

BEYOND PRICE:
Farmers' livelihood opportunities and the political
economy of avocados

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MA/MSc DISSERTATION

I, Angela Serrano Zapata hereby declare (a) that this Dissertation is my own original work and that all source material used is acknowledged therein; (b) that it has been specially prepared for a degree of the University of London; and (c) that it does not contain any material that has been or will be submitted to the Examiners of this or any other university, or any material that has been or will be submitted for any other examination

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ABSTRACT

This study explores the livelihood possibilities of avocado farmers, within a broader examination of the political economy of avocados. It exposes a state-capital arrangement that is promoting a way of organizing society in which livelihood agriculture is being displaced by investment agriculture. It draws on the systems of provision (sop) approach under the question of the production of nature. That means examining the links taking avocados from a farm to the hands of a consumer, and inquiring about the ways in which the people and places involved have come to occupy a specific role in those processes. For this purpose, a general depiction of the avocado sop exposes how consumer preferences, requirements for international trade, and agricultural policies shape avocados and, consequently, the practices of farmers growing them. The research focuses on the experience of farmers and the ways in which the mentioned state-capital arrangement shapes their livelihood possibilities.

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ABBREVIATIONS AND GLOSSARY

DANE – (Colombian) Administrative Department of National Statistics

GPN – Global Production Networks

GVC – Global Value Chains

MADR – (Colombian) Ministry of Agriculture and Rural Development

MAMSL – Metres Above Mean Seal Level

PTP – Productive Transformation Program

sop – system of provision

1 INTRODUCTION

Avocados might appear simple on the surface, but the ways in which they are produced, exchanged and consumed shape the lives of people around the world. Avocado trade has significantly changed in recent years: from about 1,000 tons sold in international markets in the 1960s, transnational sales have risen to 1,000,000 tons nowadays (FAOSTAT, 2012). In the meantime, the lives of those involved have also changed. In particular, avocado farmers of all sorts apparently have higher trading opportunities. But, in reality, these opportunities are highly restricted by multiple and complex requirements (e.g. strict quality standards, certifications for export, etc.). Those requirements partly determine prices, payment conditions and, more generally, farmers' livelihood possibilities. That is precisely the content of this research: an exploration of the ways in which current processes taking avocados from a crop to the hands of a consumer are shaping livelihood possibilities for the farmers of this fruit.

To understand the determinants of these possibilities it is necessary to analyse the whole political economy of avocados, that is, the social relations that produce a specific distribution of value along the transactions of a commodity (Milonakis and Fine, 2009; Brooks, 2015a). The reason is that the opportunities that farmers face do not depend uniquely on their own work; they are enabled by numerous relations also involving actors trading and consuming avocados. Moreover, these opportunities are not the result of impersonal prices and market conditions. Paraphrasing Brooks (2015a), an avocado in a shop is not just a 'thing', it is the product of social relations and experiences linking farmers, traders and consumers. Therefore, in the search for the conditions enabling livelihood possibilities for avocado farmers, I intend to unravel the concrete relations between people and places composing avocado market interactions and, hence, livelihood opportunities for avocado farmers.

These interactions stretch along multiple spaces around the world. Consequently, in order to identify concrete relations it is necessary to focus on specific people or places. This research focuses on Colombia, where inequalities around agriculture have not only increased in the past decades, but have also led to violent conflicts over land (Ibañez, 2009;

Oquist, 1980; Martínez, 2011). More specifically, the research takes place in the department of Santander, traditionally one of the largest avocado-producing regions in the country, which in the past decade has lost importance in terms of avocado production (PTP and LKS, 2013). A region undergoing changes around avocado production can reflect different aspects that transform livelihood possibilities from farming. Linking the changing circumstances of avocado farmers in Santander, Colombia to the greater pictures of national and international trade seems particularly relevant, especially in the context of a country where inequalities around land and agricultural production have led to an on-going conflict.

The inevitable consideration of land along any analysis of agricultural trade leads to recognising another crucial framework for the present research; namely that of political ecology, which calls for a reflexion regarding the distribution of benefits and harms related to changes in the physical environment (Robins, 2012; Loftus, 2012). Moreover, "at the heart of most political ecologists is an effort to show that the interaction of human and nonhuman serves to create environments in historically and geographically specific ways" (Loftus, 2012, p. xxi). This highlights that the present configuration of environments and relations is not "natural". Political ecology explores the processes that have shaped the world as it is, including its conflicts and inequalities.

I undertake this task in relation to avocado production, trade and consumption. For this purpose, following the introduction, the literature review explores approaches of positivist economics and the production of nature, in addition to tools to understand the organization of economic activity. The methodology explains how those tools and approaches can unravel the social relations that compose the market for avocados. Then, a general depiction of links along avocado production, trade and consumption shows the main arrangements shaping livelihood opportunities for farmers. A more concrete narration about the experience of particular farmers follows, elucidating the meanings and practices that these arrangements produce. Finally, the conclusion highlights the interlinked and inherently social character of the determinants of livelihood opportunities. It stresses that behind the production of avocados as a commodity lies the (more or less equal) production of our world.

2 LITERATURE REVIEW

In what follows, I review several conceptual approaches to the study of the connections between production and consumption. The coverage of literature first touches on issues of the experience and conceptualization of nature, before progressing to discuss modes of analysis for understanding the organization of economic activities. I conclude the review by outlining the theoretical approach that will guide the subsequent research.

2.1 Economics and the production of nature

The question of how livelihood opportunities are enabled for avocado farmers in Colombia could be addressed from different perspectives. A positivist economics approach could relate to examining the resources to which farmers have access and inquiring about the consequent livelihoods that can be built. In very schematic terms, this implies analysing the factors of production (which could include the size of land, the fertilizers for use, the amount of workers, etc.) and technology to obtain an output of avocados that can, then, be sold in the market. Subsequently, it could also comprise an analysis of the market in which farmers sell avocados, and the living conditions they can derive from the sale. Classical and neoclassical economic theories commonly privilege such approaches, focusing on the market structures explaining the levels of production and market prices of any given good or service (Hausman, 2008; Friedman, 2008; Kaldor, 2008). In particular, agricultural economics seeks to determine the most efficient combination of inputs to optimize production (Arana Coronado et al., 2015; Peterson and Orden, 2008; Takele et al., 2002). Analytical mind-sets studying the optimal combinations of factors and events are broadly used to analyse livelihood possibilities from agriculture.

These positivist approaches tend to conceptualize nature as a resource. Indeed, from this perspective, nature is understood and experienced as an external object that can be appropriated and manipulated by society (Loftus, 2012; Smith, 2008). Smith (2008) criticizes such a perspective for assuming a discrete separation between society and nature that proposes only mechanical, as opposed to organic, possibilities of integration “with” nature.

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Furthermore, this separation between nature and society implies that natural processes can be transformed by mechanical and scientific procedures, but not by social arrangements.

Following the positivist economics theories, production factors determine levels of agricultural output, and all of the former are rewarded according to their market price. Therefore, the specific social arrangements building the prices and constitution of factors remain isolated from the question of agricultural production as such (e.g. second theorem of welfare economics) (Hausman and McPherson, 2008; Hands, 2012). Understanding nature as a resource implies that the question regarding the determinants of livelihood possibilities for avocado producers should be answered by a technical and, of course, apolitical analysis. As a consequence, this conceptualization can only address the political economy of avocados from a material perspective, leaving aside the possibility to explore the role of broader socio-environmental arrangements.

Alternatively, from a critical perspective based on a reinterpretation of Marx's understanding of nature, Smith proposes the idea of the production of nature. According to this proposal, the division between nature and society is ideological, as humans live in society and are also part of nature. Therefore, these are not clearly divisible categories. Instead, the ways in which nature is understood and experienced depend on the relationship that humans have within it, which has historically changed (Smith, 2008; Loftus, 2012; Castree, 2005). For example, the experience and conception of a forest differ for someone spending a weekend at Yellowstone Park (shaped by defined paths and rules) nowadays and for someone going through the same area some 150 years ago. More generally,

at scales from the atmospheric to the genetic, the material natures of everyday life are increasingly transformed either by intentional manipulation for the purpose of commodity production (e.g. genetically modified crops), or by the myriad ecological impacts of industrial, capitalist activities and related processes (e.g. the deposition of persistent organic pollutants in Arctic and Antarctic ecosystems) (Prudham, 2009, p.589).

Both the idea and the material form of “nature” have changed over time, partly through the interaction of the human society. Therefore, it seems inconsistent to classify nature and society as categorically separated realms. Instead, it makes sense to understand them as mutually constitutive. As such, the idea of the production of nature is inscribed in political ecology as it opens the possibility to inquire about the social relations configuring and configured by environmental processes (Smith, 2008; Loftus, 2012). Consequently, this perspective can provoke questions not only about the determinants of the livelihood possibilities for avocado farmers, but also about how those determinants have been structured.

At the present time, production - including that of nature - is shaped by the capitalist mode of production. Particularly, capitalists compete for the expansion of their means in order to capture surplus value. Hence, capital is constantly seeking to expand the extent to which it transforms anything into a commodity (Smith, 2008; Castree, 2005; Loftus, 2012). There is a constant need to transform spaces that do not completely follow this rationale into capitalist production. Under this logic, the state is also seen as defending capitalist interests. Controlled by the ruling class, or just pursuing the imperative of economic growth, the state seeks to ensure the conditions for appropriation of all spaces for capitalist expansion. As a consequence, this perspective illustrates that uneven development (or inequality) is not the consequence of a failure in this model, but rather a structural part of its application (Castree, 2005; Smith, 2008). Latin America, in this context, has long played a crucial role in the extraction of resources to meet growing global commodity demands, especially agricultural products such as rubber, sugar and bananas (Mintz, 1985; Frank and Musacchio, 2006; Bucheli, 2005). 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. Consequently, demanding higher investments, which have been completed by transnational corporations, local investors and international lending and aid organizations (Renfrew, 2011; Newell, 2009; Arboleda, 2015). This would imply that the agricultural policy of many Latin American states has focused primarily on promoting opportunities for investors over creating livelihood possibilities for farmers.

2.2 The organization of economic activity

Seeking to attain the former objectives, the state must promote concrete forms of organization of production in tandem with the logic of capital. It is relevant to study those prevalent forms of production shaping the livelihood possibilities for avocado farmers. Moreover, production conditions can also be shaped by other factors. Thus, it becomes crucial to consider the relations involved in the transformation of any object into a commodity. Global Value Chains (GVC), Global Production Networks (GPN), 'follow the thing' and 'systems of provision' (sop) constitute tools, inspired in different ways by critical approaches, for understanding different links between production and consumption (Gereffi and Karina, 2011; Henderson et al., 2002; Cook et al., 2004; Fine, 2002).

2.2.1 Global Value Chains

In the past two decades there has been an increased interest in explaining economic relations that appear to be more globally spread than ever before. In particular, the study of global chains emerged as an empirical analysis of the world-systems approach, which states that political and economic inequalities between different countries are the product of and international division of labour in which the most powerful countries continuously exploit the labour and resources from the rest of the world (Newman, 2012; Wallerstein, 2004). Specifically, Global Value Chains (GVC) analysis empirically studies the relations between the actors that handle the different activities constituting a supply chain, concentrating on the places and ways in which value is created and captured along these activities (Cattaneo et al., 2011; Newman, 2012).

More profoundly, GVC analysis focuses on the relative power of the actors involved, inquiring about the capacity that each of them has to impose the conditions under which transactions are made. In other words, GVC examines the extent to which the price and characteristics of a product are defined by the preferences of retailers (buyer-driven power) or producers (producer-driven power). Furthermore, this approach seeks to highlight the places where actors with contrasting bargaining power are located, revealing the consequent inequalities for the people who inhabit those places (Cattaneo et al., 2011;

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Gereffi and Korzeniewicz, 1994; Fold and Gough, 2008; Klein, 2008). As such, it studies the distribution of benefits generated in an industry, along different actors and territories.

This approach has allowed for the empirical examination of the structures of governance in different supply chains, mainly those of agricultural products (Gereffi and Karina, 2011). In particular, several authors have studied how livelihood opportunities for agricultural producers are affected by actions taken by other actors in a commodity chain, taking the GVC perspective (Fold and Gough, 2008; Challies and Murray, 2011). Identifying the configuration of the chain allows them to understand which aspects shape the feasibility of agricultural livelihoods. Fold and Gough (2008), for instance, trace the displacement of small-holder agriculture, and of a whole producing region, in Ghana due to the changes in European consumers' preferences for a new pineapple variety. Consequently, GVC analysis provides an integrated view of the interrelations within a supply chain and the associated effects for each of its participants. However, this approach is limited to the firms or individuals that compose a chain. It overlooks external factors that can be relevant to the construction of livelihood opportunities for avocado farmers, such as the role of state actors and other organizations. Therefore, it seems necessary to look for an approach that focuses on broader sets of relations and contexts.

2.2.2 Global Production Networks

Taking into account this last criticism, the GPN perspective seeks to build on the GVC approach, but going beyond intra-chain analysis. According to the GPN perspective, under globalized relations, any industry is shaped by connections beyond the firms that compose it. These relations may involve actors such as governments and civil society organizations, as well as arrangements related to technology and legislation, among others. Then, from the GPN perspective, any element that is part of the context of the production or distribution of a product constitutes an object of analysis (Henderson et al., 2002; Hess and Coe, 2006). Therefore, the GPN framework not only offers the possibility to identify the actions of the different actors involved in an industry, but also aims at providing explanations for the way their actions are shaped by factors within and outside the industry under study.

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As such, the GPN perspective focuses on the different interactions that shape the system of production, taking into account social processes that go beyond the creation and distribution of value (Newman, 2012). Consequently, it is able to examine more complex processes including multiple and diverse actors. That has been the case of analysis regarding the mobile-telecommunications industry and the second-hand clothing trade, which can involve simultaneous relations between governments, corporations, charities and individuals, and may also be shaped by technological developments or cultural norms (Hess and Coe, 2006; Brooks, 2013). Additionally, the GPN approach has served to analyse the role of government policies in shaping the consequences of agricultural goods trade on production conditions. 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. The GPN perspective has provided an understanding of the ways in which institutional and social frameworks shape production–consumption relations. Therefore, the approach in question has shown to be particularly relevant to study relations around commodities that involve diverse actors and complex interactions in different places. Despite the focus on material and social processes surrounding a particular commodity, the GPN perspective tends to ignore the meanings that these processes take for the people involved. It focuses on abstract or aggregated actors and overlooks particular experiences. Thus, the GPN perspective proves to be limited to study livelihood possibilities at the concrete level of personal experience.

