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**Faculty of Tropical AgriSciences**



**Factors determining farming succession in  
Colombia. A study of Chaparral, Tolima**

MASTER'S THESIS

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## **Declaration**

I hereby declare that I have done this thesis entitled *Factors determining farming succession in Colombia. A study of Chaparral, Tolima* independently, all texts in this thesis are original, and all the sources have been quoted and acknowledged by means of complete references and according to citation rules of the FTA.

In Prague 6.8.2021

.....

Yessika Alejandra Garcia Cano

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*Yessika Garcia*

## **Abstract**

Small farms around the world are suffering because the countryside is ageing and losing their productive young labour. This is because young people have no interest in continuing to farm and opt to migrate to urban areas to seek employment. Additionally, the dynamics that could encourage a change in this pattern are limited and almost unknown. To this end, this study sought to answer the question; *What factors influence the process of farm succession among smallholder farmers in Chaparral, Colombia?* To do this, both qualitative and quantitative primary data were collected from 169 coffee farmers residing in the municipality of Chaparral, Tolima using structured questionnaire survey and group discussions. Quantitative data was analysed via descriptive statistics and logit regression analysis. Qualitative data was analysed using content analysis. It was found that Income (0.015)  $p < 0.05$ , Land ownership (0.098)  $p < 0.10$  and Motivation of parents (0.000)  $p < 0.01$  had an influence on family succession expectations. Based on these findings, this study recommends that in addition to the current agricultural policies aimed at secure land ownership, government should concentrate their efforts to support farms to increase income for example through extension provision which could subsequently increase the likelihood of farm succession.

**Key words:** Succession Process, Agriculture, Land tenure, Motivation, Tolima



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## **List of the abbreviations used in the thesis**

ADR - Agency for Rural Development

CAFISUR - Cooperativa de Caficultores del Sur del Tolima

COP - Colombian peso (sign: \$; code: COP) is the currency of Colombia.

COVID-19 - Coronavirus Disease

DANE - National Administrative Department of Statistics

DNP - National Planning Department

ELCA – Colombia Longitudinal Survey

FAO - Food and Agriculture Organisation

FARC-EP - The Revolutionary Armed Forces of Colombia—People's Army

FNC - Colombian Coffee Growers Federation

IFAD - International Fund for Agricultural Development

MADR – Ministry of Agriculture and Rural Development

NGO - Non-governmental organization

ORIP - Office of Registration of Public Instruments

OXFAM – Oxford Committee for Famine Relief

PDET - Development Program with a Territorial Approach

PMI - Implementation Framework Plan

RRI - Comprehensive Rural Reform

UPRA - Rural Land Planning Unit

USD - United States dollar

# 1. Introduction

Rural-urban migration is one of the main aspects of the structural transformation for the development process of a country (Syrquin 1988). In Colombia, this phenomenon has been observed for more than 60 years, when at the time, 70% of the population was rural (Leibovich 1996). Currently, according to the Colombia's National Administrative Department of Statistics –DANE (REF), only 23% of the population lives in the countryside<sup>1</sup> and out of this the 24.5 % are young (DANE 2018). According to the Colombian Longitudinal Survey (ELCA) in 2016, there is a high rate of rural-urban migration among the younger population. This could be attributed to their quest to overcome poverty, the impact of negative shocks (environmental, economic, and social) or escape from violence (Castaño 2018). As young people migrate to urban areas, leaving farms behind, the labour force in the countryside is negatively impacted because it becomes scarce and old. In addition to this, agricultural production, sustainability, and the supply of food from rural areas may be compromised (Lipton 1980; De Haas 2010).

Other challenges faced by young farmers in developing countries include unemployment, lack of education opportunities, poor access to finance, and limited access to land ownership, which diminishes the level of intervention that these young people have on farming (White 2012; Jaramillo et al. 2018). This implies that, the processes of farm succession and intergenerational farm transfer become fundamental (Price & Conn 2012). Farm succession refers to the transfer of control of the farm to so-called successors. It is generally carried out on an intergenerational basis and therefore depends on the existence of one or more successors (Leonard et al. 2017; Ramos 2017

a). In Colombia, family farming is the predominant model of farm ownership. It has been estimated that there are at least 700,000 smallholder farmers in the country, most of whom are subsistent coffee producers (Maletta 2012). Around 60 % of the coffee farmers in the country cultivate less than one hectare of land and only 0.5 % have more than 20 hectares (Guereña 2016).

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<sup>1</sup> county settlement and scattered rural included

Coffee is one of the most important agricultural products in the world and is the second most traded commodity after oil. An estimated 125 million people make their living from coffee cultivation, including 25 million smallholders. Every year, 400 billion cups of coffee are drunk. This is why this crop is of such great economic and social importance worldwide (Calle 2011). Coffee production in Colombia contributes 0.7 % to total national GDP (DANE 2021). In the case of Tolima, coffee accounted for 64.4 % of the department's exports in 2016 and there were 102,253 hectares cultivated in the department in 2019. The coffee sector currently employs around 80,000 people and supports the livelihoods of more than 60,000 families (DANE 2016). One of the problems that afflicts the coffee population is the lack of successors who want to take over management of the farms. Two factors are important here, one is that today's farmers are at an advanced age and secondly most young people plan their lives outside the countryside. If this continues, coffee cultivation and export earnings will surely suffer (Isaza et al. 2016).

Despite all the academic and government analyses that emphasize the importance of promoting the permanence of young people in the agricultural sector, scientific documentation about the factors that influence the process of family farming succession as well as about its drivers is still weak and almost unknown (Foguesatto et al. 2020). It is against this background that this study seeks to answer the following research question: **What factors influence the process of farming succession among coffee farmers in Chaparral, Colombia?**

Due to its political, social and geographical background the southern area of Tolima's department<sup>2</sup> has been known nationally. Since the middle of the 20th century, it was the centre of emergence of the mobile guerrilla movement called the Colombian Revolutionary Armed Forces —People's Army, FARC-EP. Since then, it was unfortunately considered an area of conflict, violence and forced displacement (GMH 2013). After more than 50 years of conflicts between these illegal forces and the state official forces, an agreement was signed in 2016 in search for peace and reconciliation. In this concern the rural communities were recognized as key actors in the development and transformation of the countryside. Therefore, a Comprehensive Rural Reform (RRI)

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<sup>2</sup> Administrative or political subdivision in many countries. Departments are the first-level subdivisions of 11 countries, nine in the Americas and two in Africa (Gwillim Law 2015).

was formulated to promote the development in the country, achieve the integration of the regions, guarantee food security, achieve the recognition and inclusion of the peasantry, put an end to the concentration of land ownership and rural backwardness (Mesa de Conversaciones 2016).

In order to work in an area of vital importance to the country, the municipality of Chaparral, located in the South of Tolima, has been selected as one of the priority municipalities for the implementation of the RRI (Agencia para la Reincorporación y la Normalización 2019). Chaparral is one of the regions with the largest dispersed rural population in the department, from the total of 56,147 inhabitants around 3,725 are coffee producers. The municipality is one of the axes of development and implementation of public policies that are vital and decisive at the national level (FAO & ADR 2019).

With the ageing of the rural population of Colombia, the migration of youth to the cities, and their limited motivation to participate in farming succession process, a societal problem is found. There will be a lack of future farmers continuing working in agriculture, the land will not be cultivated hence the future of the agricultural sector is uncertain. The findings of this study could add evidence to the theoretical background for agricultural policies aimed at improving the family farming and to encourage the young successors to stay in the coffee farming sector.

## **2. Literature Review**

### **2.1. Family farming**

An estimation done by the FAO in 2016 found that 98 % of farms worldwide are established family farms, producing at least 53 % of the food consumed across the world (Graeub et al. 2016). Family farming is mostly dependent on the succession process and what is generally called intergenerational transfer of the family farmland (Laband & Lentz 1983). These aspects, to some extent, mark the future of the agricultural sector as well as the long-term impacts on production and farming operations (Riley 2009). Family farming businesses are five times more likely to be transferred from generation to generation (Laband & Lentz 1983) and this could ensure continuity. The transfer of family farms depends on two interrelated aspects: the transfer of capital (physical and human) and the decision of the children to continue with the management of the farm (Laband & Lentz 1983).

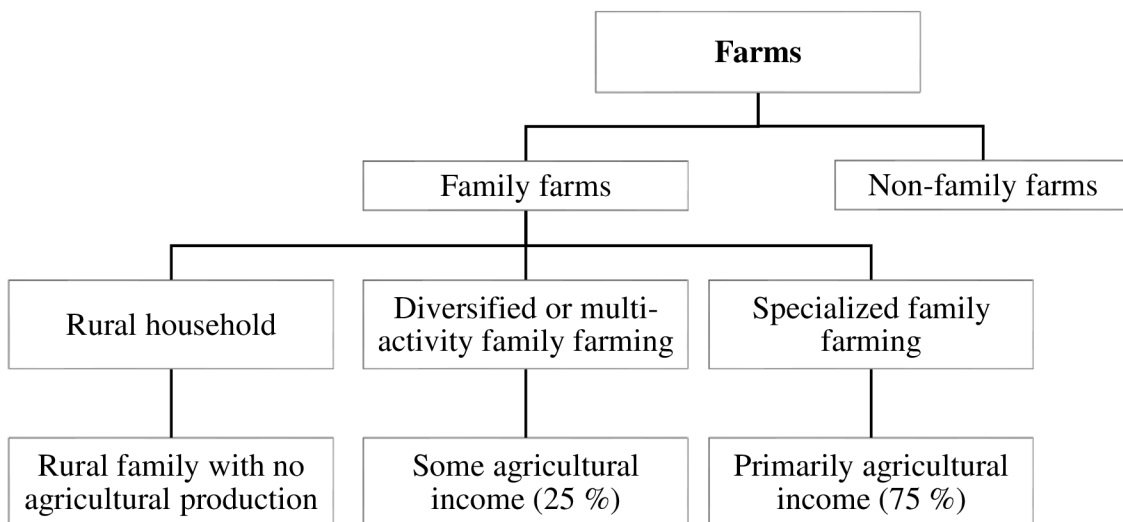
In defining the term “family farming” there are many concepts that frequently show only the perspectives of the researchers. Repeatedly, the conclusion is that this term is broad and depends on many different variables and so, thus no single, limited definition can be obtained. Mainly, the definition depends on not only the culture and social dimensions that are being considered but also related policies related (Garner & de la O Campos 2014). Often, the definitions try to base the concept on different parameters such as, the size of the farm, the farm strategies, the identities of the farmers, and the legal form and judicial status of farmers (Belieres et al. 2014; Sourisseau 2015). The Food and Agriculture Organization (FAO), highlights characteristics of family farm such as family labour and connecting its agricultural, economic, environmental, reproductive, social and cultural functions proposed the following definition: “*Family Farming is a means of organizing agricultural, forestry, fisheries, pastoral and aquaculture production which is managed and operated by a family and predominantly reliant on family labour, both women’s and men’s. The family and the farm are linked, coevolve, and combine economic, environmental, reproductive, social and cultural functions*” (Garner & de la O Campos 2014). The present definition, even though not standard, for example, when looking at Latin America and the Caribbean region, where the present study will take



place, is worth of being adopted in order to represent the group of farmers in the region and along with the context that will be provided in the following paragraphs.

In most Latin-American countries, family farming refers to the concept of small-scale production/smallholders in the policy making process and as characterization of the agricultural units of the region (Schneider 2014). The concept has evolved over time where, at first, it was defined mainly by the size of the farmland (usually 2 hectares). Today, however, the definition encompasses more relevant factors, among them family succession (Errington & Tranter 1991; Schneider 2014). In most the Latin-American countries, family farms represent about between 75 % to 90 % of the total production units, and use around 80 % of all arable land (FAO 2012). Family farming in developing countries play a very important role in the quest for sustainable development and providing solution to problems such as poverty and hunger (Ortiz et al. 2018). Large-scale or extensive agriculture, on the other hand, are associated with problems such as deforestation, climate change, water shortages, erosion, among others (Smith & Olesen 2010); and it has been found that family farming presents a possibility to counteract these problems by improving the ways of cultivation and managing the farms in a sustainable way (Pretty et al. 2003).

Figure 1 presents the classification of family farm in Latin America taking family labour in the productive unit as a key criteria. Three types of family farms are distinguished: rural household, that identifies the family without agricultural production; diversified and/or multiactivity family farms that present an income from agriculture of about 25 %; and specialized farms where agricultural income is more than 75 %.



