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Women´s empowerment: Women´s role and decision-making power in the Peruvian cocoa-based community

MASTER'S THESIS

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Author: Jana Obručová

Chief supervisor: Ing. Petra Chaloupková, Ph.D.

Declaration

I hereby declare that I have done this thesis entitled **"Women´s empowerment: Women´s role and decision-making power in the Peruvian cocoa-based community"** independently, all texts in this thesis are original, and all the sources have been quoted and acknowledged by means of complete references and according to Citation rules of the FTA.

In Prague 27 April 2018

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Jana Obručová

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Abstract

In the recent years the importance of women´s empowerment and its connection to food security and agricultural growth has been observed. However, lack of information and data across female farmers in the world still remains as a key challenge. Better understanding of gender dimensions of asset acquisition, accumulation and use together with an understanding of household and farm management decision-making can lead to an increase in women´s productivity and recognition.

This research investigated women´s role and their decision making power in agriculture and in their household. The case study was conducted among 90 anonymous women farmers in the selected Peruvian cocoa-based community. In addition, the representatives of two main local cooperatives and the manager of projects aiming at women´s empowerment from Instituto de Cultivos Tropicales were asked to provide their views on women´s empowerment in the selected area. Selected methodology was based on both qualitative and quantitative methods. The data were mainly collected by using questionnaire survey and analysed by using descriptive statistics and inferential statistics such as correlation and regression analysis.

The main findings showed that socio-economic factors such as education or marital status influence women´s role in decision-making power. Major share of women reached just primary education or no education at all and the correlation between education and decision-making power was found. Women in this study are not only essential agents involved in the main fieldwork, but they also bear a primary responsibility for the marketing of their agricultural products. Women farmers have to face burden of work that limits their participation in other activities. The analysis also shows a significant empowerment effect of women´s sole or joint land ownership and participation in income generating activities on agriculture decision-making. Agricultural decision-making in the studied area is characterized by a relatively high degree of joint decision making with regard to what to plant, what to sell, how much production to sell and how to spend generated income from sales. The results can be used by project managers in this area to better target their needs when developing interventions and also be used for further research.

Key words: women´s empowerment, decision-making power, gender equality

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List of the abbreviations used in the thesis

CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
CGIAR	Consultative Group for International Agricultural Research
FAO	Food and agriculture organization
IFPRI	International Food Policy Research Institute
INEI	National Institute of Statistics and Informatics of Peru
MDGs	Millenium Development Goals
OECD	Organization for Economic and Development
OPHI	Oxford Poverty and Human Development Initiative
SDG	Sustainable Development Goals
USAID	United States Agency for International Development
WB	World Bank
WEAI	Women´s Empowerment Agriculture Index

1. Introduction

Recent research shows that by the year 2050, global population will grow by 38%, but demand for agriculture production will increase by 100%. Sets of questions of how to manage the situation are frequently asked: What kind of steps and processes should be taken to increase agriculture productivity? How can it be sustainable and are there any new methods or opportunities to explore?

One of the possible solutions is to improve access to information, adopting new technologies, and developing processes related to production. The second opportunity is found in the improvement of efficiency in markets. Another question arising from the previous is, how can improving agricultural processes help promote economic growth? While most research is aimed at the presumed main actors in agriculture – men – women are often excluded from these studies. Gender is included in a very cursory way, e.g. mentioning a measure of the sex of the household.

One of the reasons why the agricultural sector is underperforming is because women do not have equal access to resources and opportunities to be more productive. The Sustainable Development Goal on gender equality and the Millennium Development Goal on food security are aiming at reinforcing women´s role in agriculture and the fight against hunger and extreme poverty. (FAO, 2011; UN, 2015)

Women have a vital role in agriculture. Acting as the primary keeper of the household, mother, and the main worker in the field with her husband all at once bears a big potential.

It is observed that women are actively involved in the process of agriculture production, processing, and marketing; however, social and economic constraints in many countries across the world have resulted in women having less access to productive assets than men. The gender gap in assets consists of restricted access to land, land rights, labor, and cash or credit, which results in lower productivity for women and have an essential influence on their role. Better understanding of gender dimensions of asset acquisition, accumulation and use – together with an understanding of household and farm management decision-making – can lead to an increase in women´s productivity and recognition (Alwang et al. 2017).

