JÖNKÖPING UNIVERSITY
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Sustainable livelihood for farmers

A study presenting both challenges and opportunities for local small-scale farmers in Alluriquin, Ecuador

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Abstract

The primary sector is of high importance to the economy and wellbeing of many countries. This is especially true for Ecuador, where 51 percent of the population living in rural areas earn their living through agriculture, livestock and fishing activities. Unfortunately, inequality has been growing between the rural and urban population, most noticeably in rural small-scale farmers that have less social capital and access to resources. Therefore, this study focuses on small-scale farmers, in a small town called Alluriquin, and how their way of farming can contribute to sustainable livelihoods. The empirical data has been collected through semi-structured interviews, where eleven different individuals have been interviewed. Previous research together with the theory of Amartya Sen will serve as the framework for this study.

In Alluriquin, the results show that crops such as sugarcane, yucca, cacao, plantain and bananas as well as the big interest in both cattle raising and dairy farming, helps the locals to maintain a sustainable livelihood. It can be learned from the results of this study and previous research that farmers are facing a lot of different challenges on a daily basis, and even though they had different methods of dealing with these issues, the challenges seem to be manageable. The outcome of this study shows how these eleven individuals are able to maintain a sustainable livelihood, and how this way of farming is influenced by both internal and external factors that might be harmful if they are not considered. This way of life does provide the local community with a blueprint to follow so that they can guarantee their immediate wellbeing and prepare themselves and their families for any unforeseen circumstances, achieving sustainable livelihoods inside rural communities.

Keywords: Ecuador, Alluriquin, farmers, small-scale farming, local farming, sustainable livelihood, sustainability, challenges, possibilities

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1. Introduction

Ecuador is one of the smallest countries in South America, however for the size, the country is well-known for its biodiversity, as well as for being very ethnically diverse (Walrod et al., 2018; Jolly et al., 2021). Out of a population of 17.5 million, one-third are living in rural areas (Jolly et al., 2021; Intriago et al., 2017). Unfortunately, the rural areas of Ecuador have not experienced the same development as urban areas have. According to INEC (National Institute of Statistics and Censuses) the national level of poverty is estimated at 27.7 percent. In rural areas, this number is exceeding 42.4 percent (INEC, 2021). This inequality is especially notable in rural small-scale farmers that have less in social capital and access to resources (Cole et al., 2011).

Over 51 percent of the rural population earn their living through agriculture, livestock or fishing activities. However, many small-scale farmers are struggling with feeding their families, mostly because of limited resources. In the mountainous region known as, “La Sierra”, nearly half of the communities are affected by chronic malnutrition. Health problems and poor nutrition practices contribute to the high malnutrition rates (Adaptation fund, 2011). In Alluriquin, a town located in the mountainous region, the challenges mentioned reflect the reality of many farmers. Normally, small-scale farmers in this village have access to between 5 and 20 hectares of land (GAD, n.d.). Therefore, this study will focus on small-scale farmers in Alluriquin and how their way of farming can contribute to sustainable livelihoods.

1.1 Aim and research questions

The aim is to study local small-scale farming in Alluriquin, Ecuador, and the ways in which it contributes to sustainable livelihoods. Therefore, my questions at issue are:

-*In what way can local small-scale farming contribute to sustainable livelihoods?*

-*What economic and environmental possibilities and challenges are the local small-scale farmers in Alluriquin facing?*

-*Can sustainable livelihoods contribute to poverty reduction and food security? And if so, how?*

1.2 Delimitation

The area is limited to focus on Alluriquin, Ecuador, a small village near the outskirts of the province of Santo Domingo de los Tsachilas. The study mainly focuses on the small-scale farmers of the region, however, it also includes one medium-scale farmer. According to the Food and Agriculture Organization (2017) the term small-scale farmers refers to farmers who are under structural constraints such as access to resources, technology and market. It is also important to note that small and medium-scale farmers have an almost identical definition and it can often lead to confusion, because the term does not refer to the amount

of land owned but to how much is used for cultivation (Food and Agriculture Organization of the United Nations, 2017).

1.3 Definitions

○ *Sustainable livelihood:* In 1992 Robert Chambers and Gordon Conway proposed the following composite definition of a sustainable rural livelihood, which is applied most commonly at the household level even today:

> A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term (Chambers & Conway, 1991).

○ *Small-scale farmers:* Being a small-scale farmer does not only consider the amount of hectares of the total land, because limited availability of suitable soil differs, but mainly refers to small-scale farmers operating under structural constraints such as access to resources, technology and market. It is the limited resources they obtain compared to other farmers in the sector because of inefficient production, where the competition of others makes the market unfavourable (Food and Agriculture Organization of the United Nations, 2017).

○ *Food security:* Having reliable access to affordable, nutritious food to meet one's basic dietary needs (OEC, n.d-a). Lopez-Ridaura et al., (2019) agrees by explaining it as everyone having continued access to a sufficient quantity and quality of food. At the same time, mentioning that *food security* is a bit tangled, where the part of security is relying on both agricultural and non-agricultural activities, where households are often both the producers and the consumers of food (Lopez-Ridaura, 2019).

○ *Sustainability:* In 1987, the United Nations Brundtland Commission defined the term as *"meeting the needs of the present without compromising the ability of future generations to meet their own needs."*. *Sustainability, as defined, is well connected with Sustainable development where the term is required to have an integrated approach taking environmental concerns along with economic development into considerations"* (United Nations, n.d.).

2. Background

This section provides an overall view of Ecuador with focus on the social, economic and cultural features. Further, more detailed information is given about Alluriquin to not only provide the reader a detailed background of the local community but also a greater

understanding about the day-to-day farmer. Additionally, the sustainable development goals relevant for this study will be presented.

2.1 General information about Ecuador

Ecuador is well-known for its biodiversity, but it’s also very ethnically diverse (Walrod et al., 2018; Jolly et al., 2021). The country is separated into four regions by the Andes mountain range. Firstly, the coastal region “La costa", the mountainous region “La Sierra", and the Amazon region “El oriente”, and the Galapagos Islands, located off the coast in the Pacific Ocean. The country has a population of 17.5 million and one-third of these live in rural areas (Jolly et al., 2021; Intriago et al., 2017). In December 2021, in the most recent census, the INEC (National Institute of Statistics and Censuses) estimated *urban* poverty rate up to 20.8 percent, meanwhile in *rural* areas it is exceeding 42.4 percent. This makes the national rate of poverty a total of 27.7 percent estimated against the poverty level at 85.60 US dollars per month per capita (Inec, 2021).

The most important sectors for the country are the oil-related industry and the food industry. Ecuador is a large exporter of bananas and oil. However, because of the traditional dependency of these raw materials Ecuador is highly vulnerable to price changes in the global market. Coffee, cacao, prawns, different kinds of fruits, rice and sugarcanes are also important for exporters. The extensive forests are also valuable due to the kinds of trees found there. Ecuador is one of the world's largest exporters of balsa wood, but economically the forest industry plays little role (Landguiden, 2021).

Farmers in Ecuador have experienced a lot of challenges throughout history. Earlier on when the industrialization of agriculture was meant to make a big change in the agricultural development, things became more complex in reality. The increased production was generated by the model called the “Green revolution” (Salazar et al., 2018). The green revolution started back in the early years of the 90s. It’s a model on how to maximise profits mainly by increasing yields, homogenising and concentrating the production by having large-scale production, being export-oriented and using intensive use of chemical inputs. However, the model is inefficient in ecological and social terms (Pengue, 2004). The green revolution was meant to support small-scale farmers and safeguard livelihoods, meanwhile in reality, the revolution could not manage with an increased population and therefore did not make a change to rural poverty. A decrease in food production did not meet the needs of a growing community (Salazar et al., 2018).

Even in modern times, the rural areas of Ecuador have not experienced the same development as the urban areas. This is especially notable for small-scale farmers that experience inequalities in social capital and access to resources, which in turn affects the declining productivity in the daily agricultural practices and an unequal involvement in globalisation (Cole et al., 2011). Many small-scale farmers are struggling with feeding their families, mostly because of limited resources, including capital, markets or effective farming techniques and infrastructure. There are also other factors worth mentioning, such

as lack of information about climate-related threats, inadequate quality of infrastructure and construction materials combined with fragile locations of homes (Adaptation Fund, 2011).

2.2 Focusing on Alluriquin

In the mountain region “La Sierra”, nearly half of the communities are affected by chronic malnutrition. Health problems and poor nutrition practices contribute to high malnutrition rates and a large number of small-scale farmers are struggling with feeding their families, mostly because of limited resources (Adaptation fund, 2011). Located in “La Sierra” is the smaller village of Alluriquin found with a total population of 9,725 inhabitants. The majority of them are younger people, where the inhabitants between 15 and 34 years represent 38 percent of the population, making 28 the average age in the village. There is a lack of information on the demographic of Alluriquin, but overall in the region of Santo Domingo, the majority consider themselves as “Mestizos” (81 percent), referring to a person having Spanish and indigenous descent with Spanish as their common language. The second biggest group is Afro-Ecuadorians (7.7 percent), while other groups, such as the indigenous communities (1.7 percent), are not as present (Inec, n.d.).