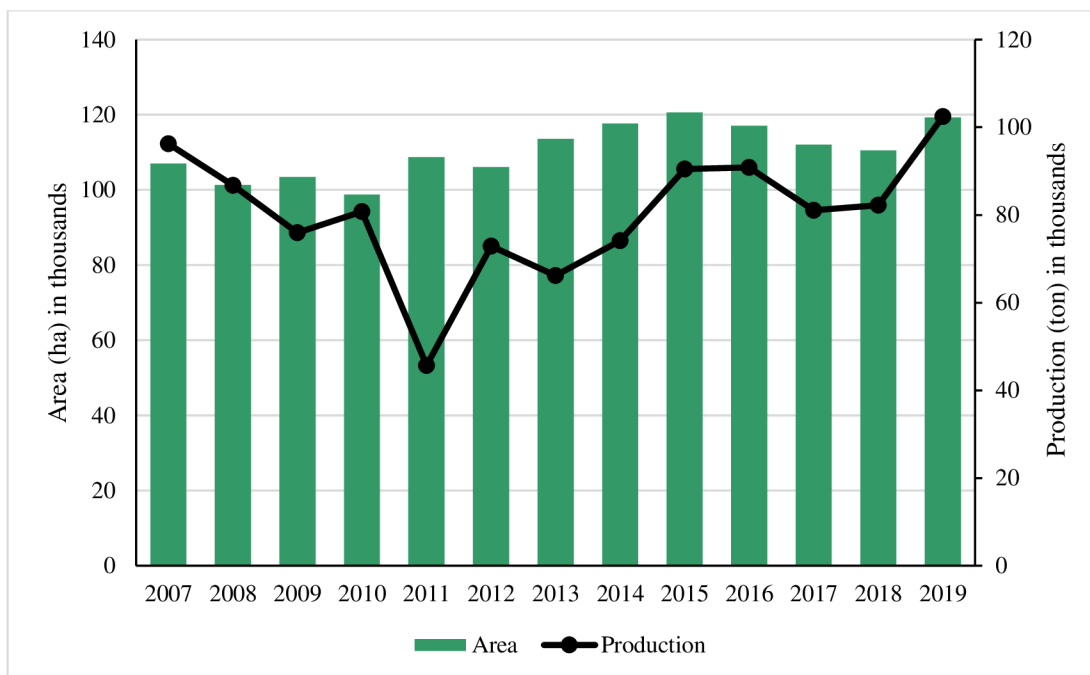
**Figure 1 Typology of family farming in Latin America (IFAD 2014)**

The concept of family farming, when compared to the rest of Latin America, is a recent phenomenon in Colombia. Prior to the emergence of the concept of family farming, this type of farming was referred to as “smallholder farming” and is closely related to family labour factors, farm size and production of the farm (Ortiz et al. 2018). According to the last agricultural census about 70 % of the farms dedicated to agriculture are less than 5 ha in size and covered about 4.8 % of the total agricultural area in the country (DANE 2016). It is well known that family farms not only representing 47 % of the total area under transitory crops and 56 % of the permanent cropland but also play an important role in providing food at national provision of food (Garay et al. 2010).

Although the process of urbanization in Colombia has been occurring at an accelerated rate, family farming is still of great socio-economic importance to the rural areas of the country. For the 30 % of the Colombian population that still lives in rural areas, agriculture is a main source of their livelihoods, and the future of these farms depends on succession.

### **2.1.1. Coffee farming situation in Colombia**

Coffee is one of the most important agricultural products in the world and is the second most traded commodity after oil. In South America, Colombia stands out as one of the countries with the highest export volumes of this product, along with Brazil. Although coffee exports in recent years in Colombia have been fluctuating, the coffee sector accounted for 11.1 % of total Agriculture, forestry, and fishing, value added (% of GDP) and 0.7 % of total national GDP in 2020 (DANE 2021). The coffee sector in Tolima continues to consolidate itself as one of the most important in the country, and one of the economic activities that generates the most employment in the department contributing more than 80,000 direct jobs and 180,000 indirect jobs for about 60,000 families (FAO & ADR 2019).



**Figure 2 Area and production of Coffee in Tolima. Own compilation based on MADR.**

Coffee is grown in mountainous areas of the department/region of Tolima at altitudes of between 1,200 and 1,800 metres above sea level, with annual rainfall of between 1,000 and 3,000 millimetres (FAO & ADR 2019). Figure 2 shows the area under which coffee was cultivated as well as the production of coffee in the department of Tolima between 2007 and 2019 according to information reported by the Ministry of Agriculture and Rural Development (MADR 2020). The figure also shows that for the period under consideration, the cultivated area steadily ranged between 105,000 and 120,000 hectares, with the highest cultivated area being in 2015. On the other hand, production has exhibited fluctuating trends, declining between 2007 and 2011, which could be attributed to environmental changes, before it trended upwards between 2011 and 2019. In 2019 there were a total of 102,256 hectares planted and a total of 119,490 tonnes were produced, an average of 1.02 tonnes per hectare cultivated (DANE 2016).

The region of southern Tolima has the highest percentage of coffee production in the department with 40 %, and the largest harvested area of 42 % out of the total cultivated land area (DANE 2016). At the regional and national level, marketing of coffee is regulated by the National Federation of Coffee Growers (FNC) through cooperatives. It is marketed as dry green parchment coffee for export, with only 14 % remaining for domestic consumption. The FNC works in accordance with international supply and demand ensures that farmers receive a minimum purchase price which is approximately

86 % of the international price and is the only agricultural product with this redistribution (FAO & ADR 2019).

The coffee sector is faced with problems related to generational handover, a process in which the ownership and management of the family farm is transferred to the next generation. Generational succession is a highly influential variable in coffee farming because the availability of human resources from a new, non-migrant generation is crucial to the development of family and peasant agriculture (Isaza et al. 2016). This is an addition to another concern, food insecurity, presented especially in coffee-growing municipalities where the Multidimensional Poverty Index<sup>3</sup> is representative. In Tolima, the southern region, which produces most of the coffee, also has a rural multidimensional poverty of 54.9 % which is the highest in the region (DANE 2016). This could be attributed to the informality of labour in rural areas coupled with low wages implying that opportunities to improve the living conditions of individuals and their immediate families are limited (FAO & ADR 2019). Farming succession has been found to be one of the main drivers of coffee production (Ngeywo 2014). This concept is more important on small farms, where the continuity of a farm depends on having successors but with rural life offering little attraction for young people the future of family farms is put at risk of collapse which might subsequently lead to reduced production (Florêncio de Almeida & Zylbersztajn 2017).

## **2.2. Succession process in family farms**

Succession, is a difficult, slow and long process, entailing challenges for both transferors and successors. For the purposes of this study and based on the literature reviewed, the main actors in the succession process are the transferor, who is the principal farmer or owner, and the successor, who is determined according to the status of the succession, in our case the term potential or possible successor will be used (Kimhi & Nachilieli 2001; Chiswell 2014). Succession sometimes poses two challenges, (1) not all potential successors have the desire to be farmers and (2) some of the transferors maybe be reluctant to the idea of leaving/handing over their farm (Keating & Munro 1989;

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<sup>3</sup> international measure of acute multidimensional poverty covering over 100 developing countries. It complements traditional monetary poverty measures by capturing the acute deprivations in health, education, and living standards that a person faces simultaneously (OPHI 2018)

Cassidy et al. 2019). In this sense it is important to understand that succession is a two-way process with the influence of not only successors but also the transferors, a process neither actor has complete control over (Cassidy et al. 2019). Family farming succession involves three interrelated processes: inheritance, succession and retirement (Errington 2002). *Inheritance* refers to the procedure of transfer of the value of the property (among these, land); *succession* is described as the transfer of administrative control of the farm; and *retirement* describes the total withdrawal of the transferor (farmer) from the farm management leaving full control to the successor (Augustins Georges 1989; Errington 1998; Ramos 2017).

### **2.2.1. Types of succession**

The overall traditional model of succession is *inter-generational* with parents usually transferring farmland to a younger family member (child) (Dudek 2016). The intergenerational farm transfer depends on property inheritance and succession rights. Generally, the transfers are carried out in a vertical way, meaning that, an heir must be selected to continue managing the land (Cassidy et al. 2019). The process of transfer of farmland from one generation to the next in the agricultural field, can be determined by the following situations:

- a) equal shares and breakup of the farm,
- b) no equality between the heirs and preservation of the state as a single unit,
- c) unequal shares and preservation of the unity of the farm and
- d) unequal practices and share out of the farm among several successors (Blanc & Perrier-Cornet 1993; Ramos 2017).

When the succession process occurs between the same generation, for example between spouses it is called *intra-generational succession* (Dudek 2016); and an uncommon phenomenon is observed when the transfer of the farm occurs from younger to the older generation and this is known as *reverse inter-generational succession* (Dudek 2016).

### **2.2.2. Phases of the succession process**

Although the succession process is independent, there are some relationships and perhaps similarities between the life cycles of the farm and the family (Potter & Lobley

1992). First is the transition phase in which the family cycle period begins. The transferor passes the management of the farm to the successor, who then initiates his working life, control is shared by both parties and gradually management is left solely in the hands of the designated successor. In this phase succession appears as a gradual process where the main concept of production plays an important role (Blanc & Perrier-Cornet 1993; Calus 2009). This phase generally includes a co-operation phase, that describes only the cooperation process between both generations. The length of the cooperation phase varies between generations, for example if the children take over the farm as soon as the succession process start the duration will be short, otherwise it will take longer (Blanc & Perrier-Cornet 1993). Second and last is the exit phase, when the transferor is retiring completely from farm managerial activities, generally due to the effects of ageing (Keating & Munro 1989).

The transfer of farmland from generation to generation has been slowly decreasing and with the continuation of farming is uncertain (Fischer & Burton 2014). This could be attributed to demographic processes as the increase in life expectancy, the decline in fertility rates or the unwillingness of old managers to transfer their knowledge. In this shift, farmers are aging in the countryside and young people are moving out of agriculture into other sectors of the economy (Cassidy et al. 2019). The relationship between the transferor and the successor plays an especially important role in the farm succession process. Cooperation between the two generations is determined by the fact that the priorities of each of the generations may be different and that is why communication and working together are vital (Venter et al. 2005).

### **2.2.3. Factors influencing succession process**

As for the factors that influence the process of family farm succession, there is a vast literature, but highly fragmented (Venter et al. 2005). The key determinants of this process have been the situation behind potential successors, young people and the ageing of the farming population. Factors such as the willingness of successor to take over the farm, the preparation level of the successor, and the relationship between owner of the family business and the successor are of relevant importance (Handler 1989). One of the main categorization of factors that influence the farming succession process are according to literature family characteristics and farm features (Fischer & Burton 2014).

### **a. Family characteristics**

These factors are mainly based on the structure of family farms, and the socioeconomic characteristics of all members in particular the heads of households and children, who would be the potential successors.

The *age* of the farmers is seen as a determining factor in family succession because it is related to the timing of succession. The probability of succession first increases with the age of the farmers and then decreases, as the farmers grow older, the time of succession process is affected (Kimhi & Nachilieli 2001). In some studies, it was found that farmers under 45 years of age thought it was too early to plan the family succession process. On the other hand, those over 65 years old felt that it was too late, their chances of having successors who would continue to manage the farm were limited and almost non-existent; because the new generation might be in a life phase and life situation where it is difficult or not attractive to change occupation and take over (Bjørkhaug & Wiborg 2010). Additionally, age influences the transferor's decision whether to transfer land, which in turn impacts the succession process. For example, in Slovenia, farmers tend to retain the land until the day of their death by tradition, without allowing the new generations to take over the land (Kerbler 2012). In Poland, the older the farmers, the higher the likelihood of generational succession was (Dudek 2016). If, however, the family farm was considered as a family business the probability of occurrence of farming succession is strongly related with the time, and age of the current manager (Glauben et al. 2009).

*Gender* is a main aspect in farm succession since the labour opportunities are offered in different ways for men and women, and hence, the probability of succession occurring may be influenced by it (Bjørkhaug & Wiborg 2010). This driver is closely related to tradition. For example, if the farms do not have any male children the probability of succession is less likely (Arends-Kuenning et al. 2021). Gender norms continue to privilege sons and dismiss daughters when deciding on appointment of successors (Sheridan et al. 2021). on the other hand, the likelihood of succession as well as the probability of being declared a successor has been found to be significantly higher when the farm owner is female (Glauben et al. 2002). In coffee farming, for example, most of the farmers are male and this is likely to demoralize female farmers from actively

engaging in coffee farming activity, thus impacting negatively on farming succession (Ngeywo et al. 2015).

