4
Pulses & Nuts	6	6	7	7	13	10	11	13
Vegetables	3	2	9	8	7	9	7	7
Fruits			2	1	2	4	2	2
Meat & Fish	10	7	23	19	18	15	14	12
Milk/dairy	4	3	2	2	2	3	4	3
Oils & Fats	0	0	6	7	13	3	4	3
Beverages			1	1	8	2	4	4
Other	14	13	7	5				

a) 2013; b) 2012.

Source: World Bank LSMS database.

From the table several observations follow:

1. Countries differ significantly in their diet composition. This is illustrated by Ethiopia as a country where cereals/starches (teff) are (more) dominant, and vegetables & fruits as well as animal products have a smaller share of total food consumption compared to the diet in the other three countries. On the other hand, Ethiopia's diet seems to be more diverse as 13-14% of the food consumed are in an 'other' category, compared with less than half this percentage in Nigeria and none in Tanzania and Uganda. Ethiopia's diet, therefore, seems to diverge considerably from those in the three other countries.
2. Data indicate that diets of urban population include fewer cereals and starch products, and more meat/fish than diets of the rural population. Hence, one find some evidence for the thesis that urban populations shift away from traditional staple crops to more animal product (associated with 'nutrition transition', see Section 3.1).⁸ Diets comprise relatively little milk/dairy products in the ten selected SSA countries and are equally important to urban and rural diets in these countries.

⁷ Other SSA countries included in the LSMS are Burkina Faso, Malawi, Mali and Niger.

⁸ Based on World Bank LSMS 2010 data for e.g. Ethiopia, Tanzania and Uganda. Dolislager et al. (2015) claim significant diet diversification into processed food (both low-processed and high-processed) with substantial penetration in both urban and rural areas.

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3. In terms of healthy foods, the consumption of sugar, fats and vegetables & fruits is worthwhile looking at. Urban population in Tanzania consumes significantly more sugar and fats⁹ than the urban population in the other three countries where urban and rural diets are also more similar in this respect. Vegetables & fruits consumption is particularly low in Ethiopia and around 10% in other countries with little distinction between urban and rural diets.

In conclusion: the above data give some indication for nutrition transition as urban diets include less cereals/starch products and more meat/fish than rural diets in these countries. As these survey data are only collected for a few years (since 2008), there is little insight into the trends; at least, the two years' survey data available for these four countries do not support a claim of an explicit shift towards an increased consumption of vegetables, animal and other processed food products (see also Appendix 2). Moreover, analyses of local context and economic backgrounds necessary to understand the data are currently lacking.

3.3 Conclusions

FAO data for ten selected SSA countries indicate that food availability (in kcal/capita/day) has increased over time in most countries. Yet, in Kenya, Uganda and Tanzania levels of food availability are rather constant, whereas in Zambia food availability has fallen below 2,000 kcal/capita/day since the end of the 1990s. More detailed data on calories by products point at a gradual shift from traditional (maize, millet, sorghum) to non-traditional cereals (wheat and rice) in most countries. For other product categories there is no indication of significant changes in consumption patterns in these ten SSA countries over the period 1990-2013, although in some cases for some countries for some food product categories small shifts in consumer trends can be noted. World Bank household survey data from Ethiopia, Nigeria, Tanzania and Uganda give some support for asserting that nutrition transition is taking place in urban areas in these countries as generally urban diets include fewer cereals and starch products and more meat/fish products than the rural diets in these countries. However, the limited number of years and countries for which these data are available and the lack of analyses to interpret the data prevent drawing firm conclusions.

⁹ This finding is confirmed by Cox and De Weerd (2016) in their panel study on the impacts of urbanisation on food consumption in Tanzania. This study also indicates that urbanisation in Tanzania is associated with important changes in dietary patterns, including a shift towards more processed and ready-to-eat foods.

4 A changing food retail and provisioning subsystem in SSA countries

Literature and also less formal information sources such as electronic news items claim that over the last decades supermarket chains have entered the food system in quite a number of SSA countries, taking an increasing share of total food sales (at least locally or regionally), offering consumers an increasing variety of food products that can be bought 'under one roof'. Next, in SSA urban areas the foodservice segment (restaurants, fast-food chains, home-delivery) has gone through a rapid development. This chapter documents examples from the literature describing the process of supermarket expansion in the SSA region, summarising consequences for the food retail structure in the region and pointing at a number of factors that affects the pace of supermarket development in SSA.

4.1 The emergence of supermarkets in SSA

The global retail expansion trend is characterised by large retailers moving from comparatively more advanced and developed countries into less developed ones, and from urban centres to small and rural towns. Sub-Saharan African countries have been part of this process only lately.

Literature on the diffusion of modern format food retail stores often refers to a process of waves in which expansion has occurred from the developed into the less developed world. The first-wave countries included South Africa (in addition to much of South America and East-Asia outside China), in which the small share of modern food retail in overall food retail in the early 1990s tended to go to some 50% by the mid-2000s (Reardon, 2011). The second wave was in much of Southeast Asia, Central America and Mexico, followed by a third wave in China, Vietnam, India and Russia. In Africa outside South Africa, regulation and democratic reforms, urbanisation, and the new emerging middle class among others are the factors that seem to be driving the fourth wave (Dakora, 2012). African countries in which the diffusion of modern food retail supermarket rolls out most quickly are in parts of West Africa, such as Nigeria and Ghana.

Yet, supermarkets have also been spreading fast throughout countries in East-Africa. In Kenya, for instance, supermarkets have rapidly gained in importance in recent years, accounting for about 10% of national grocery sales, and over 20% of food retailing in major cities (Rischke et al., 2014). Whereas this share in Kenya is still lower than in middle-income countries in Asia and Latin America, it is already higher than in most other countries of Sub-Saharan Africa. In Tanzania, for example, a few international companies have already entered the market but the modern food retailing distribution system is still at its early stage of growth (Nandonde and Kuada, 2016). In recent years, Ethiopia has seen a surge in the number of large-scale modern food stores opening in the capital city, Addis Ababa. This growing trend of establishing supermarkets is primarily attributed to the country's double digit growth over the last decade, urbanisation and the expanding population of the capital city (USDA FAS, 2016). Up to now, however, supermarkets are exclusively concentrated in Addis Ababa, in which an estimated 5 million people live. Major retail outlets are reported to source nearly all processed and packaged foods from foreign suppliers (US and Europe), whereas most fresh fruits and vegetables are sourced locally, as regards eggs and meat domestic sources dominate. Next, dairy products are mainly imported from Europe (USDA, FAS, 2016).

While foreign players are not allowed to invest in Ethiopia's retail industry, internationalisation of food retail has started in many other African countries. South-Africa's retail environment is by far the most sophisticated of the continent. World's largest retailer WalMart has entered South Africa in 2011 by a takeover of a local chain (Dakora and Bytheway, 2014), and SPAR (a Dutch multinational retail chain and franchise brand) has been around for quite some years. The largest South African food retailers all have outlets in other African countries, mainly in the southern part of the continent (buzzsouthafrica.com). In fact, the expansion of food retail companies across the border in Africa is

led largely by South Africa retailers (Dakora et al., 2014), whereas over the years also several other dominant African players at their home market have boosted their presence over the continent, such as Kenyan supermarket chains having expanded into the greater East African Community (EAC) region (including Tanzania, Uganda, Rwanda, Burundi Sudan and Kenya).

Yet, also European food retail chains are entering the SSA region. For instance, Ghana's recent economic growth has encouraging international supermarket chain expansion and has led to the entrance of Carrefour, the world's second-largest retailer, in Ghana in 2015. In addition to Ghana, Carrefour operates supermarkets and hypermarkets in seven other countries throughout the region (Cameroon, Republic of the Congo, Ivory Coast, Gabon, Nigeria, Democratic Republic of the Congo and Senegal; www.carrefour.com/current-news, 18 December 2015). Spanish supermarket chain Distribuidora Internacional de Alimentacion (DIA) plans to open more than 100 stores by 2020 in Nigeria, which is the third African market to have the company's stores after Ivory Coast and Senegal. PWC (2016) provides an overview of international food retail presence in ten most advanced economies in SSA, but also underlines that domestically owned supermarkets dominate the supermarket sector in all these countries. Moreover, an estimated 90% of all food shopping is through informal channels such as open markets, kiosks and street hawkers, and through small food shops.