2. Literature review

2.1. Women´s empowerment

Gender equality has been recently recognized as an objective for all countries over the world, as it represents a way how to achieve greater social and economic development. Many world´s public policies are guided by desirable goals of women´s equal access to education, resources, employment opportunities, political participation, health services or family planning. The establishment of Millenium Development Goals (MDGs) in the year 2000 and Sustainable Development Goals (SDG) in the year of 2015 have been used as a tool to guide public policies in countries and also to bring to women´s rights, women´s empowerment and gender equality greater relevance.

In order to define and understand the effect of women´s empowerment on social and economic development, it is necessary to clearly define definition and dimensions of empowerment. Nonetheless, there are several definitions and approaches to women´s empowerment as there are many definitions of "power" that can be linked to gender perspective (Oxaal & Baden 1997).

According to Kabeer (1999) power over resources includes not solely control over assets in the economic sense, but also control over social relations with other actors in a different institutional environment such as family, community, market, state, and others. In Sen´s (1985) theory of human development, a person is empowered when he/she has the potential to make decisions and is able to live the way he/she wants. People have various options they can choose from and they are able to follow their path.

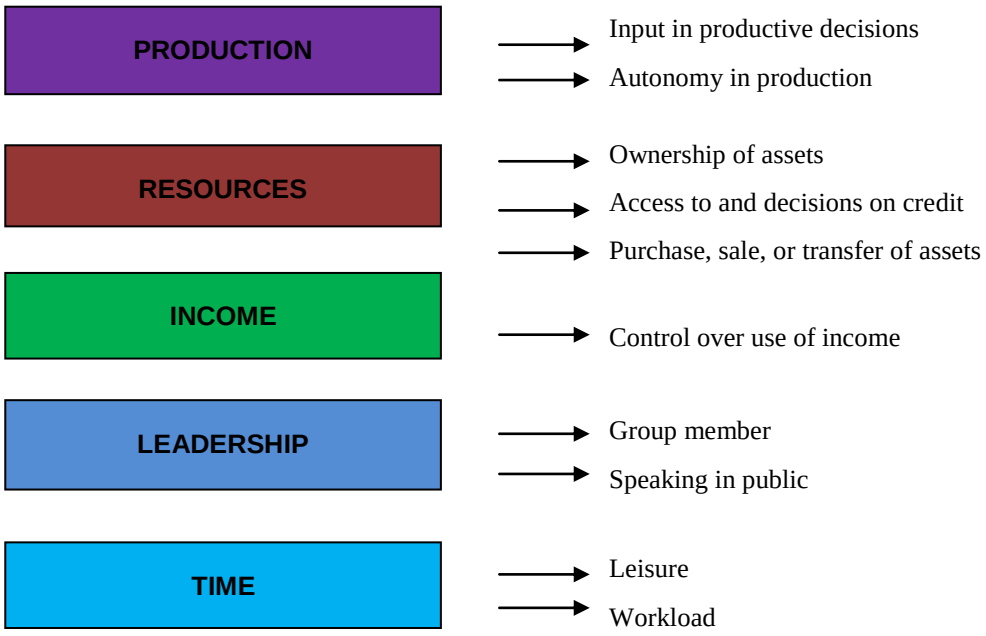
Other approach to empowerment defined by World Bank (2002) is in the context of the poverty reduction: "*Empowerment is the expansion of assets and capacities of the poor for participate in, negotiate, influence, control and supervise the institutions that they affect their lives.*" It is then necessary to break down institutional barriers and thereby strengthen the access of individuals to development opportunities. It requires systematic changes that start „from above". According to Ravallion & Chen (2002), these changes are necessary for the empowerment to be sustainable over time.

While the women´s empowerment might be understood in the way that women can acquire greater power to freely decide on their own, there are various ways how the process can be carried out. The United Nations in the year 1995 defined that the

concept of empowerment should not involve only greater access to decision-making power, but also to involve processes that allow to the people to perceive themselves as able to make decisions on their own (Rowlands 1995). As we can see the term empowerment has been defined by many authors, however, most of these definitions and approaches share common ideas, such as the ability of decision-making, control over own life, access to resources, greater confidence and the perspective of the self-generation of empowerment. Cheston & Kuhn (2002) summarized the term of empowerment into decision and power. In this way, the women´s empowerment is a process in which women acquire greater control over their lives, their bodies, and environment. They have the capacity to make decisions on important matters. Empowerment must provide access and control of the necessary resources and power, so women can make informed decisions and have control in different parts of their lives such as in the household, community, work or agriculture.