The effect of *marital status* on succession is positively significant when families are married, and negatively significant in the case of single and single-person families (Mishra & El-Osta 2008). The work of Dudek (2016) found a significant influence between unmarried family members and family succession, this relationship was negative. The marital status of the farmer head of household plays a vital role in the family succession. This implies that, the probability of finding a successor for single people is limited. In the case of married farmers, the chances of finding a successor are higher. When the marital status is widowed, it tends to depend on gender and on the traditions of the region (Ngeywo 2014), women usually outlive their spouses and are the ones holding the decision of probability of succession (Dirven 2002).

*Farmer's education* has a singular influence on the succession process. In the study of Bertoni & Cavicchioli (2016) while the results were mixed the authors exposed that the higher the level of education, the higher the probability of family succession. Other studies that found a positively significant influence of education attained by farmers and family succession are those of Kimhi & Nachilieli (2001); Mishra & El-Osta (2008); and Cavicchioli et al. (2015). However, it can also be deduced from literature that access to education is negatively related to the likelihood of the occurrence of family succession. This is mainly linked to the motivation of the children to stay on the farm or not, as well as to migrate to other cities or the choice of occupations other than agriculture (Aldanondo et al. 2007; Bjørkhaug & Wiborg 2010; Cavicchioli et al. 2018).

One of the major drivers of family succession found in the literature is *family income*, it can define the success or failure of the succession process (Foguesatto et al. 2016). It has been found that the higher the family income on the farm, the more likely it is that a successor will want to take over the farm (Matte & Machado 2017). This is an issue that even goes beyond family succession and is related to whether to stay in agriculture. It is closely related to the motivation of the actors involved, i.e. whether the father motivates his successor to stay on the farm or whether the successor decides to participate in agriculture or to follow another better paid occupation outside the farm (Kimhi & Nachilieli 2001; Hennessy 2002; Bertoni & Cavicchioli 2016). However, unlike farm family income, off-farm income is relevant in the process of farm succession.



This can lead to two situations; firstly, by obtaining better economic stability, the farm can specialise and the motivation of the successors to continue is higher; or, secondly, this may be the first step to change agriculture for another occupation and lead to the abandonment of the land (Potter & Lobley 1992).

The *number of children* in the family farms tends to be relevant when it comes to farm succession process. Historically, when agriculture was the mainstay of the world's economy, families tended to be large to have sufficient labour force on the farm. But as time went by, family sizes have become smaller and sometimes without successors to continue running the farm. With this in mind, studies show that the number of potential successors within a family could delay the process of succession because of the high competition among the children (Mann 2007). The greater the number of possible successors, the greater the competition between them and the greater the influence to succession (Kimhi & Nachilieli 2001). This has also been influenced by whether the potential successors are sons or daughters. However, Glauben et al. (2002) found that the number of children shortens the time of occurrence of the succession, although if the father continues to work on the farm the succession process is postponed. As a confirmation of the influence of this factor, a study on farms in Poland found that for each additional child the probability of family succession is 15 % higher (Dudek 2016).

*Personal and social preferences* like quality of life in the rural communities and opinion of parents also influence the likelihood that the process of family farming succession will take place (Laband & Lentz 1983; Aldanondo et al. 2007; Kerbler 2012; Fischer & Burton 2014; Cavicchioli et al. 2015; Bertoni & Cavicchioli 2016). The interest of the successor to continue with the family activities plays an important role in the process. If there is a lack of interest, there is almost no chance the possibility that the farming succession process will be carried out successfully (Venter et al. 2005; Foguesatto et al. 2020). It is not only about willingness but also about rewards and personal needs of the successor (Glauben et al. 2002). In the case of the reward to be obtained in the event of participation in the succession process, these can be measured by monetary or non-monetary value and are strictly related to the size of the business (Stavrou 1995). However, the relationships between those involved in the process, the business owner and the potential successor, play the leading role. These relationships are measured in terms of quality, by pointing to a high level of trust, effective communication,

and support, among others (Handler 1989). In this sense the motivation provided by the owner and manager of the family business is of vital importance in this process (Venter et al. 2005; Piras & Botnarencu 2019). Although the place of the potential successor is of vital importance in the succession process, the perception of the parents as owners is of equal importance (Venter et al. 2005; Cassidy et al. 2019).

#### **b. Farm characteristics**

Among these factors, *farm size* is one of the most relevant. This factor, besides influencing the family succession process, represents the economic strength of the farms (Kerbler 2012). Although it seems obvious, the fact that an estate is small influences the opinion of both, potential successors and transferors. In most cases, a small farm means that the future economic capacity of the farm will be more precarious, and this makes it less attractive to the successor (Hennessy 2002). Being less attractive for a potential successor, the likelihood of succession is reduced (Kimhi & Nachilieli 2001). Similarly, it was found that even on large farms the possibility of appointing a successor to continue the management of the farm was less likely (Kimhi & Nachilieli 2001). In developed countries such as Germany, this has been a decisive factor in choosing whether to continue farming as a livelihood or to abandon it (Glauben et al. 2003). Also, when the successor has been already selected, the fact that the farm is large motivates successors to start working on the farm as soon as possible, seeking to improve the farm and use all the knowledge acquired from the transferor (Glauben et al. 2004).

In studies from Austria where family succession was in process, the degree of *farm diversification* increased the likelihood of successful succession. This means that when a farm focuses on several production lines, succession is more likely to run its course, and when farms specialise in a single activity, succession tends to be postponed (Glauben et al. 2004). Postponing the succession is done so that the potential successor has the time to specialise and acquire sufficient knowledge.

*Farm assets* being, to some extent, a tangible influential factor to the process of family farming succession is found in literature. The transfer of assets is found in the definition of succession, which is, “*succession refers to the transfer of managerial control over the use of farm business assets*” (Gasson & Errington 1993). The farmers who have potential successors as asset holders are more motivated to bequeath their assets than those who do not, especially when they reach old age (Potter & Loblely 1992). While farm

size and income are values representing profit, assets represent the productive capacity of the farm. They will guarantee the successor future benefits in terms of cash flow or transactions (Calus 2009).

Environmental factors such as the *location of the farms* and especially their distance from the nearest population centres can also affect family succession (Bertoni & Cavicchioli 2016). For example, as the distance to the urban centres increases the less the likelihood of farm succession (Aldanondo et al. 2007; Bjørkhaug & Wiborg 2010).

*Land tenure* is tightly related to land ownership. It has been found that where agricultural policies provide incentives and credit to successors and transferors to buy their land and obtain ownership titles, the likelihood of family succession is higher (Morais et al. 2017). In the case of potential successors, the fact that the parents own the farms motivates and facilitates these young people to continue managing the agricultural land (Bednaříková et al. 2016). In this sense, the informal status of land tenure and the absence of land security affect the possibility of successful family farm succession. Even in cases where the farm is rented, the possibility of losing the rights is high and with it, the risk of losing the assets, therefore, discouraging the successors as well as the transferors (Min et al. 2017).

Family succession is linked to land *inheritance rights*. In this sense, rights and traditions influence the likelihood of designating successors (Ramos 2017). In regions with strong cultural influences, usually the designation of those who will cultivate the farm in the future has already been decided (customary tenure) (Ngeywo 2014). It is to be noted that these regions around the world are few in number and therefore, unlike traditions, the laws and policies of each country now influence the process of family succession.

When studying family farming succession, the identification of *labour sources* is fundamental. For family farms, the primary source of labour is family members. When family and hired labour are mixed, it is categorised as a family business and succession in this case is influenced by other factors not mentioned here (Calus 2009). Farm source of labour is mainly related to the type of production of the farm. For example, on coffee farms, which are a labour-intensive activity, it has been found that there is little inclusion of potential successors in the process, even though they are the main labour force (Ngeywo 2014). A study in Belgium found that the intense labour capital demands of the

family farm, discouraged farmers' children to take over the family farm (Calus 2009). Farmers without potential successors are more likely to leave farming due to demanding work, especially if they are older. However, those who have identified a successor tend to include him or her in the farm's tasks while the process is ongoing, saving the expense of hired labour (Potter & Lobley 1992).

### **c. Other relevant factors influencing succession**

Some authors, emphasizing the absence of contextualization of farming succession with external factors, have added to the field of study the economic and behavioural theories. For instance, Bertoni & Cavicchioli (2016) who investigated the occupational choice theory and rural-urban farm adaptations strategies, also added external factors such as local labour market conditions, the degree of urbanization/rurality and adaptation strategies to their investigation. Other authors define succession not by component but by calling it the dimensions of succession viz (Glauben et al. 2004). In this, they observed a direct relationship between the succession process and the timing of succession. Glauben et al. (2004), found that there is a significant negative relationship between the timing the succession process, the designation of a successor in the farm and the likelihood of carry out the succession process. The economic theory and bargaining between generations may also play an important role in succession decisions. This is based on the economic surplus generated from the assumption of intra-family succession occurrence (Kimhi & Nachilieli 2001).

The intention of family members to hand the farm over to the next generation is essential for the continuation of the farm. Succession should not be seen as an event but as a carefully planned process that takes place over time (Kirby & Lee, 1996). The conceptual framework of family farming succession is presented graphically in Figure 3. It presents the factors influencing succession according to the categories described above.

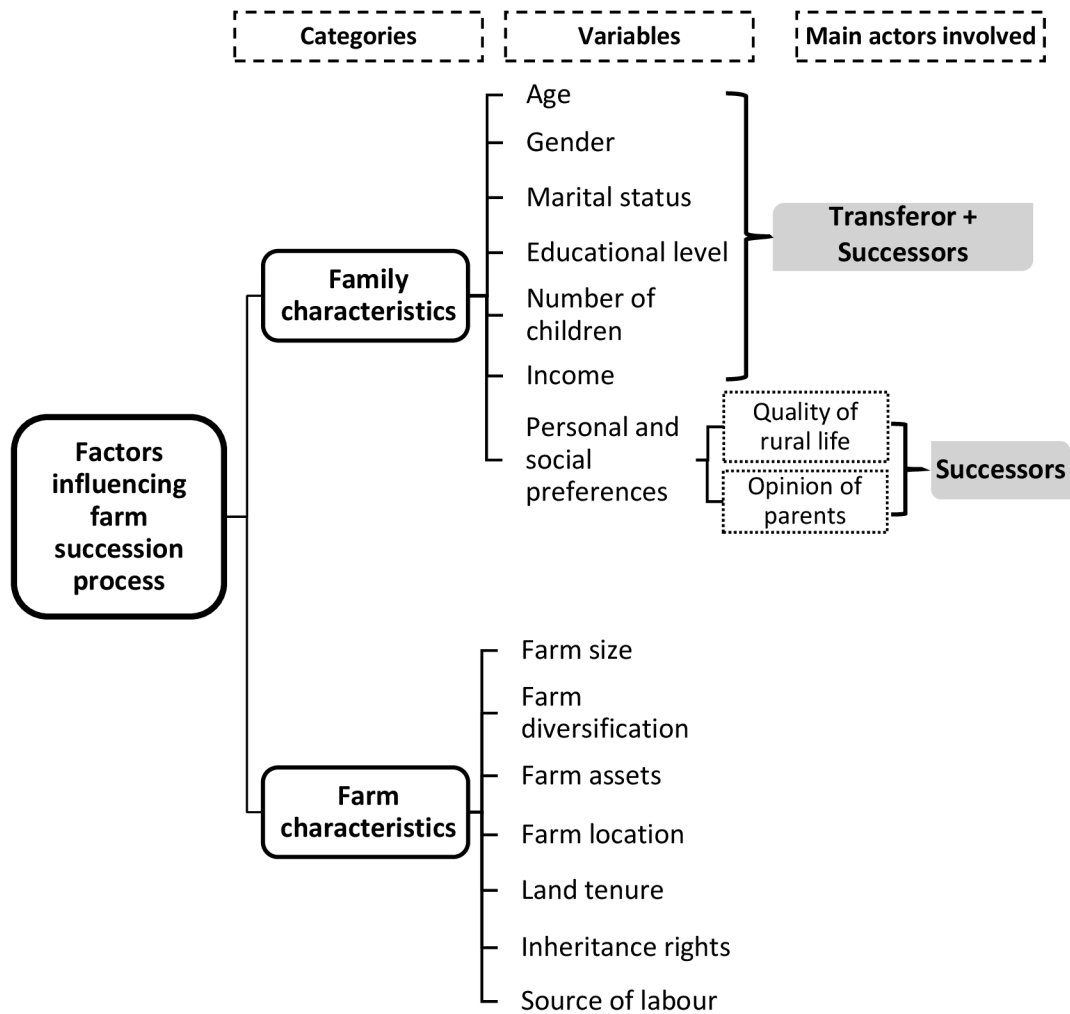


Figure 3 Conceptual framework of farm succession process. Source: own compilation

Some authors, on the other hand, describe the policies and market influences to be just as relevant for the succession process as behavioural and social factors (Fischer & Burton 2014). In addition to this, the issue of direct influence by public policy and government has also been raised. For example Ramos (2017), believes that “*the laws that govern the succession of the family farm do not help the entry of new generations into agriculture*”. In many development economies, the issue of succession in family farming is recognized as crucial in the development of agricultural policies aiming to improve the future of agricultural activities, the fight against depopulation of rural areas and

centralization (Bjørkhaug & Wiborg 2010). On the other hand, regarding agricultural policies Mishra & El-Osta 2008, found that government agricultural payment programs have a significant influence in the probability of succession.

