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Who is left behind in global food systems? Local farmers failed by Colombia's avocado boom

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Abstract

Work on global food systems has focused on the livelihoods of farmers directly affected as growers of agricultural export goods and has paid less attention to those who are left behind by new patterns of production and consumption. The connections between pre-existing agricultural livelihoods and the new systems of provision associated with fashionable products are poorly understood. Global trends in food culture have wide ranging local impacts. In this paper we argue that researchers need to look beyond linear commodity chains and the goods that travel from producers in one country to consumers in another and expand global food systems analysis to understand what regional livelihoods are modified or displaced by globalised agriculture. Avocados are a popular health food among millennials. Colombia is experiencing a boom in exports. Avocados have long been grown in the Santander region, but global demand has turned them into a politically important crop. Using food systems analysis, our field research illuminates how new opportunities for capital accumulation are transmitted through global markets and shape regional agricultural practices. Large investors have profited, while small-scale farmers have been impoverished. We demonstrate how the interplay of requirements for homogenous fruit from local supermarkets, demand for the export Haas variety, as well as the government's export-oriented policies, have modified local livelihoods. Our contribution examines the broader social space in which agriculture is located. We argue for the need to study food systems beyond the vertical relations that constitute linear supply chains and examine the horizontal context of systems of provision.

Keywords: agriculture, avocados, Colombia, consumption, food systems, production

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Highlights

- This paper investigates how the recent boom in avocado consumption has impacted the livelihoods of traditional avocado farmers in Santander, Colombia.
- Export prospects, stable prices and government support have made avocado crops more attractive for investors, who can fulfil strict quality requirements.
- Farmers who cannot produce export-quality avocados are squeezed out from the domestic market due to increased competition and lack of government support.
- Analyses of global food systems need to consider connections beyond linear commodity chains to understand how patterns of production and consumption modify or displace farmers' livelihoods.

1 Introduction

Commodity chains research, and related approaches, have effectively mapped connections between production and consumption and interrogated how different forms of labour are entangled in the global economy (Henderson et al., 2002). Vertical lines of connectivity have been drawn between farmers and other producers, often in the global South, and companies that market food products that reach the plates of consumers, primarily in the global North (Goodman and Dupuis, 2002). In particular this work has looked at various booms in newly fashionable goods, including French beans (Freidberg, 2004), papayas (Cook, 2004) and bottled water (Jones et al., 2017) and contested the ethical production of items including Fairtrade bananas (Wilson and Jackson, 2016), wine (Kleine, 2008) and organic coffee (Mutersbaugh, 2002). Here we build upon this body of work, but look at what farm to shelf research has missed. We focus on the wider horizontal impacts of food systems on the production regions where they are situated and turn our attention to the pre-existing agricultural practices and livelihoods modified or displaced as regions are reoriented towards the global market. Studies of agricultural booms have ably identified the transnational impacts of consumer demand on those directly affected as producers, but have overlooked those who are left behind. New global production affects political dynamics, displaces old agriculture and disrupts regional socio-economic practices. By focusing on the pre-existing livelihoods threatened by the integration of agricultural regions in to global commodity chains, rather than the

workers and socio-natures that are directly exploited, our field work on avocado agriculture in Colombia demonstrates that consumption booms can fail traditional growers of newly desirable products. Global agriculture and food trends have wider impacts that deserve further attention.

Rich, creamy and nutritious avocados are a very fashionable food. The fruit is favoured for its unique health benefits including “good fats” (Frank and Clegg, 2017; Hass Avocado Board, 2016a). Avocados have come to symbolise conspicuous consumption among cash-rich millennials – people born between 1983 and 2000 – across Australia, Europe and North America (Bellet and Sihra, 2017). These fruits are reified on social media and are a relatively costly, yet nutritious, convenient food. Asia is a growing market and Steve Barnard, president of Mission Produce, the world's largest avocado distributor, claims demand in China from middle class “young, trendy people” for this “heart-healthy” fruit “appears to just double every year” (quoted in Daniels, 2018: 2–3). Smashed avocado is as popular in the cafes of Bogota as it is in Brussels, Boston, or Beijing. Colombia has long been a major producer of avocados for domestic consumption, but has the potential to become one of the world’s largest exporters (PTP and LKS, 2013). Rising demand from China, the US, and Europe is driving international trade. Global wholesale prices surged by 50% in 2017 and appetite for the fruit shows no sign of abating as growers and retailers struggle to maintain supplies (Butler and Jones, 2017). Colombian exports grew

exponentially from an average of 5,401 (US\$) per year between 1997 and 2007 to over 52 million (US\$) in 2017 (see figure 1).

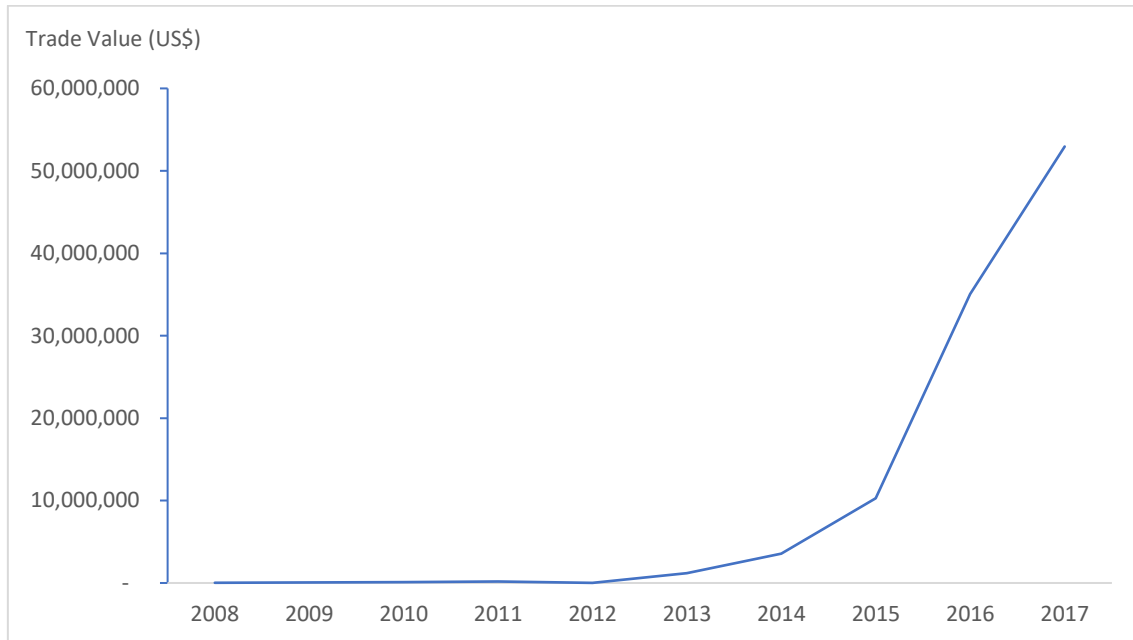


Figure 1 Colombian Avocado exports 2008 – 2017 (UN COMTRADE, 2019)

The Colombian government is actively promoting avocado exports and their policies are shaping agricultural practices. In the north east region of Santander new farming patterns are changing relationships between the state, agricultural capital, and smallholders. Here we ask how is the global avocado boom transforming the livelihoods of pre-existing Colombian farmers? Although most Santander farmers only produce for the domestic market they have still been affected by the national government's export

initiative. The international demand for avocados has spill over effects on broader local economies outside of global commodity chains. We unravel how and why government officials and agricultural extension agents promote adherence to the requirements of consumers in Europe and the United States even though small farmers are not capable of exporting avocados and are being at best left behind by the boom and at worst marginalised by the changing political economy of avocados.

