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The position of export crops banana and cocoa in food systems analysis with special reference to the role of certification schemes

by
Carlos F.B.V. Alho
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Authors:
Carlos F.B.V. Alho, Amanda F. da Silva, Chantal M.J. Hendriks, Jetse J. Stoorvogel, Peter J.M. Oosterveer, Eric M.A. Smaling

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About the authors

Carlos Alho is a researcher in the Water & Food Team at Wageningen Environmental Research, part of Wageningen University in the Netherlands. He has a PhD in production ecology and resource conservation from Wageningen University (Soil Biology Group). His current research interests are in food systems transformations that offer inclusive and equitable opportunities for sustainable and healthy food production and consumption.

Amanda Francisco da Silva is an independent consultant in sustainability and strategy. She has an MSc in environmental sciences from Wageningen University. Her work focuses on developing innovative ways to promote alignment between businesses, social accountability and environmental responsibility. Amanda is an advocate for sustainable development strategies with expertise in governance of value chains for commodities, particularly for cocoa and chocolate, as well as expertise in sustainability design and strategy, stakeholder management, and environmental, social and corporate governance.

Chantal Hendriks is a researcher at Wageningen Environmental Research. Her research focuses on nutrient and carbon modelling of agricultural systems at different scales. The projects she is working on support the transition to sustainable agriculture. Chantal did a joint PhD with Wageningen University & Research and International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), during which she analysed ways to improve the soil data in regional land use analyses. During her postdoctoral study at the University of Oxford, Chantal was working for the “Malaria Atlas Project” to study the role of agricultural insecticides on insecticide resistance in malaria vectors.

Jetse Stoorvogel is an associate professor in the Soil Geography and Landscape Group of Wageningen University (Wageningen, Netherlands) with a special focus on soil–land use interactions with special emphasis on soil geography, soil inventory, GIS and agronomy. He has an MSc in Soil Geography (1989) and a PhD on the use of GIS in land resource and land use studies in (2015) from Wageningen University. Specific studies focus on global soil degradation (S-World), the impact of urbanization on soil conditions and the role of soil conditions on crop management.

Peter Oosterveer is a professor with the Environmental Policy Group at Wageningen University. He has an MSc in rural sociology and a PhD from Wageningen University. Peter’s research interests are in the sustainable transformation of food systems with a focus on global public and private governance initiatives and innovative institutional arrangements in the field of sustainable food production and consumption. Furthermore, he is researching food consumption practices from a sociological perspective and is therefore especially interested in consumer access to sufficient, sustainable, safe and healthy food.

Eric Smaling is a senior researcher at Wageningen Environmental Research. He holds an MSc in soil science and a PhD in soil fertility management from Wageningen University. Eric conducted research in soil geography, land evaluation and integrated soil fertility management, mainly in Indonesia and in East and West Africa. Previously, he has been a professor of soil science and sustainable agriculture, first at Wageningen University, and later at the University of Twente, in the Netherlands, in the Faculty of Geo-Information Science and Earth Observation (ITC). Eric also worked as a freelance consultant to the World Bank, the Food and Agricultural Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP), the Rockefeller Foundation, the Bill & Melinda Gates Foundation and CGIAR. He has also been a senator and then a member of the lower house in the Dutch Parliament for the Socialist Party. In 2017, Eric joined Wageningen University & Research again to provide guidance to several large international programmes for rural and agricultural development.

Contents

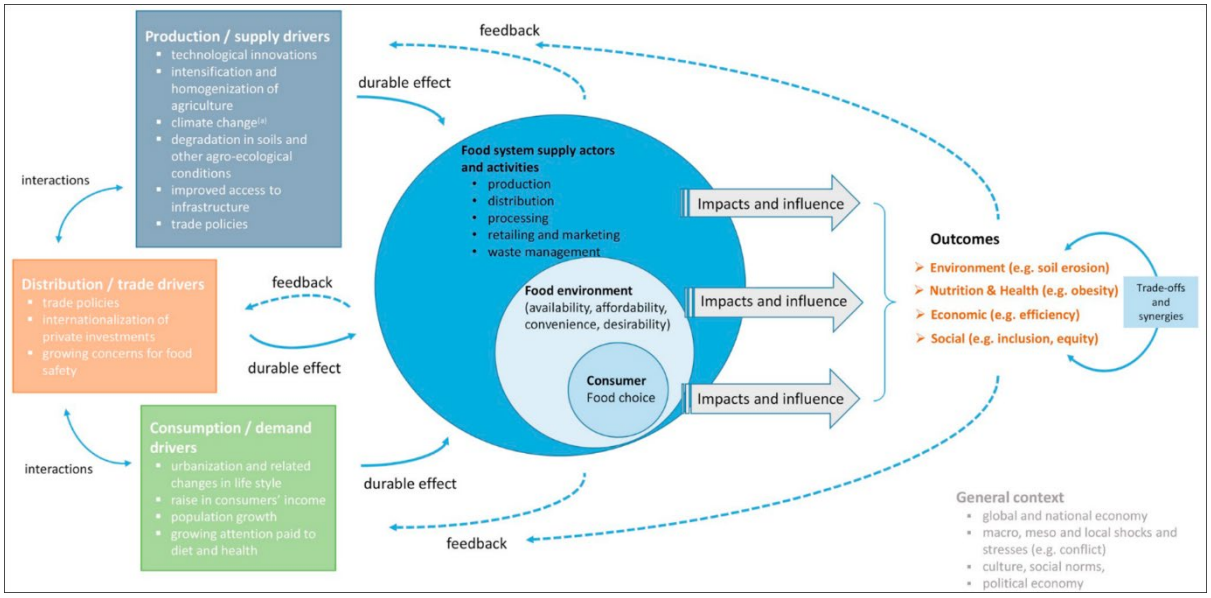
Abstract

Food system analysis is a tool that is increasingly used to understand relations between production, distribution and consumption of agricultural products. Export commodities cover substantial portions of global value chains. In food systems, they are characterized by long distances between producers and consumers. Many such commodities are facing issues related to “consumer concerns” and certification requirements, which may relate to both environmental and socio-economic drivers. In this paper, the positions of banana and cocoa, two major export commodities facing certification requirements, are discussed on the basis of the food system framework of Béné et al. (2019). Comparing the plantation worker-based banana sector in Costa Rica with the smallholder-based export cocoa in Côte d’Ivoire reveals a similar dominance by a small number of companies running large parts of the value chains, but major differences in production systems, producer voice, price setting and market structure. Drivers of production, distribution and consumption for the two commodities (intensification of production, land degradation, climate change, trade policies, food safety concern, consumer income, attention for diets and health) are analysed. In most cases, power relations between government, private sector and civil society determine the food system outcomes and the opportunities for positive food system transformation. Illustrations of these power dynamics at play when responding to negative outcomes are the active involvement of the Costa Rican government in curbing the excessive use of pesticides, a recent, more active engagement of the Ivorian government in breaking private sector market dominance, but also the sluggish progress in banning child labour. Certification schemes as a particular driver of steering long-distance export crops are then discussed and linked to the “inclusiveness” of the food system, by means of living income/living wage. The evidence on whether certification contributes to increasing living incomes or not is mixed and depends on the premium policy of the certifier, the proper calculation of living incomes and the focus of the certifier. In Costa Rica, the certification scheme’s strategy was more geared towards environmental sustainability than to social well-being. Still, Costa Rican plantation workers are much better off in terms of living wage than Ivorian cocoa farmers in terms of living income. Positive food system transformation has to build on synergies that can be realized by simultaneously addressing the weak spots in the global value chains.