### **2.3. Rural-urban migration**

In developed economies that have been influenced by structural transformation, the primary sector has been overtaken by the manufacturing and services sectors. As a result, these countries have seen an ageing of the agricultural community and a general absence of young people who intend to continue working in farming activities (Cassidy et al. 2019). According to literature, one of the causes of rural-urban migration is that young people prefer working in the secondary and tertiary sectors to the agricultural sector (Sourisseau 2015; Bednaříková et al. 2016). This situation is not only related to migration theory, but it may be directly influenced by family succession and the processes required to continue in agriculture and in the rural sector (Riley 2009). Some young people expressed reluctance to work in the farms because of the length of the succession process and long waiting period before they can manage the farms (Cassidy et al. 2019). For the most part, developing countries are still lagging in the processes of structural change, as evidenced by the fact that the agricultural sector generally contributes a fairly high percentage to these countries' Gross Domestic Product (Cassidy et al. 2019). In addition, the possibility that migration levels from the countryside to the cities will increase is likely. The absence of young people in the agricultural sector, coupled with an ageing population will slowly affect the food security and sustainability of these countries (White 2012). Moreover, there are studies carried out in different developing countries in which the levels of rural-urban migration, the absence of farmers and its relation to farming succession have already been documented (Matte & Machado 2017; Morais et al. 2017).

It is well known that the great concern around the world regarding migration from rural to urban areas has been one of the key topics in the work agendas of organisations, including the United Nations and within the framework of the Sustainable Development Goals (Adger et al. 2019). Migration is an option and a strategy used by households to escape poverty, mitigate the impact of negative shocks, seek better opportunities and escape violence, among others (De Haas 2010). Migratory flows from rural to urban areas

are also integral to a country's economic development process (White 2012). In Colombia the armed conflict was catalogued as one of the main drivers of migration from rural areas to urban centres. The migrants were mostly young people, and this caused the absence of labour to sustain family farming as a means of livelihood (Ortiz et al. 2018). In an estimation made by Lucas (2015) the average percentage of migrants in Latin America is 18 % and at rate of 36.3 %. Colombia's rate is not only around double of the regional average but also makes it one of the highest migration rates in the world.

In Colombia the rural-urban migration process has been ongoing for more than 60 years. This process is often attributed to environmental, economic, social and politic causes e.g. armed conflict (Nicolás & García 2009). The third National Agricultural Census (2014) found that one of the impacts of rural-urban migration is that the Colombian countryside “ages”. The study further states that despite reports that, in 2005 64.2 % of rural households had children under the age of 15, the census data from 2016 showed that this figure had dropped to around 50 %, with migration to cities being one of the leading causes (DANE 2016). The high risks associated with agricultural production and the general absence of credit and insurance in rural regions could explain rural migration rates (Castaño 2018).

The largest workforce in the rural area of the department of Tolima is concentrated between 44 and 54 years old. According to the DANE (2018), this fact reflects the low presence of young people with intentions of multigenerational involvement in agriculture. This could significantly affect the food security status of the country's population in the next generations as well as increase unemployment in cities and contribute to the growth of the shadow economy and inequality (Benzaquen et al. 2010). These claims are backed up by (Otero-Cortés 2019) who found that rural-urban migrants do not always find formal employment and they opt for informality.

## **2.4. Succession process in Colombia**

### **2.4.1. Land tenure and conflict in Colombia**

Historically, one of the main triggers of armed conflict around the world has been the fight for land ownership (Smith 2004). According to OXFAM as cited in (Guereña 2016), 94 % of the country's territory in Colombia is rural and is the most unequal country

in Latin America in terms of land distribution. The study further states that 84 % of smallholder farmers operated only 4 % of productive land. The unequal distribution of land and the fights for ownership originate from time of Spanish colonization. This conflict deepened the mid-20th century when peasants formed the guerrilla group FARC-EP, who, at the time, justified their fight by bringing to light inequality in land distribution, rural poverty and the abandonment of peasants by government (GMH 2013). This armed conflict between the FARC-EP and the government, rather than helping the rural population, only made the situation worse. Colombia quickly became a country with more than 7 million people internally displaced by violence since the 50's. Many more hectares of land were stolen or illegally acquired, and the rates of inequality between urban and rural areas grew even more (USAID 2017).

In response to the desire of the Colombian population to end this conflict, a peace agreement was signed between the rebel group FARC-EP and the national government in 2016. This agreement sought to initiate a transition that would contribute to greater integration of the territories, greater social inclusion and strengthen democracy in Colombia (Government & FARC-EP 2016). After the signature, the Peace agreement became one of the legal documents for the design of agricultural policies planned up to the year 2031. It consists of five specific points: 1) Comprehensive Rural Reform (RRI), 2) political participation, 3) end of the conflict, 4) solution to the problem of illicit drugs and 5) reparation for victims. In addition, a sixth point of implementation and verification mechanisms was added to monitor the fulfilment of the other five points. With this, the national government committed to create the Implementation Framework Plan (hereinafter PMI), in point 6.1.1, as one of the main national and territorial public policy reference for the implementation of the final Agreement for the next 15 years (Government & FARC-EP 2016).

Although the components that influence the design of agricultural policies can be found in all points of the agreement, there is a great focus on the first point, the RRI. This is because this reform seeks mainly at the structural transformation of the countryside by promoting the development of the country, achieving the integration of the regions, guaranteeing food security, achieving the recognition and inclusion of the peasantry as well as put an end to the concentration of land ownership and rural backwardness (Figueroa-Torres et al. 2018). It is defined by the following components: The first refers



to *access and use of land*; the second, to *development programs with a territorial approach* (PDET); and the third to *national plans for Integral Rural Reform*. According to the RRI for access to land and support, priority will be given to small and medium sized rural producers, victims of the conflict, children, women and the elderly (DNP 2018).

In addition to the consequences of the armed conflict, another issue affecting rural communities in Colombia is the informality of land and the so call land tenure insecurity (USAID 2016). Land tenure, according to (FAO 2002) “*is the relationship, whether legally or customarily defined, among people, as individuals or groups, with respect to land*” and the organization emphasizes that this relationship may be well defined and enforced in a formal court of law or through customary structures in a community. Land tenure is considered an institution governed by rules, in this case, defining how land property rights are allocated between individuals (FAO 2002). Access to land in Colombia can be categorised into two groups, the first is defined as formal/regular/legal and the second informal/irregular/illegal (UN-HABITAT 2005). Colombia has more than 45 % of the rural land in a state of informality and, one of the consequences of this situation is that those who have exploited the land for several decades are not entitled to receive subsidies from the State or obtain credits, among others. Moreover, the new generations are subject to inherit these problems (Martinez M. 2015). Consistent with information presented by the Rural Land Planning Unit (UPRA) in the department of Tolima, approximately 70 % of the land presents problems of informality in land tenure (FAO & ADR 2019).

Eleven types of tenure have been identified by the civil code in Colombia. These are, ownership, possession, occupation, simple tenure, user loans, rent, usufruct, house leasing, transit lots and temporary settlements, assignment contract or provisional tenure, joint ventures. Additionally, the law through the civil code defines the means to secure land tenure and these are occupation, possession, accession, prescription (adverse possession or usucapion) and transfer (UN-HABITAT 2005). Table 1 below shows the most common land tenure forms found in the Tolima region according to information published by the UPRA, organization attached to the ministry of Agriculture (UPRA 2013).

**Table 1 Land tenure types in Tolima.**

<b>Land Tenure type</b>	<b>Description</b>
<b>Ownership</b>	It is the person who, by a valid legal act or business, acquires property rights, the effects of which were publicized before the Office of Registration of Public Instruments (ORIP).
<b>Possession</b>	Whoever lives in a private property exercising owner's actions without being registered in the ORIP as an owner.
<b>Occupation (invasion)</b>	Whoever lives and exploits state property (vacant land) without having been allocated it.
<b>Rent</b>	Type of holder who through a verbal or written contract obtains permission to use (use and enjoy) a property or part of it.
<b>Simple tenure (partnership)</b>	Type of tenant who, through a verbal or written contract, obtains permission to operate a rural estate or a portion thereof in mutual collaboration with the owner in order to share out among themselves the fruits or profits resulting from the operation.
<b>User loans</b>	It is a contract in which one of the parties gives the other party the property free of charge, so that they can make use of it, and with the charge of returning it after the use is finished.
<b>Usufruct</b>	consists of the right to use the land in exchange for preserving and returning it to owner in the agreed terms, normally paid for with production.

Own compilation based on (UPRA 2013)

#### **2.4.2. Inheritance system and succession process in Colombia**

The inheritance system in Colombia is stipulated in the Colombian Civil Code as a legal system founded on the civil law. The inheritance process is defined from the moment the parent who owns the land deceases. In this case, the code indicates that all legitimate and natural descendants, i.e., sons and daughters, inherit and should divide the land in equal proportions if the deceased has not left a will. Correspondingly, the surviving spouse is entitled to a share of the assets, to improve their economic condition when they do not have what it takes to survive or when what they have is not enough. In this case, the surviving spouse is counted among the children and will receive as a spousal share the legitimate share of a child. If the deceased leaves no posterity, he will be

succeeded by his closest ascendants. Similarly, if the deceased leaves no descendants or ascendants, no adopted children or adoptive parents, his siblings will succeed him. The sibling's children could succeed the deceased if and only if he did not present any of the previous representatives. And in the absence of all the intestate heirs designated in the preceding articles, the tax authorities will succeed them (Colombian Civil Code 2000).

In Latin America, the succession process is generally strongly articulated around the father or so call transferor, who decides when and how responsibilities for the management of the farm will be transferred to the next generation. This transfer is usually linked to the parent's abilities and willingness to work rather than to the needs of the successor, or his or her readiness to take over management. Children usually have a limited say in the running of the farm and, in most cases, are not paid for the hours worked on the family farm. Thus, many farmers' children remain economically dependent on their parents for many years (Dirven 2002).

### **3. Aims of the Thesis**

The main objective of this MSc thesis is to investigate the factors that influence the process of family farming succession in the municipality of Chaparral Tolima, Colombia.

#### **3.1. Specific objectives**

1. Describe the factors that could influence farming succession process in Chaparral, Colombia
2. To identify the farmer's perception on factors that influence farm succession
3. To determine the influence of family characteristics on the farming succession process.
4. To determine the relationship between farm characteristics and farm succession.

#### **3.2. Research question**

What factors influence the process of farm succession among smallholder farmers in Chaparral, Colombia?