We take a food systems approach to investigate both the chains of activities that interlink production and consumption and the social context in which they are located. To explain the food system we need to understand the material and cultural specificities that bring together production, distribution and trade, as well as the consumption patterns that emerge through a whole web of relationships and transactions (Benson and Fischer, 2007; Freidberg, 2004; Galt, 2014; Mutersbaugh, 2002). We also draw from work analysing the effects for agricultural livelihoods of changing relations in food production and consumption (Fine, 2002; Friedland, 1984). Santander's pre-existing avocado farmers' choices are further enabled and constrained by other local and international actors, this includes the broader effect of changes to the political economy of agriculture and state policy efforts at the horizontal level. Our discussion of avocados is limited by the methodological challenges of investigating international trade (Hulme, 2016). We investigate the supply region rather than the emergence of consumer demand in China, Europe, and North America. Work by Marsden and other food scholars has established

how government policies, consumer movements and major supermarkets, produced retail-led food supply networks for tropical fruits in global marketplaces (Flynn et al., 2000; Marsden et al., 2000).

The article proceeds with a literature review which explores approaches for mapping agricultural systems, followed by some notes on methodology and the Colombian case study. Our fourth section provides an overview of Latin American agriculture, a general description of the avocado food system, and a discussion of how increasing global demand for avocados, mediated by the export goals of the Colombian government, shapes livelihood opportunities. In section five, the experience of various farmers illustrates their different positions within a food system. Finally, the conclusion highlights how a newly fashionable food is being grown in a context that produces relationships which marginalise livelihood opportunities for local pre-existing farmers, rather than providing opportunities for them to benefit from global trade boom, and argues that commodity studies need to pay greater attention to the livelihoods displaced by production for globalised markets.

2 Tracing Global Connections in Food Systems

The relations between producers and consumers in international food supply chains are often distant and anonymous, making them difficult to map (Hinrichs, 2003). Food systems frameworks were proposed to describe the stages through which an agricultural

commodity is transformed and acquires value, rather than forensically charting transactions (Dixon, 1999). Friedland (1984), Fine (2002), and other authors have challenged us to think of commodities as objects with a social as well as a physical presence, immersed in cultural and historical contexts. This is important as the relations between food production and consumption relate to how decisions or changes at one point of a food system can affect other actors and environments in distant places. In this section we review important transformations in the conceptualization of global relations in food systems and highlight a need for paying deeper attention to the farmers whose livelihoods are left behind by booms, or rapid transformations of consumption trends, in these systems.

Two landmark interventions in the study of the relations between food production and consumption are Friedland's commodity systems analysis (1984, 2001) and Fine's systems of provision (SOP) (1994). Interested in how technology, legislation and other aspects of the social and political environment of food systems were rapidly transforming labour and production conditions in agriculture after the 1970s, Friedland (2001) proposed a commodity chain analysis methodology to identify how changes outside agriculture shape social relations within farming. Such analysis considers the political economy of the links between production and consumption, particularly in terms of production practices, characteristics of the labour market, producers' organizations, application of science, marketing and distribution, and the role of the state. Working with

co-authors, Friedland researched the lettuce and tomato industries in the 1970s in the US, showing the consequences of agricultural mechanization on growers, worker displacement, and shifts from male to female labour (Friedland et al., 1981; Friedland and Barton., 1975). Friedland's studies represent an important contribution highlighting the many factors and relations shaping farming in the context of increasingly globalized food systems. Fine's systems of provision (SOP) approach also studies the connections between production and consumption of food, but without placing a special focus on agriculture. Instead, he calls attention to the dynamic interplay of factors along commodity chains, including agriculture, but also banking, retail, and consumption preferences (Fine, 1994: 520). This approach combines two perspectives: it traverses the *vertical* commodity chains, the relationships between different companies and individuals associated with the trade of a particular commodity and secondly examines the *horizontal* context, that being the social and historical environment in which food production and consumption are situated (Fine, 2002). Fine et al. (1996) traced the history of British sugar consumption which is connected to changing patterns of sugar cane and sugar beet production. The former was shaped by the geographies of British colonialism in the Caribbean, and the latter by the European Union's Common Agricultural Policy, alongside other historical and political factors outside the immediate domain of sugar supply chains (Mintz, 1985). The SOP approach emphasizes the importance of studying not only the relations between actors along food supply chains

but also the social and historical environment in which those relations are situated, yet this wider awareness of the regional impacts has been overlooked in many recent studies of global food production that have reified the production of high-value food commodities for northern consumers.

Parallel to developments in the study of global networks around food systems, Global Value Chains (GVC), Global Production Networks (GPN), and 'follow the thing' approaches developed as tools for understanding links between production and consumption both in food and non-food sectors (Gereffi, 1994; Hess and Coe, 2006). GVC and GPN approaches have examined how particular firms capture profit by controlling nodes in commodity networks and which actors have the power to define the price and characteristics of a product (McGrath, 2013). In agricultural research, GVC analysis has been used to trace the displacement of small-holder agriculture in Ghana due to the changes in European consumers' preferences for a new pineapple variety (Fold and Gough, 2008). The GPN approach has served to analyse the role of government policies. For instance, McGrath (2013) shows that the Brazilian state actively reproduces exploitative labour conditions in the sugar cane industry in order to meet the demands of international buyers. Cook (2004) uses the multi-sited ethnographic 'follow the thing' approach to map the economic biography of a single papaya as he follows the fruit from a farm in Jamaica to London. By narrating not only economic transactions, but also personal stories, Cook et al. (2006) are able to expose meanings and social relations in

global trade. Yet there are limits to this method as the conditions for trade depend upon historical relations that exceed the links that can be mapped by tracing the journey of a single fruit from field to fork. The focus of these approaches on power relations between different actors in global networks and the value of the personal stories from people experiencing these networks has influenced the scholarship on food systems. Building on the work of Friedland, Fine, and other developments in the study of global networks, food systems scholars have sought to conceptualize relevant relations in food systems in increasingly comprehensive ways. Goodman and Dupuis (2002), make a call to link political economy production-centred analyses with cultural approaches to consumption. The authors claim that in order to bridge the divide it is necessary to consider the interaction between knowledge and material practices along the different places of food production and consumption. This type of analysis reveals that the meanings, desires and cultural norms in conjunction with the physical and nutritional qualities of food shape the popularity of a product (Benson and Fischer, 2007; Dixon, 2002; Dupuis, 2002; Freidberg, 2004). Freidberg (2004), for instance, studies two chains of vegetable trade between Africa and Europe, and shows how demands for homogenous food from consumers in Britain and France have created new forms of domination as supermarkets place strict quality demands upon smallholders in the former colonies of Zambia and Burkina Faso. The possibility to institute those requirements is associated with both emotions and biophysical processes; including fear of food poisoning from consumers in Europe and

economic insecurities of small-scale farmers in Africa. Benson and Fischer (2007), show how US consumers' desires for healthy broccoli offer export opportunities for farmers in Guatemala that fulfil their livelihood needs and desires for a modern life, while also transferring risk to them. These approaches signal an increased interest on consumers and the cultural and political contexts where food systems are embedded. Recent scholarship has further focused on how consumer values are fuelling change along food systems. Millennial interests in health, lifestyle, sustainability and ethical standards has promoted the emergence of alternative food networks, particularly around organic food and fair trade. However, these concerns may lead to different outcomes along food systems. A growing scholarship on food justice highlights how alternative networks share many characteristics of the industrial global food supply, represent the values of white middle and upper classes, and marginalize minorities (Alkon and Agyeman, 2011; Guthman, 2014). Trauger (2015) and Wilson and Jackson (2016) study the consequences of fair trade bananas for producers in the Caribbean and suggest that fair trade schemes impose the values of consumers and companies in the Global North over Caribbean workers and producers, in many cases leading to a deterioration in working conditions in producing regions. The ethical concerns of consumers in wealthy countries can aggravate the livelihoods of farmers in the Global South.