Alluriquin has a vision of becoming a community which primarily focuses on tourism and different byproducts of sugar cane. Its main identity is therefore linked to environmental conservation and the production of sweets. The town has an important role to play, where it connects “La sierra " with the coastal part called “La costa" and this position makes the commercial activity of Alluriquin especially high (Gad, n.d.).

The agricultural produce in Alluriquin is one of the lowest in the province, one of the reasons is the limited availability of suitable soil. Overall, the main activities in Alluriquin are within the primary sector (57.57 percent), including activities such as agriculture, forestry, fishing and cattle raising. Even in Ecuador’s national economy, the primary sector is one of the most important industries, even though it brings its challenges, especially in Alluriquin where the agricultural frontier is expanding each day. This rapid development has also brought frequent landslides and an intense erosion in the ground due to fewer trees and roots holding the soil together (Gad, n.d.).

PICTURE 1

Photographer: Olivia Adolfsson.
Comment: The mountainous landscape of Alluriquin, where cows graze.

PICTURE 2

Photographer: Olivia Adolfsson.
Comment: Homemade Panela, from an unrefined whole cane sugar, in the making.

PICTURE 3

Photographer: Olivia Adolfsson.
Comment: Customer buying local candy from the streets in Alluriquin, where many sellers stand, offer their products to passing cars.

2.3 The local farmers and the agricultural activities

Small-scale farmers in Alluriquin often have access to land between 5 and 20 hectares in size, with common crops being bambu trees, sugarcanes, bananas, different kinds of citruses and corn. There is also a small section that raises pigs and chickens for self-consumption or selling for money. Additionally, the production of sugarcanes is also considered to have a cultural value in the village, where the extracted sugar from the sugarcanes makes sweets (marshmallows, panela, honeys etc.) and alcoholic beverages. This traditional production attracts families from neighbouring outskirts, making Alluriquin a special meeting point and has given the village a name worth remembering (Gad, n.d.).

The farmers in Alluriquin are now facing challenges such as the fact that supply cannot meet the demand, in particular for the produce of sugarcanes, because of limited and low maintenance of the produce. Even so, the sugarcanes no longer reach the quality needed to make the candy, so buying them from the nearby province Imbabura continuously happens. However, the sugarcanes are still used for production of alcohol, even though a large part of the production also goes to feeding livestock. There have also been soil samples in the village showing that the soil is not well suited for agriculture, however, the main products perform well for small-scale production (Gad, n.d.).

The results mentioned from Gad (n.d.) differ from the observations that have been made in this study that has shown that the common crops produced also include yucca, cacao and plantain. Additionally, the study showed more kinds of different produce such as avocado, coffee, panela, potatoes, sweet potatoes and papaya, as well as chickens, something the farmers are using for consumption of both eggs and for the meat. There is also a big interest in both cattle raising and dairy farming in Alluriquin, where they not only raise the cows for self-consumption, but they are also butchers, focusing on selling the meat for profit.

2.4 Sustainable Development Goals

The SDGs (Sustainable Development Goals) were adopted by the United Nations in 2015 to achieve universal encouragement to together end poverty, protect the planet and ensure peace and prosperity. There are seventeen SDGs all together, even though they all are interlinked and connected to each other. Two of the seventeen goals are presented below. Focusing on **SDG 1**: *No poverty* and ***SDG* 12:** *Responsible consumption and production* (UNDP, n.d-a).

2.4.1 SDG 1: No poverty

The goal is to eradicate poverty in all its forms by 2030. This involves targeting the most vulnerable, supporting communities affected by climate-related disasters and areas of conflict as well as increasing basic resources and services (UNDP, n.d-b). The challenges mentioned reflect the reality of many farmers, especially because many depend on their daily agricultural produce to make a living. Unfortunately, the farmers are now facing challenges that contribute to a high vulnerability, both socially and economically. The risk of environmental hazards is also especially high (Gad, n.d).

2.4.2 SDG 12: Responsible consumption and production

The goal focuses on achieving economic growth in a sustainable way, this by urgently reducing the ecological footprint by changing the way production and consumption are being handled (UNDP, n.d-c). Focusing extra on of the target (12.7): *Promote public procurement practices that are sustainable, in accordance with national policies and priorities* (UN, n.d.), could make a real change for the local farmers. The challenges they are facing is the paradox with limited resources but at the same time being expected to produce in a responsible way, where the problem lies in not having the opportunity to make this choice. The SDG target is relevant to the results presented, which will be further looked into in the analysis (6:1). The limited resources takes away the choice of being responsible and makes it harder to be the changer of something, when there is no opportunity for it. That is why support from the local government and the municipality are extra important to promote sustainable practices and through national policies support the small-scale farmers into making responsible choices, mainly of their production but also their consumption.

3. Previous research and theory

This section starts with presenting previous research, where different challenges and opportunities for farmers are outlined to highlight perspectives from different authors, which is presented by the division “The eternal struggle between socio-economics and natural resources” and “Challenges and opportunities for farmers.” Following the presentation of the theory relevant to this study, explaining the important pillars that have been a part of building this study. Finally, demonstrating the head concepts to show how both previous research and theory will serve as the framework of this study.

3.1 Previous research

3.1.1 The eternal struggle between socio-economics and natural resources

Starting from a wider perspective, according to Chappell et al. (2013) 52 percent of the rural population in South America still remain in poverty. The authors are discussing the overall contradiction between improving the socio-economic wellbeing for small-scale farmers without overexploiting land or resources. However, the study presents evidence that small-scale agro-ecological[1] farms can contribute to both improved socio-economic and conservation of biodiversity (Chappell et al., 2013). This is also shown in a research article by Intriago et al. (2017) about agroecology from an Ecuadorian perspective. The researchers are saying that there is a generalised agreement among farmers and consumers in Ecuador that ecological agriculture is the best alternative for some of the challenges that the farmers are facing, among these being climate change, rural poverty and especially the current and future food crises. The large number of self-sufficient families, who serve primarily to provide food for their own consumption, need solutions for these challenges (Intriago et al., 2017). Small-scale farmers are left in a difficult position where poverty is common, even though they are still expected to improve their socio-economic wellbeing, but at the same time not overexploit land or resources. This contradiction, that was just mentioned, will be further discussed and analysed together with “Challenges and opportunities for farmers” in the analysis section, bringing in new ideas from authors and highlighting their perspectives and solutions.

3.1.2 Challenges and opportunities for farmers

A national challenge for Ecuador, that several authors agree with, is the high vulnerability for small-scale farmers. This includes vulnerabilities such as social resources and food insecurity (Salazara et al., 2018; Intriago et al., 2017; Lopez-Ridaura et al., 2019; Adaptation fund, 2011; Bathfield et al., 2015; Audate et al., 2021; Cole at al., 2011). Even the great inequalities between the rural- and the urban areas is a challenge, where the rural areas with a high percentage of agriculture and its inhabitants always end up behind because of limited resources (Cole et al., 2011).

Commercial agriculture is also a national challenge in Ecuador, mostly because the newly established monocultures belong to private firms, bringing challenges for both the

[1] Referring to a sustainable agriculture that works with nature, rather than against it. And brings both values of healthy food and conservation of agrobiodiversity (Chappell et al., 2013; Intriago et al., 2017).

biodiversity and the small-scale farmers. The growing competitive land use activities sets pressure on the fragile ecosystems and challenges are also shown where there is non-cooperation between farmers. This is the new national ultimatum against established monocultures, where it both has its downsides but also its upsides, depending on the perspective looked at (Salazara et al., 2018; Bathfield et al., 2015).

April-Lalonde et al. (2020) brings another perspective for challenges and solutions for small-scale farmers. The researchers have seen a social inequality in access to healthy food because of the modern food system, but there are some families that avoid industrialised food for different reasons. Instead these families focus on buying fresh food from the markets or on consuming agroecological produce. This brings ways for small-scale farmers to not end up competing with industrialised agriculture, for example by reaching out to other groups of consumers, especially those who value good quality food and locally produced food (April-Lalonde et al., 2020). Another possibility for farmers is to focus on improved methods, such as better models for agriculture, changed land use by switching crops, or improving product commercialization (Salazara et al., 2018). Farmers' vulnerability is a continuous issue mentioned by different authors, however, studies about opportunities are included to be aware of the possibilities of improving their socio-economic wellbeing. Additionally, the different authors illustrate various challenges that will be further discussed in this study. The challenges are highly relevant in order to achieve the aim of this study, where sustainable livelihood does not come without its challenges, however, it's about resilience, where one is able to handle life's setbacks.