2.2.3 'Follow the thing'

In contrast, a more cultural approach to the meanings and subjective values that a good accumulates along a supply chain focuses on 'following the thing' along the spaces that compose the chain. By doing multi-sited ethnography a researcher can expose the particular experiences of those involved in the different transformation processes of raw materials into a consumption good. As an example, Cook (2004) draws the connections that a single papaya, or any of its byproducts, follows from a farm in Jamaica to a flat in North London. He shows how the consumption of these products in 'the global north' is connected to the exploitation of workers in 'the global south'. By narrating not only social connections but also personal stories, Cook is able to expose the meaning that these relations have for those

who experience them. As a result, he is able to go from describing theoretical effects of production networks identified by an academic, to expose the effects perceived by those who compose these networks.

By narrating these relations in a non-academic language, Cook seeks to go beyond the generation of knowledge, in order to inspire empathy for those exploited and, therefore, promote action for change (Cook et al., 2006). However, following the thing does not seem to be enough to generate this intended change. The roles of the people involved in any supply chain, as that of papaya, are determined by a long history of uneven development (Brooks, 2015b, 2015a). Indeed, the working conditions of exploited workers and the conditions for trade between any two countries, among many other factors that shape these circumstances, depend on historical relations that exceed the sole chain of a fruit. Hence, generating empathy is not sufficient to transform the conditions of exchange. In order to realize this change, it seems necessary to understand how to transform the production and reproduction of relations of uneven development.

2.2.4 Systems of provision

The systems of provision (sop) approach offers a more comprehensive perspective that takes into account the historical and cultural determinants of the relations between the production and consumption of a product. It has been proposed by economist Ben Fine, from the perspective of historical materialism, to explain how and why specific commodities are produced and consumed at a particular time and place (Brooks, 2015b). It proposes to “look at the process outside of the borders of linear commodity chains, backward to the historical events that determine regimes of production and consumption, while also combining cultural and political economy approaches to establish how value is produced in commodities” (p. 2). As such, Fine (2002) defines sop as an alternative to the abstract analyses of mainstream economics, which rely on general models to explain the production or consumption of any product. Additionally, this approach also contemplates the concern for the symbolic significance that the material content of any object takes for those who relate to it. Moreover, it integrates a historical perspective to explain how these material and symbolic contents emerge (Fine, 2002; Brooks, 2015b; Fine et al., 1996).

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It also recognizes that production and consumption are shaped by each other, among many other factors outside the immediate domain of a commodity (Fine, 1994). It is in that sense that the different processes that enable the making and purchasing of a product are understood as a system. Thus, a sop can be seen as a “comprehensive chain of activities between the two extremes of production and consumption, each link of which plays a potentially significant role in the social construction of a commodity in its material and cultural aspects” (Fine, 2002, p. 98). In this sense, the approach studies the ways in which relations of production and consumption of a specific commodity emerge, also considering how other sectors (such as banking or retailing) shape them. As an example, the sop approach has allowed Fine et al. (1996) to trace the historical emergence of sugar as the United Kingdom's main sweetener, alongside the related variations in the location of sugar cane and sugar beet crops, influenced by the capital and political pressure of farmers in different regions of the country. The sop approach enables to link the relations between different actors in economic and cultural terms, according to the current and historical circumstances.

Then, examining a system of provision of avocados requires an understanding of the relations that take this fruit from the field to the table, but, more importantly, an understanding of why these relations happen in the first place. In practice, this entails examining the material processes that make the provision of avocados possible and interpreting the processes that build the meaning that avocados take for those involved in the system of provision. Through sop it is possible to draw attention to the relations that have determined the necessary means to make a living from a specific role in the provision of a commodity in a particular place, as well as who owns these means and why. As a result, it offers a comprehensive perspective to the social relations that determine livelihood possibilities and the reasons for their emergence.

2.3 Chosen approach

The study of the political economy of avocados could be undertaken at different levels. A limited approach would only link the paths that relate all processes of creation and distribution of value. However, this would only provide information about the possible

configurations of the resources that are currently available to avocado farmers. As such, the analysis would remain fixed under the current social arrangements that have instituted that availability. Instead, to try to take a step back and look at those arrangements from a distance could enable me to see not only the material configurations that have built the livelihood possibilities of concern, but also the social relations that have produced those configurations.

For this purpose, the present research draws on the analysis of sop, under the idea of the production of nature. Two related points deserve special attention. The first one relates to the need of capitalism to transform spaces, producing specific natures for its expansion, with the support of the state. The second one relates to the mutually constitutive character of production and consumption in any system of provision. Building on these ideas, I will discuss how the different links building the political economy of avocados are shaped by a state-capital arrangement producing natures for the expansion of agriculture financed by capital investment.

Under the sop approach, I intend to analyse the concrete relations that build livelihood opportunities, identify the origins of those relations and explore the consequent experiences for those involved. This can be particularly telling if the analysis takes into account relevant propositions of the other reviewed approaches. For instance, the perspective of GVC calls for attention to the distribution of value in the production of a commodity, and the related livelihood possibilities. When taking the views of the GPN perspective into account, this can be analysed by mapping the relations between relevant actors, even if some of them are outside the immediate domain of the commodity chain. Finally, an inclination to 'following the thing' will also enable me to communicate the perspectives of those who experience the system of provision in their daily lives.

Based on the above, I aim at providing an encompassing (albeit non-exhaustive) vision of the ways in which the relations between people and objects, in maybe apparently disconnected spheres, may profoundly shape the livelihoods of others. Finally, it seems relevant to state that by taking into account perspectives from different approaches I do not intend to merge differing theories. Instead, I intend to capture the most relevant aspects of

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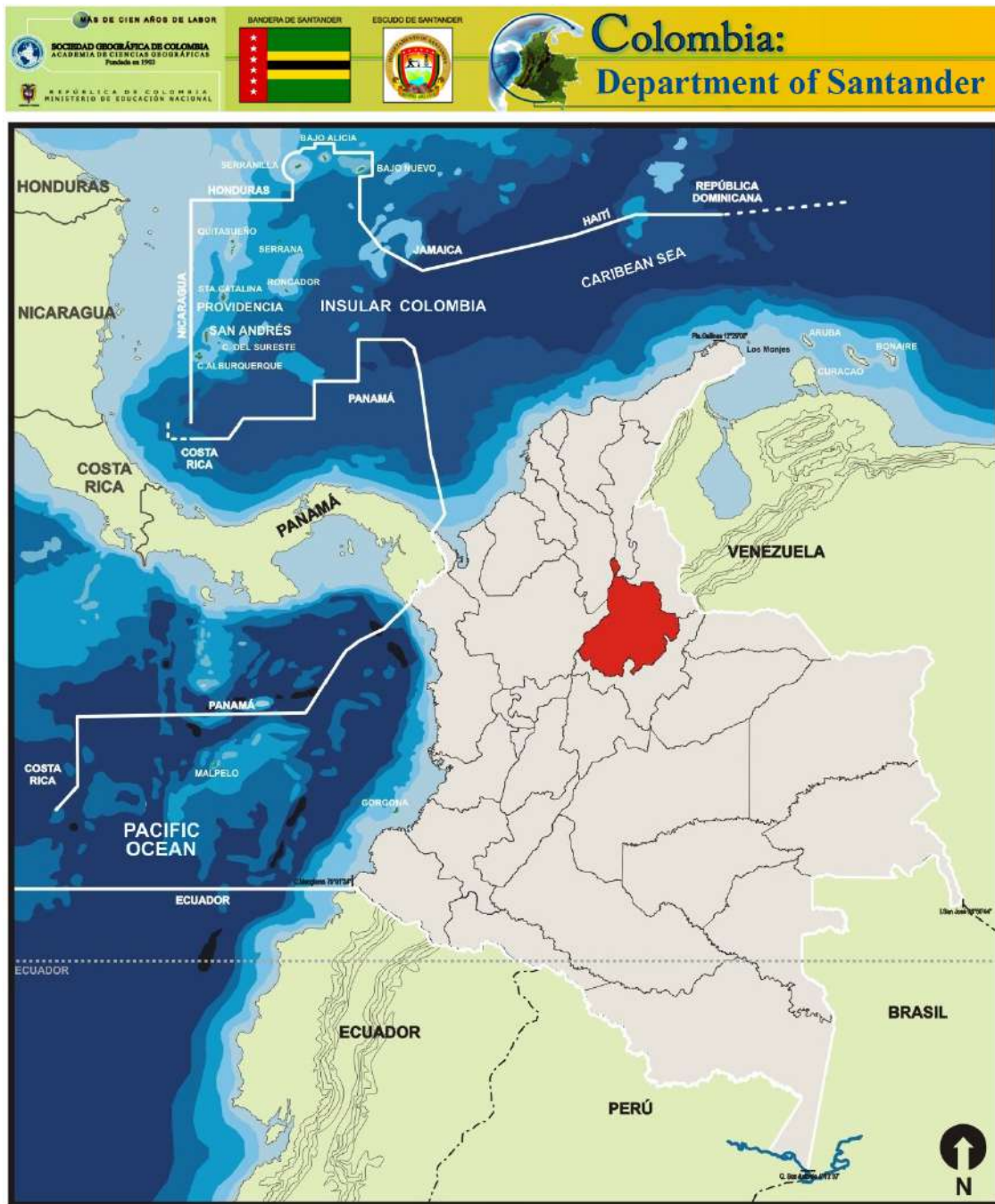
these complementary approaches, in relation to the varied range of issues that could arise from the research.

3 METHODOLOGY

The avocado sop comprises numerous people and places around the world. Ideally, an inquiry into the avocado sop would include the analysis of all the concrete relations involved. However, that analysis is beyond the space limitations of the present research. As it is possible to see in the works of Mintz (1985) and Brooks (2015a), for example, such an exploration requires book length. Therefore, taking into account my specific interest in the determinants of livelihood possibilities for avocado farmers, I decided to focus on farmers' experiences, undertaking fieldwork to learn about them. To depict the general elements and relations linking farmers to other actors I drew on my interviews with farmers and secondary sources. The result is a description of avocado trade, its requirements and policy efforts to improve consequent opportunities, followed by a deeper exposure of the differing opportunities that this offers to concrete farmers.

3.1 Study area

The avocado sop stretches along a number of places, beyond national frontiers. As a consequence, this research touches on issues regarding different countries and continents. However, to inquire about concrete consequences for the livelihoods of farmers, it does focus on avocado growers in a delimited area, the department of Santander, in northeast Colombia (see figure 1). The economy of Santander relies mainly on manufacturing, and the importance of agriculture has diminished in the last decade (DANE, 2013). According to the Colombian Administrative Department of National Statistics (DANE, for its abbreviation in Spanish), Bucaramanga, the capital of Santander, is the city with the lowest percentage of people considered poor (8.4%) in the country (DANE, 2014a). However, rural areas in the department are significantly deprived. Twenty percent of people in Santander are considered to be below the poverty line, and extreme poverty has risen in the last years (DANE, 2014a). As in most parts of Colombia, a high inequality persists between areas devoted to manufacturing and commerce (such as Bucaramanga) and those devoted to agricultural production.



1: Map of Colombia showing the location of Santander (source: translated from Escuela Nacional de Geografía, 2002)

The research was mostly conducted in the municipalities of San Vicente de Chucurí and El Carmen de Chucurí (see figures 2 and 3), which historically constitute one of the main avocado-producing areas in the country (PTP and LKS, 2013). This area has very good land quality, but it has historically had limited road access conditions. Farms have different sizes, with the largest ones (of more than 400 ha) located on the main road connecting to

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Bucaramanga and the smallest ones (usually between 2 and 4 ha) located near hard-to-access trails. Before producing avocados, this region was focused on coffee, first, and cocoa, later. Avocado trees were initially used to give shade to the other crops, and then became an important crop on their own. Most avocado farmers in this region have grown this crop for decades. Therefore, there is a history of established trees and practices.

In order to learn from the dynamics of newer crops, the research also included some farmers from the nearby municipalities of Los Santos, Villanueva and Curití (see figures 2 and 4). These are more arid regions, where farmers have been changing from temporary crops such as tobacco and beans to avocado. The consideration of this area contributed to understand how new avocado farmers value and implement public policy advice.

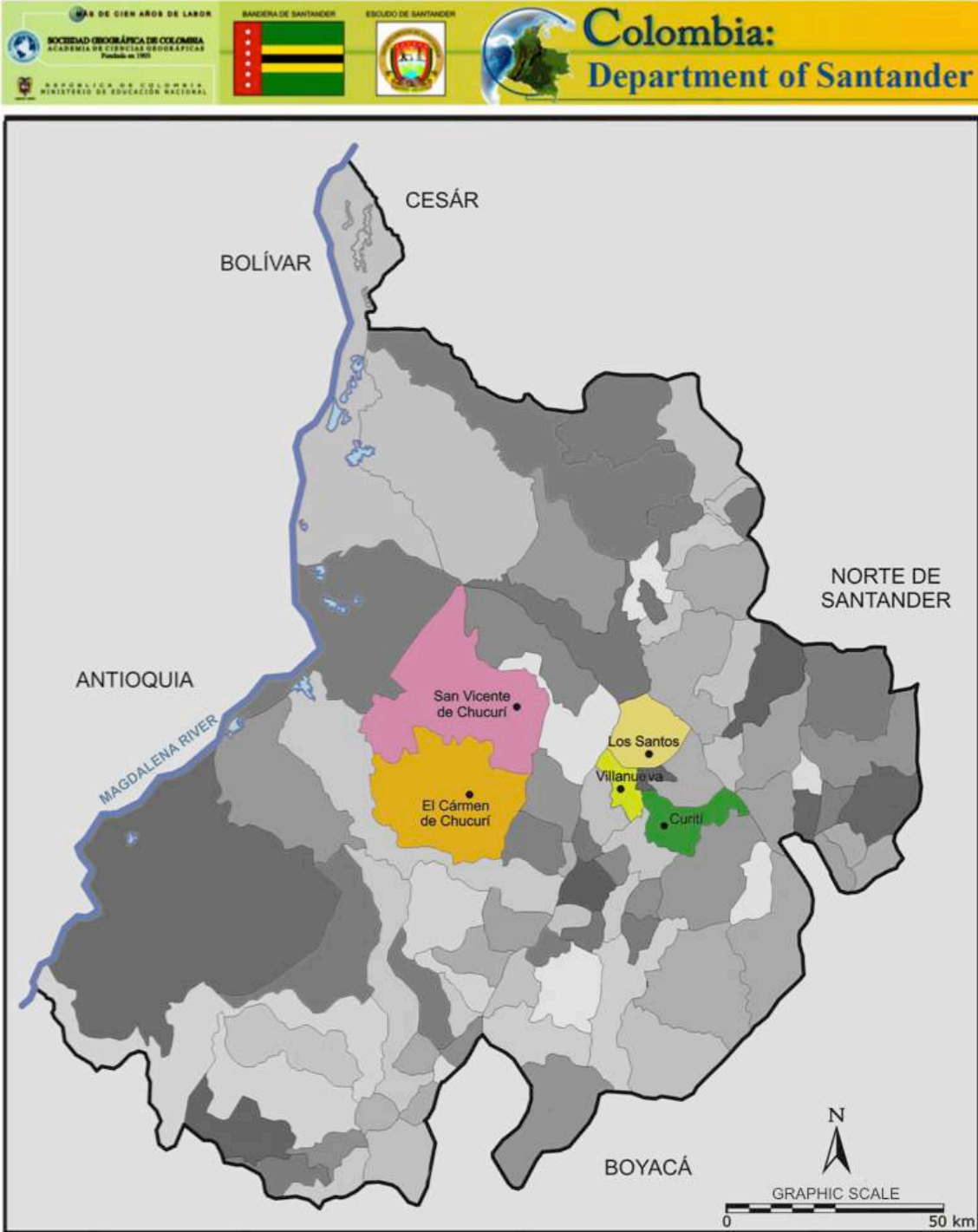


Figure 2: Map of Santander showing the location of the municipalities where I undertook field research (source: translated and edited from Escuela Nacional de Geografía, 2002)



Figure 3: Landscape of San Vicente de Chucurí (source: R-chu-R, n.d.)