Other scholars have emphasized the role of the policy environment around food chains as governments and other organizations play key roles mediating relations

between different actors. For instance, Mutersbaugh (2002) and Galt (2014) point out how the regulatory environment significantly shapes the distribution of costs and benefits in food systems. Mutersbaugh (2002) studies the effects of coffee certifications, finding that they create onerous new costs that rest unequally on small growers and producer organizations. Galt (2014) finds that different conditions such as the biophysical environment, governance structures, market signals, and extra-economic regulations in domestic and export markets determine pesticide use and shape how agrochemical companies and banks can capture larger shares of value from farming activities, at the expense of the health and economic conditions of farmers and farmworkers. Galt (2012) also reveals how approaches to protection from pesticides based on prescriptive 'rational' expectations about farmers' knowledge and behaviour ignore the conditions shaping farmers' pesticide use and fail to afford adequate protection. These studies expose how policies and certifications shape not only conditions of exchange, but also environmental and health risks and decision-making power for workers and other growers.

Studies on global relations in food systems trace the connections between food production and consumption and have progressively paid more attention to other relevant aspects beyond those linear connections. These aspects include the role of cultural norms (Benson and Fischer, 2007; Freidberg, 2004), the organic or biophysical conditions of food and its environment (Freidberg, 2004, 2009; Galt, 2014), the

consequences of consumers' ethical concerns for producers (Guthman, 2014; Trauger, 2015; Wilson and Jackson, 2016) and the role of broader institutions shaping the relations beyond linear commodity chains (Galt, 2012; Mutersbaugh, 2005). In the present study, we follow a comparable food systems approach and traverse part of the avocado system in Colombia to understand what type of agricultural practices and livelihoods are being developed. We go beyond linear relations between consumers and producers to investigate the effects of changing consumption trends on traditional avocado farmers who cannot satisfy demand for a trending avocado variety and are left behind in a context of increasing opportunities for wealthier growers. Analysing the effects of the avocado consumption boom requires documenting the relations that take fruits from the tree to the table, but, more importantly, an understanding of why these relations happen in the first place and how the effects of these relationships are transmitted for different producers. In practice, this entails examining the material processes that make the provision of avocados possible and interpreting the processes that create value in avocados. As we discuss below, the material properties of the different avocado varieties grown in Colombia affect consumption patterns as well as agricultural production. At the same time, consumer preferences for certain varieties and product qualities, in conjunction with the priority assigned to export-oriented policies by the government, have transformed livelihood and business opportunities for producers. Yet not only have

they changed practices for export-orientated farmers, they have also changed the livelihoods of small-scale farmers who only produce for a pre-existing domestic market.

3 Researching Avocado Agriculture in Colombia

Inequalities in agriculture have increased in Colombia in the past decades and led to violent conflicts over land (Richani, 2013; Thomson, 2011). Our field research was undertaken in Santander, traditionally one of the largest avocado-producing regions, which in the past decade has lost comparative importance in avocado production (PTP and LKS, 2013). A region in flux shows how both livelihood possibilities change under evolving market conditions and reflect how different types of agricultural practices prevail. Through our analysis, the changing circumstances of farmers in Santander are linked to global avocado consumption, as they are mediated by the state, and national and international trade.

The economy of Santander relies mainly on manufacturing (DANE, 2015a). Bucaramanga, the capital of Santander, is an affluent city, however, rural areas are significantly deprived, and inequality persists. Twenty percent of people are below the poverty line, and extreme poverty has risen in recent years (DANE, 2015b). Our research was mostly conducted in the neighbouring municipalities of San Vicente de Chucurí and El Carmen de Chucurí, an important avocado-producing area with very good land quality, but limited road access (PTP and LKS, 2013). Farms vary in size, with the largest (more

than 400 ha) on the main road to Bucaramanga and the smallest ones (less than 4 ha) located near hard-to-access tracks. Before producing avocados, San Vicente and El Carmen focused on coffee, first, and cocoa, later. Avocado trees were initially used to give shade for other crops, and then their fruit became an important crop. Most avocado farmers in this region have grown this crop for decades.

Interviews were used as the primary methodology and focused on the experience of each actor within the food system and their relations with other actors. The purpose was to use an in-depth and open-ended approach to the dynamics of the avocado sector and, most importantly, to explore how these dynamics shaped the everyday life of research participants. Most interviews were at interviewees' workplaces. As a consequence, we were able to learn not only from their verbal answers, but also from observations of farms, warehouses and other sites. A total of 27 interviews were conducted by a native Spanish speaker. Most interviews involved avocado farmers, but some included traders and people who implement government agricultural policies. Interviews were complemented by a secondary review of formal documents and official statistics on avocado production and trade (e.g. CBI Ministry of Foreign Affairs, 2013; DANE, 2014; PTP and LKS, 2013). These constitute official sources of textual data where it is possible to see some of the ways in which policymakers and practitioners are shaping the avocado system.

4 The Avocado Food System in Colombia

In this section, we first provide a brief overview of Latin America's historical role in global food systems. Secondly, we discuss the millennial boom in avocado consumption. Next, we sketch the overall context of Colombian avocado farming and the state's export plans. Finally, we map the international and domestic supply networks.

Latin America has long played a crucial role in producing agricultural resources to meet global demands, especially tropical colonial products such as rubber, sugar, and bananas (Bucheli, 2005; Frank and Musacchio, 2006; Mintz, 1985). More recently perishable crops including berries, cut flowers, and kiwifruit have been produced for export, facilitated by improvements in transport infrastructure (Challies and Murray, 2011). These are the types of exotic products particularly popular among millennials (Saulo, 2016). During the last decades, several Latin American governments have encouraged export-oriented models of large-scale agriculture that can potentially deliver higher crop yields by incorporating more efficient biotechnologies. Greater investment has come from transnational corporations, local capitalists, and international lending and aid organizations (Renfrew, 2011). The agricultural policies of many Latin American states have focused on promoting opportunities for investors over creating livelihood possibilities for farmers or controlling the environmental impacts of production (McGrath, 2013). Avocados have recently been championed by Latin American states who have capitalised on a booming international market. Between 2004 and 2014 the

international avocado trade almost tripled (FAOSTAT, 2014). In the United States and Europe, consumption increased by more than 40% between 2010 and 2015, while in China it grew by an incredible 126,000% over the same period (CBI Ministry of Foreign Affairs, 2015; Ferdman, 2015; HSBC, 2015).

International marketing campaigns and dietary guidelines have encouraged consumers to eat more avocados. Medical studies of the health benefits funded by trade groups have further catalysed consumer interest (Hass Avocado Board, 2016b, 2016a; Khazan, 2015; Wang et al., 2015). Promotional activities are specifically associated with the Hass variety. The “Love one today®” campaign popularises a very particular idea about the size and shape of an avocado and encourages consumers to share their avocado images on social media with the hashtag #loveonetoday (Hass Avocado Board, 2016a). Digital technologies facilitate searches about food and eating practices, although the effects can be difficult to map (Lupton, 2017). Only 2,062 posts on Instagram have used the #loveonetoday hashtag and, in comparison, a search for #avocado returned 8,297,431 posts.¹ This suggests that the popularity of avocados is more associated with individual choice. But #loveonetoday is just one market intervention, the cumulative effect of a wide suite of advertising, as well as social media activities, endorsements, new recipes, menus, promotions and retail offers has led consumers to gravitate towards collective positions and popularised avocado consumption (Saulo, 2016). Moreover, the

¹ Searches were undertaken at www.instagram.com on 26/07/2018

type of avocado consumption that is popular mirrors the objectives of the formal Hass campaign.

A reoccurring motivation for avocado consumption discussed across diverse media is the health benefits and nutritional content and their position in a particular diet and associated lifestyle. The Hass Avocado Board describes eating avocados as “a way of life, a delicious way of life” (Hass Avocado Board, 2016b: 11). Only the small and durable Hass avocados can fulfil the lifestyle promises, so increasing demand is coupled with very specific requirements. Purchase decisions are mainly influenced by the physical conditions of avocados: they must be the right size, have bright skin and be flawless fruits (Gamble et al., 2010; Hass Avocado Board, 2016a; Restrepo, 2014).