3.2 Theory

3.2.1 Measurement of poverty

The selected theory of this study was created by Amartya Sen, who did not enjoy the idea of anyone being defined as living below an imaginary poverty line and instead suggested a new way of measuring poverty (Sen, 1982, p. 5-30). To help understand the theory, two definitions must be looked at, starting with the term *Absolute poverty,* which refers to "*Condition where household income is insufficient to afford basic necessities of life. (food, shelter, clothing)*" (Economicshelp, 2019). Continuing with the second main classification of poverty where the term *Relative poverty* is defined as "*When households receive 50% less income than average median incomes*" (Economicshelp, 2019). To put this into context: The international poverty line of extreme poverty was measured at less than $1.90 per day, however, as of fall 2022, the new global line will be updated to $2.15 a day (Worldbank, 2022).

These terms are essential to the theory of Amartya Sen. The theory "Measurement of poverty," according to which it is not about living below an imaginary poverty line, instead, refers to an individual that does not have the possibility of fulfilling basic needs, taking into account the circumstances this individual actually has. Instead, Sen presented two fundamental steps that must be faced to measure poverty 1) Determining who is poor (identification) and 2) Building an index of their poverty characteristics to reflect the

extent of poverty (aggregation), something referred to as the “direct method” (Sen, 1982, p. 5-30).

The direct method identifies human deprivation in terms of minimum levels of basic needs per se, instead of using income as an intermediary of basic needs satisfaction, relying on the argument that an increase in power of the individual allows the poor to better achieve their basic needs. This connects to Sen’s statement *“Starvation is the characteristic of some people not having enough food to eat. It is not the characteristic of there not being enough food to eat. While the latter can be the cause of the former, it is but one of many possible causes”* (Sen, 1991), referring to the imperfect way of understanding deprivations and socio-economic conditions of the poor. One significant point of view is the freedom one has to achieve well-being, however, this freedom must be understood in terms of people with capabilities, in other words, taking into account an individual’s possibilities (Sen, 1982, p. 5-30). In the context of the study, the theory will contribute to not categorising people as only one thing, without an explanation, instead being aware of the *different* characteristics of one group or an individual. This will provide a deeper understanding of when a person is being identified as “being poor,” to contribute to the understanding that every individual has different opportunities, support or risks to be aware of. As mentioned, it does depend on the capabilities, as in this case, the farmers' capabilities. Sen’s theory helps us to understand that poverty is intimately connected to the ability people have to make changes to improve their lives, but also that “poverty” to some extent, is a social construction and must be seen in its context.

4. Methodology

In the following section, the research process is being presented. The aim is to achieve more transparency between the author and the reader. Therefore, six headlines will present the chosen methodology, including explanation, motivations and reflections that have been considered during the study. It also explains the data collection process and details of the material collected during two months of fieldwork in Ecuador.

4.1 Research design

There is a wide range of methods to be used to examine people’s experiences, feelings or knowledge by employing qualitative research design. The chosen research methodology for this study is based on a qualitative approach where semi-structured interviews have been used to identify issues from the participants' perspectives considering a particular topic (Alamri, 2019). The interview questions have been formulated according to six themes, to make sure that every area was covered and to examine different aspects of the aim: *Overall description, Working conditions, Economy, Challenges, Sustainable agriculture* and *General inputs* (See appendix one).

The interview guide has been revised by both the translator, to ensure that proper concepts and terms were being used within the local context, combined with one individual who was not a part of the research, but who ensured the validation and correct translation of

the research questions from English to Spanish. Additionally, the involvement was not only necessary to make sure that a comprehensible language was used but also to get an outside perspective of the research design, something that improved the quality and the outcome of the interviews.

4.2 Semi-structured interviews

The empirical data for this study has been collected through semi-structured interviews, and this methodology has been chosen to allow the respondents to feel free to speak about their background and experiences, without feeling pressured into it. In addition, semi-structured interviews open up possibilities to ask relevant questions to the respondent at hand, whereas a structured interview would have been too impersonal and focused more on larger groups. A non-structured interview was also a possibility, but it would not have been the best option as it would be unable to provide clear and comparable data from the respondents. For this reason, a mixture of both semi-structured and structured interviews seemed most suited (Bryman, 2011, p. 413; Alamri, 2019).

To overcome the possibilities of the study having difficulties due to language and cultural barriers a local translator was hired, where guidance and support helped with communication and translations. This way it became easier for the respondents to express themselves in their native language. Additionally, the authors' prior knowledge of Spanish along with the set guide of questions, made it easier for the interviews to achieve their objective.

4.3 Selection of respondents

According to Stier (2019) there are two common perspectives to analyse; one from above, where the author is analysing the more fortunate people or the one from below, analysing the more "common" people in society (Stier, 2019, p. 49–50). This study was to focus on small-scale farmers, which are normally identified as the "common" people in the Ecuadorian society. It is highly important to make the analysis more objective and more fair and to bring awareness into the study. One first step is to keep in mind the fact that cultures often get generalised and as well as the challenge to explain a society objectively and fairly (Stier, 2019, p. 49–50). It is important to include different voices with different prerequisites to make the interview-sample as broad as possible. The different voices are made from interviews conducted with eleven respondents, with a mixture of men and women, including all in different ages. To be aware of, the study is limited to a local community called Alluriquin, making the study less sufficient to draw general conclusions from. In order to draw general conclusions, there would have been useful for a comparison of several communities but because of the time limitations this was found difficult.

La Hesperia, a nature reserve in Ecuador, is the base from where the two months of fieldwork was conducted. The supervisor of the reserve was the one who was primarily in charge of finding the farmers, as he is Ecuadorian and has been living nearby Alluriquin he was familiar with the town as well as its people. This was a good way of getting into

contact with the respondents and this is how the first interview was organised, by a convenience sampling. As well as being the supervisor, he was also the translator for this study.

The selection of respondents for this study was based on three main criterias: the respondent had to be 1) Ecuadorian and 2) living in Alluriquin 3) a farmer. The focus on the local community is of highly importance in this study and that is why the selection is based on where they are farming and living in order to fulfil the aim in relation to the small town Alluriquin and how farming works locally. The study started out with having small-scale farmers as one of the criterias, something that turned out more challenging as firstly planned. With random selection it is difficult to know the characteristics of the individual until you initiate the conversation and actively ask the questions. That is why one of the farmers classifies as a medium scale farmer, even though the hectares of land are not decisive of this definition. However, the farmer owns a bigger amount of land, 75 hectares, something that makes it hard to go unnoticed when the respondent with the smallest last owns 0.5 hectares.

According to Bryman (2011) a majority of people having interviews as their methodology do recommend doing targeted selection of their selected respondents. That is why the study began with a targeted selection, where the main purpose was to find individuals that are of relevance for this study and fulfilled the three main criterias of selection. The first interview was encountered in assistance of the translator, however, this then developed into a snowball sampling, when the respondent from the first interview recommended other farmers to be part of the interview (Bryman, 2011, p. 434). But because of unavailability and other concerns of the recommended respondents, there were only three targeted respondents in the study. The rest of the respondents were of “blind” random process, where the eight remaining respondents were found by randomly knocking on their doors in the area. Finally, there were three targeted respondents and eight blind randomly selected respondents (See table one). The way the interviews have been organised depends fully on the selection between “targeted” or “random” respondents. The difference lies in whenever a respondent was recommended by another individual and thereby became a “targeted selection”, meanwhile a “blind random selection” of respondents was encountered by knocking on doors in different neighbourhoods of Alluriquin.

Table one

Respondents	Pseudonym	Gender	Selection	Age	Date of interview
Respondent 1	Paul	Man	Targeted	M	13/04-22
Respondent 2	Francesca	Woman	Random	L	13/04-22
Respondent 3	Sofia	Woman	Random	L	21/04-22
Respondent 4	Alejandro	Man	Random	L	21/04-22

Respondent 5	Roberto	Man	Random	L	21/04-22
Respondent 6	Viola	Woman	Random	L	3/05-22
Respondent 7	Greta	Woman	Random	L	3/05-22
Respondent 8	Lucy (with family)	Woman	Random	S	3/05-22
Respondent 9	Carlos	Man	Targeted	M	3/05-22
Respondent 10	Salvador	Man	Targeted	L	3/05-22
Respondent 11	Elsa	Woman	Random	L	3/05-22

Comment: The table shows the eleven respondents with information such as pseudonym, gender, type of selection, approximate age and date of the conducted interview. The age of the respondents were not directly asked and that is why initials such as S, M, L have been used to get an idea of the age-gap. S stands for 30 years and below, M stands for 31 years and uphill to 50 years and lastly L stands for 51 years old and above this age.

The interviews were planned to be individual interviews, however, for two of the interviews additional family members were present. As for one of them, the respondent had one family member nearby, who also added one complimentary comment to one of the interview questions, data that was included in the study. However, there has always been one main person being interviewed, except in an exceptional case, Lucy, who was thirteen years old at the time. Lucy had her family present during the whole interview and the comments made by the family were extra validated. This explains the added information such as “(with family)” next to Lucy's name to the table (See table one).

There has been a mixture between in-depth interviews and shorter ones. The majority of the interviews lasted around 20-30 minutes, meanwhile two of the interviews lasted for over 90 minutes. Additionally, a glimpse into everyday life of the farmers has been experienced, where some of the farmers showed their farms. Even though the results are based on the interviews from eleven farmers, doing semi-structured interviews allows notes after the interviews. When being with the farmers after the interview the opportunity was taken to be able to supplement the questions with an informal conversation (Bryman, 2011, p. 431–432).