One of the fields, where a lot of women are involved and represent a great part of their life is agriculture. In order to define and measure women´s empowerment in agriculture IFPRI, Oxford Poverty and Human Development Initiative (OPHI) and USAID in the year 2012 launched the "Women´s Empowerment Agriculture Index" (WEAI) consisting of The Five Domains of Empowerment. It is the first comprehensive standardized measure to capture women´s empowerment and define domains levels in the agricultural sector.

Figure 1: The Five Domains of Empowerment (Feed the Future 2012)



2.2. Women´s role in agriculture

In today´s world, more than 70% of the world´s poor population live in rural areas and most of them are involved in agriculture. Agriculture is an important tool for economic growth, poverty alleviation and environmental sustainability (World Bank, FAO & IFAD 2008).

Women play an essential role in agriculture, rural community and rural activities in developing countries. Their roles and responsibilities may vary from region to region and are massively changing as social and economic forces have been transforming the world we live in, including agricultural sector. Rural development is affected by processes of globalization such as liberalization of international trade, marketing of agriculture products, climate change, privatization of resources and services and increased of labor migration (UN 2008).

One of the social phenomena mentioned above is a migration from rural to urban areas. Men´s migration caused by a desire to pursue better opportunities significantly influences the role of women, who stay in the rural area. Women have been forced to increase their workload, take an important decisions and become fully responsible for both agricultural task and household activities (BID not dated).

Women as a backbone of the rural development and national economies compromise 43% of the world´s agriculture labor force. In some developing countries, this number increases up to 70%. In Africa, 80% of agriculture production mainly comes from women´s small rural farmers (WFO 2011). As indicated by FAO if women had the same opportunities and access to productive resources as men, their yields could increase up to 30%. This would lead to a growth in total agricultural output up to 4% and hunger alleviation by 12 to 17% in the world (FAO 2011).

Women figure in agriculture in two possible ways. They can work as farmers in family farm as unpaid workers or as paid workers on other farms or enterprises. However multiple tasks that rural women have to typically accomplish, working on their own or another farm, are a production of agricultural crops, engaging in the trade and marketing, breeding animals, collecting water and fuel and moreover maintaining home and caring for family members (FAO 2011; CIAT, CGIAR & CCFAS 2015).

They are essential agents in ensuring food and nutritional security in a households. Activities done by women such as cultivating food crops, food selection,

and food preparation are fundamental to food security. Evidences indicate if women have an income they likely spend it on food and children´s need. Women represent the key to food security in their households (Quisumbing et al. 1995).

One of the main causes of food insecurity is the poverty. Nonetheless, significant differences in the food security have been founded in female-headed poor houses and man-headed poor households. According to Kennedy & Peters (1992) poor households, headed by women accomplished to provide more nutritious food for children than households headed by men (World Bank, FAO & IFAD 2008).

Women can be considered as an essential key to the food security in the world, important provider of income and crucial figure in agricultural development and sustainability. Yet their role is not fully recognized and respected. They often face serious constraints that impede to fully evolve their potential.

2.3. Women´s empowerment in agriculture

Women have a vital role in agriculture. As a holder of household, mother and main worker in the field with her husband all at once bears a big potential. An indispensable condition to increase agriculture productivity and maintain it sustainable is women´s empowerment and women´s essential role recognition in agriculture by society. It is important to provide women equitable access to assets and services, adjust education to women needs and to improve the priority and resourcing given to gender equality programming by the organization (UNICEF 2013).

Women´s empowerment is important not just for increasing agricultural productivity, but also in terms of their basic human rights *"An empowered women - person is someone who has the power to decide – to say, if they have land," Well, I can go farm, I can grow crops, I can plant seeds" - or if they have seeds, or if they have animals, to say "I can sell them without asking permission." This is a person who has the power to decide about their things, their life, their actions"* (Feed the future 2012).

According to research held in Guatemala, there was a clear connection between women's empowerment in agriculture and empowerment in other sectors: greater decision-making and autonomy with respect to minor household expenditures, serious health problems, protection from violence, religious faith and use of family planning (Feed the Future 2012).

Although the diversity of women´s role in agriculture they constantly have to face a gender gap in access to productive assets, inputs and services (FAO 2011). Moreover, women are left behind or excluded from the introduction of a fieldwork education or introduction of new technologies and processes. The analysis demonstrating gender gaps conducted by the State of Food and Agriculture 2010–2011, Women in Agriculture: Closing the Gender Gap for Development has identified many such gaps moreover the analysis indicates the deficiencies in the data availability (FAO 2011).