Keywords: value chains, export commodities, certification, food system transformation

1. Introduction

Maintaining global food security will become an increasingly challenging goal in the decades ahead. It is not only the population growth itself that turns this into a daunting task, but also the need to provide more healthy and nutritious food, the need to distribute food and well-being in an affordable and inclusive manner, and the need to maintain the productive capacity of natural resources while mitigating and adapting to climate change. Of late, much attention goes to food system approaches that try to tackle the functioning of the production, distribution and consumption compartments in a holistic manner (Béné et al., 2019; HLPE, 2017; Ingram, 2011; van Berkum et al., 2018). Figure 1 shows the approach taken by Béné et al. (2019), where the three compartments are connected to groups of drivers that continuously modify them. They are also related to the food governance environment and consumers, and to a set of outcomes related to sustainability, nutrition, efficiency and inclusiveness. The aim of applying a food system approach is not just to depict the status quo, but also to see how food systems can be transformed to become more sustainable, healthy, inclusive and efficient. The drivers can be taken as an entry point to initiate change using policies or investments, with a sharp eye on the feedbacks and interactions between the different food system components. On the way to improved food systems, there can be trade-offs and synergies between the different outcome groups and here the challenge is to steer change towards synergies.



A special case of a food system is where production and consumption are spatially highly separated, and where distribution therefore relies on global trade. This is particularly pronounced with export commodities that are produced in tropical environments but of which a large share ends up in the hands and mouths of consumers in higher-income countries in Europe and North America. Over the past decades, the global trade of food products has increased substantially and today about one-quarter of food products are traded internationally (Odorico et al., 2014). High degrees of commodity-dependence are found in Sub-Saharan Africa (41 per cent), Latin America and the Caribbean (17 per cent), mainly covering agricultural products (UNCTAD, 2019). A country is defined as commodity-dependent when more than 60 per cent of its total value in exports is driven by commodities. Global commodity trade has contributed to the economy and livelihoods of producing countries as well as to dietary diversity in consuming countries, but it has also contributed to the decoupling of food production and consumption and the displacement of environmental and socio-economic impacts from food consumption (Kummu et al., 2020). In addition, market concentration in the case of export commodities has raised questions concerning power imbalances in global value chains (Howard, 2016), whereas commodity dependence has also been shown to be negatively correlated with the human development index (Nkurunziza et al., 2017). In present debates on sustainable food provision, eating locally is often presented as the best strategy (short chains, slow food).

This notion leans strongly on the opinion that the long-distance trade of agricultural products is responsible for a large share of global carbon emissions. The evidence is, however, quite mixed and differs strongly between food groups and products (Poore and Nemecek, 2018). Moreover, by eating locally, consumers in developed countries may knock out of business many workers and smallholders in developing countries that depend on export commodities for their livelihoods and economies. Given these trade-offs in pros and cons of export crops and commodities, it seems worthwhile to take a closer look at the drivers, the governance in the "food environment", and the past, present and desirable state of the outcomes (see Figure 1). This will offer information on how food system transformation can be steered in a positive direction.

The physical distance between production and consumption has also triggered growing concern among consumers in higher-income countries about environmental degradation, low income and wages and pesticide-related health risks for primary producers in developing countries (Boström et al., 2019). As a result, corporate social responsibility has developed as a driver of food system transformation in the value chains, including through the instrument of certification schemes. Here, civil society in importing countries (often through non-governmental organizations [NGOs]) speaks to governments and the private sector all across the value chain. Certification schemes can address environmental as well as socio-economic food system outcomes and create a linkage between "consumer's responsible choices with producer's responsible practices" (Lee, 2009). Over the last decades, certification schemes have been increasingly applied in the export sectors of tropical commodities, such as in the case of bananas (Voora et al., 2020) and cocoa (Voora et al., 2019), to endorse more sustainable practices and promote socio-economic changes. Ideally, this should be translated into improved health and a living wage/income for the rural population and plantation workers, and to more sustainable use of natural resources. Living wage (Global Living Wage, 2018) and living income (Living Income, 2019) are intrinsically linked to a decent life. Therefore, achieving a living wage/income has the potential of satisfying a broader range of desirable food system outcomes.

In this paper, it is argued that there is added value in taking a closer look at the position of crops that are grown in tropical environments but that have large volumes in exports to distant countries, often European and North American destinations. It is hard to link such commodities to food systems directly, as they form just one element in the diet and consumers only marginally select the food they buy on the basis of its origin. Nonetheless, the production, distribution and consumption of export commodities represent major global value chains that are part of larger food systems (Ponte and Gibbon, 2005). In chapter 2, the features of the (plantation-based) export banana from Costa Rica will be compared and contrasted with (smallholder-based) export cocoa from Cote d'Ivoire, following the list of drivers identified by Béné et al. (2019) in Figure 1. In the food environment (see Figure 1), different stakeholders are active and they influence the governance of the value chain and the food system as a whole. Some specific food system outcomes are discussed in chapter 3, including reduced pesticide use in Costa Rica, the slowly changing market power relations, as well as the sluggish process in fighting child labour in Côte d'Ivoire. In the next chapters, 4 and 5, corporate social responsibility is discussed as a highly relevant driver for these two export commodities, and in particular, the functioning of certification schemes as a positive driver to achieve the food system outcome "living wage/income" for plantation workers and smallholder farmers in the two countries. Banana and cocoa were selected because these global value chains have some similarities but also some marked differences (i.e., smallholder- versus plantation-based production, highly processed future world market, price-dominated versus almost unprocessed, non-market driven). These two tropical agricultural export commodities are of particular importance to the livelihood of banana workers in Latin America and the Caribbean (LAC) and cocoa smallholders in West and Central Africa (WCA). Costa Rica and Côte d'Ivoire were selected as representative cases for banana- and cocoa-export countries in LAC and WCA, respectively. An important similarity is that both commodities are subjected to consumer concern and subsequently to certification schemes. A key question to be answered here then is whether such schemes change food system outcomes.

2. Contrasting export bananas and export cocoa on the basis of food system drivers

In this chapter, the plantation-based perishable fruit, banana, in Costa Rica is compared with the smallholder-based non-perishable stimulant, cocoa, in Côte d'Ivoire. Figure 3 shows that both countries had substantial gross domestic product (GDP) increases over the past 10 years. They also made strides in developing non-agricultural sectors. In 2019, the GDP of the two countries was around US$60 billion, but per capita GDP in Costa Rica is US$12,244 against US$2,240 in the much more populous Côte d'Ivoire.

Bananas directly follow the major crops wheat, rice and maize in terms of global production (Perrier et al., 2011). Bananas (including plantains) are a key staple food and source of income for millions of people in many tropical countries (Dale et al., 2017). While Asia and the Pacific lead global production (Voora et al., 2020), the highest per capita consumption (exceeding 200 kg of fresh weight per year) is found in East and Southern Africa (Scott, 2021). Banana production for local consumption can be quite different compared with banana production for exportation. For example, banana production in East and Southern Africa is characterized by smallholder farming systems (often intercropped with coffee), where bananas (matooke) exhibit low yields due to abiotic, biotic and socio-economic causes (Karangwa et al., 2016). Farmers sell their products at local markets or to middlemen who transport matooke to bigger cities for consumption and processing (e.g. in the beer industry). Banana production in Costa Rica is characterized by large mono-cropped plantations dominated by the Cavendish variety and high input levels of fertilizers and agrochemicals. The banana sector in Costa Rica is economically important for: (i) the government, because the crop contributes to the national income, whereas the government also receives taxes per exported banana box of 18 kg (SCIJ, 2021); (ii) citizens, because it generates direct employment to almost 40,000 people on the plantations and to 100,000 persons in the supporting industry (e.g. agricultural inputs, transport, marketing) (Corbana, 2021); and (iii) the private sector that exports almost the entire volume of produced bananas, resulting in profits that exceed US$1 billion (Workman, 2020). Large shipping and storage companies are involved in packaging and transporting bananas to the global market. The products have to meet strict food safety regulations set by the major importing countries (the European Union and the United States). The Netherlands is an important player in the ripening, auctioning and redistribution of bananas to the European market, where they have to meet high quality standards. The supermarket chains and other retailers provide the products to European consumers.