Opportunities for avocado farmers are restricted by multiple factors, in addition to the appearance of the fruit. Avocado consumption, trading requirements and production conditions have shaped each other, creating and transforming the political economy of production regions. A small-scale farmer who sells in the domestic market is realistically unable to sell avocados abroad. Global avocado food systems are composed of distinct roles for different actors who face significant barriers to perform other activities (Henderson et al., 2002). In order for Colombian avocados to be traded internationally they must be accredited for good agricultural practices, and have phytosanitary certification, export authorization and chemical test results, all issued by Colombian authorities, as well as an international certification of good agricultural

practices from the GlobalG.A.P. certification body (CBI Ministry of Foreign Affairs, 2013; ICA, n.d.).

The majority of global avocado exports originate in Mexico, Chile, Peru, Spain, and South Africa and the major importers are the United States, the Netherlands, France, Japan, and the United Kingdom (FAOSTAT, 2012; PTP and LKS, 2013). The United States, the largest importer, represents an attractive market for avocado producers, especially for those in nearby Latin America (FAOSTAT, 2012; Vanguardia Liberal, 2015). Import regulations are restrictive and Colombian avocados only recently gained access to the United States. In the case of the United Kingdom, France, and other European countries, avocado imports come from more than 40 countries (International Trade Center, 2015). However, export opportunities are still highly restricted, and any avocado found on the shelf in Europe did not arrive there by chance. It was most likely intended to reach that part of the world ever since the tree was planted.

Hass avocados predominate in the markets of the global North because they can survive inter-continental shipment and meet the requirements of traders, retailers and, ultimately, the cultural norms expected by consumers (Restrepo, 2014). Hass avocados are only grown 1,500 metres above sea level (MASL) (green and native varieties can be grown at lower elevations). They are well suited to export because they have a thick shell preventing damage and can take more than two weeks to ripen, which enables them to be transported by trucks and boats from farms in Colombia to Europe (Bernal et al., 2008;

Restrepo, 2014). These attributes are important, as retailers demand fruits in perfect and homogenous conditions, ideally in the same volume and quality. Moreover, international buyers commonly only pay for an order after they have received it (Restrepo, 2014). So, producers must be able to afford the costs of growing and delivering avocados, while their payment arrives two to six weeks after dispatch. Therefore, only growers with the capacity to afford the financial outlay, located in areas suitable for Hass avocado, which produce sufficient yields, and implement the required managerial practices, are able to benefit from the opportunities presented by European and other overseas markets.

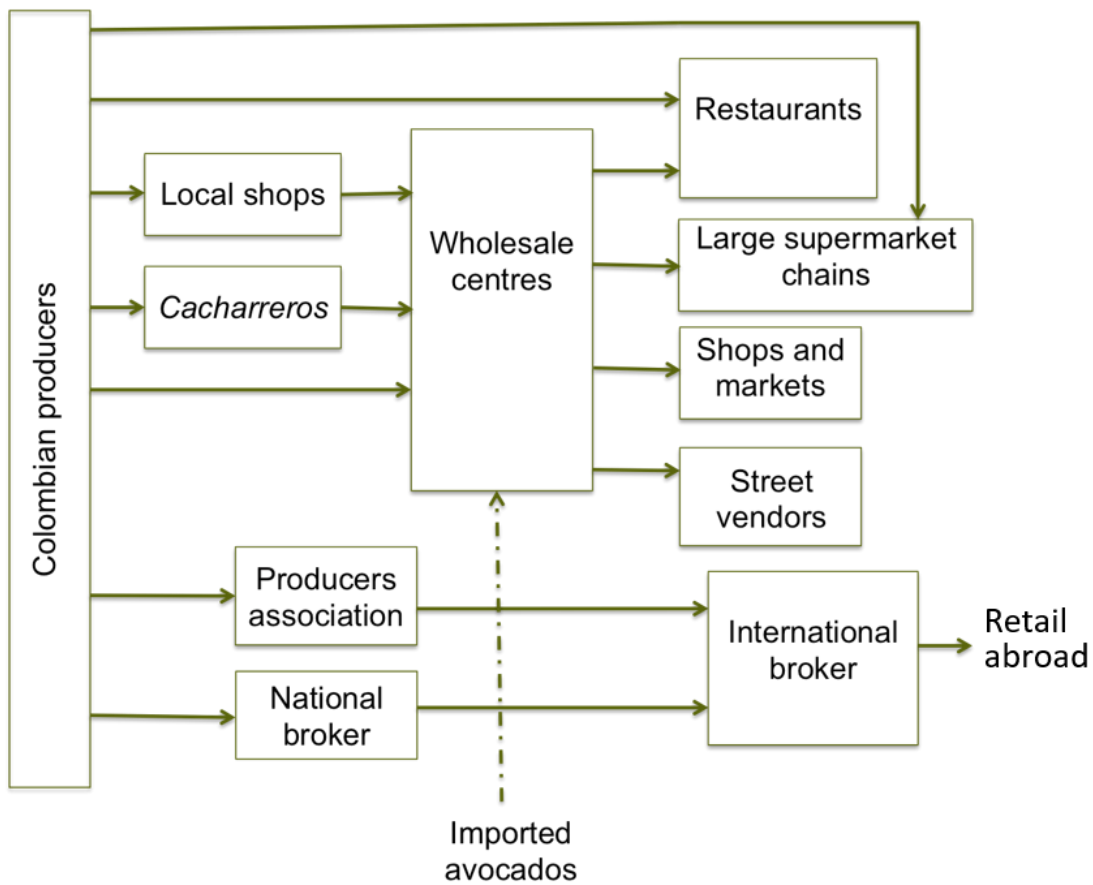


Figure 2: Diagram of avocado trade relations

The Colombian government is trying to promote avocado exports. As Juan Manuel Santos, Colombia’s former president, explained “We managed to open the market for Colombian avocados, which is a golden opportunity for thousands and thousands of farmers and trade in general” (Caracol Radio, 2017). The National Avocado Council, an advisory body to the government, is focused on supporting groups of avocado producers to jointly build the infrastructure and pay for the certifications required for export. To

comply with the international requirements production must follow specific technical practices. Trade links determine the portion of value that each actor can capture (Gereffi and Karina, 2011). Every kilo of avocados exported from Colombia is sold on international markets at FAOSTAT an average of 2.2 US dollars (FAOSTAT, 2012). In sharp contrast, the average price paid to Colombian producers (including those selling for national and international markets) is 0.57 dollars per kilo (DANE, 2014), although this average conceals disparities. Some interviewees claimed to receive 0.33 dollars per kilo, while others reported prices around 1.85 dollars per kilo. Despite the differences, averages illustrate the contrast between the opportunities in domestic and international markets.

The state is actively transforming the system. Government policies emphasise that Colombia must export avocados and farmers must adopt new production practices to satisfy international markets. One of the main policies is the Ministry of Trade's *Productive Transformation Program* (PTP), which "seeks the internationalization of the Colombian economy through the modernization and transformation of the productive apparatus" (PTP and LKS, 2013). The Ministry of Agriculture and Rural Development (MADR, Spanish abbreviation) and the horticulture trade group, Asohofrucol (which manages the national horticultural fund, assigned by the MADR), have focused on transforming avocado farming, among other crops, prioritising: "the standardization of production quality, market expansion and consolidation, fruit transformation and industrialization" (MADR, 2009: 7). According to Asohofrucol (2012), it has provided

technical assistance to over 15,000 fruit and vegetable farmers, including teaching planting techniques, how to handle crop pests and business practices. Additionally, avocado is one of the prioritized products for *Colombia Siembra*, a policy designed to increase the supply of agricultural products and promote exports by giving credit subsidies for new crops (MADR, 2015, 2016). Between 2011 and 2016 the planted area of avocado in Colombia grew from 35,211 to 66,921 hectares (DANE, 2016). In the same period, exports have increased, and domestic prices have been relatively stable (DANE, 2018; UN COMTRADE, 2019).