Figure 4: Landscape of Villanueva (source: 'Villanueva, Santander, Colombia', n.d.)

3.2 Theoretical framework

My methodological framework is guided by the sop approach (Fine, 2002; Fine et al., 1996) under the question of what type of nature is being produced (Smith, 2008). The approaches of GVC (Gereffi and Karina, 2011), GPN (Henderson et al., 2002) and 'follow the thing' (Cook et al., 2004) serve to identify relevant aspects of the avocado sop. These aspects include the identification of the main actors involved, the issues that shape their relations and the consequent meaning all of these have for them. Moreover, identifying these aspects serves to analyse the related nature (including landscapes and societies) produced upon them.

Then, understanding the avocado sop, in the present research, revolves around the following interlinked questions:

- a. Who are the actors involved in the processes linking production and consumption of avocados?
- b. Who (and where and through which processes) create and capture value?
- c. How are actors connected to each other and what is the strength of these relations?
- d. Which actors hold power over others and why?
- e. How do different arrangements (e.g. technologies, market constraints, regulations, labour relations, etc.) shape the relations between these actors?
- f. What processes have built specific roles for the different actors?
- g. How do different actors value the benefits and constraints they face?

Additionally, the analysis regarding the related production of nature lies in the answers to those questions. It seeks to expose the extent to which social and physical environments are a consequence of human relations and not a mere casual becoming. For this purpose, the above questions seek behind the surface of the objects, prices and contracts of avocado production, exchange and consumption, in order to understand the relationships that produce them.

3.3 Methods

The main vehicle to study the livelihood possibilities of farmers within the avocado sop was the conduction of interviews. These focused on the experience of each actor within the sop and their relations with other actors. The purpose was to use an in-depth and open-ended approach to the dynamics of the avocado businesses and, most importantly, to the ways in which these dynamics shaped the everyday life of my interlocutors (DeLyser, 2010; Cloke et al., 2004; Hoggart et al., 2002). Most interviews were performed at their workplaces. As a consequence, I was able to learn not only from their verbal answers, but also from the environments in which I was invited to take part.

A total of 27 interviews were conducted. Most of them (23) were recorded, with the consent of the respondents. In cases when I judged it to be more fruitful to develop unrecorded conversations, the relevant information was written on notes. Most of the interviews involved avocado farmers, but some included traders and people participating in implementing agricultural public policies. The following table exposes a summary of the respondents, their occupation and the place of their farm or work.

Table 1: Information about interview respondents

Name	Occupation	Farm or job location
Hernando Bueno ¹	Farmer and retailer	San Vicente de Chucurí
Darío Puentes ¹	Farmer and retailer	San Vicente de Chucurí
Pablo Mejía ¹	Farmer	San Vicente de Chucurí
Andrés Mejía ¹	Farmer and veterinarian	San Vicente de Chucurí
Francisco Rueda ¹	Farmer and retailer	San Vicente de Chucurí
Wilmer Arias ¹	Farmer and labourer	San Vicente de Chucurí
Fidel Parra ¹	Farm manager	San Vicente de Chucurí
Carmenza Vega ¹	Farmer	San Vicente de Chucurí
José Durán ¹	Farmer and labourer	San Vicente de Chucurí

¹ Name changed to provide anonymity to the respondents.

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Name	Occupation	Farm or job location
Marlon Bohórquez ¹	Cacharrero	San Vicente de Chucurí
Alberto Marín ¹	Cacharrero	San Vicente de Chucurí
Gerardo Sánchez ¹	Farm manager	Carmén de Chucurí
Víctor Abril ¹	Farmer	Carmén de Chucurí
Fernando Arenas ¹	Farmer	Carmén de Chucurí
Alejandro Gutiérrez ¹	Investor in real estate and agroindustry businesses	San Vicente de Chucurí
Gerardo Vargas ¹	Farm and parking lot owner	Carmén de Chucurí
Jorge González ¹	Farm owner and investor in real estate businesses	Los Santos
Julio Gómez ¹	Farm manager	Los Santos
Emilio Buendía ¹	Farmer and labourer	Villanueva
Felipe Díaz ¹	Farmer	Villanueva
David Romero ¹	Farmer	Villanueva
Néstor Otero ¹	Farm manager	Curití
Carlos Ruiz ¹	Fruit and vegetable trader	Bogotá
Cesar Pavas	Technical secretary of the National Avocado Council	Bogotá
Juan Pablo Salamanca	Asohofrucol regional coordinator	Bucaramanga
Diana Morales	Asohofrucol monitoring and evaluation professional	Multiple municipalities in east and northeast Colombia
Lady Yoana Barrera	Asohofrucol agricultural technician	Villanueva

The interviews were semi-structured and guided by the questions exposed earlier in this chapter. However, the methods and tools chosen in advance, as well as the expectations

of the researcher, are always confronted with the circumstances in the field and, therefore, must be adjusted (Cloke et al., 2004; DeLyser, 2010; Mandel, 2003). For that reason, most interviews took the form of an informal discussion of various topics, which directly or indirectly enabled me to learn about the issues specified in the questions exposed earlier in this chapter.

Interviews were complemented by the revision of formal documents and official statistics on avocado production and trade. The documents include reports from key actors designing and implementing agricultural public policy in Colombia and regulating or promoting trade internationally (e.g. ProChile, 2011; CBI Ministry of Foreign Affairs, 2013; 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 representing and envisioning the avocado sop (Cloke et al., 2004). Statistics regarding avocado trade were also gathered from both national and international institutions. These figures constitute abstract depictions of the social relations that compose the avocado sop (Cloke et al., 2004). Space restrictions limited the possibility to critically analyse some of these documents and figures. In any case, the consideration of these sources contributed to identify the formal links that shape the avocado sop. As such, it enabled me to learn about these links in order to critically analyse the relations that hold them together.

3.4 Limitations and positionality

Of course, interviewing is not a matter of merely accessing information. It is a mutual construction in which the perceptions and expressions of both the researcher and respondents shape what is said and how it is said. Elements such as the presence of a recorder, the prospective publication of results and the perception of the researcher by the respondents influence the information that any respondent is willing to share. At the same time, the premises and expectations of researchers define the way in which they hear and interpret the words and actions of the respondents (Cloke et al., 2004; Jensen and Glasmeier, 2010). Therefore, beyond acknowledging the inevitable methodological limitations of this type of research, it is also relevant to make explicit my personal positions

and the way I approached the topic. That way the reader can judge how my positions might have shaped the form and outcome of the research.

My theoretical interest in the avocado sop is part of a more general passion for the political ecology of agricultural trade. Personally being from Santander, and having grown up in a family of agricultural producers in a rural area closer to Bogotá (the capital of Colombia), I was continuously struck by the conflicts created by the enormous disparities within Colombia's countryside and between the rural and urban regions. Throughout my life, I have been frustrated to see how small landholders face enormous institutional barriers to access economic opportunities and face constant abuses. In contrast, my family, like many other larger producers, has had better economic opportunities and has been constantly supported by government policies. Such a contrast, needless to say, creates social tensions for all. The possibility to unravel the relations behind the apparently objective elements (prices, policies, etc.) that build those disparities constitutes the main motivation to engage in this dissertation.

4 MAPPING THE AVOCADO SYSTEM OF PROVISION

'Avocado' comes from the Nahuatl transliteration, *ahuacatl* (Hernandez, 1998; Storey et al., 1986). Western texts have described this fruit since the early 16th century as being present from northern South America to Mexico and the Caribbean Islands. By the 1540s, avocado production and consumption practices were already geographically separated, as varieties coming from different places were traded (probably since pre-Columbian times) in markets, such as the one of Tenochtitlan, located in current Mexico City (Popenoe, 1963; Bost et al., 2013). Since then, the activities required to bring an avocado from the crop to the table have spread throughout the world.

As mentioned earlier, in the 1960s, about 1,000 tons of avocados were traded internationally, while today, that figure exceeds 1,000,000 tons (FAOSTAT, 2012). Currently, the majority of avocado exports originate in Mexico, Chile, Peru, Spain and South Africa. Avocados grown in these countries are mainly shipped to the United States, the Netherlands, France, Japan, and the United Kingdom, mostly for consumption, but sometimes for re-export (FAOSTAT, 2012; PTP and LKS, 2013; CBI Ministry of Foreign Affairs, n.d.). In order for avocados to travel from place to place, the people and companies involved in this system of provision must comply with the phytosanitary (plant health) measures, commercial standards and tacit rules that define the trading conditions. At the same time, as Fine highlights (2002), the consumption and trading requirements and the production conditions have shaped each other, creating and transforming livelihood possibilities for everyone in these networks. Therefore, the spread of avocados has also shaped lives and territories around the world.

4.1 Avocados for the world

The concrete ways in which these people and places are shaped depend on their fixed role within the avocado system of provision. This system is composed of clearly separated links between different actors. Each one of these actors is usually specialized in concrete parts of the business and faces significant barriers to perform other activities within the system. Some of the largest barriers are determined by rules and agreements

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between different governments (Henderson et al., 2002), such as the conditions that importing countries impose on accepting the entry of fresh fruits into their territories. In order for an avocado to be traded internationally, the government of the exporting country and the farm producing the fruit must fulfil several requirements. The first one is that the exporting country complies with the phytosanitary measures imposed by the importing country. Besides that, it is common for buyers to require that each farm meets additional guarantees such as standardized certifications (CBI Ministry of Foreign Affairs, 2013). All of these considerations shape the flows of the avocado world trade.

For instance, the United States (US), the largest importer country, represents an attractive market for avocado producers, especially for those in Latin America, which are located within relatively short transport distance (FAOSTAT, 2012; Restrepo, 2014; El Telégrafo, 2012; Vanguardia Liberal, 2015). However, imports to the United States are restrictive and only around eight countries supply avocados to this market. México, Peru and Chile are its largest suppliers, while other producing countries such as Ecuador and Colombia do not meet the necessary standards (International Trade Center, 2014c).

In the case of the United Kingdom, France, and other European countries, avocado imports come from at least 30 countries around the world (International Trade Center, 2014a, 2014b). However, within the latter countries, export opportunities to Europe are still highly restricted. In fact, an avocado placed on the shelf of any shop in Europe did not arrive there by chance. It was most likely intended to reach this part of the world since its tree was planted. For instance, a Colombian farm exporting avocados to Europe must meet several formal requirements. These include certification for good agricultural practices, phytosanitary certification, export authorization and approval of chemical residual test results, issued by Colombian authorities, and an international certification of good agricultural practices by the GlobalG.A.P. certification body (Restrepo, 2014; ICA, n.d.; Sanin, 2014). These conditions demand that avocados are grown and farms are managed according to the standardized requirements of national and international authorities and certification bodies.

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In addition, the avocados must fulfil certain physical conditions to endure the shipment and meet the requirements made by traders, retailers and, ultimately, consumers. First, avocados travel for more than two weeks on several trucks and boat from the farm in Colombia to the consumer in Europe. These circumstances make the Hass variety ideal, which is only grown above 1,500 metres above mean sea level (MAMSL) (while the green and native varieties can be grown from 0 MAMSL) (see figure 5). The Hass avocado has a thicker shell and can endure the trip without suffering damage. Additionally, it can take more than two weeks before ripening. This is extremely important, as the fruits must reach the final buyer in perfect and homogenous conditions. Ideally, avocados must also arrive at the same destination, in the same amount and quality conditions, every specific period of time (Restrepo, 2014; Sanin, 2014).



Figure 5: Main avocado types in Colombia and elevation required for planting

Moreover, international buyers commonly pay for an order after they have received it. As a consequence, in order to export, it is also necessary to be able to afford the costs of producing and delivering avocados (to the national or international port, according to the terms of each deal), while their payment arrives two to six weeks after dispatching the order. Therefore, only those with the capacity to afford the financial costs, located in areas suitable for Hass avocados, produce sufficient yields, and implement the required

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managerial practices are able to benefit from the opportunities of international markets. In this context, it is possible to see that tracing the multiple relations and constraints of the avocado sop contributes to understand the barriers that farmers face to benefit from the possibilities of international trade.

Another important consideration regarding international trade is that Colombia not only exports but also imports avocados (FAOSTAT, 2012). This paradoxical situation has several explanations. First, avocados exported from Colombia to Europe might differ from those imported to Colombia from countries such as Ecuador and Venezuela (Yabrudy, 2012; ProChile, 2011; DANE, 2014b). As mentioned earlier, only Hass avocado varieties are exported from Colombia, while imports also include green varieties, which are more popular in the domestic market. Furthermore, avocados for export are grown and traded under particular conditions that give them a higher value on the international market and it is not attractive for their producers to sell them in the domestic market. Additionally, imported avocados may not fulfil the requirements made by the European market. Consequently, the imported avocados are meeting a different demand, under different conditions and prices from those that are exported from Colombia. In fact, avocados from Ecuador and Venezuela are indistinguishably sold at wholesale centres alongside domestic avocados. This situation further illustrates how commercial relations between different actors in the avocado system of provision are highly differentiated.