Most cocoa plantations are located in developing countries in Western Africa, Southeast Asia and Latin America (Fountain and Hütz-Adams, 2020), with around 70 per cent of the global production coming from millions of smallholders (2-3 ha) in Western Africa (mainly in Côte d'Ivoire and Ghana) (Thorlakson, 2018). Approximately 5.5 million smallholder farmers in Côte d'Ivoire and Ghana produce cocoa and they normally receive less than U$1 a day. Cocoa production represents 15 per cent of the Ivorian GDP, two-thirds of the jobs and 50 per cent of the exports (2 million tonnes of cocoa beans per year). The Cocoa Board of the Ivorian government determines the farm gate price every year, which is calculated as a percentage of the London market price and designed to offer a living income to farmers. Cocoa prices plummeted in 2016-2017 due to oversupply caused by cocoa newly planted in protected areas. According to the Ministry of Water and Forests, 500,000 tonnes of cocoa came from these areas. Even though the cost of a bag of cocoa beans fell in 2016, the price of a bar of chocolate did not. In fact, in the same year, chocolate brands had a US$4.7 billion windfall profit. As farmers have no trucks, local traders (pisteurs) take the beans from the farm to the villages and cooperatives. The traders that follow next in the chain sell the beans to chocolate producers (chocolate brands) and also begin the process of turning beans into chocolate (cocoa liquor, cocoa butter and cocoa powder). The Ivorian government gives 100 export licenses per year, which are sold in auction, guaranteeing the tax revenue for the country. Trading and industrial activities are highly concentrated, with three traders/grinders and six brands overly dominating the chocolate production worldwide (Thorlakson, 2018). The three traders/grinders dominating the global cocoa market include the Swiss chocolate group Barry Callebaut, the American commodities trader Cargill and the agribusiness firm Olam, with its headquarters in Singapore (Terazono, 2014). Following the same pattern, six brands dominated 60 per cent of the market for chocolate worldwide in 2016: Mars with 14.4 per cent, Mondelez International 13.7 per cent, Nestlé 10.2 per cent, Ferrero 9.5 per cent, Hershey 7.2 per cent and Lindt 5.1 per cent (Wunsch, 2021). In summary, the global cocoa chain is basically in the hands of nine companies,

making US$100 billion a year. Chocolate companies complain that they are pressured by retailers to keep the price of a chocolate bar low so they keep their spot on their shelves. In an indicative cost breakdown of a milk chocolate bar (where other ingredients are also considered, such as milk and sugar), the cocoa farmer receives between 3.5 per cent and 6.5 per cent of the sales price, while traders and manufacturers combined embrace a share of around 50 per cent. Added to that, supermarkets and retailers have a margin of 28 per cent (Ingram, 2015).

Figure 2 presents the production, export and import figures for both commodities for 2018. Costa Rica is the third exporter of bananas and Cote d'Ivoire is the first exporter of cocoa respectively. In terms of banana production, Costa Rica is not a major player, but again Cote d'Ivoire is leading the world for cocoa. In fact, more than half of the global cocoa production and export is from Cote d'Ivoire and neighbouring Ghana. The United States is by far the biggest importer of bananas and the Netherlands for cocoa. For both commodities, the Netherlands and Belgium occur in the top-10 of importers as well as exporters. These are gateway countries for commodities such as bananas and cocoa because of their large harbours.

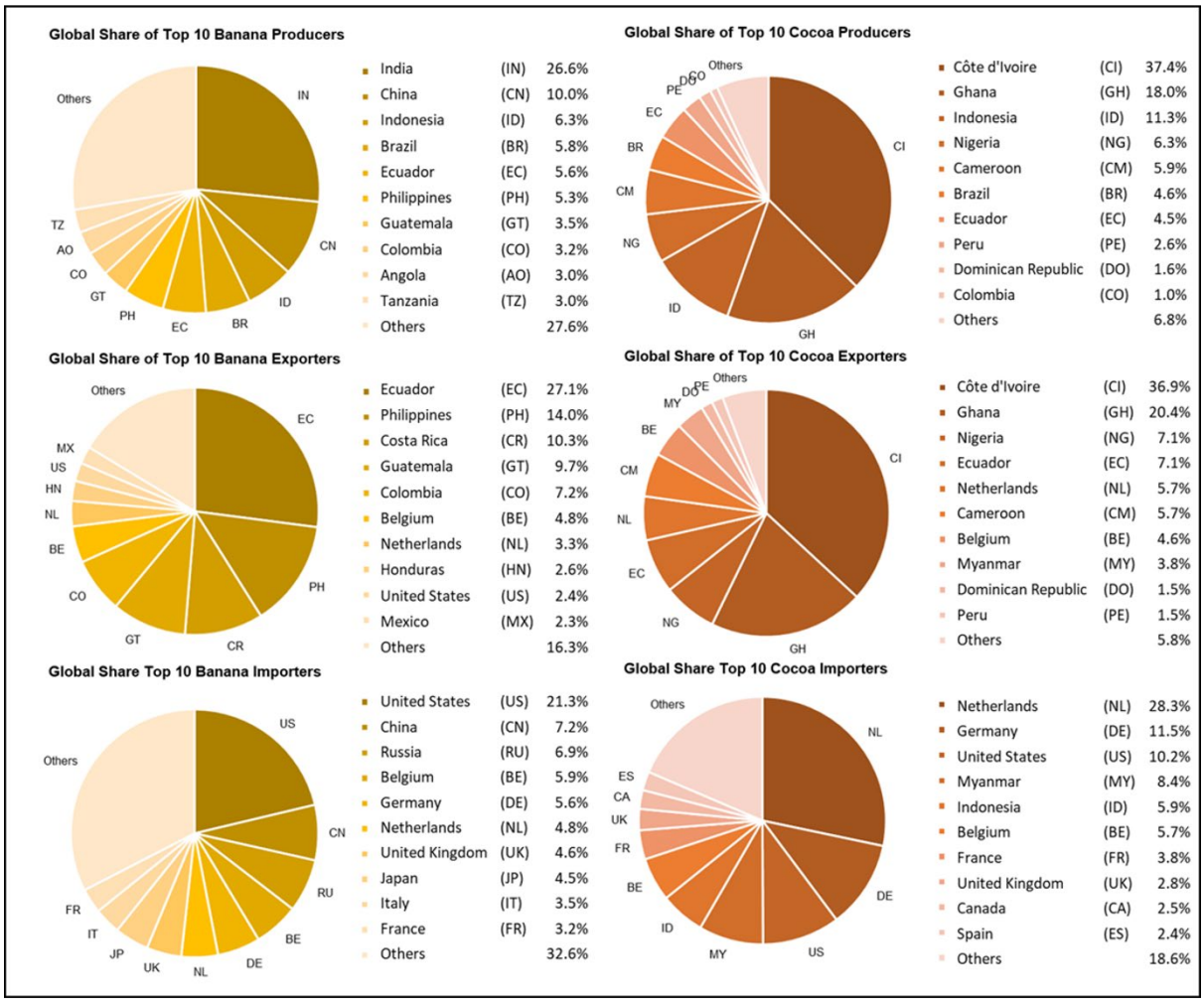


Figure 2: Production, import and export data for bananas and cocoa (FAO, 2020)

The two commodities can also be compared on the basis of a number of key indicators. An overview is given in Figure 3. There are major differences in relative export volumes, in price setting, in value chain complexity, in production systems, in the degree of commodity dependence, and in living wage and income. Both are characterized by the dominance of just several multinational companies.

Figure 3: General overview of the similarities and differences in the bananas and cocoa export sectors, including the cases of export bananas in Costa Rica and export cocoa in Côte d'Ivoire

The banana and cocoa systems are under continuous influence of environmental and socio-economic drivers, categorized as supply (production), trade (distribution) and demand (consumption) drivers (see Figure 1). *Population growth* and *urbanization* are important at a global scale to estimate opportunities for the future expansion of the banana and cocoa sector from a consumption perspective, whereby the latter

has a higher income elasticity. The *internationalization of private investment* is quite relevant for both commodities: a few companies control the global value chains for both bananas and cocoa. In the case of bananas, however, the chain is more straightforward and transparent, and financially less volatile. *Food safety concerns* are covered by import watchdogs such as the European Food Safety Authority. *Infrastructure and information* are key to success. Bananas require careful harvesting, cable infrastructure in plantations to transport bananas to the packing plant and a careful packing of green bananas in boxes. Subsequently, climate-controlled shipping and ripening near the markets is essential. Cocoa is less perishable. In Côte d'Ivoire, several levels of middlemen are involved in local transport (on bad roads) and storing and shipping. After harvesting, the pods are opened and fermented after which the beans can be extracted and dried. Thereafter, transport is relatively straightforward, but considerable processing is done mostly in the importing countries to produce chocolate. As a result, most of the added value is earned outside the producer countries.