4.2 Consequences for the food retail market structure

Despite the entrance of supermarket chains in recent years, the open-air markets and hawkers still dominate the food retail system in SSA (Dakora and Bytheway, 2014; PWC, 2016). Most countries in SSA have traditionally very informal retail systems, in which open-air markets provide generally locally produced foods including fresh meat, vegetables and fruits, whereas hawkers are favoured by low-income households, competing in terms of convenience, selling ready-to-eat, convenience foods or beverages.

Due to the high extent of informal trade, figures on market shares in the national food retailing are scarce and should be interpreted with caution in case shares are claimed. In most studies and reports on this issue, the increasing importance of supermarkets as a food retail outlet in SSA countries is based on the dynamics they cause by opening new shops, largely in the bigger cities of the country at hand but still little evidence is provided by figures showing increasing shares in overall food sales supermarkets account for in SSA countries.

There are, though, studies that have put effort in measuring the development of the supermarkets' shares in overall food sales in SSA countries. An USDA/FAS 2012 report presents the composition of Nigeria's food retail market showing that 1% of total food sales is through supermarkets. Raaymakers (2017) refers to a slightly higher figure - 2% - for supermarkets food sales share. Based on 2014 Nigerian source, Raaymakers et al. provide key indicators of Nigeria's food retail sector, indicating that the traditional open-air markets and the convenience and small stores comprise 65% and 33% respectively (Table 4.1). Raaymakers et al. describe the recent developments in the food retail sector in Nigeria, which is featured by the introduction/establishment of international supermarket brands and the construction of modern and consumer-oriented shopping malls. Despite the fact that supermarkets only take 2% of the total food sales, they are seen as an important segment due to the growing middle-class and income with rising expectations and sophistications. Another indication of the dominance of the traditional food channels is provided by Nielson (2015) who shows that 9 of the 10 respondents to its retail survey normally shop at traditional food channels like neighbourhood shops and open markets.

Several studies have looked into the dynamics of the food retail structure in Ghana. Based on a survey covering three cities in Ghana, Mengh et al. (2014) find that about 17% of households purchased food in supermarkets at least weekly. Visitors of supermarkets in towns are high-income and well-educated households living in developed urban areas. Conducting a case study on consumers' food buying behaviour in Accra (Ghana), Oltmans (2013) finds that traditional (open-air public) markets remain strong, although supermarkets have entered the food retail environment in the neighbourhood that was subject of research. Consumer preferences for traditional markets are based on low prices and the

quality of the food (especially fresh fruits and vegetables), convenience and proximity of traditional markets to their neighbourhood. Oltmans also observes the emergence of neighbourhood mini markets. Although mini markets are rarely the main food retail outlet for consumers, the majority of consumers frequent them to buy a variety of affordable foods throughout the day, especially in the evening hours when traditional markets are closed or a trip to a retailer outside the neighbourhood for one or a few items is costly. Market researcher ReportBuyer (2016) also notes that Ghana's food retail sector is dominated by the informal sector, with 70% of food purchased through traditional markets. The remaining 30% of foodstuffs are sold by a mix of grocery, convenience stores, supermarkets and hypermarkets in the burgeoning formal food retail sector.

Table 4.1 *Nigeria's food retail sector*

	Supermarket	Convenience store and small groceries	Traditional open-air markets
Average size (sq. m)	100-500	<20-50	Clusters of stalls 5-10 square meters in a large open air area
Number of outlets	100	500,000	2,000 (locations)
Market size served (%)	2	33	65
Average Annual Turnover (USD)	2.5 million	50,000	Approx. 4 million per location
Location	Urban	Urban	3:2 (urban to rural, resp.)
Stock level	Full-Line	Limited	Very Limited
Service Method	Self-Serve	Mostly assisted	Assisted

Source: Raaijmakers et al. (2017).

Mwansalkiwa et al. (2015) interviewed a total of 100 households which were randomly sampled from different Kampala (Uganda) suburbs to find features of their food purchasing behaviour. Of these 100 households, 92 bought vegetables and fruits from traditional markets, and all the 100 households interviewed bought cereals and staple foods from traditional markets. In addition, 39% of the households bought livestock products (beef, chicken, eggs, pork and goat) from supermarkets. In terms of processed products (mince, sausages, milk products, flour, jam, butter and juices), only 7 of the 100 households bought from traditional markets, implying 93% of the households considered by the study bought processed agricultural products from supermarkets. Sixty-eight reported that the processed products they purchased in supermarket are produced outside Uganda, mainly South Africa. Furthermore, only 15 households reported that the fruits and vegetables that they buy in supermarkets are produced outside Uganda. The livestock products households bought were mostly (98%) locally produced. These results confirm earlier studies that found that processed agricultural products, sourced mainly from abroad, form the bulky of all foodstuffs in most supermarkets in Uganda.

The results obtained imply that both traditional markets and supermarkets are important in the marketing of agricultural commodities. Both provide market opportunities for a variety of farm products.

4.3 Food service development and food manufacturing modernisation

Within SSA, developments in the food-service markets are most rapid in South Africa (USDA, FAS, 2016b). Hospitality and tourism are fast-growing sectors in the South African economy; growth in international travel (both business and holiday travellers) have bolstered the foodservice market in 2016 despite the country's weakened economy. International western-style fast food chains do not seem to have entered the continent on a wide scale. For instance, McDonald's has outlets only in South Africa and Mauritius, while KFC is in several SSA countries, such as South Africa, Kenya and Zambia (PWC, 2016). Restaurants and local fast-food franchises are growing all over the place, though, in particular in the main cities of the continent.

In an evolving food-system environment, local agricultural and food processing companies are modernising and developing as well, although the pace of development varies a lot among countries in the SSA region. PWC (2016) illustrates this variety by pointing at several examples in the ten profiled countries of its study showing local food companies benefitting from rapidly changing food consumption patterns towards more processed and convenience foods. Also Reardon et al. (2015) point at a number of examples (in Ethiopia, Tanzania, Nigeria and Senegal) showing a rapid emergence of processed food products produced by grassroots local firms using locally produced crops and/or livestock. Yet, the scale of these developments seems to be still rather small. Local sourcing of crops and livestock raw materials in quantities and qualities that are required by the modern food retail chains remains a big challenge for processors. Therefore, meat manufacturers and breweries, for example, vertically integrate with farming and distribution/transport activities due to problems with the quality and regularity of supply by local farmers. In most SSA countries foreign food and beverages manufacturers are present, having their home-base in either another SSA country or outside the region (like Nestlé, Unilever, Heineken and Coca-Cola, which are in some SSA countries sometimes already for many years). However, these multinationals are exceptions to the rule that local foods are largely supplied by local manufacturers, or directly by imports. Next to South Africa, PWC's report is most positive about the development and strength of local food processing and packaging industries in Kenya, Ivory Coast and Zambia, where quality and diversity of supply are claimed to be a sustained part of today's business culture (more on supply chain linkages and the role of the domestic agricultural sector in SSA modern food systems in Chapter 5).

4.4 Factors hampering the expansion of supermarkets in SSA

The development of the supermarkets as part of a food retail system depends very much on income trends. Literature (also referred to in Chapter 2) generally identifies the USD 1,000 income level as an important barrier that if reached, allows for an expansion in the amount and type of consumer goods purchased. A first trend, then, is to increase the amount of food consumed, in order to boost the daily caloric intake. Following this, a further increase in income will allow for a switch to better quality and/or more convenient foods, for example the gradual introduction of meat and processed food into the diet. Although rapidly increasing in absolute numbers, the percentage of SSA population with an income of more than USD 3/day is still low in many countries in the region.¹⁰

The diffusion of supermarkets in SSA countries is hampered by many other factors than only income development. For instance, finding suitable and reliable suppliers, managing logistics, finding suitable retail space and experienced retail managers are just a few of the challenges related to the entry modes decisions and operational management mentioned by Dakora et al. (2014), who claim that all these factors combine to make this process of modernising the food retail sector in the SSA region slow in evolution.