4.4 Motivation of the method

The reason for the chosen method is to understand the farmers’ point of view and to better understand their reality. The qualitative approach is more suitable because the study does not aim at quantification, but to understand the farmers’ point of view and to better understand their reality by talking directly to them. The aim is rather to get fuller answers, to be more reflexive and to have the flexibility to end up in different directions (Bryman, 2011, p. 340, 413–414; Busetto et al., 2020). One of the qualitative method's greatest advantages is related to the issue of flexibility where the researcher can adjust and change the direction of the questions. This brings the flexible nature of the method where the participants can reveal more about themselves. This instrument has been used whenever suitable (Alamri, 2019).

The aim is to study local small-scale farming in Alluriquin, Ecuador, and the ways in which it contributes to sustainable livelihoods. To be able to do this, questions were first asked about background and circumstances, followed by questions about the present, which was seen as the most suited with the methodology of interviews (Bryman, 2011, p. 441). This is reinforced by Busetto et al., (2020) who are saying that some research questions can only be answered using qualitative methods, especially when the research questions are aiming at discovering *reasons* for observed patterns (questions answering *when, how* or *why),* as endeavour for this study, where the collected data can be either foreseen or surprising. Therefore, the research problems can be examined by the approach from different aspects (Busetto et al., 2020). By choosing this question based methodology, the qualitative approach combined with interviews were the best way of asking more open-ended questions to allow a discussion rather than straightforward answers (Bryman, 2011, p. 340, 413–414: Busetto et al., 2020). In addition, this methodology provides the opportunity to ask additional questions to help increase the understanding during the interviews and therefore also the accuracy of the collected data. This has been a great help during the interviews (Alamri, 2019).

Random selection interviews can seem strange and hostile to the unknowing participants, but the hospitality they showed was unparalleled after being explained what the interview was about. According to Bryman (2011) in order to get the best out of the interviews, one must find the balance between listening to the answer and being aware of the silence. This will allow you to perceive when the respondent may be uncomfortable, or just taking their time to think of an answer (Bryman, 2011, p. 423). Body movements and facial expressions from the respondents have been an important guidance during the interviews. Having the initial contact be face to face had a positive influence on this process and offered a deeper insight into the participants emotional state and way of life. It also creates a friendly environment and allows the participants to express themselves with greater freedom and trust.

4.5 Methodological concerns

According to Bryman (2011), the main advantage you get when recording interviews is to be able to transcribe the audio to text. It gives the interviewer the possibility of replaying the recordings and remembering essential parts from the interviews (Bryman, 2011, p. 428). The study was initially planned for the interviews to be recorded, however, once in Alluriquin, this idea seemed unrealistic. Although recording can be advantageous, a conscious decision was made not to record the interviews. The reasons for this were that the translator recommended the interviews to be carried out without recording devices because it could make the respondents feel uncomfortable and end up affecting the quality of the answers given by the locals. Also, as mentioned before, random selection interviews can seem strange and hostile to the participants as an unknown stranger is invading their space. However, the first respondent was given the choice to be recorded or not, and he immediately asked not to be recorded because it caused him discomfort. To make the interview conditions as similar as possible, the decision was taken to carry out the *random*

selection interviews without recording as well so that the respondents would not feel overwhelmed.

Notes were taken actively during the interviews as the questions were being answered. It was important to write down as much as possible of what the respondents were saying because of the nonexistent recording, so the translator took his time translating to English to help with the note taking. Both the note taking combined with the translation, made sure that the answers were captured without changing their essence. Right after the interviews, a review of the collected data was made with the translator in order to make sure that the translation and the cultural understanding that has been exchanged was interpreted correctly.

The translation services are important and the credentials of the translator might vary. There are risks where poorly translated concepts will change from what originally the participant actually said. However, the translator for this study had language competence, where the interviews demonstrated high ability to communicate between languages using complex sentence structures and being able to describe certain concepts that the author was not familiar with within the Spanish contexts. Even so, for some occasions when the exact translation did not exist, the citations of the Spanish sentences have remained (Squires, 2008). The use of a translator was not an issue but rather an extra tool, where the author took notes of what was said by the respondent and afterward the translator translated what had been said as a confirmation and support. After the interviews were done a review and a control was made so both the translation and the cultural understanding that has been exchanged was interpreted correctly.

According to Stier (2019) language is a way of communicating and is closely related to culture. Even if the language is a big part of connecting with another person, there are obstacles to be aware of. One could be that a word could mean different things for different people (Stier, 2019, p. 59). This is especially relevant for having the interviews in Spanish, where it might be a disadvantage for the author, having Swedish as her first language. However, to use Spanish has been a way to feel more connected to the farmers when speaking their language. Even so, this can bring misunderstandings and make the communication less fluent, but with a clear script and being well prepared, the advantages of using the language that the respondents are most comfortable with are far greater than the disadvantages.

4.6 Ethical considerations

In accordance with the ethical guidelines there is a need to act and behave in a respectful way. This study has been using the recommendations from the Swedish Research Council's report (2002) to be able to ensure the research conducted does not bring any harm to the participants. It's important to conduct the study in a correct way, both legally but also ethically. The four general main requirements for research include the following: *information, consent, confidentiality,* and the *purposeful use of the material*. These

requirements have been taken under consideration and are presented below (Vetenskapsrådet, 2002, p. 6–14).

By the principle of *information,* the respondents have been notified about their assignment and their terms. Even so, the information about the study is on a completely voluntary basis and as well as if they wanted to withdraw their participation during any given time during the process this could be done without any complications. This was informed orally by the interpreter, however, this part was practically difficult with the respondents that was of random selection because of the limited time presenting ourselves when knocking on their door. To improve, it would have been better to have prepared an informative paper to make it clearer. By the principle of *consent,* the respondents have been directly asked if they would like to participate in this study. By the principle of the *purposeful use of the material* all the respondents interviewed have been informed about the purpose of this study and that the data collected will only be used for this study.

Because of the principle of *confidentiality* the decision is made to make all the interviews anonymous. The gathered data and specific details about the individuals will not be shared and additional be kept safe and without access to unauthorised persons or the public. Names are coded to make it harder to identify respondents. This has been shared already when the first contact was being made and once again when the interview was about to start. It is very important to be aware of the integrity of the person that is being interviewed. Even if my questions are not immediately sensitive, it might potentially concern issues of poverty and household economy. Therefore, an explanation is given before the interview about the purpose, and that the study is *not* about the economy of the individuals, but on adaptability in their agricultural production. It is important to give out this information so the person being interviewed understands both the professionalism of the interview but most importantly, the good intention of this study. It is about honesty, openness and respect for the individual.

4.7 Thematic analysis

According to Bryman (2011) a thematic analysis does not have a specific technique nor specific steps to follow, however, the important part is to find different themes and subthemes (Bryman, 2011). The thematic analysis in this study is about finding similarities and differences between the farmer’s different answers to the interview questions in order to fulfil the aim of the study.

The analysis began with reading through the material that had been collected. The notes had already been written directly after the interviews were conducted, considering not having recorded the interviews, there was not an additional transcribing needed. The analysis then started by writing down the most essential aspects of what each respondent had been saying, as well as reading through the written thoughts that had been written down directly after the interviews, to then complemented it by writing down new

impressions. This was done in order to get an overall picture of the material, to then continue to the next step where the details would be analysed.

A thematic analysis was then chosen when the same themes appeared. The way the themes appeared made it obvious to use the already fixed interview guide and its six themes. The guide made the framework of the thematic analysis, where the six themes became five: "*Overall description", "Working conditions", "Economy", "Challenges", "Sustainable agriculture* and *General inputs"*.

The necessary material was printed out to easily handle the data and to be able to mark the most outstanding parts of each interview. Starting with searching for outstanding similarities and differences under each theme to then continue the process with interview number one to interview number two and so on until each one of the eleven interviews had been carefully searched and analysed. The themes that appeared showed that it made more sense to look further into each question under the themes of the interview guide to be able to collect more specific data. The result is therefore presented in central themes with the same names as from the interview guide, where they have a close connection to the research questions.

4.8 Positionality and reflexivity

This study has been made with consideration and respect for the farmers being involved in the study to prevent misunderstandings that can arise, especially when a young student conducts the study in an unknown community. This is why an important first step is to become aware as an author and to reflect about possible conflicts that can arise. In this section critical reflexivity and transparency will enlighten cultural aspects of the study.