4.2 Avocados for domestic consumption

However, this differentiation is not unique to international exchange. Some retailers selling avocados grown and traded within national boundaries also demand similar conditions. For instance, large supermarket chains in Colombia demand a regular and standardized fruit supply and often delay the payment of an order for weeks. In other words, these commercial relations are shaped by buyer-driven power (Gereffi and Korzeniewicz, 1994). As a consequence, trading opportunities with large supermarkets are restricted by the possibility to have a standardized production and sufficient financial capacity.

Similarly, wholesalers often pay their suppliers only after selling any order. The suppliers, on their part, must deliver the products in the wholesale centre, and pay for the related costs. In these centres, a significant amount of transactions are informal, and wholesalers are often not able to check for quality. Therefore, it is extremely important for them to trust their supplier about the stated quality of products. For this reason, transactions almost always occur between people with established business relations; wholesalers would rather buy from suppliers whom they trust to deliver the stated quality and suppliers prefer to sell to wholesalers that they know will meet payments. Only suppliers with a regular amount of products can build this frequent relation. Therefore, direct sales to wholesale centres are mainly restricted to large producers and traders buying from different farmers. Wholesale centres market products of diverse characteristics, but this channel is restricted by the financial capacity of suppliers, the amount of products they can provide and, more profoundly, the trust between them and their wholesale clients.

The wholesale clients, on their part, are relatively diverse and include informal street vendors, restaurants, supermarkets, other market places and, frequently, even their own suppliers (as suppliers of avocados, for example, may buy other fruits to sell somewhere else). This allows wholesalers to trade different product qualities. Payment conditions are highly dependent on each client, but the largest or most regular ones usually demand credit. Most wholesale clients are relatively constant, but any sales competitor can easily attract them by offering better conditions in terms of prices, quality, supply regularity or more flexible payment options. This is more likely to happen with the more formally constituted and larger clients who are able to provide guarantees of payment. Smaller clients, on their part, have less bargaining power. For wholesalers to maintain their clients, they need to offer a constant supply that meets the conditions demanded by their clients, and offer competitive prices.

Other important actors in this system are *cacharreros* (which literally translates to jumble dealers). They drive along agricultural lands to buy foodstuff to supply wholesale centres. Areas with poor access conditions are usually served by one sole *cacharrero*. Farmers in those regions have only one possible client and, therefore, no bargaining power (Gereffi and Karina, 2011; Gereffi and Korzeniewicz, 1994). *Cacharreros* usually buy products

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of varied qualities in sacks or other low-value packaging and pay with cash on the site, but offer to pay very low prices. Furthermore, they constantly modify the prices offered, as they announce to farmers that prices in the wholesale centres have recently changed. Low payments and unstable trading conditions affect mainly the smaller farmers, whose harvest is insufficient to cover the costs of taking their products to another market and, hence, have no other alternative. The *cacharreros*, on their part, need to have the financial capacity to afford paying with cash to producers and sell to wholesalers on credit. After selling the foodstuff from their catchment area, they buy other products to sell in their region or other wholesale markets. They are, literally, some of the main drivers connecting the places of production with those of consumption.

These connections are significantly diverse and take different paths. In many cases, some actors are able to avoid the intervention of a number of intermediaries in order to gain higher profits. This is the case of avocado producers selling to supermarkets, small shops or restaurants. Some even sell directly to consumers at their own supermarkets or market stalls. Another example concerns farmers grouped into producer associations, which can build direct relations with commercially attractive clients. Each one of those cases tends to be particular and is, thus, hard to describe in the general terms of this section. However, later in this document it will be important to analyse some of those particularities, as they represent concrete conditions that enable alternative livelihood possibilities.

4.3 Mapping market connections

The following diagram represents a sketch of the links described above. It exposes the general connections taking avocados from farms to the place where consumers buy them:

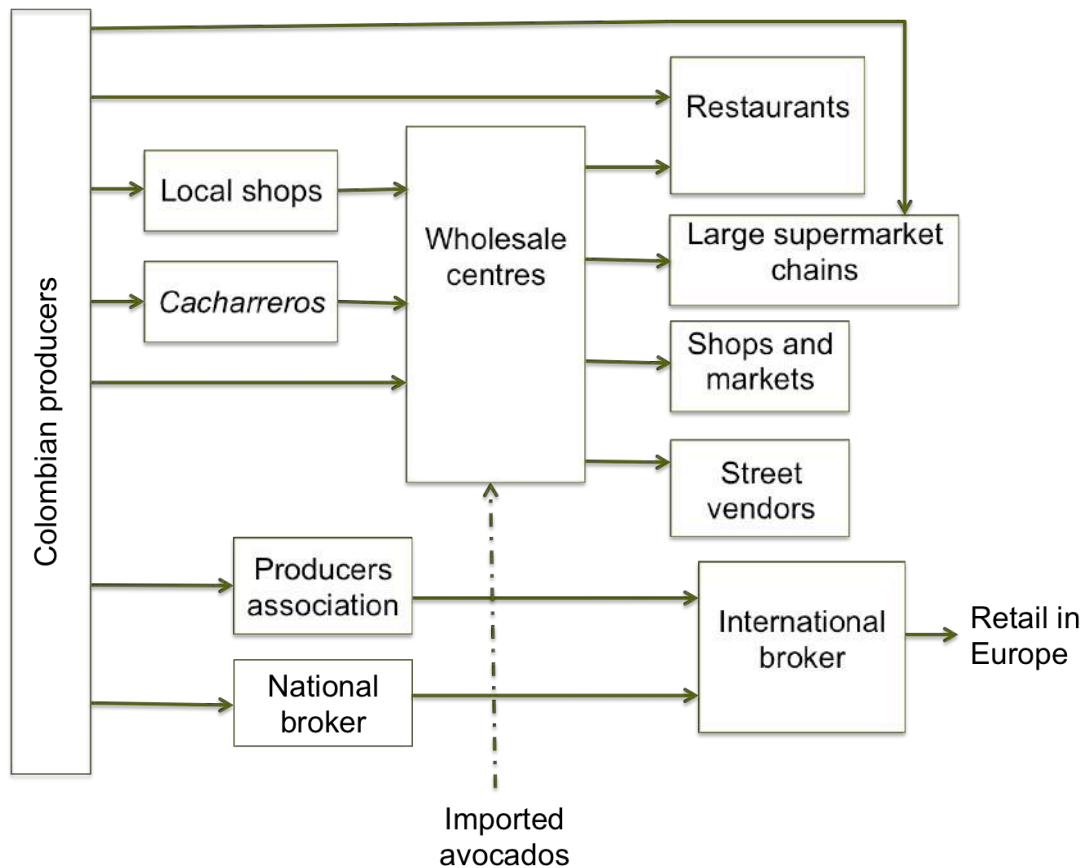


Figure 6: Diagram of avocado trade relations

As discussed earlier, the links between different actors are shaped by the requirements for exchange through any of the possible channels. Only homogenous, certified batches of Hass avocados, traded by someone with the financial capacity, can be exported. Additionally, sales to the wholesale market are restricted to those offering a constant supply. Therefore, the ways in which avocados are produced and the resources owned by each person involved in the system of production define which trade links each of these people can build.

The trade links, at the same time, determine the portion of value that each actor can capture (Cattaneo et al., 2011; Gereffi and Korzeniewicz, 1994). Every kilo of avocados exported from Colombia is sold on international trade at an average of 2.2² dollars (FAOSTAT, 2012). In sharp contrast, the average price paid to Colombian producers

² Figure from 2012 (last available data).

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(including those selling for national and international markets) is 0.58³ dollars per kilo (DANE, 2014b). This last figure, as any average, obscures the profound dissimilarities between the prices paid to different producers. For instance, some of the interview respondents claimed to receive 0.37 dollars per kilo, while others reported prices of approximately 1.85 dollars per kilo. Nevertheless, the mentioned averages serve to illustrate the contrast between the opportunities in international markets compared to those that avocado producers, in general, face.

4.4 Government goals

Export markets offer, on average, better prices than the national market. It may, then, not come as a surprise that the Colombian government is trying to promote avocado exports and the productive transformation of avocado farming towards the fulfilment of international trade requirements. One of the main policies for this purpose 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, p. 46). In order to achieve the stated goal, the PTP has set the priority to act upon avocado production, along with other selected products. Hence, the government is trying to actively shape the avocado system of provision, guided by the goal to increase exports.

The achievement of this goal requires, among other issues, fundamental changes to the way in which avocados are produced. In this line, the Ministry of Agriculture and Rural Development (MADR, for its abbreviation in Spanish) and the horticulture trade group, Asohofrucol (which manages the national horticultural fund, assigned by the MADR), have focused on transforming avocado farming. This crop is one of the key productive chains for the MADR's sectorial policy, which seeks “the standardization of production quality, market expansion and consolidation, fruit transformation and industrialization, and strengthening and promoting the business projection of this sector” (MADR, 2009, p. 7). Furthermore, Asohofrucol has set the Fruit and Vegetable Promotion Plan 2012–2022, to improve the

³ Figure from the first semester of 2013, which is the first available data and, therefore, the most comparable to the information about prices on international trade.

competitiveness and productivity of producers and retailers of 24 horticultural products, including avocados. According to Asohofrucol, it has provided technical assistance to over 15,000 fruit and vegetable farmers in 22 (out of 32) administrative regions in Colombia, teaching planting techniques, where to buy inputs and how to handle crop pests, among other matters (Asohofrucol, 2012). Government-sponsored programs are taking concrete actions to fields around the country in order to achieve the goals of increasing productivity and standardization.

Directly, the policies of the Colombian Government and, indirectly, the requirements for international trade, are modifying production practices for avocado farmers. As the GPN approach (Henderson et al., 2002) suggests, actors beyond the firms that compose the avocado production network are actively shaping the way in which this fruit is produced. But, more importantly, the relations described show the inseparable links between consumption and production activities, as highlighted by the sop approach (Fine, 2002). In this case, it is possible to see how consumption preferences and trade requirements literally shape avocados, because in order to meet standardization requests of international trade, agricultural production must be significantly manipulated.

All crops, particularly avocados, are affected by environmental circumstances and their harvests are shaped by countless factors. The results are seasonal yields and fruits of different sizes, weights and looks. In order to produce homogenous fruits with bright surfaces and equal weight it is necessary to implement highly controlled production techniques. However, these techniques are not available to everyone, and the related implementation efforts have affected the livelihoods of many people in different ways. The particular experiences of those involved in the avocado system of provision and the ways in which the relations among them have shaped their lives are the subject of the following chapter.

5 EXPERIENCING THE AVOCADO SYSTEM OF PROVISION

5.1 Agricultural policy

“Under the Free Trade Agreement [with the US] Colombia has accessibility for 80 agricultural products. If we achieve to make avocado the 81st product, it is as if we had won the lottery, because the US is one of the largest consumers of this fruit”.

Aurelio Iragorri,
Colombia's Minister of Agriculture and Rural Development
(quoted in MADR, 2015, n.p.)

“The future lies in the exports”.

Andrés Mejía,
Former technical secretary of the National Avocado Council
(quoted in Hidalgo, 2013, n.p.)

“We must investigate, (...) it's about adapting to the reality of the market, to the [avocado] size the market is buying, to the [avocado] colour demanded by the market”

Camilo Montes,
Former PTP manager
(quoted in Betancourt, 2014, n.p.)

Colombia must export avocados! And farmers must adapt their production practices to meet the conditions of the international market. As it is possible to see in the quotes from Iragorri, Mejía and Montes, that is the main message Colombian authorities are sending to avocado producers. The National Avocado Council is an advisory body to the government whose technical secretary is hired by the Ministry of Agriculture and is responsible for

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implementing the policy of the avocado chain, developed by this ministry (MADR, n.d.). Cesar Pavas, the current technical secretary, explains that the council is focused on supporting groups of avocado producers to jointly build the infrastructure and pay for the certifications required for export. That way, both small and large avocado producers could benefit from export opportunities.

However, as explained in the previous chapter, these opportunities are only available to those in land elevations above 1,500 MAMSL, who can produce Hass avocados for the export market. As in Fold and Gough's (2008) study, other regions, including those traditionally producing green avocados, such as San Vicente and Carmen de Chucurí, are excluded from these opportunities. Pavas explains that there are alternatives for these regions: "now with the Free Trade Agreements such as Caricom, Caribbean economic community, we have opportunity to place that type of avocado in the Antilles, in Central American countries" (C. Pavas 2015, Interview, 5 June). Additionally, "Miami and Florida produce that type of avocado and sell them in the United States" (C. Pavas 2015, Interview, 5 June), there is a market for 'green avocados' in the US. Therefore, with new trade agreements and a potential phytosanitary protocol with the US, the Colombian government expects export opportunities to benefit avocado producers of all varieties.

To comply with the requirements of international markets (including the "size the market is buying" and the "colour the market is buying") (Montes, quoted in Betancourt, 2014, n.p.), and augment productivity overall, production must follow more technical practices. For this purpose, some of the most crucial actors in charge of promoting agricultural 'technicalization' that can meet export requirements are Asohofrucol technicians and regional coordinators. Two of them working in Santander explain that technicalization is, among other issues, about using certified seeds, having a fertilization plan, renovating trees (cutting old ones down and planting or grafting new ones) and monocropping (planting a single crop per field). Asohofrucol regional coordinator for Santander explains, "citrus and avocado crops are to be handled alone. That idea of mixing so many trees does not work" (J.P. Salamanca 2015, Interview, 10 June). Farmers, for their own benefit, are supposed to adopt a set of prescriptions known to increase fruit production and minimize losses.

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However, there are multiple limitations. Some of the most commonly mentioned relate to "cultural factors" and farmers' failure to see the benefits of adopting the proposed techniques:

technicalization conflicts a bit with production culture (...) when it is an area where they are already traditionally carrying a crop, and a different model begins to be shown, that's where there is a conflict, (...) some producers do not see the result of genetically improved plantations to work in technology-intensive crops, clones or varieties, because they expect with the variety to give it the same treatment as to a traditional crop (J.P. Salamanca 2015, Interview, 10 June).

They have to meet standards: fruits are paid according to their colour, shape and size (...). It is only until now that there are efforts in place for farmers to get to see this (...). 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).

In these lines, the problems regarding the implementation of technology-intensive crops are caused by conditions of the farmers, by their cultural traits, and by their lack of understanding. Handling crops according to customary practices lies outside any definition of a good production model. There does not seem to be room for the possibility of a rationality embedded in performing more traditional agricultural practices.

5.2 Agriculture as a source of profit

The adjectives of 'technical', 'well managed' and 'rational' are restricted to those who follow a specific model of intensive technology and standardized practices. The farm La Bodega⁴ is a good example. Alejandro, its owner, is a businessman with investments in agro-industry and real estate sectors. At his farm in San Vicente, he mainly grows citrus and avocados. These crops are clearly separated and managed in different and specialized ways.