Sourcing of a constant supply of good quality products might be difficult due to underdeveloped local primary agriculture and processing industries - an issue that will be discussed in more detail in Chapter 5. Also, the development of modern food retailing is hampered by an deficient physical infrastructure in many SSA countries (KPMG, 2015; PWC, 2016). The latter is extremely important as due to the perishable nature of (most) food, supermarkets require to make large investments in logistics, distribution and inventory maintenance such as refrigeration, back-up generators, trucks and distribution centres. Well-maintained roads and a constant delivery of power (gas, electricity, etc.) are, hence, particularly important for supermarkets' daily operations. In many SSA countries, however, rural areas have no access to electricity whatsoever and grid-connected areas (which are predominantly in urban areas) are subject to frequent electricity shortages and blackouts.¹¹

¹⁰ Note that the number is also much disputed: Mwititi (2015) refers to reports indicating the real size of Africa's middle class is 18 million, not 300 million as the African Development Bank claims.

¹¹ <http://energymap-scu.org/energy-in-sub-saharan-africa-spotlight/energy-usage-in-sub-saharan-africa/>

The wider assessment of the business environment in most of the SSA countries also points at difficulties related to expanding economic activities in general and a formal food retail system in particular. A formal food system relies on institutions (including the government) that ensure compliance with the rules of society (including formal law and informal norms). However, SSA countries score generally at the lower end of the ranking when it comes to indicators that proxies for 'political stability', 'government effectiveness', 'regulatory quality', 'rule of law' and 'control of corruption' (World Bank, Worldwide Governance Indicators on www.worldbank.org/governance/wgi), which indicates that macroeconomic and political risks in most SSA countries are generally high due to bureaucracy and corruption, and cultural differences. Weak institutions and the economic risks involved lead to a slow process of internationalisation of businesses, with foreign food retailers entering SSA markets but also leaving the country again (Dakora et al., 2014; PWC, 2016).

4.5 Conclusions

South-Africa was among the first countries on the African continent in which supermarkets entered the food retail market. This modern retail format has spread fast in the last 10-15 years in several other SSA countries, such as Kenya, Tanzania, Nigeria and Ghana, and predominantly in urban areas. Next to domestic owners, foreign players have entered the food retail industry, yet their presence is still rather limited. Moreover, informal channels such as open markets, kiosks and street hawkers still dominate food shopping in SSA, in addition to small food shops. People's buying behaviour changes, though, as case studies show that high-income households living in urban areas tend to regularly visit supermarkets for purchasing products that differentiate in quality, convenience and taste. Within SSA, food service markets are developing most rapidly in South-Africa (where hospitality and tourism are a fast-growing sector). Food manufacturing modernisation is illustrated by several case studies showing grassroots local firms using locally produced crops and/or livestock. However, the scale of these developments (in country and regional perspective) appears to be still rather small. The sourcing of a constant supply of good quality products, deficient physical infrastructure and a weak business environment (including the lack of institutional infrastructure) are important factors hampering the modernisation of food systems in the SSA region.

5 Supply chain developments and inclusion of small farmers in local and regional chains

5.1 Introduction

If local farmers and food processors supply modern food retailers, supermarkets may boost domestic agrifood sector development, providing employment and income to farmers' households and workers in the food manufacturing industry. A modern food system, though, is featured by food production and trade that are increasingly regulated through stringent public and private requirements on food quality and safety, and on environmental aspects. Such standards can create opportunities to become engaged in modern value chains but the production and process requirements inherent in the standards-driven upgrading also implies potential constraints and marginalisation of less-developed, small-scale farmers as standards imply investments and requirements that are difficult or costly for farmers to satisfy. Empirical evidence shows that integration of smallholders in these modern supply systems - whether these are focused on international markets (for instance supplying European markets) or on domestic markets - is mixed (Reardon et al., 2009; Swinnen, 2016). In some cases they are fully integrated, in other cases processors and traders prefer to source from larger farms; in many cases supermarkets' sourcing system relies on a mixture of large and small farms. What evidence of SSA local farmers being able to integrate in modern supply chains (and what made them successful in this process) has been collected so far?

5.2 Do supermarkets source from local small-scale farmers?

Much of the research on the impacts of supermarkets' sourcing on small farmers is focused on horticultural products, mainly fresh vegetables of which the growing is predominantly in the hands of smallholder farms in Africa (see Vandervelde et al., 2016 for references of such studies). For instance, building on a case study in Kenya, Chege et al. (2014) find that farmers with contracts with supermarkets have higher cash incomes than those who do not supply these shops. More cash incomes improve the farmers' households economic access to food. In this case study, supermarket farmers sell vegetables under contract. As these supermarket contracts provide assurance and price stability, farmers have the incentive to specialise on vegetable production. More vegetable production also entails higher quantities of vegetables consumed at the household level. As a result, supermarket participation has positive impacts on food security and diet quality of these households, increasing calorie, vitamin A, iron, and zinc consumption by 15-20% or more.

However, this is not a static or sustained situation, as the same authors (in Anderson et al., 2015) show in an extended, follow-up research. Based on panel data, the authors show that many farmers have dropped out of the supermarket channel due to various constraints, such as a lack of capital endowments (with regard to irrigation and transport), and limited time or the availability of (household) labour: cleaning, bundling and delivering vegetables to supermarkets are time-intensive activities that appears difficult to out-source to hired labour. These constraints are particularly relevant to the smaller farms. Based on 120 interviews of farmers at close distance to Nairobi, Ismail et al. (2011) feature farms participating in supermarket supply chain as the bigger ones in size (hectares) and number of labourers, indicating that scale matters. Next, these farmers are higher educated and have better access to extension than those not involved in supplying supermarkets. Farmers participating in supermarket channels had significantly higher revenues compared to those supplying traditional markets. In order to improve smallholders' access to modern retail formats and overcome the scale problem, Ismael et al. recommend institutional innovations that help smallholders

band together in the form of marketing arrangements such as producer market groups and cooperatives.¹²

Other examples of recent research pointing at the difficulties of smallholders to participate in supermarket value chains are Mwambi et al., 2016 (on avocado farmers in the Kandara district in Kenya), Dijckhoorn, 2016 (on tomatoes growers in Nigeria) and Annor et al., 2016 (on smallholder pineapple farmers in Akuapem-South, Ghana). These case studies underline that lack of access to farm credits, high cost of farm inputs, labour, storage and transport are major obstacles to rural smallholders farmers in providing the quantity and quality of products that modern retail markets are demanding. To these factors Wagner et al. (2016) add the increasingly centralised procurement practices of supermarkets in Dar es Salaam (Tanzania), which is very different from the informal and unstandardised food procurement system smallholders are used to operate in. The fact that many supermarkets in the capital are foreign owned enhances their procurement strategies of importing products. Consequently, local small-scale suppliers seem to be excluded from the emerging modern food retail industry in Tanzania.

The thesis that small-scale local production is generally unable to source the expanding supermarket format in SSA countries, is substantiated by Nair and Chisoro (2015) who explain that investments necessary for complying with stable supply of high quality produce act to smallholders as a barrier to entry to supermarket value chains. The authors state that with eighty per cent of farmers in southern Africa (their region of research) being subsistence farmers the local supplier base for supermarkets is particularly low. In countries such as Botswana and Zambia local content policies have emerged with the aim to support local supply participation in supermarket value chains, yet the implementation has been sluggish and effects of this policy have not been traceable. At the same time, supermarkets are sourcing significant shares of their assortment by imports. This tendency is confirmed by Jeffery (2013) who reports that 50% of Shoprite's inventory in Namibia and 99% of the fresh fruit and vegetables sold in its Angolan shops were imported from its home-base South Africa. Similarly, another SA retailer - Pick 'n Pay - sourced 70% of its produce from home. The supermarkets' centralised form of regional procurement is said to be the major cause of this, making it difficult for local suppliers to gain access to the shops and, when they do, the produce is mostly sourced from large-scale farms. In Zambia, for example, 80% of fresh fruit and vegetables is bought locally, but 90% of that is from large-scale farmers.