#### **3.3. Hypotheses**

- I. Farmer's increasing age increases the probability of farming succession
- II. Encouragement by parents increases the probability of succession
- III. Farmer's increasing income increases the probability of succession
- IV. Increasing farm size increases the probability of succession
- V. Increasing distance from the nearest urban area reduces the probability of succession
- VI. Land ownership increases the probability of succession

## **4. Research methodology**

### **4.1. Study area**

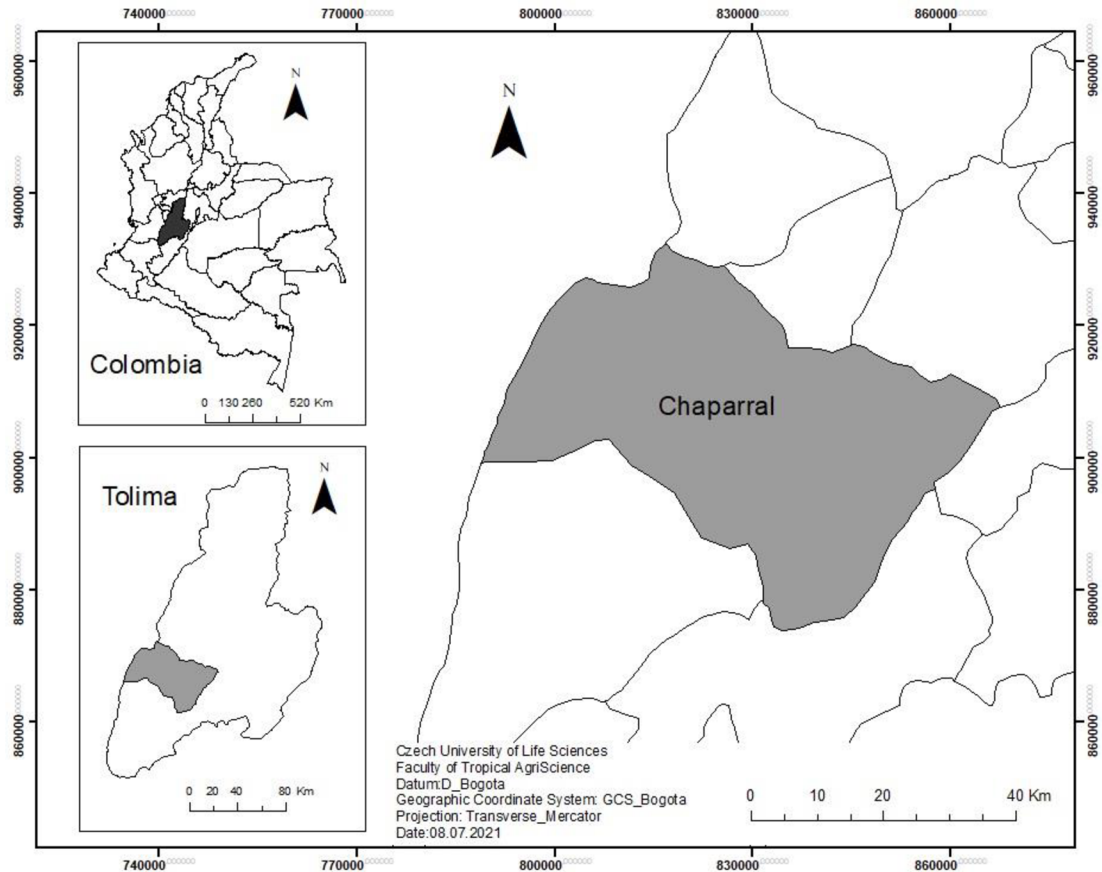
#### **4.1.1. Geographical location**

The study was carried out in the municipality of Chaparral, located in the southern part of the department of Tolima. Chaparral has an area of 2,124 km<sup>2</sup> which corresponds to 10 % of the department's total land area and is the most densely populated municipality of the region (UPRA 2013). Chaparral has around 3,725 agricultural producers (DANE 2016). The region of the south of Tolima was selected as coffee production is prevalent (DANE 2016). The Figure 4, shows the location of Chaparral as study area in the department of Tolima and the location in Colombia.

#### **4.1.2. Respondents**

The producers in the region are organized in family production units, i.e., peasant families that own farms generally smaller than 5 hectares cultivated with coffee. However, it is also possible to find associations of specialty coffee producers whose initiative for production is through a public-private partnerships.

The farmers in the sample are mostly members of the Cooperativa de Caficultores del Sur del Tolima CAFISUR. This is an institution of private character, under the umbrella of the National Federation of Coffee Growers (FNC), that helps with the transformation of coffee production, keep the prices stable, provide access to credit and supply inputs for coffee cultivation (Reyes Martinez 2013). At the time of this study, the cooperative reported 1990 coffee growers as members. These institutions support project management, provide technical assistance and commercialization of high-quality certified coffees committed to organizational, social and environmental development.



**Figure 4** Location of Chaparral in Colombia. Study area

## **4.2. Data collection**

Both quantitative and qualitative data were collected. The quantitative data was gathered through the questionnaire survey. Qualitative data was collected through unstructured discussions while farmers filled in the questionnaire. Further, two farmers meetings were visited.

### **4.2.1. Survey**

For the purposes of the survey the database of coffee growers in the region of Chaparral Tolima provided by the FNC was used. This database was used to corroborate contact information and location of the coffee growers. Convenience sampling was used for respondent selection. A total of 169 responses were gathered from the questionnaires.

The data was collected during face-to-face, as well as pen-and-paper interviews. In addition to field visits to farmers, part of the data collection was conducted by

telephone calls due to the restrictions imposed by the COVID-19 pandemic. The instrument for data collection was a questionnaire based on the literature review, filled in by a farm's main decision maker.

The questionnaire was pre-tested before field data collection. The questionnaire was divided into 3 sections. The first section collected data on *socioeconomic characteristics/household factors* such as age, gender, number of children, number of economically active members, educational level, marriage status, among others. Additionally, some demographic data such as age, gender, level of education, marital status, and place of residence for each of the farmer's children were collected; in section two, data on *farm characteristics* like farm size, land tenure information, annual farm income, among others, were collected. Finally, data on the *succession process* particularly on information regarding the existence of family incentives for succession, opinions of the farmer regarding succession process and possibility of succession were collected in section 3. There was a total of 27 questions which were comprised of different kinds of measurement (dichotomous, Likert scale, continuous, etc.). The information was collected anonymously, meaning that information about name or identification of the farmer were omitted. The questions were based on the literature review that was done previous the collection and, on the objectives set viz the Appendix 1.

#### **4.2.2. Farmers' meetings**

Also, the researcher attended two farmers' meetings in the urban area. The questionnaire was translated from English to Spanish and the interviews were provided in Spanish, native language of the region. The filling of the questionnaire lasted between 10 to 15 minutes and the data collection was carried out from February to March 2021.

#### **4.3. Data analysis**

Descriptive and inferential statistics was used for analysing the information collected. The data obtained from the surveys were analysed using IBM SPSS Statistics version 27 statistical software.

To analyse the first objective, which is the description of the farming succession process in Chaparral, descriptive statistics were performed, in this the averages,

percentages, frequencies and standard deviation are presented. Descriptive analysis was adopted to measure the second objective regarding the opinion of farmers on the factors that could influence farming succession.

The third objective of this research was to determine the influence of family and farm characteristics on the farming succession process. Inferential analysis by means of a binary logistic model (BLM) was executed. Before carrying out of the logistic regression, it was necessary to perform a correlation analysis for the explanatory variables in order to check multicollinearity.

#### **4.3.1. Binary Logistic Regression: Model specification**

Based on previous studies proposed by Calus (2009); Bjørkhaug & Wiborg (2010); Cavicchioli et al. (2015); Bertoni & Cavicchioli (2016); Cassidy et al. (2019); Cavicchioli et al. (2019) and Foguesatto et al. (2020); a binary logistic model was used to measure farm succession. Binary logistic regression determines the impact of several independent variables entered simultaneously to predict the belonging to one or the other of the two categories of the dependent variable. Logistic analysis also provides the relationships and strengths between the variables. For a binary response variable (Y) and an explanatory variable X, let  $\pi(x) = P(Y = 1 | X = x) = 1 - P(Y = 0 | X = x)$ . The logistic regression model is:

$$\pi(x) = \frac{e^{(\alpha+\beta x)}}{1 + e^{(\alpha+\beta x)}}$$

Equivalently, the log odds, called the logit has the linear relationship

$$\text{logit}[\pi(x)] = \log \frac{\pi(x)}{1 - \pi(x)} = \alpha + \beta x$$

This equates the logit link function to linear predictor (Agresti 2001).

The dependent variable (Y) specified the farmer's answer regarding whether a potential successor had been identified with dichotomous possible answers (1 = yes and 0 = no). This variable was measured based on the following question "*Do you expect that you will have successors to continue present activities on the farm?*". Information regarding dependent and independent variables is presented in the Table 2.



**Table 2 Description of variables**

<b>Dependent Variable (Y)</b>	<b>Description</b>	<b>Measurement</b>
<b>Farm succession</b>	Farmer expects that he/she will have successors to continue present activities on the farm	1 = Yes; 0=No
<b>Independent Variable (X)</b>	<b>Description</b>	<b>Measurement</b>
<i><b>Family Characteristics</b></i>		
<b>Gender</b>	Gender of the farmer	1= female; 2=male
<b>Age</b>	Age of the farmer	Years (continuous)
<b>Marital status</b>	Marital status of the farmer	1= Single; 2= In partnership; 3= Married; 4= Divorced; 5= Widow.
<b>Educational levels</b>	Educational level of the farmer	1= No formal education; 2 =Primary school; 3= Secondary school; 4 = University education.
<b>Income</b>	The farmer's income from the farm	1=Less than 500000 COP; 2= From 500000 to 1 million COP; 3= From 1 million COP to 1.5 million COP; 4= From 1.5 million COP to 2 million COP; 5= More than 2 million
<b>Children</b>	Number of children that the farmer has	Number (continuous)
<b>Farmer's motivation</b>	Farmer motivates the children to continue with the farm?	1= Yes; 0= No
<i><b>Farm characteristics</b></i>		
<b>Farm size</b>	Total land used for agricultural production (ha)	Hectares (continuous)
<b>Location</b>	Distance to nearest urban centre by public transport	Minutes (continuous)
<b>Land tenure</b>	The farmer is the owner of the land	1= Yes; 0= No

## 5. Results and discussion

### 5.1. Descriptive analysis

Table 3 provides descriptive statistics on the socioeconomic characteristics of the respondents. The table shows that 68 % (115) of the respondents were male and 32 % (54) of females. Of the total of respondents, 135 (79.9 %) were members of an association and only 34 were not (20.1 %). The average age of the respondents was 56.8 years, with the minimum age and maximum ages being 33 and 85 years, respectively. Regarding the level of schooling, only 2 farmers reported having had a university education, while twenty percent of the respondents reported not having received any formal education, and slightly more than half received primary education (51.5 %) and 27.2 % received secondary education. Of the 169 respondents, 95 (56.5 %) reported being legally married, 35 (20.7 %) in partnership, 16 widowed, 13 single and 10 divorced.

**Table 3 Socioeconomic characteristics of the sample (N=169), 2021**

<i>Dependent Variable</i>	<b>Measure</b>	<b>Frequency</b>	<b>%</b>
<i>Farm succession</i>	Yes	148	88
	No	21	12
<i>Categorical-Independent Variable</i>	<b>Measure</b>	<b>Frequency</b>	<b>%</b>
<i>Gender</i>	Female	54	32
	Male	115	68
<i>Marital Status</i>	Single	13	7.7
	In partnership	35	20.7
	Married	95	56.2
	Divorced	10	5.9
	Widow	16	9.5
<i>Educational level</i>	No formal education	34	20.1
	Primary school	87	51.5
	Secondary school	46	27.2
	University education	2	1.2
<i>Farmer's income<sup>4</sup></i>	Up to 500000 COP	56	33
	From 500000 COP to 1 million COP	74	44
	From 1 million COP to 1.5 million COP	36	21

<sup>4</sup> 1 USD= 3793.59 COP - Colombian peso (Colombian currency) on 15.07.2021.

	From 1.5 million COP to 2 million COP	1	1	
	More than 2 million COP	2	1	
<i>Source of labour</i>	Family labour	60	35.5	
	Hired and mixed labour	109	64.5	
<i>Member of association</i>	Yes	34	20.1	
	No	135	79.9	
<i>Victim of armed conflict</i>	Yes	23	14	
	No	146	86	
<i>Land tenure</i>	Yes	150	89	
	No	19	11	
<i>Access to credit</i>	Yes	77	46	
	No	92	54	
<i>Access to subsidies</i>	Yes	69	41	
	No	100	59	
<i>Farmer's motivation</i>	Yes	133	79	
	No	36	21	
<b><i>Continuous-Independent Variable</i></b>	<b><i>Min</i></b>	<b><i>Max</i></b>	<b><i>Mean</i></b>	<b><i>Std. Dev</i></b>
<i>Farmers Age (years)</i>	33	85	56.80	9.391
<i>Household size</i>	1	10	3.66	1.86
<i>Economically active Members</i>	0	6	2.84	1.279
<i>Number of children</i>	0	12	2.14	1.562
<i>Farm size (ha)</i>	1.0	58.0	8.814	7.2723
<i>Distance to the nearest urban area (min)</i>	10	230	97.54	41.177

The average number of economically active members in the family was 2.84 compared an average household size of 3.6. In this section it is worth mentioning that 6 of the respondents stated that they do not have any economically active member of their family. Those farmers lease out their land or abandoned it due to their old age. Regarding the source of farm labour, 64.5 % of the farmers used hired and mixed labour. The farmers generally use a combination of hired and family labour during the coffee harvest season. In a way, this variable is complemented by the farm size variable, since the average farm size found in this study was 8.8 hectares. About 11 farms in the sample were more than 20 hectares, the largest of them being 58 hectares. When it comes to land tenure, 89 % of farmers are registered owners of their land, leaving only 11 % with a different type of tenure. Of these, 8 were possessors, 5 either leased or rented the land, 2 were occupants of the land and 4 were working the land in partnership with the legal owners.