Government-sponsored programs are increasing avocado productivity and standardization to meet the requirements for international trade. As the GPN approach (Henderson et al., 2002) suggests, actors beyond the firms that compose the avocado production network are actively shaping how this fruit is produced. But, more importantly, the relations described show the inseparable links between consumption and production activities. As highlighted in SOP research, this includes the *vertical* relations between avocado producers, traders, retailers and consumers which determines the distribution of value along the avocado commodity chain, as well as the wider, *horizontal*, political economy context of the Colombian government's efforts to diversify agricultural exports and boost national income (Fine, 1994). In this case, it is possible to see how consumption preferences and trade requirements literally shape avocados. Crops are affected by environmental circumstances; seasonal yields vary and

fruits of different sizes, weights and appearances grow. But in order to produce homogenous Hass fruits with bright surfaces and equal weight it is necessary to implement highly controlled production techniques and produce a new rural environment. However, these technologies are not available to everyone.

Colombia has a big domestic market for avocados and receives imports from neighbouring countries. Indistinguishable fruits from Ecuador and Venezuela, including the popular green varieties, are sold alongside domestic avocados. While demanding a broader range of varieties, large supermarket chains in Colombia require similar quality standards and regular supplies as international buyers. Supermarkets often withhold payment for weeks, and only buy standardised fruits from well-capitalised producers. In other words, these commercial relations are shaped by buyer-driven power (Kleine, 2008). Similarly, wholesalers often pay their suppliers after selling an order. In wholesale centres transactions are frequently informal and depend on trust between people with established business relations. Only suppliers with a regular stock of products can build strong relations and direct sales are mainly restricted to large producers or itinerant traders. Wholesale clients are relatively diverse and include street vendors, restaurants, supermarkets, other marketplaces and, frequently, even their own suppliers, as suppliers may buy other fruits to sell elsewhere. Payment conditions are highly dependent on each client, but the most influential demand credit. For wholesalers to maintain their clients, they need to offer a constant supply that meets the conditions demanded by large clients.

Other important actors in this system are itinerant traders, or *cacharreros*. They drive around agricultural regions and buy produce to supply wholesale centres. Areas with poor access are usually served by one single trader and farmers in those regions have little bargaining power (Galt, 2012). *Cacharreros* usually buy products of varied qualities and pay in cash but pay low and variable prices. Low payments and unstable trading conditions mainly affect the smaller farmers whose harvests are insufficient to cover the costs of taking their products to other markets. *Cacharreros* need to have the financial capacity to afford to pay producers upfront and to sell to wholesalers on credit and are literally the main drivers connecting the places of production and consumption. Connections between farming and retail vary (see figure 2). Some farmers are able to gain higher profits by avoiding intermediary traders, including producers who sell directly to shops, restaurants or consumers and farmers grouped into producer associations, which can build relations with commercial clients (Fine and Leopold, 1993).

5 Experiencing the Avocado System

Some of the most crucial actors in charge of promoting the ‘technicalization’ required to produce fruits that can meet export requirements are Asohofrucol agricultural extension agents. Two of them working in Santander explained that technicalization involves using certified seeds, having a fertilization plan, renovating trees (cutting old ones down and planting or grafting new ones) and monocropping. As the Asohofrucol regional

coordinator for Santander discussed, 'avocado crops are to be handled alone. That idea of mixing so many trees does not work' (J.P. Salamanca 2015, Interview, 10 June). Asohofrucol offers field trainings to engage associations of producers interested in learning these techniques, where extension agents teach cropping and business practices. The training closes with a practical test to select the best producers for further assistance on production, marketing, and business support (J.P. Salamanca 2015, Interview, 10 June).

The prescriptions offered by Asohofrucol are supposed to increase fruit production and minimize losses, but there is a perception that farmers fail to see the benefits of adopting the proposed techniques: "technicalization conflicts a bit with production culture (...) some producers do not see the result of how genetically improved plantations work and the effect of technology-intensive crops, clones or varieties, because they expect to give the new variety the same treatment as a traditional crop" (J.P. Salamanca 2015, Interview, 10 June). The problems were attributed to cultural traits: "People from Santander have a character. It is difficult that they give-in. The culture has a lot to do. The culture here is difficult" (D. Morales 2015, Interview, 19 June). Governments and the agrochemical industry often blame the limitations of capital intensive farming practices on a cultural deficiency of farmers (Galt, 2012). Here, extension agents reduce material constraints that include access to markets and capital, and seasonal environmental conditions, to farmers' inability to adapt. The policy

emphasis on avocado exports has set export-quality standards as the norm. Farmers unable to reach these standards are perceived as failures, despite the fact that they have long produced avocados that are consumed locally.

Handling crops according to customary practices lies outside of definitions of good production. The adjectives of ‘technical’, ‘well managed’ and ‘rational’ are restricted to those who follow a specific model of intensive technology and standardized practices. The La Bodega² farm in San Vicente is a good example. Alejandro, its owner, is a businessman with investments in agroindustry and real estate sectors. He mainly grows citrus and avocados. These crops are clearly separated and managed in different and specialized ways. To learn how to plant and handle avocado crops, Alejandro travelled to Chile and visited several monocrop farms, and hired an agronomist.

At La Bodega, avocado trees are perfectly aligned on ridges, treated with pesticides when workers detect fungi or certain insects and irrigated by fertilized dripping. Consequently, the harvests are less vulnerable to seasonal changes (e.g. precipitation) and offer relatively constant production throughout the year, with two mild yield peaks. Two employees serve every eight hectares of avocado crops. A farm truck delivers fruit directly to restaurants in Bucaramanga, some of them owned by personal friends of Alejandro, who deal with a commercial manager. Sales are formalized in a yearly contract that fixes conditions (including fruit quality, prices, and payment

² All the names of farms and producers were changed to provide confidentiality to the interviewees.

conditions). Alejandro is currently focused on selling in the national market, as the green avocado varieties he can produce are not suitable for export. However, he would be interested in exporting if there was demand for green avocados. He has the technical capacity to produce homogeneous fruits, in constant volume and quality throughout the year. Farming practices at La Bodega required substantial investments, enabled by Alejandro's capital from other business ventures. His farm now delivers high productivity and profits.

As in Alejandro's case, the farms owned or managed by Jorge, Julio, Gerardo and Nestor, directly serve consumers, shops or wholesalers, skipping at least one possible intermediary in the value chain. Many of them have personal connections that allow them to sell directly to restaurants or retailers and are able to hire sales people. In all of these farms, trading and agricultural tasks are usually divided between different employees. Avocados are planted as monocrops. Fertilization, fumigation and sometimes irrigation, are performed according to standardized procedures. These activities and the related pay rolls are usually financed by profits coming from other businesses. The owners of these farms all have something in common: they do not work on their own land. They have the possibility to invest revenues from other economic activities into their crops and do not rely solely on farming to earn a livelihood. They are investors and their farms are sources of profit. They have started growing avocado in the last 10 years and are benefiting from the possibilities brought by an expanding avocado market.

In contrast to these larger commercial farms there are farmers for whom avocado agriculture is their primary livelihood. Andres and his father, Pablo, have been in the business for much longer. They have less technical approaches to land management and produce a different type of agricultural landscape. It takes an avocado tree approximately three years to provide the first harvest, therefore Andres planted quick-growing plantain in between trees, to provide some income and pay for the costs of planting. Pablo, Andres's father, owns an older avocado crop that has been producing for decades. Pablo has cocoa or mango trees and cassava plants between his avocado trees. At a distance, the variety of trees in Pablo's farm seems an indistinguishable *mélange* that contrasts with the landscape at Alejandro's farm. However, high productivity is not Pablo's priority. Instead, he is worried about having constant revenue, in the context of the risks he faces such as pests, low prices, or low yields in any of his crops.

Pablo and Andres plant cocoa, mango, cassava or plantain between the avocado trees because 'it would be a shame to lose that space' (P. Mejía 2015, Interview, 11 June). This practice may reduce the productivity of each avocado tree but enables diverse production in a limited area. Furthermore, Pablo, as with many other farmers, finds that intercalating different types of trees contributes to limiting the spread of pests and provides several sources of income he can rely on when one crop is not producing or the price is too low. Other farmers also highlight the role of plant assortment in contributing to the diversity of soil nutrients. These multi-cropping practices may result in a lower

average income for Pablo, but also reduce expenditure on pesticides and fertilizers and provide a reliable income to maintain livelihoods.