Supermarket procurement strategies may change, however, as they further develop, as Evers et al. (2014) show in their study on the sourcing of fresh fruits and vegetables (FFV) by South-African and Kenyan supermarkets with outlets in other countries in East Africa (such as Uganda and Tanzania). The authors show that regional supermarkets are an emerging channel for expanding trade in FFV across East Africa, with local suppliers increasingly engaged in regional trade. Interestingly, the authors depict a stepwise change in procurement policies of supermarkets entering a foreign market, with in a first stage of entering a country, regional supermarkets mainly import products (often from their home base), followed by a second stage where they expand domestic sourcing, and a third stage, as they enter new countries, supermarkets may import from phase two suppliers through their regional distribution chains. The authors' case study research in Kenya demonstrates the ability of some organised smallholder groups to supply domestic and regional supermarkets, as both phase two and phase three suppliers. In Uganda (where supermarkets are more recent), regional supermarkets import produce from their home countries, but they also source locally from one medium-sized farm and a few well-organised out-growers, whereas the authors emphasise that fragmented smallholders are struggling to supply supermarkets. Uganda is therefore largely in phase two, according to Evers et al., although Ugandan FFV exports to Africa are expanding and supermarkets provide a potential channel to promote this. The authors conclude that domestic and regional retailers open up an expanding entry point into supermarket value chains for local growers of fresh produce, who can comply with standards that are applied by domestic and regional supermarket operating in East Africa (mainly product, some process; rarely social or environmental standards).

¹² See Ton et al. (2017) (forthcoming) for a systematic review of contract farming and impacts on income and food security. The study, among others, highlights the role of cooperatives and other collaborative forms among farmers in benefitting from contractual arrangements with purchasers.

5.3 Local food processing industries and supermarkets

Modern food retailers in developing countries are characterised by selling more packaged and differentiated processed and quality food than traditional food outlets. Supermarkets, then, require a developed local food processing industry that is able to guarantee stable supply of high quality produce that is safe and complies with a country's rules and laws on food. The processing industry, in its turn, seeks local suppliers who are able to comply with these requirements or has to rely on imports. There is limited systematic research that suggests modern food retailers in SSA countries import most of their consumer-oriented foods from importers and internationally sourcing wholesalers, which leads to processed foods available in supermarkets that are largely imported. The argument for this strategy is that local food processing industries are mostly small scale, underdeveloped and produce at relatively high-cost (mainly due to poor infrastructure related to power, water, roads, etc.).

The latter is confirmed by USDA/FAS (2013), stating that Nigeria's food processing sector is mostly composed of small and medium enterprises, which fail to meet the demand for quality processed foods in this country. The underdeveloped state of the food processing industry also holds for Ethiopia where nearly all of the processed and packaged foods sold at major retail outlets are imported (FAS, 2016). As already mentioned before, Reardon et al. (2015), though, point at some very positive developments in the supply chain in these two countries, where value chains develop due to investments of small and medium-sized local processors.¹³ These examples may highlight the exceptions to the rule, which is evaluated by the African Development Bank as 'Actually the level of agro-processing at rural level in Africa is in most of the cases inexistent or just very basic' (www.afdb.org, agro-industrial development). In addition to a general lack of processing capacity as reason for SSA low agribusiness output, the Bank points at other barriers to value addition or barriers to selling demanded, competitively-priced value-added products, such as insufficient or inconsistent quantities of feedstock (raw crops), lack of access to electricity for value addition processes, lack of skilled labour, and lack of affordable and appropriately structured working capital and other financing for storage, aggregation, and processing. There are several 'downstream' challenges that make supplying competitively-priced products to centres of African demand challenging, including high logistics costs arising from poor transport and other infrastructure, high taxes for processed products, lack of feedback from buyers to processors and from processors to farmers on the necessary quality of products, insufficient or unenforced health and other food standards, and insufficient investment in marketing and branding to increase local demand for processed products (AfDB, 2016: 17). As a result, African countries process only a limited share of the agricultural commodities they produce and meet further demand for processed products through expensive imports. In its Strategy for agricultural transformation, the Bank's aim is to engage private sector investments in agricultural value chains by reducing risks associated with agricultural markets through creating an improved agribusiness environment (AfDB, 2016).

Research from Tanzania further highlights the local food processors' difficulties in establishing sustained relationships with modern food retailing. Nandonde and Kuada (2016) look at what criteria are used by modern food retailers in selecting local food suppliers in Tanzania, asking six food retailers in the country extensively about the factors steering the acceptance of local suppliers. Authors refer to older studies indicating that the food business in Tanzania is characterised by untrustworthiness by not fulfilling promises and commitments to other actors in the value chain. Their case study results point at nine factors being important in the retailers' decision about inclusion or exclusion of local suppliers. These factors are: acceptance of trade credit, legal certification, consumer feedback, reliability, return policy, packaging, price, quality and a well-promoted product. Cross-case analysis shows that price is one of the most important factors used in the selection of local suppliers by retailers.

Each retailer in the survey company insisted that food processors adhere to the country's rules and present certificates showing that they are certified to process food for mass commercialisation. The Nandonde and Kuada study shows that complying with government regulations is important to

¹³ See for other examples of local sourcing by food industry (e.g. sorghum for breweries) the IFDC 2Scale project (among others the impact study by Christine Plaisier, Wageningen Economic Research).

retailers because if they are caught selling uncertified products they face penalties and their goods are confiscated. Food quality is tested by employees and consumers. Their feedback is an important factor influencing retailers' choice of suppliers, as secondary data support views that local food items in the country are generally of low quality. On return policy, suppliers commonly have to agree to replace anything, including expired products and damaged goods, at the retailer's request, whether or not the goods were received in good condition. Traditionally, food suppliers in Tanzania were drivers of value chains and set trade terms including credit terms and means of payment, yet the survey shows that retailers now drive the terms of trade credit. The Tanzanian case study suggests that Tanzanian food producing companies have the option of integrating into modern food retailing if they offer the product at the right price-quality ratio *and* accept the modern retailers' terms on trade credit and return policies. From their survey, Nandonde and Kuada conclude that modern retailers in Tanzania are able to reject suppliers because of disagreement on trade credit and that they can be selective in their choice of suppliers and insist on certain conditions from suppliers.

5.4 Conclusions

Literature shows mixed evidence for SSA local farmers being able to integrate in modern supply systems, with some successes but also bottlenecks. The (larger) scale of production, (good) education level, (improved) access to finance, (family) labour, storage and transport means are important factors supporting farmers to connect with modern food-system actors. Next, the formal and increasingly centralised procurement practices of supermarkets is very different from the informal and unstandardized food procurement system smallholders are used to work in. Next, quality and food safety requirements make it difficult for local suppliers to gain access to modern food retail formats. Yet, there are examples of local growers of fresh producers who comply with standards and find entry into supermarket value chains. Same is with the local processing industries as case studies in Ethiopia, Tanzania, Nigeria and Senegal show their capability of initiating value chain development due to investments of small and medium-sized local processors. Generally, though, the level of agro-processing in SSA is assessed being very basic, while increasing the industry's value added processing capacity faces many challenges. As a result local food producing companies have difficulties in integrating with modern retail supply chains.

6 Transformation of SSA food systems and import dependency

6.1 Introduction

The previous chapter indicates that local supply generally has serious difficulties integrating with supermarket supply chains. If supermarkets are unable to source domestically, they may have to rely on imports. Observations on the spot point at many processed products in supermarkets are imported (e.g. Andam, 2017, for Ghana; Minten et al., 2016, for Addis Ababa, Ethiopia). This adds to literature underlining that SSA becomes more and more dependent on food imports (e.g. Van Ittersum et al., 2016; AFC, 2015; USDA, 2015; UNDP, 2012). If local supply cannot bridge the requirements linked to supermarkets' demand for processed and quality products - as the previous chapter points out - import dependency might indeed go up when nutrition transition continues and accelerates. Although we do not find strong evidence for a nutrition transition, nor for supermarkets gaining a significant share of food sales in SSA countries already, our analysis shows signs of dynamics in the SSA food system. In that context it is interesting to research whether these dynamics go together with increasing import dependency, especially for animal and processed products. This chapter examines recent trends in food import dependency based on FAO country level data.