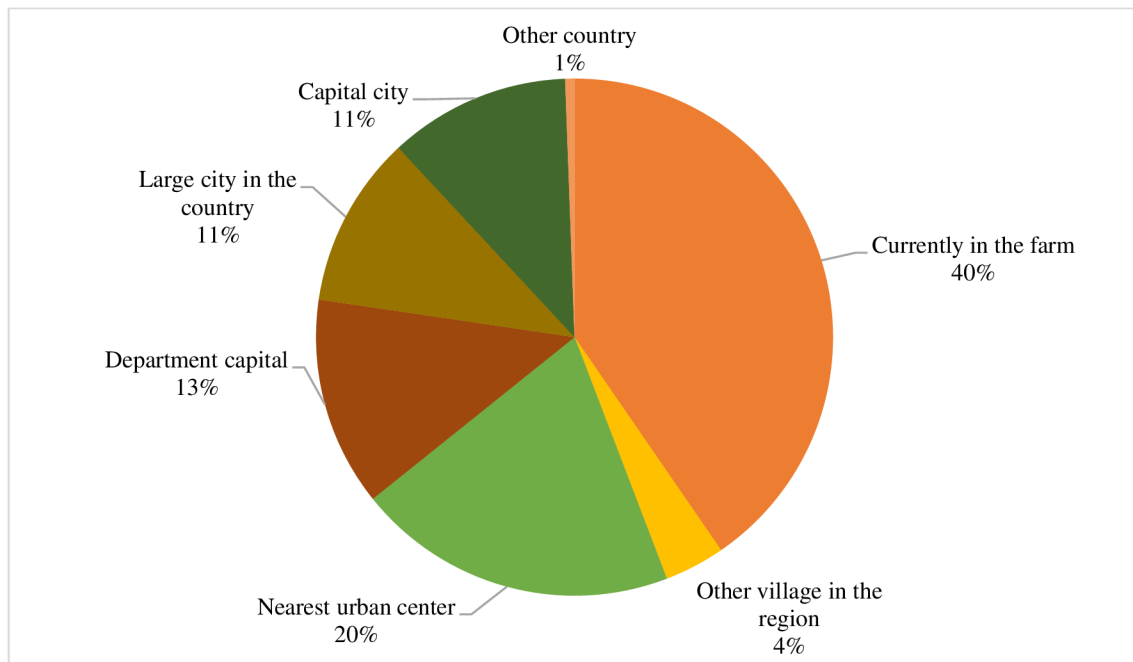
About 77 % (130) of the interviewees stated that their farm income was less than or equal to the minimum wage in Colombia; 36 (21 %) farmers reported an income from 1 million COP to 1.5 million COP; and only 3 farmers registered farm income greater than 2 minimum wages. It should be noted that as of the date of data collection, the minimum wage in Colombia was about 908,526 COP. This income is mostly obtained from agricultural activities, especially coffee harvesting. It is not surprising to see that 75.7 % (128) of the total respondents reported agriculture as their only activity while the remaining 24.3 % reported having off-farm jobs. Of the 41 respondents who reported having income other than from farming, only 3 earned more than 50 % of their income from other jobs.

When farmers were asked about the time in minutes it takes them to get to the nearest urban centre, the most common response was 97 minutes, which is more than an hour and a half. This time was explained in terms of public or private transport. From the total of respondents, 46 % (77) reported to have had access to credit and the other 54 % did not have access to credit. Regarding subsidies 41 % (69) stated that they have had access to subsidies, mainly given by government, meanwhile 59 % (100) did not. As for the categorisation of victims of the armed conflict, only 23 % of the sample identified themselves as victims. The other 77 % did not consider themselves as direct victims of the conflict in the region.

When analysing the information on the succession process in response to the question "Motivation of parents towards continuing working in agriculture", (133) 79 % stated that they motivate their children to continue farming and 21 % (36) do not motivate the potential successor to continue with farming activities and the management of the farmland. On the other hand, 88 %, more exactly 148 respondents reported that they expected a possible successor to take over the management of the farm after them.

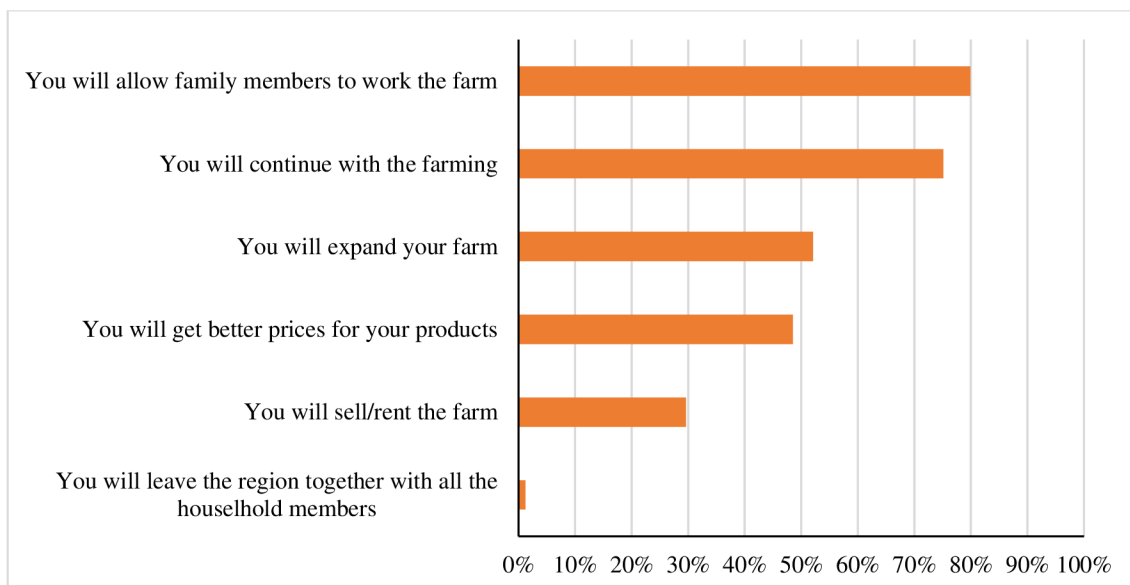
In the sample the farmers had 2 children on average 2. 10 participants reported not having children and two claimed to have a total of 12 children. As additional information, demographic characteristics of the children were collected. In this regard, the total of 344 children was quantified and of this 37.5 % (129) were female while 62.5 % (215) were male. The average age among the children was 27.5 %, with the oldest and youngest found to be 61 and 1 year(s) old, respectively. As for the level of schooling, 98 % of the children were found to have had access to education and only two children had

no education at all (one 61 years old and the other 38 years old). One of the most striking results of the information collected on the children was their current place of residence. In this case 58.4 % of the children were living outside the farm and village (201). The most frequently mentioned place of residence was the nearest urban centre, being this Chaparral town, as shown in Figure 5.



**Figure 5 Current place of residence of the potential successors**

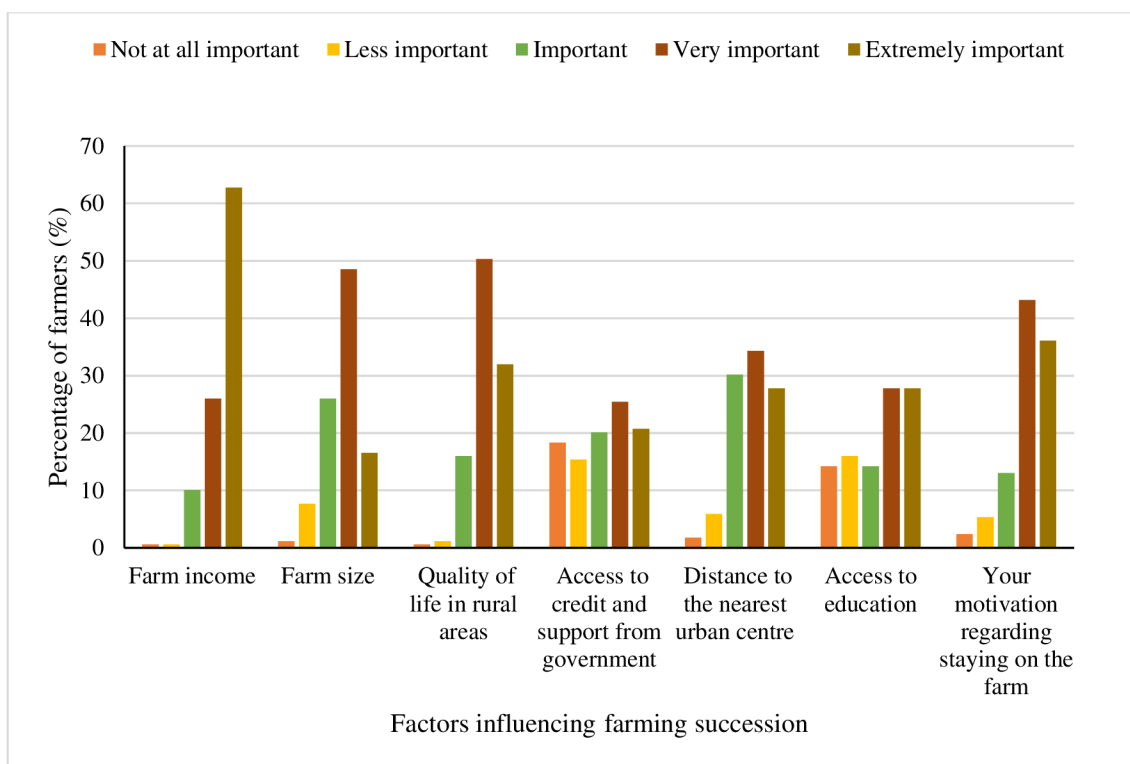
In order to know the opinion of the farmers regarding the economic development of the farm in the future the question "*How do you imagine the future economic development of your farm in the next 10 years?*" was asked. The results are represented in Figure 6. From the total of the sample, the 98.8 % expressed a desire to remain in the region. Comparing this response with the idea of continuing farming as a livelihood, only 75.1 % of the total sample responded that they would continue working in agriculture and the other 24.9 % did not. This means that, although farmers do not want to leave the region, there is still a relevant percentage (24.9 %) who want to leave agriculture as their main means of livelihood. This could be attributed to the low and unstable income generated from agriculture compared to employment in other sectors. It was also identified that opinions are divided on the expectation that prices for products will increase in the coming years. 48.5 % of the respondents expected to get better prices for their products while 51.5 % did not.



**Figure 6 Farmer's expectations on the future development of their farms in the next 10 years**

## **5.2. Farmer's perception on factors influencing farm succession**

The respondents had the opportunity to give their opinion on the factors that they perceive could influence the decision of their children to take over the farm. The results of are presented in Figure 7. This Figure shows that 62.7 % of the respondents selected farm income as an “extremely important” influence on whether their children decided to take over the farm. Influential factors ranked as “very important” were quality of life in rural areas (50.3 %), the size of the farm (48.5 %), the parent’s motivation (43.2 %), distance to the nearest urban centre (30.2 %) and access to credit and support from government (25.4 %). When it came to education, however, the results indicated an equal number of respondents ranked access to education as either “extremely important” or very important” (27.8 %).



**Figure 7 Farmer's opinion regarding factors that could influence farm succession**

### 5.3. Factors affecting farming succession – Binary Logistic regression

A binary logistic was performed to assess the effect of several factors on the likelihood of the occurrence of a farming succession process. The significance of the coefficients was measured at 1 %, 5 % and 10 % significance levels. The overall goodness of fit of the model was statistically significant at 1%, ( $\chi^2$  10, N=169) =58.467, P<0.01), indicating that the model was able to distinguish between expectation of farming succession occurrence or non-expectation of faming succession, viz Table 4. The model contained ten independent variables and results are presented in Table 6.

**Table 4 Goodness of Fit of the logit model**

	Chi-square	df	Sig.
Step	58,467	10	0.000
Block	58,467	10	0.000
Model	58,467	10	0.000

The model as a whole was explained between 29.2 % and 55.4 % of the variance of faming succession, and correctly classified 91.1 % of the cases (Table 5).

**Table 5 Binary logistic model summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	68.394 <sup>a</sup>	0.292	0.554

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than ,001.

According to Table 6, three predictors made a unique statistically significant contribution to the model. These are two family characteristics (Farmer's income and Parent's motivation) and one farm characteristics, the land tenure.