Each year, Pablo gets two major avocado harvests, one or two cocoa and cassava harvests, one mango harvest, and some sporadic yields throughout the year. He cannot afford an irrigation system that could enable constant production. In order to buy one, he could take out a loan, using land as collateral. However, he is not willing to do this as his family's livelihood would be at risk if he failed to make repayments. Without an irrigation system his harvest depends on seasonal weather. Favourable weather results in high regional yields and a glut of avocados on the market depresses the prices. Therefore, Pablo gets the lowest prices per avocado, precisely when he has the highest amount of produce.

Andres and Pablo sell their produce to *cacharreros* who drive by their farms every week. In recent years, they have searched for alternative ways to market their products. When they tried to supply a wholesaler directly, sales were difficult as they were unable to create regular trading relations and were offered low prices. Their yields were too low to supply supermarkets. Pablo says, "I've tried selling all around the country. Leaving the farm at 9pm, to meet at 2am with a guy who has monopolized the wholesale center and tells me that avocados are one thousand pesos [US 0.33 per kilo] today. As a small farmer with a full truck, I have to sell them at one thousand [a very low price]" (P. Mejía 2015, Interview, 11 June). The conditions set by the wholesaler are Pablo's only option. In

contrast, wholesalers have an increasing range of suppliers to choose from. According to Carlos, a long-time wholesaler, 20 years ago he only knew of three large industrialized producers, “It was a different story. Today, there are over a thousand producers” (C.Ruíz, Interview, 15 June). So, as Alejandro and other business people are attracted to the opportunities offered by the increased consumption of avocados, stable prices and export prospects, Pablo's sale opportunities are shrinking.

“What we need is support to sell. To produce... we know how to produce. But see? The Opossums end up eating it” (P. Mejía 2015, Interview, 11 June) says Pablo, while pointing at produce decomposing on the ground of his farm. He has been growing avocado for over 30 years and has complete confidence in his agricultural techniques. Pablo is reluctant to adopt more industrialized practices requiring high investments, as him and many others recall how small farmers with monocrops or debts to pay for irrigation have been driven out of business in times of pests and low prices. Additionally, these practices would not solve his main difficulty: accessing the higher value and more stable markets that Alejandro and other large producers are able to access. As mentioned earlier, only farmers willing to adopt the practices prescribed by Asohofrucol are offered technical assistance, which includes marketing and crucially business advice. Farmers committed to more traditional agricultural practices are considered culturally unsuited. Long standing avocado farmers like Pablo are disadvantaged and left behind. They cannot

get the state support they need as the government's policy objectives are dominated by export-orientated production.

Wilmer, Carmenza and José describe similar cropping practices to those of Pablo. However, they own smaller areas of land that do not provide a sufficient income to pay for nutritious meals every day. Like many other farmers in the area, they have tall and old trees around 10 meters high and sometimes more than 40 years old that are less productive than younger plants. These farmers cannot afford to cut down old trees to graft or plant new ones, as this would mean waiting one or three years, for the next harvest. They keep less productive plants to survive and supplement farm income with low-paid insecure work on other farmers' land. Agricultural labour in the region, as in many areas of Colombia, is usually hired on a temporary basis, at a daily rate below the minimum wage, and without any social security benefits. These impoverished farmers are stuck with the conditions offered by *cacharreros*. Moreover, *cacharreros* know this, and sometimes pay them even less than they pay farmers like Pablo who can afford to seek alternative clients. Therefore, those with the greatest need and least productivity are paid the lowest prices for their produce. The distribution of land in the region and labour conditions in rural Colombia, among many other historical and social *horizontal* factors shape the livelihood possibilities of each of these farmers, beyond the relations between the actors involved in the avocado production network (Fine, 2002; Friedland, 1984).

As more avocado markets open for Colombian producers in general, opportunities for long-term small farmers are closed, and inequalities among agricultural producers widen. Export prospects, stable retail prices in the domestic market, and the support offered by the government have made this crop more attractive for business people like Alejandro, Jorge, Julio, Gerardo and Nestor. Revenue from other businesses allows them to make the investments to produce homogenous fruits all year-round and hire sales people to market their produce. In contrast, experienced small-scale farmers are squeezed out of markets. With lower relative power to bargain with sales intermediaries and no direct channels to consumers and retailers, they are forced to accept lower prices. Additionally, the practices that allow small farmers to sustain low-investment crops to stay in business render them unable to access the marketing and business advice now available through Asohofrucol to other farmers. Instead of profiting from the booming avocado business, small farmers are struggling more and more to sustain their livelihood.

6. Left behind in a globalised food system

Our research has demonstrated how global food systems have wider affects on agricultural regions beyond the linear relationships mapped in commodity chain studies. Colombian avocado exports and global demand are booming, but small farmers in the traditional avocado producing region of Santander are at risk of failing. Pablo, Andres, and many others have not profited and face pressures to adopt unsustainable production

strategies. Pre-existing farmers are not materially connected to international supply networks and their fruits do not reach new consumers in Europe, North America, or China, but they are enveloped in the same avocado food system. Using methods common to the family of approaches that encompasses GVC and GPN, our research has focused attention on the farmers who are left behind by new globalised patterns of agricultural production. Drawing on the system of provision approach we have moved beyond the usual vertical relationships mapped in commodity studies to assess both the wider horizontal factors that shape the political economy of avocado production and the broader regional impacts on livelihoods outside of global trade. This methodology helps us understand the roles that governments, traders, interest groups, and retailers play in transmitting the demands of consumers in Europe and the U.S. via supply networks to Santander and how this effect carries beyond export orientated farms.

Ben Fine (1994) argued that the organic characteristics of food at both extreme ends of systems are crucially significant and that the social and economic factors of systems of provision determine each other in historically contingent ways. We can extend this argument by adding that they not only determine one another, they can further determine livelihoods outside of global food systems. Small and flawless Haas avocados that meet international demand can only be produced all year-round in monocrops, under standardized and capital-intensive cropping practices unavailable to small livelihood farmers. Pre-existing farmers need to grow more than avocados and engage in

activities that provide a stable, less risky income. New investors like Alejandro are attracted by export prospects and compete in local markets that Pablo, and other small farmers used to supply. The deterioration in their livelihood opportunities has been mediated by the government and materialized through agricultural extension agents. By promoting technicalization and offering business support to new producers, extension agents contribute to squeezing pre-existing farmers out of domestic markets. Extension agents attribute farmers' resistance to change to irrational 'cultural traits'. Their actions may not be rational in the sense of the classical characteristics associated with the gendered and abstract figure of Rational *Economic Man* who with his complete knowledge of the global market, entrepreneurial spirit, and self-interest would always choose to maximise profit (Galt, 2012). But through detailed fieldwork we can understand how livelihood farmers' choices are rational and risk averse.

Using a food systems approach has enabled us to take our analysis further than just explaining the decision-making processes of livelihood farmers (Fine, 2002; Friedland, 1984). We can explain how they are being impoverished by the state's manipulation of the market. Examining the global and regional contexts in which a new fashionable food system has emerged, has enabled us to reveal how different farming approaches have developed. Powerful connections between capital — which includes transnational corporations, local capitalists, and international organizations — and the Colombian state have promoted a particular vision for society and agriculture (Galt,

2014). Rather than a simple conversion from livelihood to technology-intensive agriculture, the government is promoting a takeover of agriculture by investment capital. This is a political decision, not a simple outcome of market forces as it is led through the state. The standardized Hass fruits produced in technology-intensive crops are not the only avocados in demand. Imported light green avocados are reaching the same wholesale centres as avocados produced by poorer livelihood farmers, demonstrating that there is demand and a commercially attractive market for these green avocados in Colombia. We could not have understood these dynamics if we simply mapped the linear, vertical commodity chain and examined the livelihoods of only those who produce Haas avocados for global markets. Food system analyses offer a perspective to identify how relationships in markets transform environments, livelihoods, and opportunities for capital accumulation (Hinrichs, 2003). Studying the avocado food system beyond the borders of linear supply chains enables us to recognize the relationship between agricultural policies and different farmers' livelihoods. Choosing, selling, promoting or regulating an avocado, shapes the livelihoods and landscapes of many apparently disconnected, but actually inextricably interconnected actors and places.