6.2 Trends in imports of food product categories

SSA countries are highly diverse in terms of food production, imports and their trade position (see Appendix C for food trade positions of SSA countries in 2015). For these reasons, a regional overview is presented before food import dependency for a number of SSA countries is discussed. Figure 6.1 presents food import trends for four SSA regions: East (EA), Middle (MA), Southern (SA) and Western Africa (WA). Import trends are presented for five major food categories: animal products (meat, dairy and fish), cereals (including processed), fruits & vegetables (fresh and processed), oils and fats and Other food products (mainly sugars). Imports of all five import categories show an significant increase over the last 15 years for all regions, with imports being four to six times as high in 2014 compared to 2000 in EA and WA, and three to five times higher in MA and SA (depending on the product category). These data indicate that SSA is indeed importing much more food than the region did in the early 2000s.

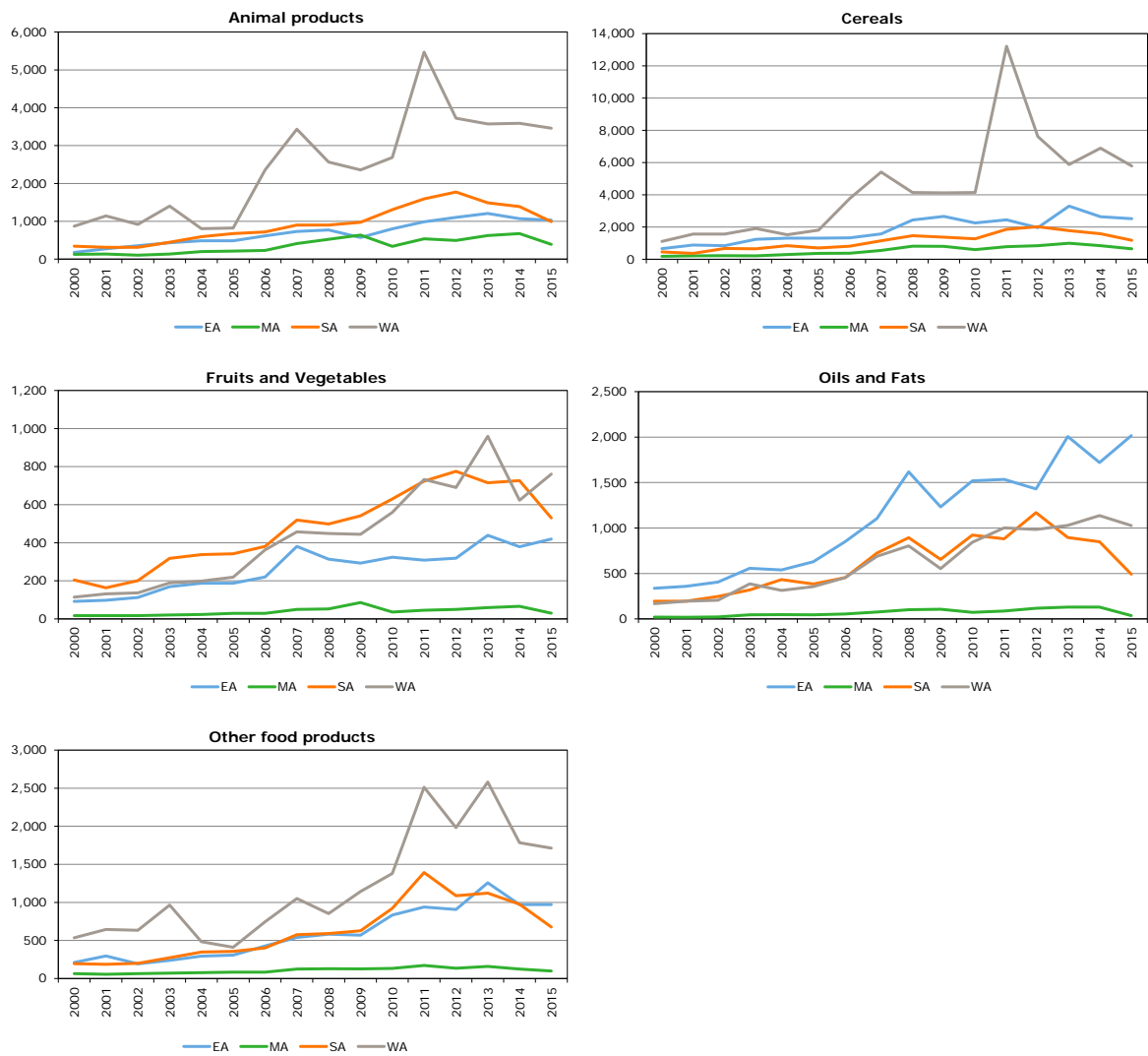


Figure 6.1 Food imports by SSA region, 2000-2014 (in million USD)
 Source: UNCOMTRADE.

Table 6.1 provides data on import values for the same ten SSA countries for which food availability data are presented in Chapter 2, in order to indicate trends in food import values for these countries.

Table 6.1 Food imports in selected SSA countries, in million USD

	Animal products		Cereals		Fruits & Vegetables		Oils & Fats		Other	
	2000/01	2014/15	2000/01	2014/15	2000/01	2014/15	2000/01	2014/15	2000/01	2014/15
Cameroon	58	369	139	616	6	23	9	26	45	78
Cote d'Ivoire	190	602	179	754	19	96	11	84	24	75
Ethiopia	3	25	120	857	3	90	27	820	8	298
Ghana a)	130	616	153	643	15	167	18	186	56	276
Kenya a)	13	32	196	526	20	71	116	562	80	258
Nigeria b)	497	1,912	539	2,553	10	360	24	570	274	1,236
South-Africa	178	1029	284	1,133	98	554	159	459	85	569
Tanzania	6	47	103	360	7	18	59	345	56	130
Uganda	2	10	59	241	2	20	25	240	26	136
Zambia	5	130	30	63	9	56	21	95	10	41

a) 2012/13 data; b) 2013/14 data.

Source: UNCOMTRADE.

The data show that food imports of all categories in this overview increase for all ten countries. Another observation is that for all countries except Zambia the import bill for cereals (and its products) is (much) higher than for any other product category. In the Others category, the imports of sugars have been a major contributor to the rapid increase of imports in Ethiopia, Nigeria and Ghana, whereas the increased import value of Oils & fats (specifically palm oil) has been most significant in countries like Ethiopia, South-Africa, Tanzania and Uganda.

Hence, both at SSA regional level and for the ten selected SSA countries, the conclusion is that the value of food imports has gone up importantly.

6.3 Comparing imports of foods with what is domestically available for consumption

Increasing imports have led to higher import dependency for many products as well, as shown in Figure 6.2. In composing this figure, import volumes of separate food items are transferred from kilograms into kilocalories and related to FAO food availability data from the FBS statistics. Food import dependency is defined as the share of imports in food availability of a country. Figure 6.2 shows this ratio for the ten SSA countries for a number of food product categories, and for a 'grand total' which means for all food categories together.