**Table 6 Factors influencing farming succession process**

	<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig.</b>	<b>Exp(B)</b>
Farmer's Gender	0.575	0.683	0.708	1	0.400	1.777
Farmer's Age	-0.055	0.039	2.055	1	0.152	0.946
Farmer's Marital Status	-0.493	0.323	2.334	1	0.127	0.611
Farmer's Education	-0.359	0.528	0.462	1	0.497	0.699
Farmer's income	1.607	0.659	5.944	1	<b>0.015</b>	4.990
Number of children	0.104	0.180	0.333	1	0.564	1.110
Farm size	0.001	0.060	0.000	1	0.990	1.001
Farm location	-0.001	0.009	0.011	1	0.915	0.999
Parent's motivation	3.558	0.753	22.353	1	<b>0.000</b>	35.104
Land tenure	1.478	0.893	2.742	1	<b>0.098</b>	4.385
Constant	0.493	3.097	0.025	1	0.874	1.637

### 5.3.1. Family characteristics influencing family farm succession

Regarding family characteristics the strongest factor influencing succession is the *parent's motivation* (0.000), being significant at 1 % with a positive relationship between the dependent variable and the independent and an odds ratio of 35.104. This indicates that, an increase in the parent motivation by 1 % leads to a 3.558 % increase in the likelihood that succession will take place, holding all other factors constant. This result confirms the hypothesis that parental incentives, in this case motivation, positively influence family succession. Indeed, in discussions with farmers, they claim to be the role models and as guides their influence on their children's decisions is very vital. *"I have always motivated my children, that is why I have a son who I encouraged to study and then manage the farm, he studied zootechnics and now he is there receiving the fruits of agriculture but also of his profession. Everything is possible if it is combined"*, as declared one of the farmers met during the interviews.



Statements regarding motivation towards children were divided. On one hand, many farmers said that they motivate their successors to continue in agriculture. One respondent said *“With the new opportunities that the government is providing in terms of technology and support for farmers, I do motivate my children and every day. I show them the beauty of this life, agriculture is incredibly beautiful, you are your own boss, you get up when you want and if you don't want to work you don't do it, nobody forces you.”* Other farmers were neutral and said that they do not interfere with that decision, i.e. *“If my son wants to continue with the management of the farm that would be fine with me, although I don't want to force him to continue, as a father I don't like the countryside anymore.”* On the other hand, some farmers alleged they do not want their children to continue with the farms, meaning they are encouraging their children to migrate out of the countryside; *“There is nothing to do in the countryside, rural life is difficult, and for me my children should study and go to seek new horizons.”* Figure 8 and Figure 89 show photographic evidence of field data collection.



**Figure 8 Female farmer being interviewed**



**Figure 9 Male farmer being interviewed**

Although no literature was found on the process of family farm succession in Chaparral, Colombia, there is literature on generational handover in other regions. In qualitative work done by Jiménez et al. (2018), coffee farmers reported that in addition to verbally motivating their children to continue with the coffee farm, they are proceeding with a kind of non-legal transfer and/or so-called verbally transfer of the land. This is

done to ensure that the children have an incentive to continue with agricultural activities as well as generate income. The authors stated that *“for the parents, it is fundamental to continue with agricultural production. They see the inheritance of the land for the young and handing it over (as most of them do) means making clear the desire to remain in the countryside working the land. It is the expression of trust in the next generations, but it also implies the commitment to strengthen and preserve the coffee growing tradition”*(Jiménez et al. 2018).

In comparison with other studies, the present results are in agreement with those found by Foguesatto et al. (2020a). Parent’s motivation is one of the main drivers of farm succession. In addition to the importance of motivating potential successors, other authors reported that their views on farming life were vital. Matte & Machado (2017), for example, found that farmers who were dissatisfied with agriculture generally discouraged their children from participating in the process. On the contrary, parents who were pleased and satisfied with the agricultural life as a livelihood enhanced their children's motivation to continue to manage farms (Pessotto et al. 2019). In a study focused on successors in Brazil, most respondents reported that their parents had no influence on their dedication to work. This contrasts with the responses of the previous generation who were subjected to efforts to convince their parents to continue farming. It is striking that one third of the parents interviewed in that study were not clear whether anyone would succeed them (Abramovay et al. 1998).



**Figure 10 Farmer’s discussion group**

The results in Table 6 indicate that there is a positive relationship between *farmer's income* and the expectations of having a potential successor. This implies that a 1 % increase in farmer's income will lead to an increase in the likelihood that succession will take place by 1.607 %, holding all other factors constant. This result was statistically significant at 5 %. The odds ratio for farmers income was 4.990, indicating that for every increase in the income's categories the probability of occurrence of succession is more likely.

This result is in line with those found in the work of Foguesatto et al. (2020a) who conducted similar research among Brazilian farmers. This study found that in farms with the higher the income, the probability of family succession is higher. In addition to the statistically confirmed results, the farmers in that study as well as the respondents of the present study categorised income as a decisive factor for participating in the process of family farming succession and continuation of farming as a means of livelihood. Other papers that also reported family income as a determinant of farm succession were Bertoni & Cavicchioli (2016) in Upper Austria, Hennessy (2002) in Ireland, and Kimhi & Nachilieli (2001) in Israel and Glauben et al. (2009) in Germany. As to why this factor is so important, most authors agree that the decision to continue farming as a means of livelihood is no longer a matter of emotional importance but rather of great economic importance (Kerbler 2008). In addition to being major causes of failure in the succession process, low and inefficient incomes, are also a very influential factors in the decision of young people to leave the region and migrate to urban areas (Zou et al. 2018).

On the other hand, and contrary to our results, research conducted in Moldova by Piras & Botnarenco (2018) found that parents did not consider income as a determining factor in the decision to continue with the family succession by potential successors. Although this work did not consider the opinions of the children, which could have been different.

In the discussion with the farmers (viz Figure 10) interviewed from Chaparral about why they consider income to be of vital importance, statements such as the following were revealed: "*We live from coffee, a crop that has only two harvests a year, and we live from this all-year round. The prices of this product are very volatile and that*

*is why our income is volatile. This greatly influences the fact that we want our children to continue working on the farms”.*

Indeed, in the research carried out by (Jiménez et al. 2018) in Nariño, another region of Colombia, found that agricultural production depends mainly on factors such as: price fluctuation, which impacts income instability; institutional support; climatic changes; financing and technification; however, those who have lived from this activity for years see it as their only income, a fair business and a generator of employment. In the opinion of farmers, *“Having a fixed salary is not the same as having to average and divide one's income with the family's expenses, which makes one hesitate whether he/she wants to stay in agriculture or if it is better to go to the city and work as an employee”.*

Comparing the above two significant factors in this study and their relationship with other studies found in the literature, motivation towards agriculture plays a more crucial role than the role of income (May et al. 2019). Morais et al. (2017) also reported in their research that the role of the father and mother as motivators of potential successors is significant, in the form of knowledge transfer and thus increasing the desire of those to continue to manage the farm.

The logistic regression showed that the Farmer's Gender is not an influencing predictor of farm succession. These results are in line with those reported by Sheridan et al. (2021). However, in other regions of the world, this the farmer's gender plays a very important role, for example in Italy being a female farmer increases the likelihood of family succession (Cavicchioli et al. 2015). Most of these studies have been based on the gender of the potential or selected successor but not on the transferor or smallholder (Kerbler 2008; Cavicchioli et al. 2018; Piras & Botnarencu 2019; Arends-Kuenning et al. 2021). This may be one of the reasons why no significance was found in the present study.

In conversations with interviewees in this research, it was noted that their expectation of having or not having a successor on the farm did not depend on the sex of their children but on other factors. For example, one coffee farmer mentioned: *“None of my children want to stay on the farm because the climate is bad for them and because it is too far away.”* another stated that: *“I live with one of my daughters who helps me on the farm, she works as hard as a man, and I expect she will continue to manage the farm when I leave”.*

The age of the farmer did not show a significant influence in the succession expectation in this model. However, literature was found in which age was a decisive factor when it came to farm succession. Kerbler (2012), who conducted a similar study in Slovenia reported how farm owners retained management of the farm and farm activities as long as forces permitted, which affected the ability of children to participate in the family succession. In this sense, such decisions are linked to not only emotions and attachment to the land and traditions but also the fear of losing power and control over their land, and these factors act negatively on the opinion of the successors. Mishra et al. (2010), on the other hand, argues that the probability of agricultural succession increases with increasing age of the farmer.

The farmers' views on age as a determining factor in the continuation of agricultural activities, whether one is young or old, influences their opinion on their place of residence and above all their vision of the future succession plans: *“I am old, and I didn't want to leave the farm, but I had to leave because my wife died and I couldn't do anything there alone, so one of my daughters who lives in Bogotá took me into her house and I come here from time to time.”* Or *“We are a young couple, who have borrowed money to buy this land to be able to work for our children and their future.”* Also *“At the moment nobody lives on the farm and the truth is that I don't care if I have a farm or not, I have that little piece of land by inheritance and because of my advanced age I am only here to live in the urban areas (Rioblanco)”*.

Although the marital status factor did not show any significance, the statements above by the farmers reveal the possible relationship between marital status and family succession, as it was stated that if one of the spouses dies, it is possible that the succession process will not take place and the end of the family farm will be abandoned, sold, or dissolved (Mishra et al. 2010). In the research of Ngeywo (2014), marital status had no significant influence on family succession, as in this study. Regarding the level of education of farmers, no significant differences were reported in the model. However, some authors in other studies found this driver as significant in the farming succession expectation of occurrence, for example Mishra et al. (2010; and Arends-Kuenning et al. (2021) found that the higher the level of education the higher the probability of succession.

The variable number of children did not present a significant influence on the farm succession. These results are in line with the ones found by (Foguesatto et al. 2020), who also did not report any significative effect. However, literature about this possible influence was found in Austria where the probability of succession increased by about 9 % with each additional child (Glauben et al. 2004); as well as in Italy, where the number of children positively influenced the probability of farm succession (Cavicchioli et al. 2019).

### **5.3.2. Farm characteristics influencing family farm succession**

Regarding farm characteristics, the strongest factor influencing succession is the *land tenure* (0.098). This information was analysed based on the question of whether the farmer owned the land or not. This variable was significant at 10 % with a positive relationship with farm succession and an odds ratio of 4.385. This indicates that, if the chances of owning the farm increase, the probability of family succession will increase by 4.385 times. These results are consistent with those reported by Piras & Botnarenco (2019), who found that, farmers who transfer land relate land ownership to positive personal and social satisfaction, thus presenting a desire to continue farming and the succession process. About 66.67 % of the farmers in that study expressed their wish never to change their land ownership status, an opinion that was also shared by the successors.

In addition to this, in a study conducted by Glauben et al. (2004), family farm succession was also positively significantly affected by the land ownership factor, specifically because the right of ownership of the farm represented a kind of loan guarantee and thus the improvement in the development of agricultural activities. Furthermore, land ownership is determined by land tenure certificates or titles. In this regard, a study in China found that holding a land tenure certificate significantly influenced the likelihood of participation in farm transfer processes (Min et al. 2017). In works such as that of Parker et al. (2007) and Bednařiková et al. (2016), it was also found that ownership of land is a significant factor increasing the likelihood of continuing with farming as a future occupation.

It is important to highlight that in the present study, most of the farmers reported having their land entitled as owners (viz Table 3). Prior to 2013, most of these farmers



held their land informally, i.e. they did not have title of ownership and therefore access to credit, government support and other benefits was limited. With the joint support of public and private organisations in the South Tolima region, campaigns were carried out to hand over the titles to these farms. Between 2013 and 2016 alone, around 430 farms were formalised with the help of CAFISUR and the NGO Mercy Corps in the area (MercyCorps 2016). This may be one of the reasons why the author thinks that this factor influences the family farm succession in a positive way. By obtaining a title that secures ownership, farmers find reasons to continue working on their farms and above all, expect their children to be the next generation in charge of the family farm business. This view is confirmed by the farmers' own opinions. For example, one of the farmers interviewed stated that: *“You look for projects and support and the first thing the organizations ask you is do you have a certificate of ownership? I did not have it because I did not have the opportunity to get my title deed since it costs at least 300 or 400 thousand COP, and additionally, the 20,000 COP for the transport ticket, each way, because you never go once and that's it. Now, with title in hand, things are looking better”*.

Further, even a representative of the Ministry of Agriculture, a crucial organisation in this issue, stated in a meeting: *“A rural property title becomes the key to progress. It is the tool for the rural population to feel ownership of their land, to guarantee access to food, to plan their future, to improve their quality of life and even to obtain the peace of mind of inheriting something for their family”*.

