
1. General introduction

The agricultural sector remains crucial to growth and development of many developing economies. In the agriculture-based developing countries in particular, the sector generates about 29% of the gross domestic product (GDP) on average and employs 65% percent of the labor force (World Bank, 2007). Furthermore, the agriculture-based developing countries are presently home to more than half a billion people, half of whom live below the poverty line of \$1.25 a day. About 68% of this population living below the poverty line is found in rural areas, where agriculture is the predominant economic activity. Indeed, agriculture is a direct source of livelihood for close to 86% of the rural population (World Bank, 2007). Agriculture therefore presents an important avenue for enhancing development goals and realizing the much needed poverty reduction in these countries.

In rural areas of developing countries, most households are smallholder farmers engaging in subsistence production, mostly producing staples for direct consumption and occasional surplus for domestic trading (McCullough *et al.*, 2008; World Bank, 2007). Besides providing a direct source of livelihood, agriculture therefore plays an equally important role of ensuring household food security. Furthermore, there are also rural landless households often employed as agricultural wage laborers. Through such wage employment, agriculture provides an important source of income for sustaining household consumption. Income from agricultural wage employment also provides additional cash flow for investment in agricultural production (Babatunde & Qaim, 2010; Maertens, 2009). Additionally, some rural households are also

involved in non-farm wage employment in agribusinesses that are directly linked with agriculture.

Agriculture-based developing countries also benefit a great deal from agricultural export that has traditionally been dominated by bulk commodities such as coffee, tea, and cocoa among others (Jaffee, 1992). These exports provide an important source of foreign exchange for developing countries (World Bank, 2007). However, most traditional tropical bulk commodities have experienced a major decline in world market prices that has undermined competitiveness of agricultural exports from developing countries. However, there are emerging international demands for non-traditional exports that open further market avenues for developing country agriculture.

1.1. Transformation of agriculture: emerging high-value markets in developing countries

Despite the declining world prices of many bulk commodities, agricultural exports continue to play a significant role in the economies of developing countries. The past three decades, however, have seen notable changes in international trade of agri-food products with processed products becoming increasingly important (Senauer & Venturini, 2005). The composition of processed food exports has also undergone remarkable changes with high-value commodities like processed fish and fresh fruits and vegetables (FFVs) assuming an increasing share of developing countries' exports (Kiggundu, 2006; Maertens & Swinnen, 2009; Mayer *et al.*, 2002; Watts, 1994; Whitaker *et al.*, 2006; Wilkinson, 2004). These changes constitute expanding opportunities for exports of high-value products that can offset export stagnation triggered by

declining world prices of traditional exports. Figure 1.1 shows an increasing trend in the export of non-traditional exports from developing countries.

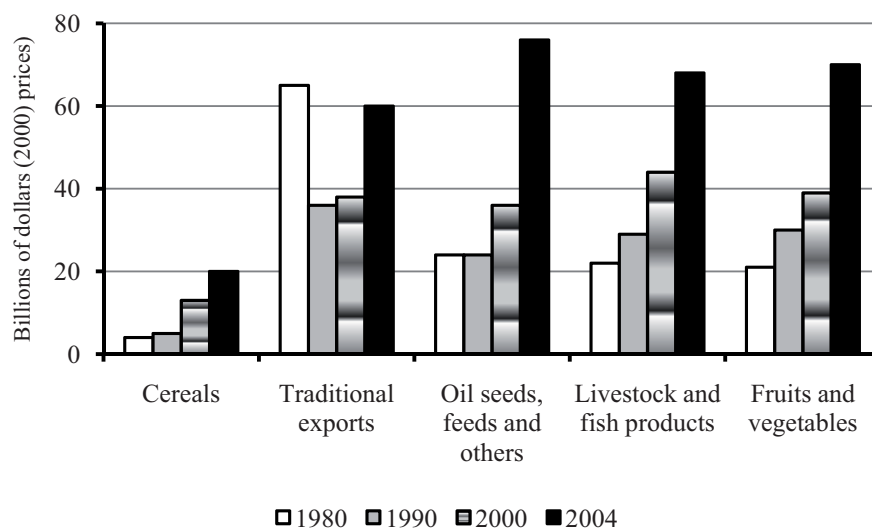


Figure 1.1: Expanding high-value exports from developing countries

Source: World Bank (2007)

Courtesy of this export diversification, high-value exports such as horticulture, livestock, fish, cut flowers and organic products currently account for 47% of developing countries' agricultural exports (World Bank, 2007). This is in comparison to 21% held by traditional exports such as tea, coffee, and cotton among others. These high-value exports do not only provide foreign exchange for developing economies, but also provide a major source of household income for farm households (Maertens & Swinnen, 2009). High-value exports also generate employment opportunities for wage laborers since their production is often more labor intensive (Weinberger & Lumpkin, 2007).

Several factors are responsible for these changes. First, consumer preferences in industrial countries, characterized by demand for off-season products are opening new markets for fresh

produces from developing countries (World Bank, 2007). In addition, declining tariff barriers and ability of developing countries to maintain year round supply of products also enhance developing countries' competitiveness in exports of high-value products. Advances in production, transport and other supply-chain technologies also make it increasingly possible for developing countries to export fresh produces (World Bank, 2005).

The growth in demand for high-value crops is not restricted to export markets. Domestic economies of developing countries are also experiencing increasing demand for high-value food products (McCullough *et al.*, 2008; World Bank, 2007). As can be observed from figure 1.2, developing countries are showing a shift in consumption patterns from staples to high-value fresh products. Remarkable shifts are particularly more evident in the demand for horticultural products.