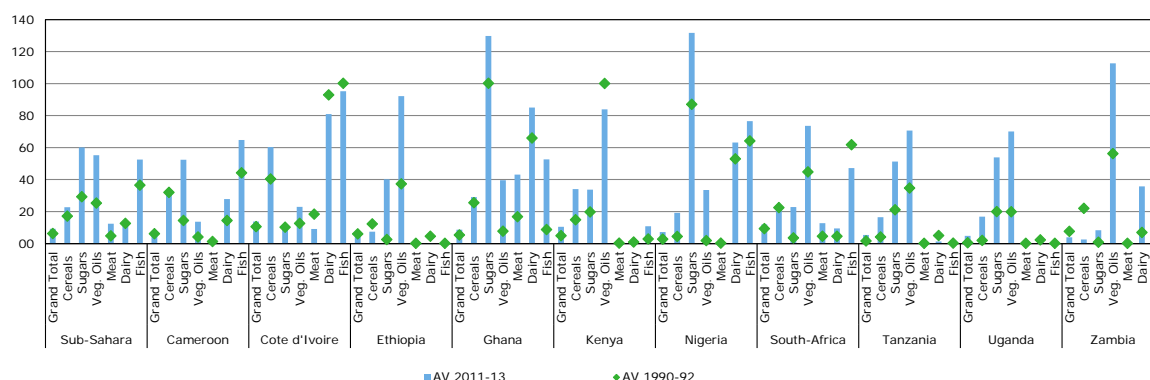


Figure 6.2 Share of imports in domestic food supply (in kcal/capita/day) in SSA countries
Source FAO Food Balance Sheets. Note: FBS import in tonnes is converted to kcal/capita/day based on the ratio between FBS food supply in tonnes and FBS food supply in kcal/capita/day.

Grand totals of the countries are relatively low: 9% in SSA overall, and out of the ten selected countries this share is higher only for Cote d'Ivoire (14%), Kenya, 11% and South Africa (12%). Totals have gone up compared to the early 1990s. This implies that SSA region have become more food import dependent over time, but with 10% share of imports in domestic consumption overall rates are still modest.

For some products, though, imports accounts for high share of domestic consumption. This is in particular the case of sugars, vegetable oils and fish (>50% in SSA overall and in most selected countries)¹⁴; next, much of the dairy consumption in Cote d'Ivoire, Ghana and Nigeria is imported. Import dependency of meat consumption is low across the countries selected, yet when further detailed it appears that 30% of SSA's overall consumption of poultry meat is imported (not shown in Figure 6.2). Despite significant imports of cereals in absolute figure (see Table 6.1), all countries except Cote d'Ivoire do not seem to be very dependent on cereal imports for their domestic consumption.

6.4 Concluding remarks

Regional and country data presented in previous sections (from FAO source) indicate that SSA food imports (in value) have gone up over the recent period, and that the region has become more food import dependent as well. This trend is also reflected in recent OECD, FAO and World Bank analyses of the SSA food situation and import dependency. For instance, in their 2016 Agricultural Outlook, OECD-FAO underline that agriculture and food production growth in the SSA region has failed to keep pace with demand deriving from population and income growth, resulting in rising imports for food products, such as wheat, rice and poultry (2016: 68). In a FAO-study, Rakotoarisoa et al. (2012: 5-15) explain that Africa has a food trade deficit already since the mid-1970s and ever since that deficit has grown fast, with import increases particularly striking for basic foodstuffs such as dairy products, edible oils and fats, meat and meat products, sugar and especially cereals, implying that food import has been increasingly important in ensuring food security. Nevertheless, Rakotoarista et al. (ibid) conclude that on a per capita basis the net food imports are relatively low and suggests that food import dependency is less alarming than often though (2012: 22-23). Own analysis using per kcal/capita data also shows that although increasing in some of the countries studied, food import dependency is still generally low.

¹⁴ For some products (sugars in Ghana and Nigeria), percentages are above 100, which means that production (and stocks) are very low and the country mainly imports this product, yet there is also some exports which brings domestic supply available below the level of imports.

7 Conclusions

7.1 Major findings

As a region that is rapidly urbanising and showed significant welfare growth rates in recent years, conditions in SSA are favourable for a nutrition transition that is characterised by increasing consumer demand for vegetables, livestock based and processed foods. Long-term FAO data indicate that food availability per capita has increased over the period 1960-2015 for seven out of ten selected SSA countries we analysed. However, only relatively small changes in diets could be identified in these countries, with shifts from traditional cereals like maize and sorghum to non-traditional grains like wheat and rice. World Bank LSMS surveys demonstrate that urban-rural consumption patterns are distinct, with urban population having diets with fewer cereals-based and more livestock products than rural population, but data cover only a few countries and few years. Moreover, survey data do not provide easy insights in whether diets are shifting to processed foods or not. Whilst modest signs of diet changes in the region can be deduced from them, firm conclusions cannot be drawn from the scattered data that is available.

Supermarkets have entered the food system in many SSA countries, but they operate mainly in the larger cities and account for just a small share of all food sales. Open-air markets and street vendors still dominate the food retail system in SSA. Yet, although just taking root, SSA food systems are transforming towards mixed market outlets as many case studies referred to in this explorative overview paper indicate.

Despite some positive examples in local food supply chain developments, local supply in SSA countries generally has serious difficulties integrating with (super)market supply chains. Studies indicate that processed food products sold in supermarkets are largely imported, as is fresh fruits and vegetables, and fish although the latter is mainly practised by supermarkets home-based elsewhere. However, and despite imports increase in values across the SSA country sample researched, there is no evidence for a rapid increasing food import dependency on a per capita basis.

Food systems in SSA show dynamics as in quite a number of countries in this continent diets change, supermarkets formats emerge, and food processors and farmers/growers invest in integrating in supermarket value chains. Literature points at sometimes rapid developments, but these stories are largely based on local specific cases. The overall, general picture in the countries this study has looked into, is that diet changes are mainly of a gradually nature, supermarkets are increasingly important but on a country base their share in total food sales remain limited, and food processors and farmers face many difficulties in their efforts supplying modern value chains.

7.2 Research agenda

This explorative paper, incomplete in its nature, gives rise to many follow-up research questions. A few are listed below along the lines of the need for better data and further in-depth analysis of the implications of modernising food systems for market linkages of farmers.

7.2.1 Data requirements

Diet change is an important driver of food-system dynamics. Therefore, reliable and accurate data on consumption trends is key in investigating forces behind food-system changes, but unfortunately these are scarce in SSA countries. *More detailed food consumption data* would thus help to analyse SSA food and nutrition situation and the extent of nutrition transition in the region. More in-depth analytical and quantitative research on people's eating and food buying behaviour shall be based on

improved data sets in order to provide for evidence-based research results. This type of research requires local/regional consumer surveys and field studies, in which not only shifts in quantities but also diet quality (nutritious food) should be subject of research. Such consumer surveys should also collect information about drivers of change in food consumption patterns.

Better industry data would improve insights into food industry developments and implications for the national economy (value added, employment, trade, etc.). A modernising food system is featured by an increasing role for processed foods. Literature indicates that supermarket chains in SSA countries import most of the processed foods which is due to the relatively low level of agro-processing in Africa. At the same time, there are limited data (e.g. food manufacturing statistics) in SSA countries to analyse the local food processing industry capacities, performance, efforts and barriers to integrate in modern food supply chains. With increasing demand for both fresh and processed food products in African urban areas there is high potential for value adding activities by the agri-food processing sector that may contribute importantly to a country's economic growth.

7.2.2 Market linkages for farmers in modern food systems' context

In-depth country case studies could complement literature that is mainly case specific (focusing on a product and a location/region). The entrance of supermarkets has diversified the food production, distribution and retail system in SSA countries, with supermarkets being one of the multiple food outlets for local farmers and processors. Although the local farmers' position in the supermarket channel has been researched in some SSA countries, systematic research to highlight the consequences of the emergence of supermarkets for farmers' position in the food supply chain on a country basis is still lacking. This holds for instance for countries like Nigeria (the most populated country in the region).

In addition to the previous point, the link between agriculture and retail is much broader than farmers versus formal supermarket channels only. Increasing supplies to urban (formal and informal) markets is necessary due to growing population centres and the food supply to metropolitan areas becomes more complex logistically, as well as in terms of economic relationships (more actors are involved). Farmers may liaise with other actors in the supply chain in many ways, for instance via contract farming. *Research on modalities to source produce* from smallholders in SSA specific conditions (e.g. institutional environments and pace of increase of urbanisation rate) would contribute to find most efficient and effective (for instance in terms of income generation, employment and food security objectives) modes to feed Africa's growing cities.