It is easy to reify fashionable products like Haas avocados, but a narrow focus on things can constrain horizons. Our research has demonstrated that global food systems have broader agency in the transformation of agricultural regions than can be mapped by following the production of farms goods or tracing the vertical connections in trade

networks. There does not need to be a physical connection between consumption and production for there to be an affect. Other livelihoods are impacted by consumers' desires and retail trends (Guthman, 2014; Trauger, 2015). Our work reinforced the notion that relations in global food systems are often distant and anonymous (Hinrichs, 2003). These relations are not dependent on traceable transactions and can further be determined by transformations to regional political economies. Understanding these contexts requires in-depth fieldwork across agricultural regions. Our work has shown how there is a hidden geography to global food systems. Small farmers can be left behind and struggle to make a living when they are on the margins of globalised trade patterns. Global-scale consumer demands affect distant agricultural livelihoods, including livelihoods of which the consumer is not only unaware, but to which they have never been materially connected.

References

- Alkon AH and Agyeman J (2011) Introduction: The Food Movement as Polyculture. In: *Cultivating Food Justice: Race, Class, and Sustainability*, Cambridge, MA: The MIT Press, pp. 1–20.
- Asohofrucol (2012) Boletín 003-Asohofrucol impulsa la productividad del sector de frutas y hortalizas en Colombia. Available from:

http://www.asohofrucol.com.co/archivos/Boletín_003.pdf (accessed 3 August 2015).

Bellet C and Sihra E (2017) What research tells us about the avocado toast controversy.

LSE Business Review. Available from:

<http://blogs.lse.ac.uk/businessreview/2017/05/22/what-research-tells-us-about-the-avocado-toast-controversy/> (accessed 27 January 2018).

Benson P and Fischer EF (2007) Broccoli and Desire. *Antipode* 39(5).

Bernal J, Díaz C, Tamayo A, et al. (2008) *Tecnología para el Cultivo del Aguacate*.

CORPOICA. Available from:

<http://conectarural.org/sitio/sites/default/files/documentos/tecnologacultivoaguacate.pdf>.

Bucheli M (2005) *Bananas and Business: the United Fruit Company in Colombia 1899-2000*. Kindle edi. New York: New York University Press.

Butler S and Jones S (2017) Holy guacamole! Avocado fans in UK face further price rises.

The Guardian. Available from:

<https://www.theguardian.com/lifeandstyle/2017/may/12/avocado-uk-further-price-rises-demand-china-harvest-mexico-peru-us>.

Caracol Radio (2017) Fue una reunión muy positiva para la paz y el posconflicto: Santos.

Available from:

http://caracol.com.co/radio/2017/05/19/politica/1495227417_979089.html

(accessed 6 June 2017).

CBI Ministry of Foreign Affairs (2013) CBI Product Factsheet : Fresh Avocados in the European Market. Available from:

<http://www.cbi.eu/sites/default/files/study/product-factsheet-avocado-europe-fresh-fruit-vegetables-2014.pdf> (accessed 20 January 2016).

CBI Ministry of Foreign Affairs (2015) CBI Product Factsheet : Fresh Avocados in Europe.

The Hague. Available from:

https://www.cbi.eu/sites/default/files/market_information/researches/product-factsheet-europe-fresh-avocados-2015.pdf (accessed 20 January 2016).

Challies ERT and Murray WE (2011) The Interaction of Global Value Chains and Rural Livelihoods: The Case of Smallholder Raspberry Growers in Chile. *Journal of Agrarian Change* 11(1): 29–59.

Cook et al I (2006) Geographies of food: following. *Progress in Human Geography* 30(5): 655–666.

Cook I (2004) Follow the Thing: Papaya. *Antipode* 36(4): 642–664.

DANE (2014) Precio promedio por tonelada de la primera transacción, según cultivo.

Encuesta Nacional Agropecuaria. Available from:

<http://www.dane.gov.co/index.php/agropecuario-alias/estadisticas-agricolas-y-pecuarias-ena> (accessed 2 August 2015).

DANE (2015a) Cuentas Nacionales Departamentales. Available from:

<http://www.dane.gov.co/index.php/pib-cuentas-nacionales/cuentas-departamentales> (accessed 19 January 2016).

DANE (2015b) Santander: Pobreza Monetaria 2014. Available from:

http://www.dane.gov.co/files/investigaciones/condiciones_vida/pobreza/Santander_Pobreza_2014.pdf (accessed 19 January 2016).

DANE (2016) *Encuesta Nacional Agropecuaria*. Available from:

<https://www.dane.gov.co/index.php/estadisticas-por-tema/agropecuario/encuesta-nacional-agropecuaria-ena>.

DANE (2018) *Precios Mayoristas-Series Históricas*. Available from:

<https://www.dane.gov.co/index.php/estadisticas-por-tema/agropecuario/sistema-de-informacion-de-precios-sipsa>.

Daniels J (2018) Avocado sales could more than double this year, helped by demand from China's middle class. *CNBC*. Available from:

<https://www.cnbc.com/2018/01/10/chinas-middle-class-is-boosting-demand-for-avocados.html> (accessed 27 January 2018).

Dixon J (1999) A cultural economy model for studying food systems. *Agriculture and Human values* 16(2): 151–160.

Dixon J (2002) *The Changing Chicken: Chooks, Cooks and Culinary Culture*. Press NSWU (ed.), Sydney.

Dupuis ME (2002) *Nature's Perfect Food: How Milk Became America's Drink*. New York:

NYU Press.

FAOSTAT (2012) Avocado Imports-Exports. Available from:

<http://faostat3.fao.org/browse/T/TP/E> (accessed 16 July 2015).

FAOSTAT (2014) Avocado Trade. *Trade- Crops and Livestock products*. Available from:

<http://faostat3.fao.org/download/T/TP/E> (accessed 20 January 2016).

Ferdman R (2015) The rise of the avocado, America's new favorite fruit. *The*

Washington Post, 22nd January.

Fine B (1994) Towards a political economy of food. *Review of International Political Economy*.

Fine B (2002) *The World of Consumption: The material and cultural revisited*. 2nd ed.

London: Routledge.

Fine B and Leopold E (1993) *The World of Consumption: The Material and Cultural Revisited*. London: Routledge.

Fine B, Heasman M and Wright J (1996) *Consumption in the Age of Affluence: The world of food*. Oxon: Routledge.

Flynn A, Harrison M and Marsden T (2000) *Consuming interests: The social provision of foods*. London: UCL Press.

Fold N and Gough K V. (2008) From smallholders to transnationals: The impact of changing consumer preferences in the EU on Ghana's pineapple sector. *Geoforum* 39(5): 1687–1697.

- Frank A and Clegg D (2017) Dietary Guidelines for Americans—Eat Less Saturated Fat. *JAMA* 315(17): 1–7.
- Frank Z and Musacchio A (2006) Brazil in the International Rubber Trade, 1870-1930. In: Topik S, Frank Z, and Marichal C (eds), *From Silver to Cocaine: Latin American Commodity Chains and the Building of the World Economy, 1500–2000*, Durham, NC: Duke University Press, pp. 271–299.
- Freidberg S (2004) *French Beans and Food Scares: Culture and Commerce in an Anxious Age*. Oxford: Oxford University Press.
- Freidberg S (2009) *Fresh: A Perishable History*. Cambridge, MA: Harvard University Press.
- Friedland W (1984) Commodity Systems Analysis: An Approach to the Sociology of Agriculture. In: Schwarzweller HK (ed.), *Research in Rural Sociology and Development: A Research Annual*, Greenwich, Connecticut: JAI Press, pp. 221–235.
- Friedland W (2001) Reprise on Commodity Systems Methodology. *International Journal of Sociology of Agriculture and Food* 9(1): 82–103.
- Friedland WH and Barton. A (1975) *Destalking the Wily Tomato: A Case Study in Social Consequences in California Agricultural Research*. Davis: University of California, Department of Applied Behavioral Sciences.
- Friedland WH, Barton AE and Thomas RJ (1981) *Manufacturing Green Gold: Capital, Labor, and Technology in the Lettuce Industry*. New York: Cambridge University

Press.