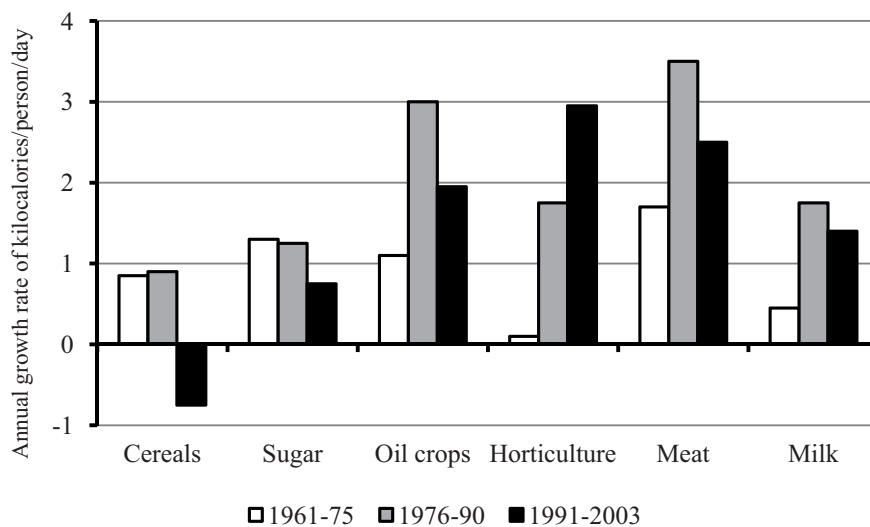


Figure 1.2: Shifts in per capita food consumption in developing countries

Source: World Bank (2007)

The dietary shifts are driven by several factors. First, recent decades have seen substantial growth in per capita incomes in developing countries – rising from 1% annually in the 1980s and 1990s to 3.7% between 2001 and 2005 (World Bank, 2006), with important implications for food demand patterns in the developing world (Mergenthaler *et al.*, 2009b; Pingali, 2007). Rising incomes generally increase demand for processed food. Higher incomes also increase consumer concerns for food quality and food safety, often associated with high-value products (Mergenthaler *et al.*, 2009a; World Bank, 2007). Furthermore, growth in income is often associated with more diversified consumption patterns (Beng-Huat, 2000). Finally, increasing demand for high-value food products is also encouraged by wider media penetration and greater participation by women in the labor force usually associated with rapid urbanization (McCullough *et al.*, 2008; Pingali, 2007). In particular, media penetration often leads to westernization of diets and local adoption of high-value diets that are already commonplace in industrialized countries. These factors are currently driving demand for high-value commodities in developing countries. As a result, new frontiers are opening up for a wide range of high-value agricultural products with the former niche phenomenon beginning to have wider market implications.

1.2. Implications for the supply chain: expansion of supermarkets

Increasing demand for high-value food products in developing countries has important implications for domestic agri-food supply chains. First, the year-round demand for products require retail outlets to organize the timing of purchases and deliveries in order to meet consistent product demand (McCullough *et al.*, 2008). Secondly, high-value food products are

highly perishable and quality sensitive, and this implies safety and quality challenges for retailers (Gulati *et al.*, 2007). Ensuring the quality and safety standards demanded by consumers therefore requires shorter supply chains often involving direct sourcing from farmers. Moreover, demand for food safety and quality entails informational uncertainties for supply chain actors (Okello & Swinton, 2006). In order to maintain quality and safety standards, retailers therefore adopt tighter coordination that enables efficient flow of product information along the supply chain (McCullough *et al.*, 2008).

However, traditional food systems predominant in developing countries present major challenges for retailers seeking to meet demands of emerging consumers of high-value products. First, traditional food systems lack the coordinating capacity to ensure consistency in supply and quality attributes. Traditional food systems are also characterized by information asymmetries, which limit the flow of information necessary for assuring product quality and safety as demanded by consumers of high-value products. Additionally, traditional systems are also characterized by spot market trading, usually prone to uncertainty in quality, supply and prices (Grosh, 1994; Simmons, 2002). The structural weaknesses of traditional food systems have therefore necessitated the entry of modern retail outlets including super- and hypermarkets in domestic food chains (Dries & Swinnen, 2004; Reardon & Berdegue, 2002; Weatherspoon & Reardon, 2003).

The initial entry of supermarkets is often motivated by growth in income, which leads to increasing demand for processed food (Reardon *et al.*, 2008). The resulting growth in demand provides scale economies, which is a major incentive for operation of modern retail outlets. But as incomes rise and inspire dietary shifts, consumers also become conscious of food quality and safety, which can hardly be provided by the traditional food systems. Having already established

themselves in the sale of processed food and accustomed themselves to the needs of high-value consumers, supermarkets then enter the sale of FFVs to fill the gap created by the failures of traditional food systems. Given the sequence of these developments, supermarkets' share of fresh fruits and vegetables often lags behind their share in overall food retailing (Balsevich *et al.*, 2003; Neven & Reardon, 2004).

Encouraged by these emerging opportunities, supermarkets have therefore been spreading rapidly across the developing world in the last two decades. The degree of penetration varies across countries. In particular, supermarkets are more widespread in Latin America, Asia and Eastern Europe, where food systems are more structured with modern retailers assuming a sizeable proportion of food retailing (Traill, 2006). Latin America leads the pack with supermarkets accounting for 50 – 60% of the national food retail. This is followed by East Asian and South East Asian countries where supermarkets account for 33 – 63% of national food retailing (Reardon *et al.*, 2003). These developments reflect the income changes that have been evident in these countries and confirm the influence of income growth on the demand for high-value products. Figure 1.3 that is based on country-level data, illustrates the influence of per capita income on supermarket growth.