2.1 Technological innovation (breeding), intensification and homogenization (environmental pressure) in Costa Rica

The ongoing spread of Tropical Race 4 (TR4), a major banana disease, threatens the supply of bananas to the global market and the economy and livelihood of banana-exporting countries. Export-based banana plantations in LAC were previously dominated by the Gros Michel variety, which was suitable for monoculture propagation and long transport routes (FAO, 2019). These plantations were wiped out in the 1950s due to a disease caused by a soil-borne fungus (*Fusarium oxysporum f.sp. cubense*). In order to overcome the losses, banana-exporting countries switched to the Cavendish variety, which is currently the main variety grown for export. Even though the Cavendish variety was resistant to what became known as Race 1, this variety is susceptible to the current TR4. Once the soil has been infected with TR4, managing the disease can be extremely challenging and costly. Global loss of production area due to TR4 is estimated to cause 240,000 banana workers to lose their jobs and the countries that suffer the most are China, the Philippines, Pakistan and Vietnam (in Asia) and Mozambique and Tanzania (in Africa). The negative impact of TR4 in these countries may in turn offer an opportunity for unaffected countries to thrive, most importantly large banana exporters in LAC (FAO, 2019). However, despite the efforts to prevent TR4 from reaching LAC, the disease was detected in Colombia in 2019 (Garcia-Bastidas et al., 2019). Given the economic and social importance of banana plantations in the region, the arrival of TR4 imposes a major threat to the economy and livelihood in the region. It has been estimated that total losses to the trade of Gros Michel bananas amounted to a current equivalent of US$2.3 billion and TR4 may cause even greater losses given the current annual value of production for export and the importance of Cavendish bananas (FAO, 2019).

2.2 Climate change

Figure 4 shows that the banana supply chain results in relatively small quantities of greenhouse gas (GHG) emissions per kilogram compared to other crops (Poore and Nemecek, 2018). Climate change is expected to cause declining yields in banana production systems potentially impacting global banana markets (Varma and Bebber, 2019). GHG emissions from the supply chain of cocoa are high. This is mainly due to forest cutting and the opening up of land resulting in losses of soil carbon and biomass (Rice and Greenberg, 2000). Future projections on the impacts of climate change on cocoa production in WCA indicate a shift of the production towards the south, causing increased and renewed deforestation (Schroth et al., 2016).

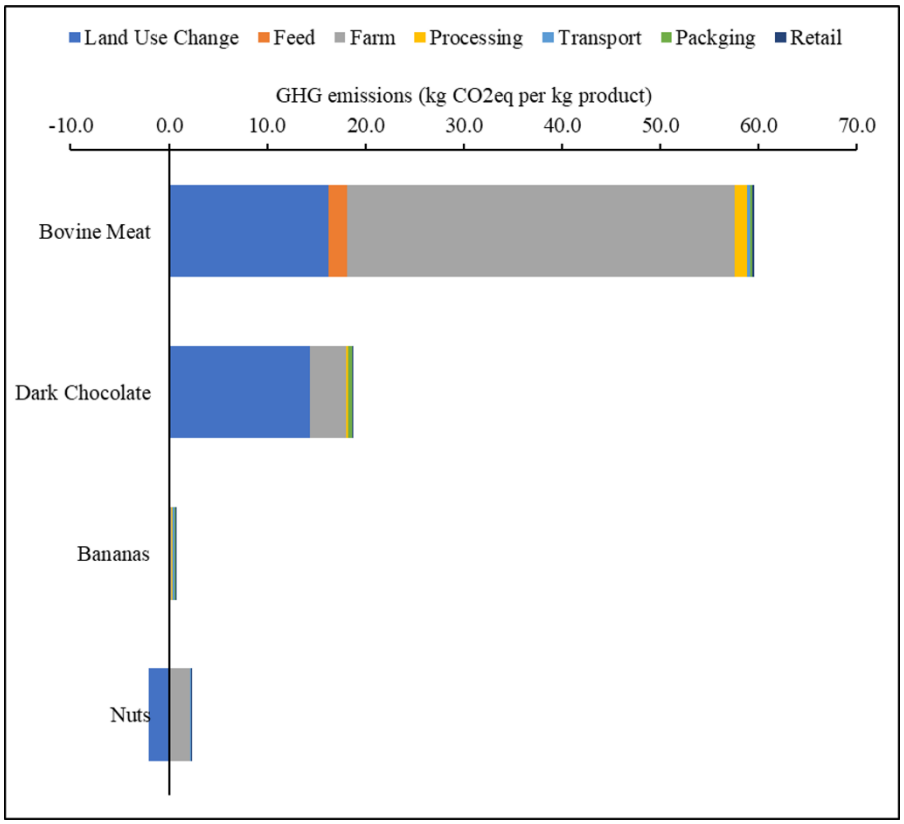


Figure 4: Greenhouse gases (GHG) emissions (kg CO_2-eq per kg product) for selected food products. For comparison, bananas and dark chocolate (representative for cocoa) are contrasted with the food products with the largest and lowest GHG emissions (bovine meat and nuts, respectively). Data from Poore and Nemecek (2018).

2.3 Degradation of soils and agroecological conditions in Côte d'Ivoire

From the farming perspective there are basically two ways to promote income improvement: either paying more per kilogram of product or increasing the productivity per hectare (Molenaar and Short, 2018). Until now, yield increases could be an important strategy for Ivorian smallholders to improve their income and move out of poverty without relying on area expansion. This is because the rejuvenation of existing cocoa fields is subject to restrictions, given the lack of knowledge to do so and the use of obsolete agricultural practices in the field (Dormon et al., 2004). Thus, farmers started growing cocoa illegally in areas that are formally "protected", where virgin soils offer a possibility to plant new crops. In these more fertile uncultivated areas, cocoa starts to yield in two to three years as opposed to five to six years in already cultivated areas. Estimations indicate that Côte d'Ivoire has lost 85 per cent of its forests since 1960 (Aboa, 2021).

2.4 Trade policies in banana and cocoa

Wiley (1998) describes the changed market and trade landscape for bananas in 1993 after the European Union (EU) allowed non-ACP countries to take a larger share of the European market. This was also driven by the World Trade Organization pushing the EU to give up the preferential partnership with its former colonies. Fluctuations in the banana trade are largely due to the seasonality in banana demand (i.e. decreased demand in large markets in summer due to availability of local fruits) and climate-related production challenges (i.e. floods, cooler temperatures and mudslides) (Voora et al., 2020). Bananas do not have international mechanisms for price setting. Instead, price differentiation among supply countries is related to factors such as quality and sustainable sourcing (Getz and Shreck, 2006). The market share of a producing country is determined in an open market and thus basically defined by the product quality with a relatively low price (Fonsah and Chidebelu, 2011).

The global cocoa price is established on the cocoa futures market based in London and New York (ICCO, 2016). Cocoa prices can be quite volatile due to supply-demand fluctuations, market speculations, investments considerations and currency movements (Agritrade, 2013). For instance, the government in Côte d'Ivoire uses these international benchmarks to determine the minimum farm-gate price locally, which is a result of the price paid in auctions for future sales, before the new crop season (Malan, 2013). Through these auctions, between 70-80 per cent of the production for the next year is sold in advance to exporters. From the final price sold, about 60 per cent goes to the smallholders, while 40 per cent is retained by the government as taxes (Agritrade, 2013). Although these taxes are very high, there is not much transparency on how they are reinvested in the cocoa sector or how they are converted into real benefits for the local population. There is a sentiment that the local elites still benefit unequally from this price control mechanism compared to smallholders (Laven et al., 2016). Moreover, in Côte d'Ivoire a differentiation in price based on higher quality is not possible because of this price control. However, the payment of certification premiums on top of the established price is still possible (Bymolt et al., 2018).