Galt RE (2012) From Homo economicus to Complex Subjectivities : Reconceptualizing Farmers as Pesticide Users. *Antipode* 45(2): 336–356.

Galt RE (2014) *Food Systems in an Unequal World: Pesticides, Vegetables, and Agrarian Capitalism in Costa Rica*. Arizona University Press.

Gamble J, Harker FR, Jaeger SR, et al. (2010) The impact of dry matter, ripeness and internal defects on consumer perceptions of avocado quality and intentions to purchase. *Postharvest Biology and Technology*, Elsevier B.V. 57(1): 35–43.

Gereffi G (1994) The organization of buyer-driven global commodity chains: How U.S. retailers shape overseas production networks. *Commodity Chains and Global Capitalism* (January 1994): 95–122.

Gereffi G and Karina F-S (2011) *Global Value Chain Analysis: A primer*. Available from: http://www.cggc.duke.edu/pdfs/2011-05-31_GVC_analysis_a_primer.pdf (accessed 22 May 2015).

Goodman D and Dupuis EM (2002) Knowing Food and Growing Food : Beyond the Production-Consumption Debate in the Sociology of Agriculture. 42(1).

Guthman J (2014) *Agrarian Dreams: The Paradox of Organic Farming in California*. 2nd ed. Oakland, CA: University of California Press.

Hass Avocado Board (2016a) *Avocado Tracking Study 2016*. Mission Viejo, CA. Available from:

https://www.hassavocadoboard.com/sites/default/files/hab_general_market_segmentation_report_2016.pdf.

Hass Avocado Board (2016b) Love One Today. Available from:

<https://www.hassavocadoboard.com/loveonetoday>.

Henderson J, Dicken P, Hess M, et al. (2002) Global production networks and the analysis of economic development. *Review of International Political Economy* 9(3): 436–464.

Hess M and Coe NM (2006) Making connections: Global production networks, standards, and embeddedness in the mobile-telecommunications industry. *Environment and Planning A* 38: 1205–1227.

Hinrichs C (2003) The practice and politics of food system localization. *Journal of rural studies* 19(1): 33–45.

HSBC (2015) The avocado advocates: How the alligator pear is winning over Chinese shoppers. Available from: <https://www.hsbcnet.com/gbm/global-insights/week-in-china/2015/the-avocado-advocates.html>.

Hulme A (2016) Following the (unfollowable) thing: methodological considerations in the era of high globalisation. *cultural geographies*, SAGE Publications 24(1): 157–160.

ICA (n.d.) ¿Cómo solicitar un Certificado Fitosanitario para Exportación? *Instituto Colombiano Agropecuario*. Available from: ¿Cómo solicitar un Certificado

- Fitosanitario para Exportaci?n? (accessed 28 July 2015).
- International Trade Center (2015) List of supplying markets for a product imported by European Union (EU 28). *Trade Map*. Available from: http://www.trademap.org/Country_SelProductCountry_TS.aspx (accessed 4 February 2016).
- Jones C, Murray WE and Overton J (2017) FIJI Water, water everywhere: Global brands and democratic and social injustice. *Asia Pacific Viewpoint* 58(1): 112–123.
- Khazan O (2015) The Selling of the Avocado. *The Atlantic*. Available from: <https://www.theatlantic.com/health/archive/2015/01/the-selling-of-the-avocado/385047/>.
- Kleine D (2008) Negotiating partnerships, understanding power: doing action research on Chilean Fairtrade wine value chains. *The Geographical Journal* 174(2): 109–123.
- Lupton D (2017) Cooking, eating, uploading: digital food cultures. *Asia Pacific Viewpoint* 58(1): 112–123.
- MADR (2009) Cartilla Cadenas Productivas 2009. *Ministerio de Agricultura y Desarrollo Rural (MADR)*. Available from: http://www.agronet.gov.co/www/docs_agronet/2010215155849_CARTILLA_Cadenas_productivas_2009.pdf (accessed 8 August 2015).
- MADR (2015) MinAgricultura presentó plan ‘Colombia Siembra’ que busca ampliar en un millón las hectáreas sembradas. *Ministerio de Agricultura y Desarrollo Rural*.

Available from:

<https://www.minagricultura.gov.co/noticias/Paginas/MinAgricultura-presentó-plan-‘Colombia-Siembra’.aspx> (accessed 24 July 2018).

MADR (2016) MinAgricultura inyecta nuevos recursos para ICR. *Ministerio de*

Agricultura y Desarrollo Rural. Available from:

<https://www.minagricultura.gov.co/noticias/Paginas/MinAgricultura-inyecta-nuevos-recursos-para-ICR-.aspx> (accessed 24 July 2018).

Marsden T, Banks J and Bristow G (2000) Food Supply Chain Approaches: Exploring their Role in Rural Development. *Sociologia Ruralis* 40(4): 424–438.

McGrath S (2013) Fuelling global production networks with slave labour?: Migrant sugar cane workers in the Brazilian ethanol GPN. *Geoforum* 44: 32–43.

Mintz S (1985) *Sweetness and Power: The Place of Sugar in Modern History*. New York: Penguin Books.

Mutersbaugh T (2002) The number is the beast : a political economy of organic-coffee certification and producer unionism. *Environment and Planning A* 34(1): 1165–1184.

Mutersbaugh T (2005) Fighting Standards with Standards: Harmonization , Rents , and Social Accountability in Certified Agrofood Networks. *Environment and Planning A* 37: 2033–2051.

PTP and LKS (2013) Plan de Negocios de Aguacate. Available from:

- [https://www.ptp.com.co/documentos/PLAN DE NEGOCIO AGUACATE 131211.pdf](https://www.ptp.com.co/documentos/PLAN_DE_NEGOCIO_AGUACATE_131211.pdf)
(accessed 27 May 2015).
- Renfrew D (2011) The Curse of Wealth: Political Ecologies of Latin American Neoliberalism. *Geography Compass* 5(8): 581–594.
- Restrepo JD (2014) Exportacion y Logistica de Aguacates. July, 2014. El Retiro, Antioquia. Available from: <https://www.youtube.com/watch?v=78tMqqyujkQ>
(accessed 15 July 2015).
- Richani N (2013) *Systems of violence : the political economy of war and peace in Colombia*. 3rd ed. Abany: SUNY Press.
- Saulo AA (2016) Millennials and Food. *Food Safety and Technology* 63: 1–3.
- Thomson F (2011) The Agrarian Question and Violence in Colombia: Conflict and Development. *Journal of Agrarian Change* 11(3): 321–356.
- Trauger A (2015) Is Bigger Better? The Small Farm Imaginary and Fair Trade Banana Production in the Dominican Republic. *Annals of the Association of American Geographers* 104(5): 37–41.
- UN COMTRADE (2019) UN COMTRADE DATABASE. Available from: <https://comtrade.un.org/data/> (accessed 21 January 2019).
- Vanguardia Liberal (2015) Gobierno quiere que el aguacate nacional llegue a Estados Unidos. *Vanguardia Liberal*, Bucaramanga, 4th February.
- Wang L, Bordi PL, Fleming JA, et al. (2015) Effect of a moderate fat diet with and

without avocados on lipoprotein particle number, size and subclasses in overweight and obese adults: a randomized, controlled trial. *Journal of the American Heart Association* 4(1): e001355.

Wilson M and Jackson P (2016) Fairtrade bananas in the Caribbean : Towards a moral economy of recognition. *Geoforum* 70.