Food standards and smallholders' and traders' position in the supply chain. Modern food systems are featured by food production and trade that are increasingly regulated through stringent public and private requirements on food quality and safety. Implications of applying food safety regulations can be huge for open markets and street vendors which are (still) the major food channels in SSA. Increased consumer concerns about food safety and diet quality in SSA countries may displace value chain actors from domestic markets, with considerable socio-economic consequences. More research is needed to help support governments to establish institutions that fit the local circumstances (making efficient and effective control and inspection systems work in a context of small scale farmers and traders operating at informal markets mainly) and at the same time enhance the sector's ability to comply with the international quality and food safety standards. Next, *market governance issues related to improved nutrition (healthy diets)* may become more important in SSA as the food environment and lifestyle changes which both may add to higher chances on obesity and overweight.

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Appendix 1 Sub-Saharan Africa

A1.1 List of countries (source: www.loc.gov)

Angola	Côte d'Ivoire	Madagascar	Seychelles
Benin	Djibouti	Malawi	Sierra Leone
Botswana	Equatorial Guinea	Mali	Somalia
Burkina Faso	Eritrea	Mauritania	South Africa
Burundi	Ethiopia	Mauritius	Sudan
Cameroon	Gabon	Mozambique	Swaziland
Cape Verde	The Gambia	Namibia	Tanzania
Central African Republic	Ghana	Niger	Togo
Chad	Guinea	Nigeria	Uganda
Comoros	Guinea-Bissau	Réunion	Western Sahara
Congo (Brazzaville)	Kenya	Rwanda	Zambia
Congo (Democratic Republic)	Lesotho	Sao Tome and Principe	Zimbabwe
	Liberia	Senegal	

A1.2 Sub-Saharan Africa, in UN classification of SSA regions. See

<http://unstats.un.org/unsd/methods/m49/m49regin.htm#africa>

Eastern Africa	Middle Africa	Southern Africa	Western Africa
Burundi	Angola	Botswana	Benin
Comoros	Cameroon	Lesotho	Burkina Faso
Djibouti	Central African Republic	Namibia	Cabo Verde
Eritrea	Chad	South Africa	Cote d'Ivoire
Ethiopia	Congo	Swaziland	Gambia
Kenya	Democratic Republic of the Congo		Ghana
Madagascar	Equatorial Guinea		Guinea
Malawi	Gabon		Guinea-Bissau
Mauritius	Sao Tome and Principe		Liberia
Mozambique			Mali
Réunion			Mauritania
Rwanda			Niger
Seychelles			Nigeria
Somalia			Saint Helena
South Sudan			Senegal
Uganda			Sierra Leone
Tanzania			Togo
Zambia			
Zimbabwe			

Appendix 2 World Bank LSMS data on urban and rural consumption

Table A2.1 Budget shares of food consumption (% food consumption value in the average food consumption budget (%))

Ethiopia	2011			2013		
	Urban	Rural	Total	Urban	Rural	Total
Cereals	45	49	49	49	57	56
Starches	8	6	6	8	6	6
Sugar	6	7	7	7	6	6
Pulses & Nuts	7	8	8	6	6	6
Vegetables & Fruits	4	2	2	3	2	2
Meat & Fish	13	9	9	10	7	7
Dairy products	3	4	4	4	3	3
Oils & Fats	0	0	0	0	0	0
Condiments	2	3	3	3	3	3
Other	12	12	12	11	10	10
Total	100	100	100	100	100	100

Nigeria	2010			2012		
	Urban	Rural	Total	Urban	Rural	Total
Cereals	25	28	27	27	32	30
Starches	16	18	17	15	17	17
Sugar	2	2	2	1	2	2
Pulses & Nuts	6	6	6	7	7	7
Vegetables	9	10	10	9	8	8
Fruits	2	2	2	2	1	2
Meat & Fish	23	19	20	23	19	20
Milk	3	2	2	2	2	2
Oils & Fats	9	9	9	6	7	7
Beverages	2	1	1	1	1	1
Spices	1	1	1	3	3	3
Other	4	2	3	4	2	2
Total	100	100	100	100	100	100

Tanzania	2008			2012		
	Urban	Rural	Total	Urban	Rural	Total
Cereals	34	34	34	19	36	36
Starches	7	15	12	3	15	12
Sugar	6	4	4	14	3	4
Pulses	5	8	7	8	6	5
Nuts	4	5	5	5	4	4
Vegetables	10	9	9	7	9	10
Fruits	4	4	4	2	4	4
MeatFish	18	13	15	18	15	16
Milk	3	4	4	2	3	3
OilsAndFats	5	3	4	13	3	4
Beverages	5	2	3	8	2	2
Total	100	100	100	100	100	100

Uganda	2010			2012		
	Urban	Rural	total	Urban	Rural	total
Cereals	16	16	16	16	15	15
Starches	22	32	30	20	31	29
sugar	6	4	5	6	4	4
pulses	7	10	9	8	10	9
nuts	3	3	3	3	3	3
Vegetables	6	7	7	7	7	7
Fruits	2	2	2	2	2	2
Meat & Fish	13	11	11	14	12	13
Milk	4	3	3	4	3	3
Oils&Fats	4	3	3	4	3	3
Beverages	5	5	5	4	4	4
Outside	13	4	6	14	6	8

Source: World Bank LSMS database (own calculations, rounded figures).

Appendix 3 SSA net trade in food

This appendix depicts regional net trade positions (in intra- and extra regional trade relations) of agricultural products related to domestic production and use. The analysis of the data shows the regions' food import dependency (on product categories' detail), and of individual SSA countries. This section also includes context explaining the net trade position of the region, referring to openness to trade and foreign investments as this openness can be a driver of change to food systems' dynamics.

A3.1 SSA net trade position in agricultural products and in foods

Taking the WTO definition of agricultural products (HS01-24, 29, 33, 35, 40,41, 44, 45, 50-53), trade figures show that quite a number of SSA countries are net-exporters of agri-food products (see Figure A3.1). For those countries that record a net trade surplus in agri-food products, major export categories are non-food commodities, which means commodities that are not edible. Examples of these commodities are coffee, tobacco, cocoa, live tree and plants, and cotton. For example, the East-African countries Ethiopia and Kenya are important coffee producers and exporters to the international markets. Together with significant exports of ornamental flowers, coffee exports adds importantly to these countries agri-food trade surplus. Other examples are Benin and Burkina Faso, two Western African countries that generate agrifood trade surplus because of their exports of cotton (accounting for over 50% of these countries' agrifood exports). Cocoa is a key agricultural product in Ivory Coast and Ghana, and both countries are among the largest cocoa exporters in the world: their export performance in cocoa explains much of their agri-food trade surplus. Nigeria, a huge net-importer of agri-food products, still reached export values of USD 2.4bn, of which cocoa, sesame seeds and rubber account for two-third of the value. Trade figures indicate that SSA agri-food net trade position is strongly impacted by exports of non-edible cash crops. These crops are largely exported to markets outside the region for further processing.

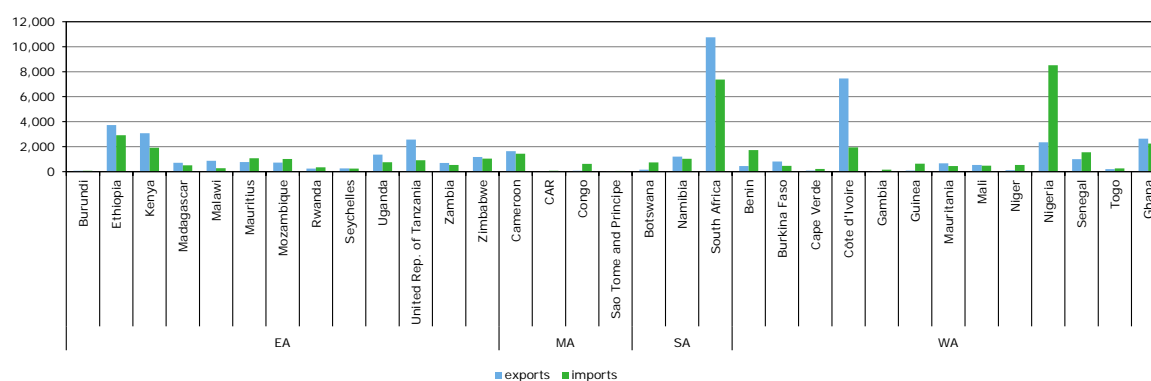


Figure A3.1 Agri-food trade balances of SSA countries (in million USD). Source: UNCOMTRADE. Notes: 2015 data for Eastern Africa (EA), except for Kenya (2013); 2014 data for Middle Africa (MA) and Southern Africa (SA); 2014 data for Western Africa (WA) except for Ghana (2013) and Mali (2012). Trade data of SSA countries not presented in this figure were not recorded (as reporter/exporter) since 2012.