2.5 Consumer income and growing attention to diet and health

Bananas are an affordable and convenient source of energy, vitamins, minerals and dietary fibres (Voora et al., 2020) and are therefore difficult to be simply replaced by other fruits in the global market. In fact, bananas are the most eaten fresh fruit in the EU and the United States (US) (D'hont et al., 2012). Given its practicality and healthy profile, bananas are likely to maintain or slightly increase their position as the favourite fresh fruit in well-established global markets. The banana sector is projected to experience a modest compound annual growth rate (CAGR) of 1.2 per cent in consumption between 2019 and 2024 (Voora et al., 2020), likely driven by population growth and increasing health awareness.

Cocoa is the main ingredient for chocolate production. Global average chocolate consumption in 2017 was about 0.9 kg per capita, with a fairly stable consumption in the most important global markets (i.e. the EU and US) (CBI, 2019). Commonly, chocolate consumption is larger in high-income countries. In Switzerland – the largest chocolate consumer – chocolate consumption reached 10.5 kg per capita in 2017 (CBI, 2019). In China and India, chocolate consumption reached only a mere 100-200 g per capita for the same year (StatInvestor, 2021). The cocoa sector is expected to grow at a CAGR of 7.3 per cent between 2019 and 2025 (Voora et al., 2019), likely driven by an increase in household income in developing countries. China and India are regarded as promising markets due to the rise of the middle class (Food Navigator, 2019). The Chinese market may face constraints given its high lactose sensitive population. Moreover, many countries in Asia and the Pacific region are exposed to very high temperatures, which can cause chocolate to melt at room temperatures. Therefore, a rise in the chocolate consumption in these areas needs to be accompanied with changes in infrastructure, a possible "tropicalization of the recipe" to adapt to the local conditions and a reduction in the final price (for example, by replacing cocoa butter with cheaper vegetable fats). Furthermore, global increase in health awareness can be expected to increase the demand for cocoa with high flavanol content (e.g. dark chocolate) (Argout et al., 2011). Consumption of high-flavanol cocoa products has been shown to reduce blood pressure (Davison et al., 2010) and insulin resistance and therefore reduce the risks of developing cardiovascular diseases (Tokede et al., 2011) and type 2 diabetes (Maskarinec et al., 2019).

3. Governance to act on negative food system drivers

The drivers in Figure 1 and the previous chapter can be steered to different degrees. It is easier for a government to change trade policies than to curb population growth. Governance in food systems can be understood as actors and organizations managing a resource base and defining what management rules should be designed and put into practice (Eakin et al., 2017; Ostrom, 2009). The role and power of governments (G), private sector (P) and civil society © can be portrayed as a societal triangle, showing the way they influence each other (Czischke et al., 2012). Governance mechanisms include subsidies and taxes, import regulations (G), readiness to invest and market concentration (P), labour union activities and the pushing for environmental and socio-economic concerns through media attention, crowdfunding and demonstrations by NGOs ©. Governance is of particular importance in the case of export commodities due to the market concentration whereby a small number of private companies control their global trade.

Moreover, as an internationally traded commodity there are no public authorities in charge of regulating their global trade. In this context, both the banana and cocoa export sectors are characterized as buyer-driven cases (Fold and Neilson, 2016). This setting is characterized by large companies having significant influence and coordination power over the other stakeholders in the value chain, which is commonly observed in cheap and laborious commodities, such as banana and cocoa (Gereffi et al., 2018; Global Value Chains, 2017). Figure 5 provides an example for the banana case of power interactions that steer the food environment and opens up avenues to food system transformation.

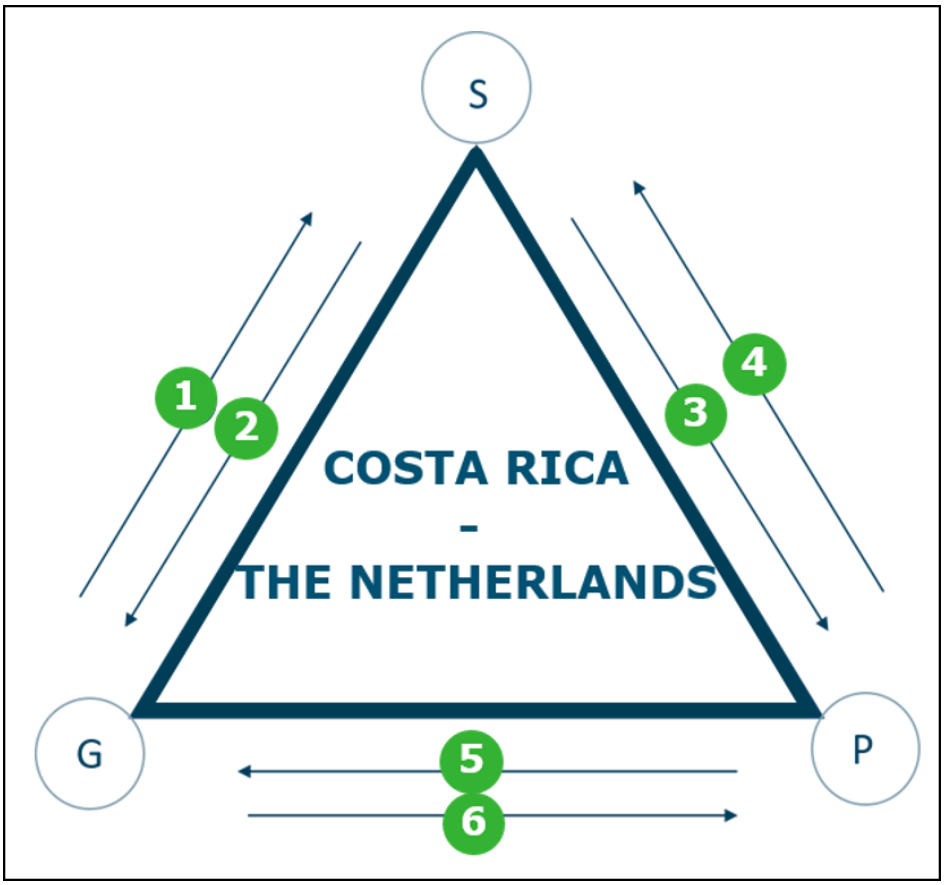


Figure 5: Societal triangulation (Czischke et al., 2012) encompassing civil society (S), the private sector (P) and governmental agencies (G) for the Costa Rica – the Netherlands case. Description of the power relations indicated by the numbered arrows are described below:

1. G wants to keep S healthy, economically and physically. G (NL) promotes fruits as part of healthy diet.

2. S wants to stimulate G for policies or action on decent working conditions (CR) and yes/no to GMO bananas (NL).

3. S (NGO) criticizes P and tries to influence the decisions of P on working conditions in plantations (CR and NL). S (NL) demands high product quality, niche for organic bananas and alternative fruits.

4. P influences price setting, marketing, seduction of supermarkets buyer (NL), job opportunities, wages, labour conditions and unions. P tries to prove the (in)correct conclusions of S (NGO) by funding research and P illustrates with a lot of publicity the actions they take to (partly) meet the action points of S (NGO).

5. P requests low taxes and support to mitigate the effects of diseases/climate change on production. P (NL) asks for permission to import GMO. P is funding research and is informing G about results. P and G have synergies economically. People from P have positions in G.

6. G (including the EU) makes legislations and regulations that P needs to implement (imports, corporate social responsibility, certification, product quality, CO2-taxes on overseas transport e.g. CR-NL).