Stier (2019) writes about the correlation between values and one's world view. Trying to explain it as simply as possible, every culture has one worldview, intentionally or unintentionally, to withhold to. This view can help to organise and to categorise the reality (Stier, 2019, p. 98–101). The fact that it's hard, or even impossible to achieve objectiveness or fairness in a cultural analytical text is enthralling, it gives a different meaning to the term objectivity. As claimed by Rabinow (2016) culture is interpretation and the "facts" given are culturally mediated by the people whose culture we have come to explore, meaning that "facts" are made differently depending on who is making them. All cultural facts are interpretations and the one presenting these "facts" has taken a lot of detours, mainly by assumptions and self-reflection, to explain something that in turn can then be misinterpreted (Rabinow, 2016, p. 150–153). My cultural background and my values will affect the study, even if the intention is to be as objective as possible. One first step is to acknowledge the preconceptions to understanding the other person and not interpredict any answers beforehand. This by being transparent and presenting the decisions made that have formed this study.

4.8.1 Reflections of when one cultural meets another

It was the first time meeting the respondents when the interview was being held, there was no previous association. This brings the question of how the perception of each other will turn out and if there are any factors that can affect the outcome of the interview. According to Stier (2019) a meeting with a stranger reinforces the thinking of “we” in a group (Stier, 2019, p. 146–147). With the facts that it cannot be avoided, some regulations have been made to diminish this, such as a given introduction of myself and the translator, having the interviews in Spanish, and an extra careful look over the research design, to have it as accurate as possible, and even to always be aware of certain signals and predict the situation to an extra extent.

5. Results

This section is divided into six headlines according to the themes from the interview-guide. Firstly, the theme “Description of the farm” provides an insight into the eleven farmers' backgrounds and information about the farm. Secondly, the theme “Working conditions” is focusing on how much time is spent working on the farm and if the family is contributing in any form. Thirdly, the theme “Local produce and self-sufficiency” is presented to see how the farmer at hand is using the crops and how much is for home-consumption and merchandising. The fourth theme is about “Economy”, and if it is possible to make a living from small-scale farming, and the fifth theme is “Challenges”, to get an understanding of the farmer’ views and experiences of their daily agricultural struggles. The last theme “A sustainable agriculture and general inputs' ' focuses on whether sustainability is considered when farming, and presents the final comments from some of the respondents. It should be noted that the citations used in this study have been translated from Spanish to English mainly by the author, with the help of the translator when needed.

5.1 Description of the farm

To organise the interviews, most of the farms have been visited in person. This is how a glimpse into everyday life of the farmers has been experienced, where some of the farmers invited the author to see more of the practical agriculture and how farming in reality is carried out by them. Yet, the results are based on the interviews from eleven different farmers based in Alluriquin with equally important voices and involvement in this study.

The majority of the farmers are landowners, referring to owning their own farm where they live and work, but two respondents differ. Viola grew up on a farm, where she and her siblings have been learning about agricultural practices since they were small children. Therefore, she explained that she was still working in the agricultural sector, however, they were renting the farm to be able to live off it. Meanwhile, Greta moved to Alluriquin for better opportunities, taking charge of the farm where she currently lives and works.

As many as five of the respondents owning their own land had the same background and reasons for why they are farmers today. The first reason is that they were born into an agricultural life and the second reason is that they have inherited the lands from their

parents (Francesca, Sofia, Alejandro & Carlos) or they are planning on inheriting the land (Lucy). As of the rest of the four farmers, who bought the land, they have named two different reasons for the purchase. Two respondents, Paul and Elsa, explained that it was a dream for them to have a farm, they both said it gave them a new opportunity to start a new and different life here in Alluriquin. Meanwhile Salvador said it was to build a new future, but mainly for his children, "*. . . so that they one day can inherit the land*" (R10). An important note to add is that Salvador bought 75 hectares of land, something that makes him different from the other farmers, where he is, compared to the other respondent identified as a medium scale farmer. And lastly, Roberto who said that he, many years ago, bought half of the land from his wife to move to Alluriquin with her, because the wife was, once again, *". . .born into the agricultural life"* (R5). As noticed, even if the reasons differ for why the respondents today own the land, the majority of the respondents are landholders. Even so, the pattern shows that it is more common to be born into a farmers' family and then continue on the same path as the parents than to become a farmer without past experiences.

Table 1

Respondents	Bought land (Hectares)	Inherited land (Hectares)	Other (Hectares)
Paul (R1)	**34**	-	-
Francesca (R2)	-	**1**	**-**
Sofia (R3)	-	**0.5**	**-**
Alejandro (R4)	-	**10**	**-**
Roberto (R5)	**26**	-	-
Viola (R6)	-	-	**7**
Greta (R7)	-	-	**26**
Lucy (R8)	-	**8**	**-**
Carlos (R9)	-	**36**	**-**
Salvador (R10)	**75**	-	-
Elsa (R11)	**2**	-	-

Comments: Shows how much hectares of land each respondent has access to, and in what way they either became landholders of the land- by buying the land or inheriting the land, or the third alternative way, where both renting or working as an employee on the farm is included.

The most common crops produced on the farms are sugarcane, yucca, cacao, plantain and bananas. A majority of the respondents had at least one of these products on their farms, besides Roberto, who is focusing on dairy farming and Paul who is focusing on coffee-production and cattle raising. However, one thing all of the respondents have in

common is the growing of citruses, such as mandarins, oranges and lemons. As Greta said when asked about her main crops produced *". . . dairy cattle and that which grows naturally here"* (R7). Greta refers to the plants and the trees that grow widely in her farm, but there is no need for much maintenance. In her case she has oranges, limes and lemons growing and only used for self-consumption. Even Roberto referred to the same thing as "*land that gives everything*" (R5), where he refers to the bananas, lemons and oranges that are growing in his backyard with hardly any maintenance. Additionally, the respondents mentioned more kinds of different produce such as avocado, balsa trees, coffee, panela, potatoes, sweet potatoes and papaya. As well as having chickens, useful for both eggs and for the meat[2] and the production of aguardientes[3]. There is also a big interest in both cattle raising and dairy farming in Alluriquin, and as many as seven respondents are engaged in either one of them, while two of the seven respondents not only raise the cows for self-consumption, but are also butchers, focusing on selling the meat for profit.

5.2 Working conditions

To ensure a sustainable livelihood there are certain working conditions that need to be undertaken, working hours are one of those. Two of the respondents are retired, and in one case, Roberto hires farmers working on his farm, as they themselves are unable to work because of old age. The other retired respondent, Elsa, has her son and her family mostly maintaining the farm. This leaves nine respondents that are actively working. Four respondents: Paul, Francesca, Sofia and Viola said that they were working half-time, around 4 hours per weekday, but it all depends on the season of the year. There was just one respondent working less than half-time, Alejandro. However, as could be expected, the two men with the biggest hectares of land said that they were working more than halftime. Salvador with around 75 percent full-time, meanwhile Carlos worked more than full-time, but again, it all depends on the season and how many workers they have at that moment.

To get an idea on how much maintenance is needed on the farm, the amount of labour is one essential part to measure this. It is more common to have paid labour than not amongst the respondents. Six of the respondents (Paul, Sofia, Alejandro, Roberto, Carlos & Salvador) have paid labour, but the number of workers varies between them. Normally, it is between one and three workers. Even so, the workload does depend on the hectares of land, what type of crops that are being produced and the type of animal care that is needed. Additionally, according to Carlos the current season is highly important as well, as during the summer he is in need of 5-6 workers, but fewer during the rainy season. With all these factors to consider, it is also determined on the kind of support provided from the family.

There are five respondents who do not have any type of paid labour (Francesca, Viola, Greta, Lucy & Elsa), but they all do depend on family support. All, but one, of the

[2] To bear in mind, there is a possibility that crops listed by memory from the respondents during the interviews could have been forgotten and therefore not mentioned.

[3] A local alcoholic beverage that contains between 29% and 60% alcohol by volume and is normally made from sugarcane.

respondents said that their family is either working or helping[4] them to maintain the farm in some way. Many of the respondents expressed major concerns that it is essential that the family members are helping them to run the farm, if they would not have helped it would risk the chances of being able to maintain the farm.

5.3 Local produce and self-sufficiency

All of the respondents are combining selling their products to the local markets with self-consumption of their produced crops and final products. However, a pattern has been noticed where the ones with a smaller hectare of land are mostly prioritising self-consumption, rather than firstly selling the products. The five respondents (Francesca, Sofia, Alejandro, Viola & Elsa) expressed similar thoughts of the calculation of firstly consuming food, and then selling the products they are not going to eat anyway. However, the best outcome is to sell as much as possible to be able to make a profit. Meanwhile, Paul, Roberto, and Greta prioritise selling the products, rather than for self-consumption where they had different reasons for it. Starting with Paul who prioritised products to uphold his café where he sold his produced coffee. Roberto, on the other hand, who firstly sold the milk of the cows in order to maintain the farm, and lastly Greta who was in charge of the farm (and not the landowner) and therefore also prioritised selling the products. The rest of the respondents found a balance between local sales and self-consumption and did not give any further comment on the issue.