Sub-Saharan Africa's exports and import of food products are presented in Figure A3.2. Food items include animal products like meat, fish and dairy (HS 02, 03, 04 and 16), cereals (HS 10, 11 and 19), vegetables and fruits (HS07,08 and 20), and 'other categories' like fats and oils, sugar and

miscellaneous edible preparations (HS 15, 17 and 21)¹⁵. Data show that only few countries generate a net food trade surplus. These countries are Malawi, Seychelles, Tanzania and Zambia in Eastern Africa (EA), Namibia and South-Africa in Southern Africa (SA) and Mauritania in Western Africa (WA).

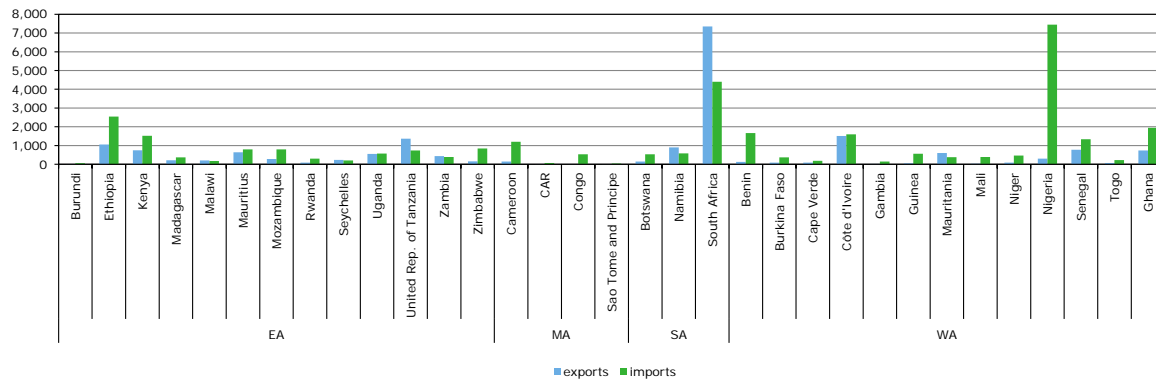


Figure A3.2 Food trade balances of SSA countries (in million USD). Source: UNCOMTRADE

Notes: see Figure A3.1.

A3.2 Intra- en extra-regional trade in food products

Trade in food products among SSA countries is mainly between neighbouring countries, while cross-regional trade in food products is relatively modest. Figure A3.3 offers an impression of the regional food trade relations of the four SSA regions distinguished; trade flows are estimated based on the available UNCOMTRADE trade statistics as explained in the notes to Figure A3.1, which means that not all SSA countries are included in this overview. Trade data used indicate, among others, that:

- All regions are net-importers of food from non-SSA countries except SA;
- WA and EA imports of food are mainly from non-SSA countries. MA, though, imports more foods from other SSA regions (mainly EA and SA) than from non-SSA countries;
- Intra-regional trade (=trade among countries in a SSA region) in food products is particular small in WA, MA and EA if compared to a region's overall food imports; in SA, intra-regional food trade is about 50% of SA's overall food imports.
- SA is the only region with a food trade surplus in its trade relations with other SSA regions, suggesting SA is the 'food provider' region in the SSA;
- Interregional trade (trade between the four regions) is particular small between West-Africa and the other three regions, which seem to have more intensive relationships among each other (again with SA being the net-exporting region).

¹⁵ This definition of food excludes live animals (HS01), products of animal origin nes (HS05), live trees and other plants (HS06), coffee, tea, etc. (HS09), oilseeds (HS12), Lacs gums etc (HS13), Vegetable plaiting materials (HS14), cocoa etc. (HS18), beverages (HS22), Residues and waste from food industries (HS23), and tobacco (HS24).

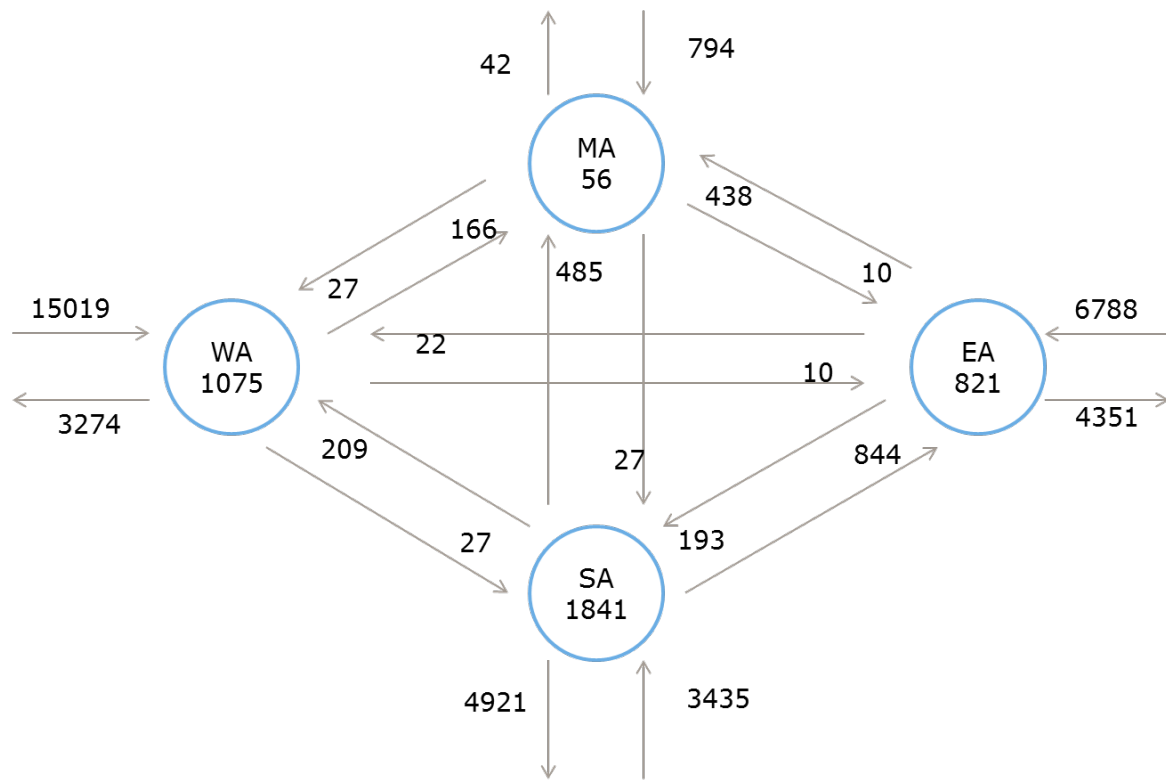


Figure A3.3 Inter-, intra- and extra regional trade in food products for SSA countries (in million USD)
 Source UNCOMTRADE. Notes: see Figure A3.1

There are several reasons why SSA intra- and interregional food trade is relatively low. Poor physical infrastructure (roads, rail tracks, harbour facilities, etc.) induce high costs on intercontinental transports. Import tariffs are another bottleneck for trade among SSA countries. SSA has established several free trade agreements promoting regional trading blocs (such as the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), and the Southern Africa Development Community (SADC)). However, these trade agreements frequently exclude free trade in foods. Next, SSA countries score very low on 'trade across border' indicators (measuring customs clearance of imports costs, port handling charges etc. at the border) in the World Bank Doing Business survey, indicating that international trade is costly. And last but not least, many SSA countries simply produce less foods than their populations need and are depending on imports, which thus have to be imported from outside the region. Another factor is the poor recording of trade in general: much trade is 'informal' and not registered, which also applies to food trade across borders in SSA.

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REPORT
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