3.1 Positive food system transformation in Costa Rica: response to environmental and health concerns

The high pressure of pests and diseases require producers to make intensive use of, for example, fungicides and nematicides. In addition, the large uptake of nutrients by the crop requires intensive use of organic and mineral fertilizer (Bellamy, 2013). The effects of the intensive use of pesticides and fertilisers have been studied exhaustively. Excessive and careless use of pesticides can have lasting effects on soils, neighbouring ecosystems and humans active in the banana sector. Costa Rica has, however, implemented tough environmental regulations and appears responsive to complaints and desires from plantation workers. For exported bananas, regulations are very strict and dictated by bodies such as the European Food Safety Authority. These are generally stricter than local rules (Mendez et al., 2018). Soil toxicity as a result of persistent use of fungicides in former banana plantations was found to severely damage soil quality some 30 years ago (Thrupp, 1991). Many more recent studies reviewed the effects of pesticides use in bordering nature areas, including wetlands and fish stocks (Arias-Andrés et al., 2018; Echeverría-Sáenz et al., 2018; Fournier et al., 2018; Rämö et al., 2018). Over the past decades, Costa Rica made a lot of headway in fighting environmental pollution and health hazards for plantation workers. Marquardt (2009) describes the powerful labour movement in Costa Rica and how it managed to put the health threats of pesticide use on the negotiation table. Pesticide use has been reduced substantially over the past 30 years and some pesticides have been banned. Also, Green Chemistry-Based Biocontrol Agents have been developed that have low toxicity, recognized biocompatibility and a rapid biodegradability (Ureña-Saborío et al., 2017).

3.2 Signs of food system transformation in Côte d'Ivoire: government acts on market dominance

Through a joint initiative, Ghana and Côte d'Ivoire have recently managed to convince chocolate traders and makers to raise the price they pay for cocoa. The problem is that Africa's cocoa producing countries capture just 4 per cent of global chocolate industry revenue (Ingram, 2015). Although Côte d'Ivoire produced 2.1 million tonnes of cocoa in 2017 (44 per cent of global output), it brought in just US$3.3 billion from the trade, compared to earnings of US$22 billion for US chocolate majors (Mieu, 2020). In July 2019, Côte d'Ivoire's and Ghana's Cocoa Boards successfully imposed a pricing mechanism to help producers earn a living income. Their suspension of forward sales of cocoa beans had such a negative impact on global prices that, in less than a month, chocolate traders and makers agreed to the idea of a premium of US$400 a tonne on all cocoa sales contracts. The plans are to also coordinate production seasons, market volume and standard prices for producers to avoid smuggling. Also, the building of storehouses and of grinding facilities for processing are considered as they may lead to higher value addition in the producer countries.

3.3 Sluggish food system transformation in Côte d'Ivoire: response to forest cutting and child labour

According to the International Labour Organization in 2005, more than 200,000 children were working on cocoa farms in Côte d'Ivoire, some of them "in the worst forms of child labour". In 2007, the International Cocoa Initiative launched a campaign to improve the livelihoods of children working in cocoa. However, the number of children working in cocoa farms in the Côte d'Ivoire went up to more than 800,000 in 2008-2009, and to 1.3 million in 2013-2014. In 2018, the VOICE Network, along with a global consortium of civil society organizations, released the Cocoa Barometer 2018, a biennial assessment of the state of the US$ 100-billion industry. In regard to child labour, the report states, "not a single company or government is anywhere near reaching the sector-wide objective of the elimination of child labour, and not even near their commitments of a 70 per cent reduction of child labour by 2020." And although the Child Labour Monitoring and Remediation Systems that the International Cocoa Initiative has implemented with industry partners are useful, they are currently reaching less than 20 per cent of the over 2 million children impacted. The VOICE network also mentions that while many of the current programmes in cocoa focus on technical solutions around improving farming practices, the underlying problems deal with power and political economy; how

the market defines price, the lack of power of farmers to bargain and rejuvenate their crop, market concentration of multinationals, and a lack of transparency and accountability of both governments and companies.

4. Certification schemes in export banana and cocoa: an effective driver of food system transformation?

For export crops traded long-distance, the societal triangle of Figure 5 is more complex than for locally produced and consumed crops. This is because there are actually two relevant triangles that interact: one for the exporting and one for the importing country. The Béné et al. (2019) table does not recognize this specific character and therefore does not include an across-the-ocean driver that has gained momentum over the past decades and became known as Corporate Social Responsibility (CSR). This is mainly civil society in the importing country speaking to the private sector on the one hand, and speaking to the government to come up with rules, regulations and subsidies or taxes on the other hand. Civil society translates its concerns and demands amongst others into certification schemes. As these are relevant for both banana and cocoa and address two food system outcomes (sustainability, inclusiveness), they are singled out here.

Over time, private corporations have had their role in society grow in importance and this has been accompanied by a proportional level of responsibility for their decisions (Crane et al., 2008). Companies have reacted to that public agenda with the development of the concept of CSR. It can be understood primarily as a management method by which businesses can achieve a balance between environmental awareness, social responsibility and economic viability in their operations; or, in other words, apply a “triple bottom line approach”. By definition, CSR also encompasses the relationships with the relevant stakeholders in that business. On top of this, CSR brings an important focus on morality and ethics within corporations on a voluntary basis, or beyond regulations. Different sectors have consequently different issues, given the unique shape of their supply chain. Therefore, there is no universality in CSR interventions, but they are rather designed to fit the particularities of a given sector. This is particularly the case for food supply chains. In these scenarios, certification schemes are often in the centre of discussions as a CSR tool because of their power to promote change and endorse more environmentally friendly practices in an attempt to solve the important issues that persist in rural livelihoods (Maloni and Brown, 2006).

Certification schemes emerged as a market response for achieving more sustainable and social practices throughout global value chains. Either driven by non-governmental agencies or private organizations, these schemes have been performing an important role in the value chains of export commodities, especially when state regulation is absent (Bush et al., 2013). Certification standards commonly go beyond national regulations and incorporate relevant aspects of both production and trade to promote desirable food system outcomes (Liu et al., 2004). Nonetheless, in a certified buyer-driven chain, the leading companies also establish and regulate the quality of the commodity, define the rules for participating in the chain and determine the division of labour among other actors (Ponte and Gibbon, 2005). In other words, beyond the consumer’s demand originating downstream, the producer’s decision to be certified often comes as a requirement from powerful companies imposed upon the production base to respond to that demand. This means that producers do not always choose to comply with certification schemes themselves but may be compelled to follow them to have better access to global markets. Robinson (2010) described CSR initiatives in the Costa Rica-United Kingdom banana chain. There are dominant corporate actors at each end of the chain (i.e. a few large agribusinesses and a few supermarket groups) that can steer CSR. Costa Rica has been responsive to CSR, but in practice workers are still forced to meet demanding production schedules. At the same time, retailers keep pushing consumer prices down, forcing producers to cut costs, which has a negative bearing on working conditions.

Certification labels for bananas started primarily under the consumers’ pressure for improvements in the environmental profile of intensive production, especially related to the use of pesticides, climate resilience, water usage and the protection of primary coverage (Willer et al., 2019). The Rainforest Alliance certification arose as one of the industry’s most prominent responses to these demands (Bellamy et al.,

2016) and is currently the most widespread label for bananas (Willer et al., 2019). Rainforest Alliance and UTZ were both initiated as a result of the increase in environmental and sustainability awareness experienced over the last decades, with an important focus on the deforestation of tropical forests caused by the production of agricultural export commodities (UTZ, 2019; UTZ, 2020). Rainforest Alliance and UTZ have recently merged and together they are expected to account for 79 per cent of the certified cocoa sales worldwide (Nieburg, 2018).

Over recent decades, certification schemes have been increasingly applied in the banana (Voora et al., 2020) and cocoa (Voora et al., 2019) export sectors to endorse more sustainable practices and promote socio-economic changes. In this context, these schemes have standards that mainly relate to deforestation, control over the use of agrochemicals, climate change mitigation, poverty alleviation, slavery and child labour (Cargill, 2019; Chiquita, 2019; UTZ, 2019). For bananas, it has been estimated that the share of the certified area in 2017 ranged between 6.0 and 9.9 per cent (mainly covered by Fairtrade International, GLOBALG.A.P., Organic and Rainforest Alliance), whereas for cocoa, it has been estimated that the share of the certified area for the same year ranged between 23.4 and 40.8 per cent (mainly covered by Fairtrade International, Organic, Rainforest Alliance and UTZ (Willer et al., 2019)).