The merchandising is limited to the local market and neither one of the respondents are exporting their products. As Paul explained it *“No, we are not thinking about exporting. The local market is big enough”(R*1) Most often the produced products are being sold at the local market in Alluriquin or in the bigger city, called Santo Domingo, just 40 minutes away by car. For the majority, produced products such as fruits, vegetables and meat are being brought by themselves to the market to be sold there. However, when it comes to selling the milk, there is a truck that comes by the farm to collect it. There was only one respondent, Sofia, who said that merchandisers went to buy the vegetables and the fruits at her farm. Another respondent stood out as well, Paul, a producer of coffee. Paul and his wife own a café where the customers often come to consume their final product, the coffee, and in addition, Paul is also currently selling the coffee to other cafés in the neighbourhood.

5.4 Economy

The majority of the respondents has agriculture as their only source of income, where some key products make them enough profit to be able to live from it. The products that were mentioned that have the highest profit when it is being sold are banana plantain, bananas, cacao, panela, tilapia fish, aguardiente, yucca and products from cows, such as milk or meat. This leaves four respondents who had other incomes as well. Paul is one of

[4] There is a fine line between “working” on the farm and “helping” out on the farm as a family member, especially in the Ecuadorian rural society where families are very dependent on each other and therefore the decision was made to include both of the terms.

these respondents because he combined his income from agriculture with his income from the café, but after all, he is still self-employed. Paul talked about the difference in profit between selling the coffee beans unprocessed and selling the final product of coffee, where there is not enough profit selling them unprocessed. This is why he bought unprocessed coffee beans from other farmers to then process the beans themselves (drying, roasting), to be able to sell the final product of coffee. Roberto, on the other hand, received two incomes, one from agriculture and another additional income from his pension. He shared that he was able to live only by his pension, however, for the purpose of keeping the farm maintained he had workers responsible for the dairy production. This means he was able to pay the labour by selling the milk for the purpose of taking care of the farm.

The remaining two respondents, Francesca and Sofia, combined their agricultural income with a second job, keeping in mind, these are the farmers with the smallest hectares of land. Francesca, with 1 hectare, was only working with the farm, but her husband was working as a truck driver and this was also their main income. Sofia, on the other hand, owned 0.5 hectares of land and was working in a restaurant for some weekends, because only working with the farm was not sufficient. Although she did have one employee working for her a few hours per week to help her maintain the farm, especially when there were bigger things that needed to be done.

5.5 Challenges

There was a greater difference in responses for this theme where many mentioned different obstacles that happen in the daily life of the farmers. According to Paul, who is prioritising selling the products rather than self–consumption, said there was tough competition between farmers, but he also said that the greater challenge lay with competing with the bigger companies and merchandisers. He thought this was the main reason for not selling as much as he could have done. This is connected to what Greta said about "*the prices get lowered"* (R7), because traders always asked for the lowest price possible and this was hurting her business. Francesca continued on the same subject, and said that farmers are leaving the countryside because of the unfair market prices, where the challenges lay in not getting paid enough. She continued explaining her challenges with the subject of land. Francesca is an owner of one hectare, and she gave a scenario where if she would have had more land this would have brought her greater agricultural possibilities, especially for increasing her crops. Paul was also mentioning missing opportunities, but from a different position, where he owned 34 hectares of land. Paul was referring to the lack of technical machines, in his case he was in need of a machine that would spread out the coffee beans by size, to avoid doing it by hand, something they are currently putting a lot of effort and time into doing today. Paul continued explaining about the advanced machines that are imported from other countries which makes them very expensive to buy for common people because of the high tollgate fees.

A different challenge mentioned by Roberto was the nonexistent support from his children. He explained the situation further where the children wanted to stay in Quito to study and did not see any future being a farmer. However, this left Roberto and his wife managing

the farm alone, and that was also the explanation for why they had workers taking care of their dairy cattle as well as maintenance of the farm. Carlos, on the other hand, mentioned a challenge where he said that *"it is essential to keep the livestock in good condition to be able to have good meat. Because if they [the cows] do not eat good quality grass, and get the right nourishment, the meat will turn out thereafter" (R9)*, and that was mainly the reason why he was trying to keep his surroundings in the best possible way. Viola has another challenge with cattle raising, where she explained the complexity of having cows grazing on steep hills where the risk of them falling is high, and this was also one of the main reasons why they died combined with different kinds of sicknesses.

There were four respondents who had not experienced a failed harvest. Francesca is one of these respondents. She had already commented on longing for more hectares to farm on, however, she was not worried about a failed harvest because of her variety of crops, she said "*. . . if something fails, there are other things [crops] we can use*" (R2) and by doing this, she spreads out her risks. The remaining seven farmers have experienced a failed harvest, with a lot of different reasons for it. The most common ones were fungi, parasites, ticks, ants and other types of pests that are daily hazards against a successful harvest. To deal with this they have to invest to deal with the problem, which is something Viola was saying she cannot afford. She continued to talk about it as a big ultimatum in her daily struggle where the struggle turned out to be a bit of a gamble, where she was hoping for a successful harvest to be able to live from agriculture but then again, the pests might strike anytime.

Another common challenge was the rain, especially during the rainy season when it is raining heavily. Salvador commented and was concerned about the bananas and lemons, because they are not well fitted for the cold weather. Another problem he said was the fact that the rain was affecting the soil, where the vitamins did not stay in the ground but rather flowed away with the water, which made the productivity less effective for his crops. Additionally, the heavy rain increased the risk of the flowers falling off and did not produce any crops for that season, something that became a problem for Paul, when the coffee plant flower fell off. Carlos continued on the dilemma of too heavy rain saying it was a challenge to harvest the cacao during the rainy season, where the heavy rain was ruining the production combined with fungus attacking the fruits. This was reinforced by Salvador and Lucy, who additionally had problems with a lot of heavy rain, but also the shifting to too much sun. The sun was a challenge for Elsa as well, however, it is because of a different reason. She was saying there was a lack of fresh water to be able to sustain the harvest when the soil was too dry, which made her crops dry out.

5.6 A sustainable agriculture and general inputs

Sustainability is a widely used term that can be interpreted differently (See definition), the question that was asked to the respondents was "Do you use certain methods to farm more sustainably?" where the majority of the respondents do not use any certain methods for this, and one follow up-question was formulated as "*Do you think about sustainability in any way?"* to be able to keep the question open and see what the respondent at hand first

thought of, however, the majority do not think about sustainability in any way when farming, as Greta was explaining *"I just do what I am told to do, to be able to do my job"* (R7). Sofia, on the other hand, was using all natural products for her farm such as natural fertilisers, however, the only reason was because of the small size of the farm that made it unnecessary to use other types of industrialised products.

As explained earlier, a small-scale farmer does not need to be identified by the owned land but by the availability of suitable soil. As with Carlos, with 36 hectares of owned land, who was explaining that all of his land is not suitable to practise agriculture because of reasons such as erosion and other challenges. Carlos also mentioned he was intrigued by the interview and its questions and commented that he was missing out on knowledge about the environmental theme but he would like to learn more about sustainable farming, especially on how to use organic products. He had knowledge about the social problems using certain fertilisers but then continued explaining that he neither could afford to use organic products and even if he did, he would not know how to use them. Even Salvador commented on the price for organic products when he said "*It is too expensive. I do not produce enough to do this and it is very expensive. It is not possible to use organic fertilisers"* (R10), but either way, he was not using any other methods to farm more sustainably. Even so, Alejandro said that he is using organic fertilisers, even though he admits of the need to use fertilisers that obtain chemicals sometimes. Another respondent using certain methods to farm more sustainably was Lucy and her family. They were using natural products such as natural fertilisers and found these ones being even easier to buy on the market.

When it comes to Paul, Alejandro and Lucy there was a different approach where the interest of sustainability was higher and more commented on. Starting with Paul, with a background of environmental engineering in Italy, he had methods in order to avoid certain challenges. One of the hardest daily challenges he encountered were the pests that were destroying the harvest, however, to deal with this problem he developed different organic methods to overcome these obstacles. One example out of many was a bottle filled with alcohol to attract insects to get into the bottle rather than destroying the harvest, and in this way, they could even avoid using harmful chemicals. He continued explaining about another method where he plants the coffee beans in an effective way of *"zig-zag pattern to avoid erosions, which is a general problem we have up here"* (R1). Paul was the only one with actual methods that are sustainable, where he gave examples of using the used coffee beans to make tea and the used coffee shells to be used as fertilisers to reinforce the land. He also commented on the social aspects of sustainability, where he always thinks about the working conditions of the farmers he is buying his coffe off. One way of doing it practically was paying more salary than he needed to the farmers that are currently growing the coffee beans for him, but as well, he was also demanding the best quality for the coffee beans produced.

Even if there were some thoughts of sustainability amongst the respondents, there was also a clash against the possibility of losing their harvest if they would not use products that are

stronger, such as pesticides or fertilisers containing different kinds of chemicals. This was commented on by Carlos, Alejandro, Elsa and Lucy. Lucy explained it a bit further, where she said that they are well aware of the consequences, of both harming the nature and the people living in it, however, they do need to kill the insects that are invading their harvests and if they do not succeed with this, they might lose the harvest, which is a risk that they are not willing to take.