⁴ Name changed to provide anonymity to the interviewees.

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To learn how to plant and handle avocado crops, Alejandro travelled to Chile and visited several specialized farms. For the implementation of the learnt techniques, he hired an agronomist with experience in avocado farming. At La Bodega, avocado trees are perfectly aligned on ridges and are irrigated by fertilized dripping, organized in what Alejandro and others refer to as 'the Chilean model'. Consequently, the harvests are less vulnerable to seasonal changes (e.g. rain) and offer a relatively constant production throughout the year, with two mild yield peaks. Two employees serve every eight hectares of avocado crops. Every week, they cut avocados from the trees with specialized scissors, place them in plastic baskets and hang the baskets in a pulley system that takes avocados to the point where fruits are selected and loaded on the farm truck. The truck delivers this fruit directly to restaurants in Bucaramanga, who deal with a commercial manager who works for Alejandro. The transaction is formalized in a yearly contract that fixes conditions (including fruit quality, prices and payment conditions). Alejandro is currently focused on selling in the national market, as the avocado varieties he can produce are not suitable for export to Europe. However, he would be interested in exporting if new markets for green avocados were to open. Farming and marketing practices at La Bodega follow the technicalization model. They require high investments but also deliver high profits, constituting a productive and lucrative economic activity. Alejandro is able to engage in these investments because he has access to capital from other economic activities.



Figure 7: Landscape of avocado trees in Santander, planted following the 'Chilean Model' (source: Centro Agroempresarial del Oriente, 2010)

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. In all of these farms, trading and agricultural tasks are usually divided between different employees. Avocados are planted on monocrops. Fertilization, and sometimes irrigation, is performed according to standardized procedures. These activities and the related pay sheets 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 the farm is a source of profit.

5.3 Agriculture as the source of livelihood

It takes an avocado tree approximately three years to provide the first harvest. Consequently, farmers must invest in land, planting, crop management and other related activities for this period, before receiving any revenue. To pay for these costs, Andres planted plantain in between avocado trees, as plantain takes approximately nine months to

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harvest, and can provide some income and pay for the costs of planting avocado trees while they produce a harvest. Pablo, Andres's father, owns an older avocado crop that has been producing for decades. Pablo has cocoa or mango trees between avocado trees and, at the same time, cassava plants growing in between. He also raises chickens and cattle. Pablo derives his livelihood exclusively from his farm. Therefore, he must be sure to have several sources of income on which he can rely, when the others are not producing or the price of one produce is too low to pay for its costs.

At a distance, the variety of trees in Pablo's farm seems an indistinguishable *mélange* that contrasts with the landscape at Alejandro's farm. There are several reasons why all of these produces are planted in the same field, and not in monocrops as prescribed by Asohfrucol. Avocado trees are usually planted at a distance of at least 6 metres between them. In monocrops, avocado trees are supposed to deliver higher yields. However, high productivity is not Pablo's priority.



Figure 8: Landscape at Pablo's farm

Instead, he is worried about having constant revenue, in the context of the risks he faces, which might be related to pests, low prices or low yields in any of his crops. Planting cocoa or mango and cassava or plantain between the avocado trees enables Pablo and Andres to take advantage of the space between avocados, as “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 according to Pablo, given the limited size of their land, it does enable them to have a higher amount and diversity of produce in a limited space. Furthermore,

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Pablo, as with many other farmers, explains that intercalating different types of trees contributes to limit the spread of pests, which may only affect one type of plant and may travel through particles in the air. Other farmers also highlight the role of plant assortment in contributing to diversity of soil nutrients. Hence, these practices may also contribute to lower needs of fertilizers and pesticides and, therefore, lower costs. The above practices, according to the technicalization precepts, result in a lower average income for Pablo. However, they also imply lower costs (that Pablo can actually afford) and the possibility to have a smoother income to pay for his family's expenses every day.

Each year, Pablo gets two major avocado harvests, one or two cocoa harvests, one or two cassava harvests, one mango harvest, and some sporadic yields from several of these throughout the year. He cannot afford an irrigation system that could provide him with a constant production. In order to buy one, he could easily receive a loan, as he has land as collateral. However, he is not willing to do this. In case he does not repay the loan, the bank would take the land from him, and his family's livelihood would be at risk. Then, in the absence of an irrigation system, his harvests solely depend on seasonal weather, which is common to all farms in the region. High yields coincide with everyone else's harvest, pushing avocado prices down. Therefore, Pablo gets the lowest prices per avocado, precisely when he has the highest amount of produce.

Andres and his father sell their produce to *cacharreros* who drive by their farms every week. They have searched for alternative ways to market their products, especially when prices offered by *cacharreros* have been too low. When trying to sell directly to a wholesaler, “once, during Easter holidays, we had to park ourselves on the sidewalk in front of the wholesaler's house, begging him to pay us. Nah, that's too wearying, because they don't know you, so they treat you as a fool” (P. Mejía 2015, Interview, 11 June). Pablo and Andres have also sold directly to a large supermarket chain: “We sold avocados to *Carulla*, but then we were not able to keep up with the quantities they required” (A. Mejía 2015, Interview, 17 June). Therefore, not being able to produce constant yields and specialize in commercialization to create regular trading relations prevents them from accessing more profitable marketing channels.

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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. They, as with many other farmers in the area, have trees that are around 10 meters high, sometimes more than 40 years old, and less productive than the younger trees. However, they cannot afford to cut down old trees to graft or plant a new one, as that would imply waiting from one year (in the case of grafts) to three years (in the case of planted trees) for the first harvest. Therefore, their decision to keep less productive plants responds to their income necessities.

They, or someone from their families, usually complement farm income by working on someone else's land. However, that is not a reliable and sufficient source. Agricultural hand 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. Furthermore, in terms of their farm's produce, these farmers are stuck with the conditions offered by *cacharreros*. Unlike Pablo, they cannot afford to look for alternative ways in which to sell their products, because their yield is so small that it would not even pay for the trip. Moreover, *cacharreros* know this, and sometimes pay them even less than what they pay to Pablo. Therefore, those with the most necessities and least productivity are paid the least prices for what they can produce.

5.4 Investment agriculture displacing livelihood agriculture

According to the view of positivist economics, it could be argued that the above stories confirm that the failure to adopt a technology-intensive agricultural model results in lower returns. After all, Wilmer produces fewer avocados because he does not renovate old trees. Additionally, his low yields prevent him from having bargaining power with his only potential client, the *cacharrero*. Pablo only produces high yields when there is a high avocado offer on the market, because he has not taken a mortgage to implement an irrigation system. Furthermore, they both fail to have higher avocado yields because they plant these trees next to a number of other crops. In contrast, Alejandro is doing as prescribed and runs a successful avocado business. From this perspective, it seems

reasonable to state that the problem with small landholders in Santander is a matter of culture.

However, the above stories actually expose that farmers such as Pablo and Wilmer do follow a rationality, although not the type related to the technicalization model of agriculture. The objective of livelihood farming practices is not necessarily to maximize income, but rather to obtain sufficient means for living *every day*. This implies engaging in activities that can provide a stable income and low risks, with the resources accessible to these farmers. It implies choosing lower investments and low-cost activities to ensure being able to afford the farm costs and obtain revenue, regardless of price fluctuations and seasonal weather variations. This highlights the importance of analysing the meanings that apparently objective elements (such as money) have for the people involved (Cook et al., 2006). The rationality embedded in these practices subordinates income to the goal of sustaining a livelihood, which differs from the apparently objective ideal of maximizing average revenues rooted in the rationality of technology-intensive agriculture. Therefore, it may be true that most farmers in San Vicente, El Carmen and many other areas do not follow the rationality of technicalization. However, it is also true that technicalization does not follow the rationality of livelihood agriculture.

The adoption of technology-intensive and standardized managerial practices leads to the possibility to fulfil export and supermarket chain requirements, giving farmers more commercial possibilities. Yet, these are not the only markets. The fact that imported avocados are reaching the same wholesale centres as avocados produced by livelihood farmers suggests that there is a commercially attractive market for avocados in Colombia. Therefore, the export and standardized production for supermarkets are not the only options.

Additionally, technicalized agriculture is outside the reach of livelihood farmers. By promoting its implementation, the Colombian government is seeking to impose precepts that do not accord with needs and possibilities of people who derive their livelihoods from farming. Instead, it is promoting a model that can only be followed by agricultural investors. Consequently, rather than a conversion from livelihood to technology-intensive agriculture,

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the government is promoting a takeover of agriculture by investors. It is promoting the production of landscapes with perfectly aligned rows of avocado trees, on ridges systematically irrigated and fertilized — the production of a specific nature. Moreover, it is participating in the production of a specific society, one in which agriculture is not a means of livelihood but rather a source of profit.

Of course, the Colombian government is not doing this in isolation. Viewing the links along the processes between production and consumption of avocados as a system of provision contributes to understanding the links between the relations of different actors. As a consequence, it is possible to see that the efforts of this government constitute just one element in a series of relations seeking to facilitate large-scale business opportunities along the chain of agricultural production and trading. In sum, it is part of a state-capital arrangement promoting a way of organizing society in which livelihood agriculture is displaced by investment agriculture.

6 CONCLUSION

The restrictions that farmers with no access to capital face are related to prices, yields and other aspects that may appear physical or technical. However, they are a product of social relations, being created by regulations, consumer preferences and agricultural policies. Regulations set by importing countries imply higher costs for agricultural producers. Pleasing preferences for flawless homogenous fruits requires technology-intensive agricultural practices and, hence, higher costs. Public policies promoting a technicalized agriculture and export market as the only appropriate option for avocado producers encourage investment agriculture, while weakening the opportunities of livelihood agriculture. Therefore, the idea that large-scale technology-intensive agriculture constitutes the more efficient or suitable for the market is a consequence of the way that market has been produced.

Hence, improving opportunities for farmers is not restricted to finding better technologies or encouraging more efficient managerial practices. Any proposal limited to mechanical and technical solutions obscures the eminent social component of farming opportunities. Of course, that is not to say that these opportunities are uniquely determined by social arrangements. As seen, the categories known as social and natural are inextricably intertwined. For instance, in the case of avocados, higher yields and trees planted in perfect grid squares are not only the products of mechanical practices. They are also products of social determinations, which enable certain people to apply them and deny others to do the same. To me, this is the main force of the idea of the production of nature; it illustrates how any situation is not uniquely fixed by physical or mechanical barriers, it is also produced by social arrangements.

In the case of the avocado sop, our society has produced an arrangement to shape the livelihood possibilities of avocado farmers in Colombia (and, surely, in many other producing countries) by excluding those with no access to capital from economic opportunities, yet promoting these opportunities among them. As contradictory as this may sound, the present research illustrates how despite the fact that technology-intensive

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agriculture lies beyond the possibilities and goals of people deriving their livelihood from farming, the Colombian government has tried to promote these practices among them. Both foreign firms and governments have played a role in shaping the market that has motivated these policies. Even individuals demanding a certain quality of fruit have played their role. Therefore, arrangements set along an interlinked set of practices and decisions involving firms, consumers and states have created impoverishing livelihood possibilities for these farmers. At the same time, these arrangements have produced increasing opportunities for agricultural investors. Therefore, far from being a failure in the way policies are adopted and economic opportunities are distributed in the avocado sop, the process of uneven development is inherent to its current structure.

Arguably, I have analysed this process in terms of somewhat general categories. For instance, portraying livelihood farmers as a relatively homogeneous group. However, this group is diverse and its internal differences most likely determine the ways in which different individuals experience the processes of uneven development. For this reason, further research could consider the difficulties that farmers face according to their differing roles in aspects such as gender relations or regional differences within a country. These analyses can elucidate further determinants of livelihood possibilities for farmers.

It is precisely the recognition of the differences between farmers which enables an understanding of the exposed distributional consequences of the market of agricultural products. Under the assumption of farmers being a uniform group, it may be possible to sustain the argument that it is necessary to promote exports and intensive farming practices for their benefit. But as soon as we acknowledge the huge differences between farmers, the crucial distributive consequences of these practices become evident. Indeed, such recognition reveals a system of uneven distribution of opportunities concealed by beautiful, smooth avocados on the shop shelf. It is, then, possible to see that choosing, selling or regulating an avocado, far from being a simple practice, shapes the livelihoods and landscapes of many apparently disconnected but actually inextricably interconnected actors and places. Behind the choices about avocados lie choices about the shape and distribution of the world in which we live.

7 APPENDIX

7.1 Copy of Ethics Screening Form

Department of Geography PGT Research Ethics Screening Form King's College London

Please Note: Filling out this Geography PGT Research Ethics Screening Form does NOT constitute College Ethics Approval.

This *Geography Research PGT Ethics Screening Form* will help you to determine if you must submit a *College Research Ethics Application* to the *College Research Ethics Committees* before starting your research, under the guidelines for working with human participants set out by the Social Sciences, Humanities & Law Research Ethics Sub-Committee (SSHL RESC), and the Geography, Gerontology and Social Care Workforce Research Unit Panel (GGG REP).

In order to complete this process, please

- Familiarise yourself with the professional research ethics guidelines of *The British Sociological Association*: <http://www.britisoc.co.uk/equality/> (Statement of Ethical Practice)
- Read "Which kinds of research require ethical approval through the KCL Research Ethics Committees?" (p. 2 of this form).
- Answer the questions in Table 1 below, sign the form and also obtain the signature of your supervisor.
- Return the signed (by both you and your supervisor) *Geography PGT Research Ethics Screening form* to the Geography Department office and **KEEP A COPY** which you will place in Appendix 1 of your IGS/dissertation.
- If ethics approval is needed (answering 'yes' to question 2 in Table 1), you must apply for college ethics approval through the appropriate *College Research Ethics* committee, and **not start ANY research (including preliminary 'trials')** until ethics approval has been granted in writing.

Table 1. Department of Geography PGT Research Ethics Screening Questions.

1) Have you read and familiarised yourself with the professional research guidelines of <i>The British Sociological Association</i> ?	x Yes <input type="checkbox"/> No
2) Does your research "involve human participants" and/or "raise other ethical issues with potential social or environmental implications"?	x Yes <input type="checkbox"/> No

If you answered 'No' to question two, you do not need to submit your research for ethical review. If you answered 'Yes' to question two, please read the following web pages with information to establish your ethical risk level and where you need to apply: <http://www.kcl.ac.uk/innovation/research/support/ethics/about/index.aspx>, <http://www.kcl.ac.uk/innovation/research/support/ethics/applications/apply.aspx>, <http://www.kcl.ac.uk/innovation/research/support/ethics/applications/briefingpage.aspx>.