5. The food system outcome ‘living wage/income’ in export banana and cocoa

From a socio-economic perspective, the incapability of achieving a living wage/income can be understood as an undesirable food system outcome. The concepts of a living wage and living income receive increasing attention in interventions for socio-economic development since these concepts incorporate important components that are intrinsically linked to a decent life (Figure 6). Depending on how agricultural activities are conducted and the social relations structured, one of the two concepts might be more applicable than the other. In other words, the main distinction between these concepts is the employment status, which is different for bananas and for cocoa. The concept of a living wage is more applicable to the case of banana workers in large monocropping plantations in LAC (e.g. Costa Rica), whereas the concept of living income is more applicable to the case of cocoa smallholders in WCA (e.g. Côte d’Ivoire). In this chapter, we discuss the extent to which certification schemes can be regarded as a normative standard on the basis of which the living wage gap for banana workers in Costa Rica and the living income gap for cocoa smallholders in Côte d’Ivoire can be bridged through the payment of premiums.

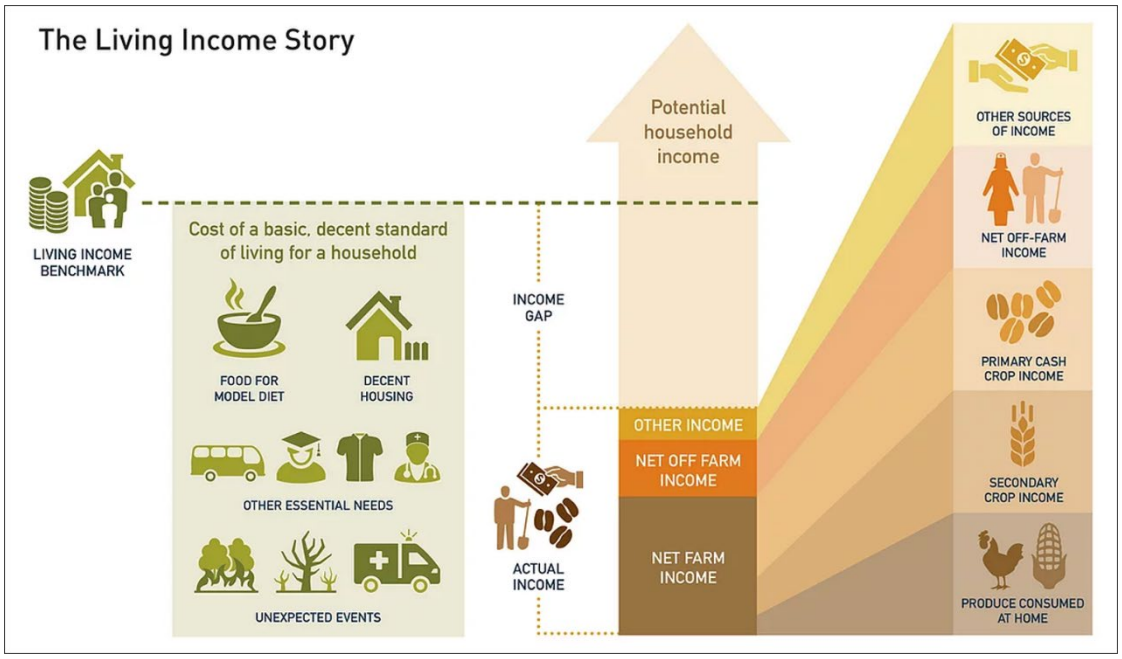


Figure 6: Schematic representation of the living income concept (Tyszler et al., 2020)

Certification schemes have different approaches when it comes to premiums. For example, UTZ-Rainforest Alliance has a premium called “Sustainability Differential”, which is based on a negotiation between farmers and traders and applied to the overall market price (UTZ, 2018), but this is often insufficient to cover the minimum production costs (da Silva, 2020). Fairtrade International has several indicators to calculate the “Cost of Sustainable Production” for the certified crops, which then is defined as the “Fairtrade Minimum Price”. On top of that, a “Fairtrade Premium” is added and paid to the smallholders’ cooperatives. The overall calculation is context-based, taking into account local particularities, such as where the crop is grown (Fairtrade International, 2020a).

Fairtrade certification delivers additional premiums on top of Fairtrade’s fixed prices that aim to cover farming costs and provide a decent life to growers in such a way that farmers are capable of reinvesting this money back into the community (Fairtrade International, 2020b). Fairtrade prices are based on local realities, in contrast to UTZ-Rainforest Alliance, which base their calculations on market dynamics and negotiations between traders and farmers. Considering the power imbalance between traders and farmers and the low bargaining power that smallholders have when negotiating with companies, a premium that comes as a result of this negotiation might not fully benefit cocoa smallholders. This explains why the biggest certification schemes are often coined as insufficient to improve the livelihood of cocoa smallholders (Glasbergen, 2018). Moreover, Fairtrade is not without criticisms for its lack of impact and the low engagement of cocoa smallholders in its implementation (Uribe-Leitz and Ruf, 2019).

5.1 Living wage gap for banana workers in Costa Rica

The living wage benchmark in Costa Rica for a family of four with 1.4 workers was established at US$731 per month (or US$6.09 per capita per day) (Global Living Wage, 2019). Given the employment status of banana workers in Costa Rica, it is important to consider the extent to which certification schemes applied to the plantations – primarily related to environmental improvements – directly benefit individual workers from a socio-economic perspective. For instance, cooperatives receive US$1 extra for each 18 kg box sold under the Fairtrade label (Ostertag et al., 2014) and only modest benefits to workers’ livelihood as a result of the application of certification schemes in banana plantations have been reported (van Rijn et al., 2020). Nonetheless, based on a preliminary survey, the Sustainable Trade Initiative (IDH) has estimated that over 50 per cent of banana workers in Costa Rica receive wages above living wage benchmarks, while the remaining workers receive wages that are 10 per cent lower than the living wage benchmark (IDH, 2020). Moreover, Robinson (2010) reported that wages in Costa Rica for banana workers are amongst the highest in comparison to other countries in LAC. The extent to which certification schemes were responsible for addressing the living wage gap is unclear, as the benefits of certification schemes in banana plantations in Costa Rica are commonly correlated with environmental improvements and reduction in pesticide usage (Willer et al., 2019).

5.2 Living income gap for cocoa smallholders in Côte d’Ivoire

The living income benchmark in Côte d’Ivoire for a family of six members was established at US$454 per month (or US$2.52 per capita per day) (Living Income, 2018). In reality, the average income for cocoa smallholders in Côte d’Ivoire has been estimated to be US$0.78 per capita per day, leaving 91 per cent of smallholders incapable of achieving a living income (Rusman et al., 2018). Premiums paid by certification schemes could potentially alleviate the income gap of cocoa smallholders. However, in the case of cocoa in Côte d’Ivoire, Schweisguth (2015) reported that the income of some certified cocoa smallholders was equal or even lower when compared to non-certified smallholders. The average premium paid by UTZ-Rainforest Alliance to cocoa smallholders in 2018 was US$97.9 per tonne (UTZ, 2018). Considering a smallholder household producing 4 tonnes of cocoa per year, with a typical family size of six members, this would result in a mere addition of US$0.18 per capita per day to the household income, which is certainly insufficient to close the income gap. Fairtrade International pays premiums of US$240 per tonne of cocoa beans on top of a Fairtrade Minimum Price of US$2400 per tonne of cocoa beans (Fairtrade International, 2020a). Therefore, from a socio-economic perspective, the Fairtrade logo assumes a more reasonable approach in closing income gaps for cocoa smallholders. Overall results tend to be beneficial when it comes to a higher profitability obtained by smallholders (FAO, 2014; Fenger et al., 2017; Foundjem-Tita et al., 2016). Fairtrade

International itself recognizes that there is room for improvement (da Silva, 2020). In its survey amongst its West African certified growers published in 2018, it is indicated that 42 per cent of cocoa farmers are above the extreme poverty line (US$1.90 per capita/per day), however only 12 per cent of them can realize a living income. Even though the demand for certified cocoa is growing, it is still occupying a minor share of global cocoa trade (Nieburg, 2018). Moreover, Fairtrade holds the smallest share compared to other certification schemes (Willer et al., 2019). Fairtrade is, therefore, still a niche market. The possibilities and opportunities to grow are directly related to consumers' level of awareness, their understanding of the Fairtrade principles and their willingness to pay more, which remains low in some markets (Gomersall and Wang, 2011), as well as to producers' willingness to get certified. Meanwhile, the earlier-mentioned Cocoa Barometer 2020 refers to attempts to raise prices in order to realize living incomes for cocoa producers in Côte d'Ivoire. However, the authors notice underestimations of the cost of living, errors in land and production measurement, and the inability of growers to raise productivity due to restrictions on crop stand rejuvenation.