Another issue commented by Carlos is the way farmers were changing their crops from different kinds of fruits to be sold at the local market into Balsa trees for exports. He explained that the trees are becoming more popular and are even changing the biodiversity in the area, mainly because it takes a lot of land to grow these trees. So instead of planting crops for consumption purposes, farmers are now starting to grow Balsa trees. He was saying that it might not be bad for the environment per se, however, there is currently less produced food which might make it into a social problem when there is less food produced for the locals if the tendency of growing the balsa trees continues.

Lastly, Lucy who was only 13 years old at the time, was finalising her interview by saying that we all need to be more conscious about the way we farm and choose the methods we use more wisely and also consider what we are buying. She continued and said that the chemicals do not only hurt the land, but even our surroundings. So it is very important to take care of our environment and the only planet we are living on, to be able to still live here.

6. Analysis

This section will provide an analysis of the results as well as compare it to the theory and previous research in order to answer the research questions. The first section, *"In what way can local small-scale farming contribute to sustainable livelihoods?"* covers uneven living conditions for different farmers and their ability to support themselves and their families. The second section, *"What economic and environmental possibilities and challenges are the local small-scale farmers in Alluriquin facing?"* further analyses how these challenges affect their daily lives and what solutions there are. Finally, the third section, *"Can sustainable livelihoods contribute to poverty reduction and food security? And if so, how?"* will provide new perspectives to further analyse the theme of sustainable livelihoods and whenever it is possible to reduce poverty and secure everyone having continued access to a sufficient quantity and quality of food.

6.1 In what way can local small-scale farming contribute to sustainable livelihoods?

In order to answer the first research question there is a need to clarify the term *sustainable livelihood* (See definition 1.3). There is not only one way in which local small-scale farming can contribute to sustainable livelihood, but several ways. For example by the way they are aware of their daily challenges, and how they are trying to overcome them. Some of the respondents find new methods to deal with these challenges, meanwhile others respondents continue with traditional ones. The study shows how they all maintain their

farms, but are still relying on support, mainly from family members. Even so, they do have time for other activities outside of work, where work does not consume all of their time. The results also provide information about the limitation of opportunities linked to assets, not meaning a lower quality life, but a profound difference in advantages. One example is the assets of land where the majority of respondents own the land, as many as 9 out of 11. The presented results do tell something about owning the land and the possibilities and opportunities it brings.

The overall results showed that the farmers leasing the land had a few more hours of workload and, neither of them gave any comments on certain sustainable methods because they believed they were just doing their job, which could be an indicator that development of farming is not their first priority. This is certainly an interesting theme to research further. My own thoughts about landowners owning their land would be that they care for the land in another sense. This is because, as the theme of inheriting the land, as the majority of the respondents had done, the land will be owned for generations, a factor that differs from those farmers not owning the land. Additionally, owning the land requires maintenance and workforce which brings job opportunities. It might not be a full time job, as the study shows, however, the land is being used for self-consumption, and food that remains unused or unconsumed is sold at the local market, something that brings extra profit, and might even ensure secure retirement. Owning the land is usually a long-term investment, if the land and especially the soil is taken care of. This way of living contributes to sustainable livelihoods, where land is taken care of and where the farmer is making the most of its possibilities and capabilities. Additionally, this is where sustainable methods and different strategies are highly valuable, to ensure healthy surroundings, for present and future users of land. However, to be a landowner does not only come with advantages, but also brings certain risks. Risks presented by the result such as deteriorated soil, price or market risk, uncertainties of weather and erosion or the harmful effects of pests. These general risks are connected to being dependent on your agriculture and not being able to provide food for the family, not being able to pay the labours and in the worst case, ending up losing the farm.

To comment on what was introduced in the beginning of this study, the background data shows that almost half of the small-scale farmers in Alluriquin are struggling with feeding their families, mostly because of limited resources. To clarify, this is not what this study has been presenting, instead, the study shows how farmers are finding ways for food security and are preventing any kind of hazards of the means possible. For example, as confirmed by Francesca, even with her limited area of one hectare, she uses a variety of crops in case if something does fail and in that case she has other crops to rely on. This not only shows that she is mitigating the risks but it also shows that she is contributing to maintaining her assets under control. This way of living contributes to sustainable livelihoods, where land is taken care of and where the farmer is making the most of its capabilities, assets as well as the activities required for a means of living. The term capabilities is also related to the theory of Amartya Sen, where one important point of view, that has been mentioned, is the freedom one has to achieve well-being, however, this

freedom must be understood in terms of people with capabilities. As the study and previous research shows, the farmers do face difficulties with their limited resources, however, being able to use the available resources they have makes the difference, as several of the respondents have been showing throughout the study.

If looking at previous research there are some contradictions that need to be analysed. According to Chappell et al. (2013) there is a need for a discussion about improving the socio-economic wellbeing for small-scale farmers without overexploiting land or resources (Chappell et al., 2013). In comparison with this study, without drawing any conclusions, there are signs of just this, for example by the respondent Paul and his different diversified use of methods of reducing risks shows that socio-economic wellbeing without overexploitation of land or resources might be the way forward. Intriago et al. (2017) reinforce this with their research, where the study shows that ecological agriculture is the best alternative for some of the challenges the farmers are facing such as climate change and rural poverty (Intriago et al., 2017). Even so, as shown in this study, Paul's knowledge and interests can be seen as an advantage to be able to use sustainable methods, but at the same time the results also shows that there is a lack of both of these components for the majority of the farmers, even though there was some interest amongst the farmers to learn more.

There were interests shown amongst farmers to engage and learn more about sustainable methods. If one looks at the community of Alluriquin, where its main identity is linked to environmental conservation and the production of sweets, one must find it as an interest to somehow support the local small-scale farmers to uphold its identity. This connects to one of the SDG:s targets (12.7): *Promote public procurement practices that are sustainable, in accordance with national policies and priorities* (UN, n.d.). A few of the respondents were talking about organic products being too expensive, something that makes the product inaccessible. This takes away the option of being responsible and that is why support from the local government and the municipality are extra important, especially when interest in sustainability is starting to appear. In order to promote sustainable practices and contribute to sustainable livelihoods there is a need to support the small-scale farmers in making it easier for them to make responsible choices of their production. Additionally, there was a fear of losing their harvest when they are not using stronger types of pesticides or fertilisers, and this fear can disappear with correct information and knowledge.

6.2 What economic and environmental possibilities and challenges are the local small-scale farmers in Alluriquin facing?

The farmers are facing a lot of different challenges, both economic and environmental. This study show, like the studies of Salazara et al. (2018), Intriago et al. (2017), Lopez-Ridaura et al. (2019), Adaptation fund (2011), Bathfield et al. (2015), Audate et al. (2021) and Cole at al. (2011) that there is a high vulnerability for small-scale farmers, such as social resources and there have been signs showing that urbanisation is a real ongoing problem. Even the great inequalities between the rural and the urban areas, which Cole et

al. (2011) is discussing and can also be noted in this study, provides results that the rural areas with a high percentage of agriculture and its inhabitants always end up behind because of limited resources.

One challenge mentioned by the respondents is the competition between the small scale farmers against the big companies. One product in particular is the balsa tree, a product that has become very popular for exports. As presented in the previous research section, Salazara et al. (2018) and Bathfield et al. (2015) are not only writing about this as a local challenge but as a national challenge. Returning to this study, the challenge with balsa trees was commented by the respondent Carlos, where the biodiversity in the area is changing together with the changes the farmers are making when they are exchanging their crops into trees. The challenge with changing crops into trees for exporting might make it into a social problem, where there will be less food produced in the future. The scenario, in a long-term perspective, might play out as less food is being produced as well as selling less products to the local market, which might increase the prices with less food available in Alluriquin, which in turn can lead to less food being available to people in the region, and with this scenario there is no food security and can eventually even lead to starvation.

Something not presented as a result in the study, but that brings another perspective is the way of seeing solutions for these challenges. As April-Lalonde et al. (2020) is saying, to oppose industrialised food and industrialised agriculture is to focus on agro-ecological produce for example by reaching other groups of consumers, especially those who value good quality food and locally produced food (April-Lalonde et al., 2020). These two examples are something that is done by the farmer, however, what could be the next step is the way of doing agriculture where there are ways of improving the methods used. There are certainly different ways of doing this, including methods that are not being brought up in this study. However, some of these methods are discussed by Salazara et al. (2018), where studies provided are saying that there are possibilities for farmers, especially when focusing on improved methods, such as better models for agriculture, changed land use by switching crops, or improving product commercialization (Salazara et al., 2018). Something worth mentioning are the risks with these “improvements”, where nothing is guaranteed, for example by switching crops that brings certain advantages but does not however guarantee a higher amount of crops.

Farmers have a lot of challenges to face, especially external threats that are not easy to deal with. Even so, they do have possibilities to both reduce the challenges and to limit the impact. As the study shows the rain is one of these external threats that has been discussed on several occasions, and with new weather conditions, one solution might be to find other crops more fitting and more adaptable to this climate or to vary the crop they produce. Whatever the solutions might be, the study shows their awareness of their own individual challenges, which bring a certain indicator that the challenges have been handled before and even if the methods might not be sustainable, they do have solutions suitable for them and their specific way to do agriculture that works for the local condition.