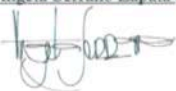
Table 2. Three levels of ethical risk for project types, and how to obtain College Research Ethics clearance.


Project type	How to submit?
Minimal ethical risk	Running on a pilot basis in 2014/15. PDF-based checklist and guidance are available online: http://www.kcl.ac.uk/innovation/research/support/ethics/applications/MR-pilot.aspx
Low ethical risk	Submitted online using REMAS: http://remas.kcl.ac.uk . The level of ethical risk is determined by your answers to a series of questions.
High ethical risk	Submitted online using REMAS: http://remas.kcl.ac.uk . The level of ethical risk is determined by your answers to a series of questions.

You MUST sign and return this *Geography PGT Research Ethics Screening Form* to be kept on file with the Department Office, and if a Masters student, submit a copy of this at the end (as part of Appendix 1) of your Dissertation. In cases where there is minimal, low or high ethical risk, **you MUST complete the *College Research Ethics Application* at least one month before you intend to start your research and obtain written approval from them BEFORE carrying out any research.**

Carrying out research without ethical approval by the College Ethics Committee may result in a charge under misconduct regulations as "action that deviates from accepted institutional, professional, academic or ethical standards will be regarded as misconduct and an infringement of these regulations" "Academic regulations, Regulations concerning students & General regulations" B3 – 1.1, King's College London. You should note that your research will not be covered by the College's insurance until you have completed the College ethical review process. This means that unless you receive ethical approval for your research, if a participant makes a legal claim regarding the research, then you would be personally liable. It is your responsibility to submit your research for *College Ethical Review* in good time to carry out any research.

Provisional dissertation title: Livelihood Possibilities from Agriculture under Shifting Retailing Conditions: The Case of Avocado Producers in Colombia
 Student Name: Angela Serrano Zapata Student Card No: 1414959


 Student Signature: _____ Date: April 22, 2015
 Supervisor Name: Andrew Brooks


 Supervisor Signature: _____ Date: 28/4/2015

Last updated 9 April 2015

7.2 Risk Assessment

Geography Individual Research and Fieldwork

(This form is available electronically via <http://www.kcl.ac.uk/geography> → "For Current Students" → "Student Forms" → "Universal Forms")

1 COMPLETING THE DEPARTMENT OF GEOGRAPHY RISK ASSESSMENT FORM

This process is now a digital process. These forms do not need to be printed and signed. The new procedure is as follows.

- **STUDENTS:** Read and complete this form carefully and email to your research supervisor as a word document (if you are unsure about any of the questions discuss them first with your supervisor). **Save the document using the filename RiskAssessmentForm_YourName_KCLStudentCard#.docx replacing YourName and KCLStudentCard# with the appropriate details.** Also submit the web-based [TRAVEL NOTIFICATION AND INSURANCE FORM](http://bit.ly/kclgeotravel) (at <http://bit.ly/kclgeotravel>). Your typed name and student number and the sending of this from your email account is accepted as your signature.
- **STAFF:** Read and check this assessment carefully. If you consider the student has identified, understands and is managing the key risks and that this work will be safe, "sign" the signature page and forward the received email message from the student (and attach this signed document) to katharine.silk@kcl.ac.uk with a cc to the student who completed it (they will need your signed off copy to attach as an appendix to their dissertation). Your typed name and staff number and the forwarding of this from your email account is accepted as your signature. **Responsibility for assessing whether this assessment is appropriate lies with you, as supervisor. Until the risk assessment has been accepted by the supervisor, the research activity is not permitted.**
- **PROCESS:** This form will be further reviewed departmentally. In the rare cases that risks are deemed to be unacceptable, despite supervisor sign-off, the form will be returned by e-mail to the student (cc to supervisor) with feedback on any further clarification needed. If you do not hear from Katharine within a few working days of submission you may assume that there are no issues arising..

WHY DO I NEED TO DO THIS?

You are ultimately responsible for your own safety and that of those working for you but the Department of Geography has a duty of care to ensure that you have thought carefully about the risks involved in the field or laboratory work, and that you have done the utmost to manage and reduce them. We will not sanction fieldwork that we consider to be unsafe. Fortunately serious accidents and deaths in the field are rare but they do happen. Think through the risks and how you will manage them and ensure you have outlined a plan of action in case something does go wrong.

2 GENERAL GUIDANCE ON RISK ASSESSMENT: MANAGING HEALTH AND SAFETY

In most countries, national legislation provides the legal framework for health and safety management. For example, in the UK, universities abide by the *Health and Safety at Work Act 1974* (<http://www.hse.gov.uk/legislation/hswa.htm>) and associated regulations. The Act places a duty upon employers to take steps to ensure, so far as reasonably practicable, the health and safety of their employees and any other people affected by their activities including, in the case of universities, all students and members of the public.

Additional guidelines may also exist at the local or national scale. For example, there is a British standard concerning *Specification for the provision of visits, fieldwork, expeditions, and adventurous activities, outside the UK* (BS8848). These laws and guidelines typically require that 'risk assessments' are undertaken to identify what should be done in order to manage safety. Assessments of risk are usually focused around 'risk' and 'hazard'. Put simply:

- **Hazards** result from working in potentially dangerous environments and refer to environmental conditions, agents (including strangers) or substances that can cause harm.
- **Risk** is the chance that a person (you or someone else) might be harmed by the hazard.

During individual research (e.g., fieldwork), hazards and risks can change rapidly, for example, as a result of changing weather conditions or political actions, and should be continually reassessed.

A risk assessment should be completed for:

- All individual research and fieldwork taking place OUTSIDE the Department of Geography conducted as part of your degree,
- All laboratory work INSIDE the College premises
- All student dissertation work, whether human or physical, and whether undergraduate, postgraduate taught or postgraduate research.

The extent of your involvement in actually assessing the risks will vary according to the way in which the individual research and fieldwork is organised, but you have a responsibility to follow any precautions or safety measures laid down in the risk assessment.

3 RISK ASSESSMENT FORM AND ASSOCIATED DOCUMENTATION

After reading through ALL risk categories, please select RISK TYPE A or B below.

RISK TYPE A

You are only eligible for RISK TYPE A if all of the following are true:

- Your work takes place within: college premises or home or within organizations/premises that have their own clear risk assessment in place.
- Your work involves ONLY library/archival data or existing on-line/other data.
- Your work WILL NOT expose you to risks greater than in everyday life.

DECLARATION: I have considered ALL categories in this form (see page 4 onwards) and I declare that I am undertaking a student project/dissertation where: a) NONE of my research will be outside of college premises or home or organizations/premises that have their own clear risk assessment in place; and b) it does not involve ANY of the risks identified in ANY of the categories of this risk assessment form. Should my research project change, such that there are now risks involved, then it is my responsibility to resubmit this form after completing an assessment for Risk Type B.

SIGNATURES OF PERSON FILLING IN A RISK ASSESSMENT AND COUNTERSIGNATURE.
A. Person filling in this risk assessment
Signature (TYPE YOUR NAME AND STAFF OR STUDENT ID IN PLACE OF A SIGNATURE):
Date:
B. Countersignature and date. I sign to indicate that I have read this and consider it an appropriate assessment. (Students – Research Supervisor; Research Staff – Project Leader; Academic Staff – Head of Department)
Signature (TYPE YOUR NAME AND STAFF OR STUDENT ID IN PLACE OF A SIGNATURE):
Date:

RISK TYPE B

Fill out THIS PAGE and ALL OTHER PAGES in this form.

DECLARATION: I have considered ALL categories in this form and have indicated which risks apply to me that are greater than in everyday life and normal activities (writing yes/no for every section). Where I have answered 'yes' then I have also indicated the degree of risk from 1–5 (1=low, 5=high) and, where appropriate, added notes or comments relating to the level of risk. I have identified and added any additional risks not explicitly covered by this form in the final section.

SIGNATURES OF PERSON FILLING IN A RISK ASSESSMENT AND COUNTERSIGNATURE.
A. Person filling in this risk assessment
Signature (TYPE YOUR NAME AND STAFF OR STUDENT ID IN PLACE OF A SIGNATURE): ANGELA SERRANO ZAPATA 14141959
Date: 07/05/15
B. Countersignature and date. I sign to indicate that I have read this and consider it an appropriate assessment. (Students – Research Supervisor; Research Staff – Project Leader; Academic Staff – Head of Department)
Signature (TYPE YOUR NAME AND STAFF OR STUDENT ID IN PLACE OF A SIGNATURE):
Date:

PROJECT DETAILS

Please ensure you complete the **TRAVEL NOTIFICATION AND INSURANCE FORM** (available at <http://bit.ly/kclgeotravel>) at least two weeks before leaving. For work outside of the UK, please do not forget to obtain insurance in accordance with College regulations.

A. The project title: Livelihood Possibilities from Agriculture under Changing Retailing Conditions: The Case of Avocado Producers in Colombia

B. The overall aim of the project: Understand the social relations that determine the conditions of exchange between avocado producers and retailers

C. Can you identify any risk to others of the activity that you propose? (If yes, please elaborate.) I identify the same risks for others as they face talking to another human being, on their daily lives.

D. Can you identify any reputational or business risk to the college of the activity that you propose? (If yes, please elaborate.) Minimal. I will be talking to agricultural producers, and I will mention as part of the explanation of my research that I belong to this college. Therefore, the college faces the same reputational risks it does when I mention to any person in my daily life that I study here. I acknowledge that my behaviour has an impact on the reputation of the college.

E. The location(s) where the data will be collected: Santander, Tolima, Bolivar, Cundinamarca and/or Antioquia, Colombia. Colombia is my home country and I have visited these areas several times in my life, without facing any significant risks. I have friends or acquaintances in all of them.

F. Are you planning to work alone? (If yes, please justify this decision and detail the crisis management measures in place if something goes wrong in the field. How will you summon help? Who will know where you are and raise the alert if you are not back when planned and what are their contact details? If no, please provide name and contact numbers of colleague(s) who will be assisting you with the fieldwork if applicable, and/or named contact who will be provided with information on the timings and locations of your work.)

Yes. I will be in areas that I know, where there is good transport and telecommunications infrastructure. Therefore, any crisis can be communicated and managed. My mother, Maria del Rocio Zapata (+573102639963), will always know where I am.

G. Do you have permission to do this work from the landowner or person responsible for the site you are working in? Please elaborate.

I will be contacting agricultural producers in order to meet with them in public places, or in their private properties with their permission.

H. Are you leaving any equipment on site? If so, do you have permission to do so and who is overseeing the equipment locally when you are not there? Please elaborate.

No.

I. Please briefly list the methods or techniques that will be employed for data collection during the project:

Semi structured interviews, composed of around 10-15 guidance questions. I will also gather information through public reports.

J. Please elaborate on other relevant Project Details not mentioned above or in the Personal Details (below).

PERSONAL DETAILS

Data Protection: This information will remain confidential and will only be used by the Department in the event of an emergency or urgent need to contact you.

Please note that, other than for very low risk environments, we do not sanction lone field working. In all cases, you must have a nominated contact who should know where you are, be in potentially immediate contact with you (by phone) and who should have the timings of your departure and return from work, so that an alarm might be raised.

Your Name: Angela Serrano Zapata

Next of Kin (name): Maria del Rocio Zapata

Next of Kin contact details: +573102639963

Any relevant medical information which might impact upon your study or safety: No

Address of nearest local hospital(s) to project or fieldwork site(s):

Urbanización el Bosque - Autopista a Floridablanca. Bucaramanga - Colombia

Name of local contact person(s) if applicable:

You now need to demonstrate that you have considered *each* listed risk by indicating with either 'yes' or 'no' whether the risk applies to your fieldwork. ALL risks must be answered 'yes' or 'no' even if they do not apply to you. If the answer is to any particular risk is 'yes' then you must also indicate the degree of risk from 1–5 (1=low, 5=high) and complete the relevant comments. At the end of the form you should add any further relevant risks for your fieldwork that have not been listed. This form is meant to be a formative process of considering risk — not just a form-filling 'bureaucratic exercise' — and for you to actively consider risks involved in your research/project that might be greater than everyday life and your normal activities. You should consider a five-step approach to risk assessment.

1. Identify the hazards: during the field work, what could cause harm, for example, slippery ground, high altitude, weather conditions, civil or political unrest.
2. Identify who might be harmed and how: this includes all the field workers and members of the public.
3. Evaluate and minimise the risks: once suitable precautions have been taken, for example, wearing appropriate protective clothing, how likely is it that someone will be harmed?
4. Record the findings: write down the identified hazards and precautions to be taken.
5. Review the assessment periodically: situations change and so do the potential hazards and risks, so risk assessment is not an isolated task but an ongoing evaluation to be updated and revised as often as necessary.