5.3 Living wage/income gaps and food security

One important issue to discuss is the linkage between living wage/income gaps and food security. To look at this relationship, we calculated the percentage of the income that is allocated to food expenditure. For Costa Rica, food expenditure has been estimated at US$2.98 per capita per day (or US$2.87 per capita per day if the widespread public programme for provision of food at schools is considered, which reduces the domestic costs of meals at home) (Voorend et al., 2017). Comparing this number with the estimations provided by the IDH on the current state of the living wage gap, banana workers in Costa Rica would be expected to allocate about 50 per cent of their wages to food expenditure, which does not indicate a risk for food security. For Côte d'Ivoire, food expenditure has been estimated at US$1.24 per capita per day (Knoema, 2018). Considering that the average income of Ivorian cocoa smallholders is US$0.78 per capita per day, there is a clear risk for food security. In fact, the figures used within the living income benchmark established for Côte d'Ivoire point to the need of US$1.20 per capita per day to sustain a decent nutrition intake (Tyszler et al., 2019).

5.4 Limitations of certification schemes and outlook

Certification schemes, in general, claim to be an attractive way for farmers to achieve better livelihood conditions (Cargill, 2019; UTZ, 2019). However, due to the high costs of being certified, there are ongoing concerns about the potential risk that certification schemes actually increase inequalities among growers or exclude those ones that are incapable of affording the certification costs (Drigo et al., 2009; Pinto et al., 2014). Aligned to that, the exclusion of small farmers was named to be one of the constraints for the certified commodities markets to keep expanding, particularly for products such as cocoa that are generally cultivated by smallholders (Iseal Alliance, 2011). Therefore, it is clear that smallholders need external governance tools in order to simultaneously promote more sustainable practices in cocoa cultivation and achieve a better livelihood for themselves.

In the case of cocoa, as a common rule, if you are a certified smallholder, you are organized in a farmers' group or cooperative. This is because individual smallholders do not possess the financial resources, technical capability and inputs to certify themselves individually. We already mentioned that the price and efforts to be certified constitute one of the biggest barriers for certification schemes to spread further among farmers. Certification standards require an initial investment from farmers to upgrade their farming conditions towards more socially or environmentally friendly practices. On the other hand, smaller and poorer smallholders who are not integrated into cooperatives end up being further marginalized. Most development interventions realized within cocoa communities happen within the boundaries of certified cooperatives (da Silva, 2020). In general, farmers who are both certified and a member of a cooperative enjoy benefits that help them to have better access to market information and to inputs, and are therefore one step ahead on the living income ladder. As a result, non-organized farmers are not only excluded from certified value chains but often also from external aid.

In the case of bananas, despite limited economic impact on primary wages, certification schemes may still provide other social benefits to banana workers. For instance, van Rijn et al. (2020) investigated banana plantations certified by Fairtrade International in the Dominican Republic and reported that the certification

scheme had some relevant positive effects on labour conditions, particularly by delivering in-kind benefits, offering a sense of job security and enabling private savings. According to these authors, Fairtrade International also seems to have a positive effect on the “voice” of wage workers. In this context, positive outcomes of certification schemes may not be reflected in better wages or basic labour conditions, which may in fact fall under the direct control of national and international law. Instead, the positive outcomes of certification schemes should also be assessed in terms of social benefits (e.g. access to and satisfaction with sanitation and health care), and especially in terms of voice-related benefits (van Rijn et al., 2020). The current (economic) focus on living wages in the sector tends to overlook these less tangible, but equally important (social) benefits of certification schemes (van Rijn et al., 2020).

It is important to note that attributing any major improvement in farmers’ livelihood solely to certification schemes is difficult since other drivers of change that promote overall socio-economic improvements (i.e. policies and regulations) may simultaneously play a role. Furthermore, as pointed out by van Rijn et al. (2020), a simple comparison between certified versus non-certified farms/individuals is unlikely to provide the complete answer. For instance, if differences between certified and non-certified farms/individuals are not observed, this may be because certified farms/individuals could have been in a worse situation to start with, but have in fact improved. Moreover, as compliance with other national/international regulations in the production of export commodities becomes more generalized, differences between certified and non-certified plantations tend to become smaller over time.

6. Conclusions

Export commodities that are produced in a tropical environment, such as banana and cocoa, and that are consumed in western countries are characterized by global value chain rules and long distances between production and consumption sites. The products from both plants are part of global food systems and part of people’s diets across the world. Many pressures and drivers affect the position of such crops and commodities in the food systems. These can be more complex drivers, such as climate change, population growth, urbanization and the spreading of a plant disease, whereas others can be influenced more directly, such as trade policies, pricing, boosting information technology or influencing consumer behaviour.

For banana and cocoa in particular, the environmental and socio-economic vulnerability of the systems where the commodity is produced gained increased attention in the consumption countries, and led to the introduction of certification schemes, which can be seen as a specific export crop-related driver. To reduce the vulnerability, the banana sector predominantly focussed on the health of plantation workers and on environmental pollution, whereas the cocoa sector predominantly focussed on the market position of smallholders and on relegated workers (e.g. women, children). The banana and cocoa sectors and the issues these sectors have to deal with differ greatly.

This study showed the complexity of the export value chain and the difficulty of analysing the effects of different drivers, including certification schemes. Therefore, the principles of the food system approach were used to get a better understanding of the effects of the driver ‘certification schemes’ on the banana and cocoa systems. We found that certification schemes have some positive impacts on the livelihoods of banana plantation workers and smallholder cocoa producers but that significant gaps remain. In particular, to effectively improve the livelihood of smallholder cocoa growers in Côte d’Ivoire, much still remains to be done.

Our analysis also generated conclusions on using the food systems perspective when analysing global commodity chains. First, using this perspective illustrated how the drivers and actors in the food system influence the outcomes of the system; in this case the remaining gap in living wage/income. With respect to global export commodities, such as cocoa and banana, it is especially important to better understand how the food system drivers are subject to power relations. This gives insights into which actors are in charge of the drivers that avoid or cause a system to change and how different other actors may be able to influence them. Second, the food system approach we applied showed that an integrated approach, as the one used in this study, can help to create synergies among different food system outcomes. In our case, avenues are made visible that address improved environmental sustainability and resilience and the socio-economic well-being of plantation workers and smallholders simultaneously. Third, certification schemes remain a

popular strategy to improve the livelihoods of smallholder farmers and plantation workers. However, as we showed in the overview, their effects may be limited, depending on the specific approach of the scheme and the local conditions. Furthermore, it is important that a certification scheme should not be considered a singular, independent improvement strategy. Instead, it should be approached as an intervention into pre-existing food system and therefore needs to be supplemented with additional interventions.

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Via Paolo di Dono, 44 - 00142 Rome, Italy
Tel: +39 06 54591 - Fax: +39 06 5043463
Email: ifad@ifad.org
www.ifad.org

facebook.com/ifad
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