6.3 Can sustainable livelihoods contribute to poverty reduction and food security? And if so, how?

As the study shows, the farmers presented in the study do not fit the description of being in extreme poverty. Poverty is defined as, "*Condition where household income is insufficient to afford basic necessities of life. (food, shelter, clothing)*", therefore, it is more suitable to describe these farmers as living in relative poverty. Even so, the theory presented by Amartya Sen presents a better way to measure poverty. Sen talks about an index that measures characteristics of poverty to reflect an individual's economic condition. The term "poverty" and "being poor" must be seen in its context and this study shows that the farmers do have limited access to resources, however, because of their way of living, considering the possibilities of providing food for themselves, makes it more difficult to put them into grouping, because in reality it is hard to measure.

Lucy, who was only thirteen years old, is a great example of someone living as part of a family and contributing to a sustainable livelihood, where she is educating herself but at the same time upholding the family support. The family support is, as the results show, highly important and almost necessary for almost all of the respondents. Lucy, who is younger compared to the other respondents, was well informed about the theme of sustainability and its benefits but also its challenges. Even though this is only one case, it could indicate how the interests for combating these challenges are increasing in Alluriquin and how the younger generation could be the ones advancing the information for the ones interested in learning more and bringing new methods that are both financially manageable and well adapted to this land area.

This research question is interlinked with the two previous ones, where the possibilities of living is dependent on the choices made by the farmer. Maintaining a sustainable livelihood is possible and to be able to do this varies between the respondents. As said, most of them depend on family support, weather conditions, hectares of available land, choice of crops and other viable factors. Even though it is difficult to tell whenever it is possible or not to maintain a sustainable livelihood, there are more indicators that it is possible. The results presented show that it depends on the farmer at hand, where it is more about making something out of the resources one actually has, with consideration that everyone is not given the same opportunities, however, it is also about being prepared for the challenges to be able to face them when they do take place.

Connected to SDG 1: No Poverty, the challenges that have been mentioned, reflects the reality of many farmers, and as the result shows, most of the respondents are having agriculture as their only source of income. This indicates that it is possible for local small-scale farming to have a positive effect on poverty reduction to their way of living, where the working conditions are good and work does not consume all of their time. Also, this study shows that all of the respondents are combining selling their products to the local markets with home-consumption of their produced crops, where consumption seems to be the priority, something that allows for readily available fresh food amongst the

families in Alluriquin, as well as referring to food security. Conclusively, their own actions are essential for ensuring a sustainable livelihood, where everyone exceeds the living condition where household income is more than sufficient to afford basic necessities of life.

7. Discussion and conclusion

The theory of Amartya Ses has provided a useful framework of analysis, as learned, “poverty” needs to be looked at from outside of this term. It is not only about the income one gets, but understanding that poverty is intimately connected to the ability for people to make changes to improve their lives. As the study and previous research shows, the farmers do face difficulties with their limited resources, however, being able to use the available resources they have makes the difference, as several of the respondents have been showing throughout the study.

The aim of this study was to examine in what way local small-scale farming in Alluriquin contributes to sustainable livelihoods. It can be learned by the results of this study and previous research that farmers are facing a lot of different challenges on their daily bases of living, and even though they had different methods of dealing with these issues, the challenges seem to be manageable. The study also shows us how dependent farmers have become on local farming, self-sufficiency farming or most commonly, a combination of them both. The majority do have agriculture as their only source of income, however, a pattern has been noticed where the ones with less land are mostly prioritising self-consumption, rather than firstly selling their products. The most common crops produced, as well as sold on the farms, are sugarcane, yucca, cacao, plantain and bananas as well as the big interest in both cattle raising and dairy farming in Alluriquin.

Maintaining a sustainable livelihood is possible and to be able to do this varies between the respondents. As mentioned, most of the respondents depend on family support, weather conditions, hectares of available land, choice of crops and other viable factors. Even though it is difficult to predict when it is possible or not to maintain a sustainable livelihood, there are more indicators to show that it is possible. Conclusively, the results show how these eleven individuals are able to locally farm small-scale and contribute to sustainable livelihood, however, this farming is influenced by both internal and external factors that might be harmful if they are not considered. This way of life does provide the local community with a blueprint to follow so that they can guarantee their immediate wellbeing and prepare themselves and their families for any unforeseen circumstances, achieving sustainable livelihoods inside rural communities.

7.1 Future research

For future research, it would be interesting to study the concept of the difference between being a landowner and someone who leases the land they farm on. This research would include factors such as sustainable methods, workload, investments, support from family members and the different priorities one makes to see if there are differences in mindset between the two parties and if so, how these differences play out in practice.

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Appendixes

Appendix one- Interview guide

Interview guide	
Q1: Questions connected to the first research question. **Q2**: Questions connected to the second research question. **Q3**: Questions connected to the third research question. -The questions are however interlinked.	This form was filled out just before the interview started: Fiction name/s: Gender/s: Age: (S, M or L)
Themes	**Interview questions**
Overall description	
Q2	**1. How come you're working with agriculture? / ¿Por qué decidiste trabajar como agricultor?**
Q2	**2. Are you the owner of the farm?/ Usted es el dueño de esta tierra?**
Q2	**3. How many hectares is the farm? ¿Cuántas hectáreas tiene la finca?**
Q2	**4. What are the main crops you are producing?/ ¿Cuáles son los cultivos principales que está produciendo?**
Working conditions	
Q1 + Q2	**5. How many hours do you work each week?/ ¿Cuántas horas trabaja cada semana?**
Q1 + Q2	**6. Do you have any workers working for you?/ ¿Tiene algún trabajador trabajando para usted?** -No: Why not? Porque no? -Yes: How many? What hours per week? ¿Cuántas? ¿Cuántas horas cada semana?
Q1 + Q2 + Q3	**7. Does your family help you/work with the farm?/ ¿Su familia le ayuda en la finca?**

Local produce and self-sufficiency	
Q1 + Q2	**8. What are the crops you mostly use at home for consumption purposes? /¿Cuáles son los cultivos que utiliza más en su hogar para el consumo?**
Q1 + Q2	**9. Do you sell your products?/ Vende los productos?** **-To who? / A quien?**
Q2	**10. How do you sell your products?/ ¿Cómo vende sus productos?**
Economy	
Q1 + Q2 + Q3	**11. Is agriculture your only source of income? / ¿Es la agricultura su única fuente de ingresos?** Yes: Is your income sufficient from agriculture? / ¿Son suficientes sus ingresos de la agricultura? No: How/where do you make your extra income?/ No: ¿Cómo/dónde obtiene su ingreso extra?
Q1 + Q2	**12. What are the crops you get the most economic profit from?/ 10. ¿Cuáles son los cultivos de los que obtiene mayor beneficio económico?**
Challenges	
Q1 + Q2	**13. What 's the most common challenge you face daily within the agriculture sector?/ ¿Cuál es el desafío más común al que se enfrenta a diario dentro del sector agrícola?**
Q1 + Q2	**14. Have you ever experienced a failed harvest? / ¿Alguna vez ha experimentado una mala cosecha?**
Q1 + Q2	**15. What are the most common reasons for a failed harvest? ¿Cuáles son las razones más comunes de una cosecha fallida?**
Sustainable agriculture	
Q2 + Q3	**16. Do you use certain methods to farm more sustainably? / ¿Utiliza ciertos métodos para cultivar de manera más sostenible?**
General Inputs	**17. Is there anything you would like to add to further explain a certain subject?/ ¿Hay algo que le gustaría agregar?**

Figures and tables

Table one: Presentation of respondents

Respondents	Pseudonym	Gender	Selection	Age	Date of interview
Respondent 1	Paul	Man	Targeted	M	13/04-22
Respondent 2	Francesca	Woman	Random	L	13/04-22
Respondent 3	Sofia	Woman	Random	L	21/04-22
Respondent 4	Alejandro	Man	Random	L	21/04-22
Respondent 5	Roberto	Man	Random	L	21/04-22
Respondent 6	Viola	Woman	Random	L	3/05-22
Respondent 7	Greta	Woman	Random	L	3/05-22
Respondent 8	Lucy (with family)	Woman	Random	S	3/05-22
Respondent 9	Carlos	Man	Targeted	M	3/05-22
Respondent 10	Salvador	Man	Targeted	L	3/05-22
Respondent 11	Elsa	Woman	Random	L	3/05-22

Table two: Access to hectares

Respondents	Bought land (Hectares)	Inherited land (Hectares)	Other (Hectares)
Paul (R1)	**34**	-	-
Francesca (R2)	-	**1**	**-**
Sofia (R3)	-	**0.5**	**-**
Alejandro (R4)	-	**10**	**-**
Roberto (R5)	**26**	-	-
Viola (R6)	-	-	**7**
Greta (R7)	-	-	**26**
Lucy (R8)	-	**8**	**-**
Carlos (R9)	-	**36**	**-**
Salvador (R10)	**75**	-	-
Elsa (R11)	**2**	-	-