CATEGORY	CATEGORY RISKS	DOES RISK APPLY? (Y/N)	DEGREE OF RISK (1 = LOW, 5 = HIGH)	ASSOCIATED CONTROL MEASURES	NOTES OR COMMENTS
1.0 LONE / OUT OF HOURS WORKING in the FIELD	1.1 Difficulties in summoning help when required; risk of abuse/attack	yes	2	<ul style="list-style-type: none"> • Where possible work, as a minimum, in pairs. • Where possible carry a radio or mobile phone. • Leave details of the field site and a work plan (include contact name and address) with colleagues in the department or at home prior to any trip. • Specify dates and times of departure and return • If your plans change, inform someone as soon as possible. • Do not carry valuables or large sums of money unless you need to. • Carry a personal alarm (This advice is directed to males as well as females—all are equally vulnerable when alone) • Instigate a "check-in" system with a colleague or supervisor—Phone in at regular intervals. If you do not phone or return at a certain time arrange for suitable action to be taken. • Trust your intuition—if you feel scared or uneasy, do not ignore it. 	<p>I will carry field work in public spaces and buildings of agricultural associations by myself. However, this will happen during working hours, when several people should be there. I will always carry my phone, and will inform my mother about dates and times of departure and return from each site. I will arrange to perform most interviews in public spaces. In cases in which this is not possible, I will always go accompanied and will get there by car, staying close to the vehicle and the exit.</p> <p>I will arrive to Colombia on May 30th, and will return to the UK on July 13th, but will be carrying field work approximately between June 2nd-30th. Most likely on the following dates: June 2nd, 5th, 9-12, 15-19th, 22-26th.</p>
2.0 ENVIRONMENT: HAZARDOUS WEATHER/CLIMATE [where potential extreme conditions are anticipated]	2.1 General	no		<ul style="list-style-type: none"> • Consult a daily weather forecast before setting out. Check Met Office forecast, http://www.metoffice.gov.uk/weather/. • Wear clothing suitable for expected weather conditions. However, be prepared for sudden changes and where possible take a change of clothes. • Strong winds and cold weather reduce energy levels; take adequate food and drink supplies. 	
	2.2 Hypothermia—This results from dangerous loss of body heat. The main land based cause is wind chill, through inadequate clothing. Immersion in cold water can rapidly lead to hypothermia	no		<ul style="list-style-type: none"> • Ensure clothing is appropriate and use a survival suit in extremely cold weather. • Wear a woollen hat—this significantly reduces heat loss. • Wear lots of layered clothing—remove layers to reduce sweating. • Wear woollen gloves under waterproof gloves. • Eat plenty of food and drink plenty of fluids. 	
	2.3 Frostbite—This results from lack of circulation in the extremities caused by severe cold. It is most common when hands or feet are wet. High altitude can exaggerate the problem as circulation tends to be less efficient in these environments	no		<ul style="list-style-type: none"> • Wear woollen gloves under waterproof gloves. • Make sure shoes/boots are loose enough to allow room for two pairs of warm socks and still not be tight. Restricting circulation with tight shoes will make you more prone to frostbite. • Be aware that the altitude you will be working at will affect your susceptibility to frostbite. • Ensure that footwear is waterproof. 	
	2.4 Poor Visibility—This can be due to driving rain, snow, etc. or fog. Working at dawn or dusk can also lead to visibility problems.	no		<ul style="list-style-type: none"> • If problems are due to adverse weather conditions, seek shelter and wait for weather to clear. • If working at dawn or dusk, ensure a torch is carried. • Wear high visibility clothing so you can be seen easily. 	
	2.5 Sunburn—This can occur even in cold conditions, especially where there is reflected light—e.g. close to or on water, at high altitude, in snowy conditions. Any exposed area of the skin is susceptible (face and hands).	yes	1	<ul style="list-style-type: none"> • Use a high factor Sun block • If working in full sun, do not expose skin unnecessarily! • Make sure back of neck is covered. • Wear sunglasses to protect eyes. 	I will use sunblock.

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CATEGORY	CATEGORY RISKS	DOES RISK APPLY? (Y/N)	DEGREE OF RISK (1 = LOW, 5 = HIGH)	ASSOCIATED CONTROL MEASURES	NOTES OR COMMENTS
	2.6 Dehydration —This can occur in hot or cold weather—wind can be a contributing factor.	no		<ul style="list-style-type: none"> • Drink plenty of fluids—more than 3 litres per person per day is recommended in hot weather. • Do not drink alcohol or caffeinated drinks. 	
	2.7 Heat stroke/heat exhaustion —These are due to the body over-heating and are often accompanied by dehydration.	no		<ul style="list-style-type: none"> • Avoid working in full sun. • Drink plenty of fluids. • Always wear a sun hat. • Keep back of neck covered. • If feeling particularly hot, find some shade and rest. 	
3.0 ENVIRONMENT: HAZARDOUS TERRAIN	3.1 General: Slips, trips and falls—Due to “wrong footing” on uneven or wet/slippery ground.	yes	1	<ul style="list-style-type: none"> • Wear footwear suitable for the conditions. • Plan route carefully to avoid most uneven ground. • Ensure you can see where you are putting your feet before walking. • Avoid working in poor light conditions. 	I will wear appropriate shoes to provide grip.
	3.2 General: Back and neck injuries- Due to jarring spine, etc. This can also lead to skull fractures.	no		<ul style="list-style-type: none"> • Do not jump over or off anything. If there is a drop or ditch that has to be negotiated, lower yourself slowly or use existing bridges, steps, etc. • Be aware that landing “heavily”, thus jarring the spine, can lead to basal fractures of the skull or concussion. In the event of such an injury, medical attention must be sought immediately. 	
	3.3 Agricultural Land: Slips, trips and falls	yes	3	<ul style="list-style-type: none"> • Be aware that agricultural land is often ploughed and therefore deeply rutted. 	I have lived most of my life in agricultural land, and will continue to act cautiously around potential farm hazards and ask farmers if there is anything to be cautious about before entering the farm. If I have to visit a farm I will always stay close to the gate and be accompanied by the farmer. I will not be walking around alone, so the risks associated with agricultural land will be minimal. I will wear appropriate shoes to provide grip as well as robust clothing.
	3.4 Agricultural Land: Breaks and sprains	yes	2	<ul style="list-style-type: none"> • Do not jump over drainage ditches. Always use existing bridges, etc. • Ensure appropriate footwear is worn to protect ankles. 	I will not be walking much around fields. Interviews will mostly take place on one place.
	3.5 Agricultural Land: Risk of personal injury caused by boundary fences—electric fences, Barbed wire, hedges, etc.	yes	1	<ul style="list-style-type: none"> • If working close to fences, etc. avoid working with your back to the fence, in case you back into it. • Do not climb over fences—use gates or stiles 	Fields for fruit production usually only have fencing on their borders. I will only be crossing those through a gate when coming in and out of the land.
	3.6 Heathland, Moorland and Mountains: Slips, trips and falls	yes	1	<ul style="list-style-type: none"> • Rocky outcrops are extremely slippery when wet, avoid walking on them whenever possible. • Wear strong gloves to protect hands against cuts and grazes. • When walking down hill, walk across the slope and not down the steepest path, keeping your weight on the back foot as much as possible—if you slip you should try to fall backwards, not forwards! • Wherever possible follow existing paths. 	I will not be walking much around fields. Interviews will mostly take place on one place.
	3.7 Heathland, Moorland and Mountains: Breaks and sprains	yes	1	<ul style="list-style-type: none"> • Do not jump off ledges, etc. • Ensure appropriate footwear is worn to protect ankles. 	I will not be walking much around fields. Interviews will mostly take place on one place.
	3.8 Heathland, Moorland and Mountains: Altitude sickness, low oxygen levels	no		<ul style="list-style-type: none"> • Do not try to do too much at once. • There is a higher risk of sunburn at high altitude—use a higher factor sunblock. • If you are feeling tired or yawning this may be due to lack of oxygen, not sleep! 	
	3.9 Beaches and Cliffs: Falls	no		<ul style="list-style-type: none"> • Be aware of high winds on cliff tops—do not stand closer to the edge than is necessary. • Check for soft or crumbling ground near cliff edges. • Where necessary approach cliff edges on all fours to spread the body weight. • Do not stand and peer over the edge of cliffs. 	
	3.10 Beaches and Cliffs: Slips and trips	no		<ul style="list-style-type: none"> • Take special care on slippery rocks. Always look ahead at ground when walking around the water's edge. 	
	3.11 Beaches and Cliffs: Drowning/cut off by tide	no		<ul style="list-style-type: none"> • Be aware of incoming tides. Check tide tables before commencing work and ensure your escape route is not blocked. 	

CATEGORY	CATEGORY RISKS	DOES RISK APPLY? (Y/N)	DEGREE OF RISK (1 = LOW, 5 = HIGH)	ASSOCIATED CONTROL MEASURES	NOTES OR COMMENTS
	3.12 Mudflats and Estuaries: Slips, trips and falls	no		<ul style="list-style-type: none"> Avoid wearing waders if possible—Wellingtons are preferable. Waders are cumbersome and may encourage you to go deeper into water than is safe. If waders are necessary, use a pole to probe ahead to assess the stability of shoreline terrain. When wearing chest waders, you should always wear a buoyancy aid too. Take special care on slippery rocks. Always look ahead at ground when walking around the water's edge. When sampling in flowing water environments, be careful of slippery or steep banks and fast currents. If the current is fast or the water looks deeper than knee height, do not enter the water. If you must enter the water, a rope should be tied around your waist and secured to the bank 	
	3.13 Mudflats and Estuaries: Sinking/drowning	no		<ul style="list-style-type: none"> If stuck in mud, do not struggle as this causes deeper sinking. Roll on back and spread weight evenly whilst attempting to "sledge" to firmer ground. Be aware of incoming tides. Check tide tables before commencing work and ensure your escape route is not blocked. 	
4.0 ENVIRONMENT: LOCATION	4.1 Risk of causing offence which may lead to personal attack/abuse.	no		<ul style="list-style-type: none"> Respect must be paid to local customs and problems, and advice taken from local contacts, embassies, etc. Dress appropriately. Consult Foreign Office for advice. 	
	4.2 Working within other establishments, businesses, laboratories, etc.	no		<ul style="list-style-type: none"> Ensure establishment has their own safety guidelines in place. Whilst on the premises follow their guidelines. 	
	4.3 Working beside major roads	no		<ul style="list-style-type: none"> Wear brightly coloured, conspicuous clothing. Avoid having your back towards the traffic flow. 	
	4.4 Risk of attack/abuse and personal injury	yes	1	<ul style="list-style-type: none"> Avoid areas known to be "unpleasant" Seek information on areas before setting out. Consult Local Community groups, Local Authorities, Police, etc. for information and possible contact names before setting out. Do not enter unfamiliar neighbourhoods alone. Walk with confidence and purpose—try not to look as if you are not sure of where you are going. Do not carry more money than you need to. Dress appropriately—try to fit in without attracting attention. 	I will not carry any expensive equipment that may call other people's attention, and will mainly be visiting places that are familiar to me; avoiding any areas known for having security issues.
	4.5 Risk of getting lost —this may lead to straying into high risk areas.	yes	1	<ul style="list-style-type: none"> Study maps of the area before setting out. Plan your route carefully. Ensure you know of a second route should the first be impassable. Ensure you have a means of raising alarm if you are lost 	I am familiar with these areas and will take the necessary precautions.
5.0 ENVIRONMENT: ANIMALS	5.1 Personal injury and attack by Livestock or "Domesticated" animals, i.e. dogs	yes	1	<ul style="list-style-type: none"> If necessary to do so, pass through fields with animals quickly or limit your working time in that area to return later. Try to avoid walking near to the animals. Be especially aware of pregnant animals or those with young. 	I will ask farmers if there is anything to be cautious about before entering the farm. If I have to visit a farm I will always stay close to the gate and be accompanied by the farmer.
	5.2 Snakes, scorpions, spiders—risks of bites from venomous animals	no		<ul style="list-style-type: none"> Wear protective footwear. Look carefully where you are treading or putting your hands. If appropriate, check shoes and shake out clothing before putting them on. Ensure you know where to go or what to do in case of injury—Seek local information before you go into the field 	
	5.3 Biting and stinging insects can cause discomfort and infection e.g. allergic reactions and malaria; ticks may be found on bushes where cattle are or have recently passed and on the cattle themselves.	yes	1	<ul style="list-style-type: none"> Use insect repellent particularly in the evenings or when near standing water. If appropriate, Anti-malaria tablets should be taken. Carry anti-histamine tablets in case of bites. Be aware that some forms of anti-histamine can cause drowsiness. If affected do not continue with fieldwork. Clean and cover any bites to reduce risk of infection. Do not attempt to pull ticks off skin, as the mouth parts can be left imbedded. A small amount of paraffin poured onto the tick may cause them to release their grip. Ideally medical attention should be sought. 	There are mosquitos in the regions I will be visiting, but not known dangerous tropical sicknesses in these areas.
	5.4 Other People's "Pets" risk of injury, allergy, etc.	yes	1	<ul style="list-style-type: none"> Be aware that not all pets are "friendly" If entering a house with a dog or cat, ask that the animal be put in another room if you feel uncomfortable. If you are "wary" of a dog, do not enter the house unless the owner is prepared to remove the animal from the room you are going to be in. (Be polite and tactful when asking!) See also allergies 	If there are any pets, I will ask for them to be put in another room if I feel uncomfortable. I will be polite and tactful when asking.
	5.5 Phobias	no		<ul style="list-style-type: none"> Individuals who have phobias relating to e.g. wasps and bees, should be "buddied" with others who do not. The buddy should help to calm the individual and frighten off the insect if necessary. Try to avoid situations which may bring you into contact with the object of your phobia. Ensure at least one other member of the group is aware of the problem. 	

CATEGORY	CATEGORY RISKS	DOES RISK APPLY? (Y/N)	DEGREE OF RISK (1 = LOW, 5 = HIGH)	ASSOCIATED CONTROL MEASURES	NOTES OR COMMENTS
	5.6 Health	no		<ul style="list-style-type: none"> Animals carry diseases. Consult your medical advisor to ensure that you have the appropriate protection. Be aware of the symptoms and precautions. 	I will be in the same type of environment where I have been most of my life. Risks will not be higher than in my everyday life in Colombia.
6.0 ENVIRONMENT: POLLUTION	6.1 Working near power stations/smelter works/chemical plants: Risk of long term damage to lungs.	no		<ul style="list-style-type: none"> Do not enter the area unless absolutely necessary Do not spend longer than necessary in the area. Wear a face mask with a filter suitable for the category of pollutant. 	
	6.2 Working near power stations/smelter works/chemical plants: Risk of absorption through skin: some toxins are accumulative and constant absorption or repeated exposure can lead to long term health effects.	no		<ul style="list-style-type: none"> Do not enter the area unless absolutely necessary Keep skin covered as much as possible Wear gloves if handling plants, etc., growing near in the area Wash/shower as soon as possible after finishing work Be aware that clothing will also be contaminated—wash clothing after finishing work. Be aware that toxins, etc., may be carried by rain from higher in the atmosphere. Be cautious of any skin reaction that may occur—seek medical attention. 	
7.0 MANUAL HANDLING Loading/unloading Vehicles	7.1 Unstable loads—if equipment is not stacked properly, there is a risk of it moving whilst the vehicle is in motion. This may injure the driver/passenger or may fall when the doors of the vehicle are opened for unloading.	no		<ul style="list-style-type: none"> Ensure that heavy equipment is on the bottom of the pile. Pack awkward shaped items into square boxes if possible. Tie down any loose items. Do not stack equipment higher than the seats. 	
	7.2 Back Injury—due to incorrect lifting techniques	no		<ul style="list-style-type: none"> Stand close to object, with feet apart. Keep back straight. Bend knees. Keep head up. Avoid twisting or bending or repetitive work. Seek proper training in manual handling techniques 	
8.0 MANUAL HANDLING: Moving Equipment to site	8.1 Back Injury—due to incorrect lifting techniques	no		<ul style="list-style-type: none"> Stand close to object, with feet apart. Keep back straight. Bend knees. Keep head up. Avoid twisting or bending or repetitive work. Seek training in proper manual handling techniques. 	
	8.2 Back injury—due to incorrect carrying techniques	no		<ul style="list-style-type: none"> Where possible carry equipment in a rucksack. Do not overload rucksacks. Do not carry equipment further than is necessary—get as close to site as possible by other means. Do not single-handedly attempt to carry anything that is “too heavy”. This will vary from individual to individual—know your limits and do not be persuaded to over stretch that limit. Be aware of awkward shaped loads and unevenly balanced loads. Where possible dismantle large pieces of equipment into smaller, lighter components. 	
	8.3 Injury to arms and hands—strains, sprains, breaks, cuts and grazes	no		<ul style="list-style-type: none"> Where possible carry equipment in a rucksack. Wear protective gloves. Keep sleeves rolled down. Be aware of sharp edges/corners. Be aware of pieces of equipment which may pinch the skin—hinges, lids, etc. 	
9.0 WORKING NEAR WATER: GENERAL	9.1 Slips, trips and falls.	no		<ul style="list-style-type: none"> Waders are cumbersome and may encourage you to go deeper into water than is safe. Take care when wearing waders and ensure that you are not in water that is too deep. Chest waders should only be worn if the person is also wearing a buoyancy aid. Use a pole to probe ahead to assess the stability of shoreline terrain. If stuck in mud, do not struggle as this causes deeper sinking. Roll on back and spread weight evenly whilst attempting to “sledge” to firmer ground. Take special care on slippery rocks around lake shores and river banks. Always look ahead at ground when walking around the water's edge. When sampling in flowing water environments, be careful of slippery or steep banks and fast currents. If the current is fast or the water looks deeper than knee height, do not enter the water. If you must enter the water, a rope should be tied around your waist and secured to the bank. 	
	9.2 Health	no		<ul style="list-style-type: none"> There are a number of water borne diseases or diseases associated with river margin habitats. You should consult your medical advisor to ensure that you have appropriate protection for the environments in which you are working. Be aware of Hemlock Water Dropwort, which is a poisonous plant species common near rivers and other water bodies. Be aware of the symptoms and precautions for Leptospirosis. 	
	9.3 Associated Risks	no		<ul style="list-style-type: none"> See also chemical/biological hazards See also Weather 	