One of the main hypotheses tested in this work was the influence of farm size on farm succession, based on previous literature review. However, this hypothesis was rejected in the logistic regression because this factor was found to have no effect on succession on the sampled farms. As a final farm characteristic in the presented model, the farm location did not report having a significant influence in farm succession. Nevertheless, this factor has been reported in previous studies to be of great importance, namely in Spain Aldanondo Ochoa et al. (2007) suggested that the farm location affected the probability of succession process occurrence. In Slovenia, the householder's perception regarding the place where the farm is located influenced negatively the expectations of succession (Kerbler 2008). The fact that a farm is remotely located with no road access and far from the market discourages both the transferor and the successor. In statements presented earlier in this paper, this factor was already raised as a major

influence on the opinion of farmers, and the following comment was also made. *My son will continue to run the farm, but it is necessary to build roads and from time to time we hire people to help transport the produce*” and *“The farm we have is rented, it is far from the village and that is why we have decided to go in a different direction”*.

#### **5.4. Limitations**

This study is limited by the fact that the evolution and dynamics of the family nucleus change constantly according to each generation, in this case the results obtained represent the current situation and it is not possible to predict the future with certainty. Additionally, the restrictions put in place due to the COVID-19 global pandemic directly influenced the collection of data, firstly by delaying and increasing the time it took to collect data and secondly, the holding of group events was limited and almost absent. Therefore, a large number of surveys were also conducted by telephone. On the other hand, the information was collected directly from the point of view of the transferors (farmers), which may limit this type of study, as the opinion of the potential successors is of vital importance because they are the ones who decide whether to participate in the farming succession process. In the design of this study, it was planned to carry out the collection of children's opinions, but due to COVID and difficult access, this was not included.



## **6. Conclusions**

### **6.1. General remarks**

Small farmers around the world are suffering because the countryside is ageing, young people have no interest in continuing to farm and the dynamics that could encourage a change in this pattern are limited and almost unknown. In addition to a problem of ageing farmers, rural-urban migration and land tenure problems have been a trigger for the lack of motivation in the choice of agriculture as a livelihood. One of the most important issues in agriculture is the process of family farming succession. This aspect determines and perhaps guarantees the likelihood that a family will continue the agricultural vocation from generation to generation, in the case of successful succession. Or, on the contrary, if there is no participation (failure) in this process of the households the consequence is that the land is sold, abandoned or rented out for other purposes.

Since this is such an important aspect, it was the author's motivation to carry out a study that would first identify the factors that influence the farming process in Colombia and then, that would make possible to influence to a certain extent the direction of certain agricultural policies that would encourage farmers in this area. Chaparral, Tolima was selected as a study area because it is an area of crucial importance in the country, due to its history of conflict and war. After the end of the conflict this municipality was included in the peace agreements of 2016 and consequently in the comprehensive rural reform, a public policy instrument that aims to improve the quality of rural life in the region and all aspects that this encompasses.

In this study, we sought to answer the research question: What factors influence the process of farm succession among small – holder farmers in Chaparral, Colombia? After the inferential statistical analysis was performed, three factors influenced statistically significantly farm succession, these factors were Income, Land Tenure and Parent's motivation towards continuing with agricultural activities. In addition to the statistical analysis, information about farmers' perceptions of the family succession process was collected. In this regard, factors such as Farm size, Access to credit and Access to Education were significantly represented in the farmers' opinion. 75.1 % of the farmers in the sample said they wanted to continue farming as a means of livelihood.

As a result, and conclusion of this work, it can be seen that the process that the different institutions in the region are carrying out to support small farmers in obtaining their legal land titles has a positive impact on the farmers' perceptions to continue working in agriculture and, above all, motivates their successors. Although factors such as gender, age, marital status, education and number of children of the farmer were not statistically significant, it can be concluded from the qualitative information collected that these factors to some extent shape farmers' opinions on succession planning decisions. Similarly, factors such as farm size and distance from the farm to the nearest urban centre did not report any statistically significant influence, but it can be concluded from the statements of the respondents that these can be decisive factors for the expectations of farm succession and especially for the continuation of farming.

## **6.2. Recommendations**

Based on the findings of this work, it is worth recommending that governmental institutions carry out an exhaustive identification of the factors that may influence the process of generational handover in rural areas of Tolima and Colombia. Little is known about it, but this could determine a plan to help motivate new generations to continue in farming. Since in this study farm income, land tenure and parents' motivations were the main findings influencing succession, it is worth to recommend that agricultural policies focused on securing land ownership of farmers in Colombia. Because we could say that increasing land ownership status increases the farmers ability to invest in the land and subsequently lead to higher income generation. In addition to this, increasing the profitability of farming activities by providing support (better access to credit, extension services and stable prices for produce, among other things) could increase the farmer's motivation which could in turn be extended to their children leading to higher likelihood of succession.

Because coffee sector is of great importance for the economy of Colombia, the above factors are crucial for the improvement of the sector. The young generation must be included in the planning of policies aiming at improvement of agriculture and rural communities. The farmers, so called transferors should receive incentives that in turn motivate them to encourage their children to pursuing agriculture as an occupation.

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## **List of Appendices**

- Appendix 1: Questionnaire for data collection

# Appendix 1: Questionnaire for data collection

Dear farmer, I would like to ask you to fill the following questionnaire needed to my diploma thesis. I am a student from Czech University of Life Sciences Prague with focus on International Development and Agricultural Economics. The topic of my diploma thesis is **Factors determining farming succession process in Colombia. The case of Chaparral Tolima**. This questionnaire is anonymous and will take approximately 10 minutes. Thank you for your time.

## QUESTIONNAIRE SOCIOECONOMIC CHARACTERISTICS AND HOUSEHOLD FACTORS

1. You are									
<input type="checkbox"/> Male				<input type="checkbox"/> Female					
2. Please indicate your birth date									
[ ]									
3. What is your marital status?									
<input type="checkbox"/> Single		<input type="checkbox"/> In partnership		<input type="checkbox"/> Married		<input type="checkbox"/> Divorced		<input type="checkbox"/> Widow	
4. What is your education?									
<input type="checkbox"/> No formal education		<input type="checkbox"/> Primary school		<input type="checkbox"/> Secondary school		<input type="checkbox"/> University education			
5. How many children do you have?									
[ ]									
5.1 Please fill the following information									
Child	Gender		Age	Occupation	Educational attainment	Marital status	Currently abroad		If yes, where to
	Male	Female					Yes	No	
1				<input type="checkbox"/> Student <input type="checkbox"/> Worker	<input type="checkbox"/> No education <input type="checkbox"/> Elementary school incomplete <input type="checkbox"/> Elementary school complete <input type="checkbox"/> High school incomplete <input type="checkbox"/> High school complete <input type="checkbox"/> University studies	<input type="checkbox"/> Single <input type="checkbox"/> In partnership <input type="checkbox"/> Married <input type="checkbox"/> Divorced <input type="checkbox"/> Widow			
2				<input type="checkbox"/> Student <input type="checkbox"/> Worker	<input type="checkbox"/> No education <input type="checkbox"/> Elementary school incomplete <input type="checkbox"/> Elementary school complete <input type="checkbox"/> High school incomplete <input type="checkbox"/> High school complete <input type="checkbox"/> University studies	<input type="checkbox"/> Single <input type="checkbox"/> In partnership <input type="checkbox"/> Married <input type="checkbox"/> Divorced <input type="checkbox"/> Widow			
3				<input type="checkbox"/> Student <input type="checkbox"/> Worker	<input type="checkbox"/> No education <input type="checkbox"/> Elementary school incomplete <input type="checkbox"/> Elementary school complete <input type="checkbox"/> High school incomplete <input type="checkbox"/> High school complete <input type="checkbox"/> University studies	<input type="checkbox"/> Single <input type="checkbox"/> In partnership <input type="checkbox"/> Married <input type="checkbox"/> Divorced <input type="checkbox"/> Widow			
4				<input type="checkbox"/> Student <input type="checkbox"/> Worker	<input type="checkbox"/> No education <input type="checkbox"/> Elementary school incomplete <input type="checkbox"/> Elementary school complete	<input type="checkbox"/> Single <input type="checkbox"/> In partnership <input type="checkbox"/> Married <input type="checkbox"/> Divorced <input type="checkbox"/> Widow			

					<input type="checkbox"/> High school incomplete				
					<input type="checkbox"/> High school complete				
					<input type="checkbox"/> University studies				
<b>6. Number of members currently living in the household</b>									
<input type="text"/>									
<b>7. How many of your household members are?</b>									
Children <18	<input type="text"/>	Youth 18-35	<input type="text"/>	Adults 35-60	<input type="text"/>	Elderly>60	<input type="text"/>		
<b>8. How many family members are economically active?</b>									
<input type="text"/>									
<b>9. What is the average farm income per month? (minimum wage-COP 877,803)</b>									
<input type="checkbox"/> Up to 500000 COP	<input type="checkbox"/> From 500000 COP to 1 million COP	<input type="checkbox"/> From 1 million COP to 1.5 million COP	<input type="checkbox"/> From 1.5 million COP to 2 million COP	<input type="checkbox"/> More than 2 million					
<b>10. Is farming your only source of income?</b>									
<input type="checkbox"/> Yes					<input type="checkbox"/> No				
If not, please indicate the percentage of the household income from off-farm work									
<input type="checkbox"/> Up to 25 %					<input type="checkbox"/> 51-75 %				
<input type="checkbox"/> 26-50 %					<input type="checkbox"/> 76-100 %				
<b>11. Source of labour in the farm</b>									
<input type="checkbox"/> Family labour					<input type="checkbox"/> Hired labour				
<b>12. Are you member of an association?</b>									
<input type="checkbox"/> Yes					<input type="checkbox"/> No				
If yes, which? <input type="text"/>									
<b>13. are you recognized as victim of armed conflict?</b>									
<input type="checkbox"/> Yes					<input type="checkbox"/> No				
If yes, which? <input type="text"/>									

### FARM CHARACTERISTICS

<b>14. Name of the village?</b>									
<input type="text"/>									
<b>15. Farm size? In hectares</b>									
<input type="text"/>									
<b>16. Are you the legal owner of the farm?</b>									
<input type="checkbox"/> Yes					<input type="checkbox"/> No				
If yes, which document do you have?									
<input type="checkbox"/> Deed			<input type="checkbox"/> Statement			<input type="checkbox"/> resolution			
<b>17. Do you have this document registered on the Public Instruments Registrars office? (land tenure)</b>									
<input type="checkbox"/> Yes					<input type="checkbox"/> No				
If not, what is your relationship with the land? (land tenure)									
<input type="checkbox"/> Holder (possession)					<input type="checkbox"/> Simple tenure (partnership):				

<input type="checkbox"/> Leaseholder (rented land)	<input type="checkbox"/> Usufruct holder
<input type="checkbox"/> Occupier	<input type="checkbox"/> Other _____
<b>18. Distance to the nearest urban area? In time</b>	
<input type="text"/>	Name of the urban centre _____
<b>19. Distance to the main road? In time</b>	
<input type="text"/>	
<b>20. Distance to the nearest cooperative centre (collecting point of coffee before manufacturing)? In time</b>	
<input type="text"/>	
<b>21. Do you have access to credit?</b>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>22. Do you have access to subsidies?</b>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No

### SUCCESSION PROCESS

<b>23. How do you imagine the future economic development of your farm in the next 10 years?</b>						
<input type="checkbox"/> You will continue with the farming business as usual <input type="checkbox"/> You will expand your farm <input type="checkbox"/> You will allow family member(s) to manage the farm <input type="checkbox"/> You will sell/rent it for agricultural purpose <input type="checkbox"/> You will get better prices for your products <input type="checkbox"/> You will leave the region together with all the household members <input type="checkbox"/> Other (please specify) _____						
<b>24. Do you expect that you will have successors to continue present activities on the farm?</b>						
<input type="checkbox"/> Yes			<input type="checkbox"/> No			
<b>25. Please point out which of your children do you think is interested in taking over the farm</b>						
<input type="checkbox"/> Children 1 <input type="checkbox"/> Children 2 <input type="checkbox"/> Children 3			<input type="checkbox"/> Children 4 <input type="checkbox"/> Children 5 <input type="checkbox"/> Children 6			
<b>26. Do you motivate your children to continue with agricultural activities?</b>						
<input type="checkbox"/> Yes			<input type="checkbox"/> No			
<b>27. Please in your opinion what could be the factors that could influence the decision of your children to take over the farm.</b>						
	<b>Rating</b>	<b>1</b> Not at all important	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b> Extremely important
<b>Factors</b>						
Farm income						
Farm size						
Quality of life in rural areas						
Access to credit and support from government						
Distance to the nearest urban centre						
Access to education						
Your motivation regarding staying on the farm						
Other (Please specify) _____						