CATEGORY	CATEGORY RISKS	DOES RISK APPLY? (Y/N)	DEGREE OF RISK (1 = LOW, 5 = HIGH)	ASSOCIATED CONTROL MEASURES	NOTES OR COMMENTS
10.0 WORKING NEAR WATER: BOAT HANDLING Note: Boat Handling should ONLY be done where further training has been given, or where supervision is provided, or where a local risk assessment and mitigation procedure is in place	10.1 Equipment—failure to check or use correctly resulting in personal injury	no		<ul style="list-style-type: none"> The Helm is responsible for all decisions within the boat. Ensure the boat is fully inflated and that valves are sealed correctly. Inflate the keel (where appropriate) in windy conditions for extra stability. Wear survival suits in rough, cold conditions. Be aware that conditions in the middle of a lake may be much rougher than those at the launch site, which is often a sheltered bay. A minimum of two people should be in the boat while in operation. A tool kit including a knife, pliers, spare shear and split pins must be carried on board. A set of oars must always be carried. A boat pump, anchor and rope, a safety line and a bailer should be carried. Check that the motor is securely attached to the transom and is also attached by a rope to the boat for additional security. Ensure that there is sufficient fuel in the tank before setting out. If using a battery to power an electric engine, treat the battery with care. Always place the battery in a water tight box, lift carefully and place in a stable position on board. Avoid skin contact with any leaked acid. Keep ropes coiled and stowed neatly inside the boat. Keep the bow rope inside the boat to avoid it tangling in the propeller. 	
	10.2 Risks of Fire	no		<ul style="list-style-type: none"> Ensure fuel tank is horizontal and stable. Open pressure release valve when the motor is running. No other fuel allowed on board. Never smoke near inflatable boats or engines. 	
	10.3 Sinking/drowning	no		<ul style="list-style-type: none"> Buoyancy aids must be worn at all times. Non-swimmers should wear a life jacket. Submersed obstacles can damage the propeller and the bottom of the boat. Always keep a look out, especially in shallow water and rocky areas. In gusty winds, short steep localised waves of considerable size can develop. If the boat length exceeds the wave length, the boat cannot ride the waves. Shelter should be sought. Ensure safe anchoring prior to cutting the engine. 	
11.0 HEALTH: ACCIDENTS AND ILLNESS	11.1 Risk of injury	yes	1	<ul style="list-style-type: none"> Ensure that one of the fieldwork team is trained in First Aid. Carry a First Aid kit Medical Supplies or treatment—be aware of where these can be bought or received if there is an accident Have plans of action and be aware of where help can be sought should an accident occur in a remote location. Remember that it is essential to fill out an accident report and return it to the Departmental Safety Officer on return. It may help to make notes as soon after the incident as is possible. 	I will always be close to health centres, and will have a plan to get there. Mostly being close to public transportation or getting there accompanied by car. I will also be in contact communication with a member of my family that can pick me up if necessary.
	11.2 Risk of illness whilst in the field	yes	1	<ul style="list-style-type: none"> Ensure any necessary medication is carried at all times Ensure someone else is aware of medical conditions and will recognise signs and symptoms. They should also be informed of the location of medication. Diabetics should ensure sufficient food is carried in case there is a delay in returning. Medical Supplies or treatment—be aware of where these can be bought or received if a medical condition or illness arises 	I will always be close to health centres, and will have a plan to get there. Mostly being close to public transportation or getting there accompanied by car. I will also be in contact communication with a member of my family that can pick me up if necessary.
	11.3 Risks of Dental problems—it is often difficult to get dental treatment in remote locations! Remote locations only	no		<ul style="list-style-type: none"> Ensure that a full dental check up is received before departure Be aware of where Dental treatment can be received Carry emergency dental treatment as First Aid. 	
	11.4 Fatigue leading to lack of concentration, accidents and risk of injury When strenuous work or driving is undertaken	no		<ul style="list-style-type: none"> Do not try to do too much in one day, especially if the work is to be followed by a long drive home Be aware that working at high altitude can quickly lead to fatigue due to reduced oxygen intake. Lack of sleep can lead to accidents—ensure sufficient rest is taken. 	
	11.5 Lack of Physical Fitness—leading to risk of personal injury/illness Strenuous work or remote locations	no		<ul style="list-style-type: none"> Know your limitations—do not be forced to over-stretch your limit. Do not be afraid to tell someone if you feel unwell or cannot carry on with a task. Plan your work within your limits. If you feel unwell—stop. 	
12.0 HEALTH: ALLERGIES	12.1 Anaphylactic Shock—severe cases of allergic reaction can result in breathing difficulties	no		<ul style="list-style-type: none"> Seek medical attention immediately. Be cautious of the first signs of allergic reaction and DO NOT ignore them. 	

CATEGORY	CATEGORY RISKS	DOES RISK APPLY? (Y/N)	DEGREE OF RISK (1 = LOW, 5 = HIGH)	ASSOCIATED CONTROL MEASURES	NOTES OR COMMENTS
	12.2 Some plant material may cause allergic reactions—Allergic reactions can cause discomfort and in severe cases anaphylactic shock.	no		<ul style="list-style-type: none"> If aware of an allergy, carry any necessary medication. Be aware that some forms of anti-histamine can cause drowsiness. If affected do not continue with fieldwork. Be cautious of the first signs of allergic reaction and DO NOT ignore them. 	
	12.3 Insect Bites and stings	no		<ul style="list-style-type: none"> If aware of an allergy, carry any necessary medication. Be aware that some forms of anti-histamine can cause drowsiness. If affected do not continue with fieldwork. Be cautious of the first signs of allergic reaction and DO NOT ignore them. 	
13.0 HEALTH: FOOD AND DRINK	13.1 Lack of food and Drink— various risks including dehydration, fatigue, fainting, etc.	no		<ul style="list-style-type: none"> Do not forget to stop for food breaks Drink plenty of fluids, particularly in hot weather. Always carry plenty of water. Carry food supplies with you if necessary (Kendal Mint Cake!!) Breakfast is particularly important before a day in the field. 	
	13.2 Alcohol—Risks of dehydration; inability to work efficiently due to hangover; in cold weather, alcohol consumption can lead to hypothermia	no		<ul style="list-style-type: none"> Avoid drinking excessive amounts of alcohol on the evening before going into the field. Avoid drinking alcohol during fieldwork Be aware that alcohol can impair judgement and will remain in the system for several hours after consumption. 	
	13.3 Miscellaneous Risks -Food poisoning, dehydration, allergies	no		<ul style="list-style-type: none"> In remote/overseas locations—Be wary of accepting ice in drinks. In remote/overseas locations be careful of eating food prepared by other people—particularly meats or fish and salads. Try not to drink contaminated water Caffeinated drinks (coffee, Cola, etc.) can enhance dehydration—avoid drinking them in hot weather Be cautious of the first signs of allergic reaction and DO NOT ignore them. 	
14.0 EQUIPMENT: USING EQUIPMENT and EQUIPMENT FAILURE	14.1 Risks of personal injury, damage to equipment	no		<ul style="list-style-type: none"> Read Risk Assessments associated with each piece of equipment – note any precautions that need to be taken with potentially more dangerous equipment Read the instruction manual—follow the instructions! Read manufacturers safety information Do not try to bypass or tamper with any safety device. Seek instruction from trained personnel if required. Do not use damaged or faulty equipment. Ensure the equipment is suitable for the work—try not to improvise! Do not use electrical equipment in wet/damp conditions or if you have wet hands. 	
	14.2 Risk of personal injury/ injury to others	no		<ul style="list-style-type: none"> Do not use equipment found to be damaged or faulty. Do not attempt to repair equipment if you are untrained. Report any faults as soon as possible. Label faulty equipment clearly so that no one else tries to use it. Try to write down the “symptoms” of the failure and any action taken. 	
15.0 EQUIPMENT: CHECKING EQUIPMENT	15.1 Risks of personal injury/injury to others	no		<ul style="list-style-type: none"> Always check equipment before use—do not assume it has already been checked. Check external appearance for signs of wear— electrical cables, ropes, cracks in casing, etc. Ensure that any built in safety devices are operating correctly. Check for sharp edges. Do not use equipment that is damaged or found to be faulty. Report any faults found to the relevant people. 	
16.0 PEOPLE: UNEXPECTED BEHAVIOUR	16.1 Risk of personal attack/abuse due to misunderstanding of nature of work	no		<ul style="list-style-type: none"> Be aware of any delicate issues involved with discussions or interviews e.g. before asking a farmer questions regarding his land management, explain why you need to know. Ensure landowners and their employees know who you are and what you are doing. 	
	16.2 Risk of theft	yes	1	<ul style="list-style-type: none"> Ensure you have copies of your passport, visa and Insurers emergency contact details Keep valuables in a secure place wherever possible 	I will not carry any expensive equipment that may call other people's attention, and will mainly be visiting places that are familiar to me; avoiding any areas known for having security issues.

CATEGORY	CATEGORY RISKS	DOES RISK APPLY? (Y/N)	DEGREE OF RISK (1 = LOW, 5 = HIGH)	ASSOCIATED CONTROL MEASURES	NOTES OR COMMENTS
	16.3 Aggressive Behaviour	yes	1	<ul style="list-style-type: none"> Do not underestimate the importance of body language. Talk yourself out of problems; placate rather than provoke. Do not turn your back on someone who is behaving aggressively. Stay calm, speak gently and slowly. Do not be enticed into an argument. Avoid an aggressive stance. Crossed arms, hands on hips or raised hands will challenge and confront. Keep your distance. Never try to touch someone who is angry—this will not calm the situation. Keep your eye on potential escape routes 	I will act with caution.
	16.4 Physical attack	yes	1	<ul style="list-style-type: none"> Try to get away as quickly as possible. Move towards a place where you know there will be other people. Carry a personal alarm—set it off as close to the aggressor's ear as possible and then throw it out of reach. Shout and scream—shout something practical like "call the police!" or "Fire!"—people rarely react to cries of "help!" or "rape!" If grabbed and unable to break free—pretend to vomit. This will often have the desired effect! 	I will act with caution.
17.0 WAR or MILITARY ZONES	17.0 War or Military Zones	no		<ul style="list-style-type: none"> Be aware of political, military or civil unrest through communicating with residents or buying local newspapers. Consult Foreign Office for advice. Inform nearest Embassy of your presence in the country when you arrive to enable them to keep you informed of any hazardous situations and advise you of what to do. Know places of refuge, flight transfers and procedure in an emergency situation. 	I will not visit conflict zones.
18.0 Additional Risks Related to your Specific Project (COMPLETE INFORMATION IN EACH COLUMN)	18.1	no		<ul style="list-style-type: none"> 	
	18.2			<ul style="list-style-type: none"> 	
[Continue as needed] Hitting 'tab' in the last column of the last row will result in a new row being added.	18.3				

7.3 College Ethical approval letter



Research Ethics Office
King's College London
Rm 5.12 FWB (Waterloo Bridge Wing)
Stamford Street
London
SE1 9NH

29 April 2015

TO: Angela Serrano Zapata

SUBJECT: Confirmation of Approval

Dear Angela,

Thank you for submitting your Research Ethics Minimal Risk Checklist. This letter acknowledges the receipt of your checklist; your Research Ethics Number is **MR/14/15-29**. Be sure to keep a record of this number and include it in any materials associated with this research. Approval is granted for **one year** from **29 April 2015**.

Record Keeping:

In addition, you are expected to keep records of your process of informed consent and the dates and relevant details of research covered by this application. For example, depending on the type of research that you are doing, you might keep:

- A record of the relevant details for public talks that you attend, the websites that visit, the interviews that you conduct
- The 'script' that you use to inform possible participants about what your research involves. This may include written information sheets, or the generic information you include in the emails you write to possible participants, or what you say to people when you approach them on the street for a survey, or the introductory material stated at the top of your on-line survey.
- Where appropriate, records of consent, e.g. copies of signed consent forms or emails where participants agree to be interviewed.

Audit:

You may be selected for an audit, to see how researchers are implementing this process. If audited, you will be expected to explain how your research abides by the general principles of ethical research. In particular, you will be expected to provide a general summary of your review of the possible risks involved in your research, as well as to provide basic research records (as above in Record Keeping) and to describe the process by which participants agreed to participate in your research.

Remember that if you have any questions about the ethical conduct of your research at any point, you should contact your supervisor, the Research Ethics office, or a member of your Department's Research Ethics Panel for advice.

Feedback:

As KCL is currently trialling the Minimal Risk Process, you may be selected to provide feedback on the Minimal Risk guidance, form and process. You can also provide feedback on the process by emailing rec@kcl.ac.uk.

We wish you every success with this work.

With best wishes

Research Ethics Office

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