Constraint that women farmers face is a lack of crucial support that would help them to increase their productivity. They generally lack access to basic quality education, access to health services and have to face multiple discrimination and violence. As indicated in recent studies in Mexico and Colombia especially indigenous and afro-descendants suffer from ethnicity discrimination and status displacement. Rural women are also more exposed to poverty than men (CIAT, CGIAR & CCFAS, 2015; Gutierréz 2014). Moreover, scarcity of equal access to credit and the ability to make a decision about it, autonomy in decision or inputs in productive decisions weaken the role of women (Feed the future 2012).

Lower income compared to men is also caused by differences in male and female employment and wage patterns. Women in many developing countries have less education and work experience in comparison to men. As well as less education working experience reduce their bargaining power and they tend to accept low wages and irregular working conditions (Kantor 2008). According to National Administrative Statistics (DANE) in Colombia, women´s average workload is around 67 hours, while men´s represents 57 hours. Despite this fact, men receive more paid hours than women (CIAT, CGIAR & CCFAS 2015).

Another constraint observed by Osuman (1997) is that agricultural extension services are mostly staffed by men and are inclined to helping menfolk. According to Morna et al. (1990) in Malawi, when agricultural extension workers visit rural areas to introduce new techniques, women are excluded and the interaction is held just with men.

Information needs of women should be analyzed and take into account as women play the active role in agriculture. The accessibility of information and its

quality should be guaranteed by extensions agents and gender policies should be taken into account by governments and implementing organizations. Education programmes are required to be designed to be gender specific and sensitive as women do not have just one role as fieldworkers, but also mothers and household members that differ their needs from men´s needs and access to information.

2.4. Women´s empowerment in Latin America

2.4.1. Latin America

Latin America could be considered as a place of contrasts. Economically has experienced steady growth and poverty has decreased in the last decade. However, the degree of inequality in the distribution of income continues to be one of the main challenges (Cepal 2012; OECD & Cepal 2012). In rural areas that account almost for 46% of the population with the highest level of poverty, mainly indigenous people, landless farmers, children, and women the situation is even more critical (Cepal 2011).

Agriculture in Latin America represents a very important source of employment and also contributes remarkably to Gross Domestic Product. Also, it bears the big potential of agricultural production and a possibility to contribute to global food security (Cepal, FAO & IICA 2012).

World´s globalization, opening up to international markets, a spread of education and other trends of the modern world have shaped with the role and importance of women in rural areas in Latin America. However, the problem of inequity has not been resolved (Echevarría Perico & Ribero 2002; Ruiz Bravo & Castro 2011).

As a result of several social-economic factors women´s participation in the labor and rural sector in Latin America generally has increased. Mexico, Bolivia, Peru, and Brazil are countries with the highest rates of female activity in rural areas in Latin America. Among rural workers more than 60% are women. In contrast, Venezuela, Chile, and Cuba have the lowest rates of female activity in rural areas with less than 25% of employment (Ballara & Parada 2009).

As Chant (2003) mentioned the existence of female-headed households is increasing and has become a significant feature of Latin American family systems.

The research of Liu et al. (2016) has demonstrated that if „*households are not headed by co-residing married couples, their living conditions are systematically worse, but the interaction between sex of the household head and union status shows that, in all these cases (i.e., singlehood, cohabitation, separation/divorce, widowhood), households headed by women are less likely to be residing in poorer conditions than those with male heads in the same circumstances".*

As one of the explanations for an increasing trend in female-headed households can serve conclusions of a research conducted in the southeastern Mexico explaining the phenomenon of higher women´s participation in agriculture due to a migration of men and resolving into a reorganization of a farm management and activities (Radel et al. 2012).

As for the major women´s role in agriculture, a research made by Bastidas (1999) in Ecuador shows that main responsibility of men is to do hard physical work in the field meanwhile women are responsible for seed´s selection, planting, and harvesting. Generally, women also decided about family income generation by selling products.

2.4.2. Peru

Peru's history, as the history of other Latin American countries, is marked by a colonial past, a struggle to gain independence from Spanish domain, followed by a series of unstable governments, military governments and a constant battle to obtain and sustain the democracy. The country has been hit by a severe economic crisis and terrorism, and both have scarred the nation deeply (Vargas 1990). There are abysmal racial, ethnic and economic differences in the Peruvian society. While women are a group in itself, women share these racial, ethnic and economic differences (Rousseau 2009; Huls 2011).

The Peruvian government has signed International Women´s Human Rights treaties that are mandatory, as CEDAW (Convention on the Elimination of All Forms of Discrimination against Women) and Belem do Pará (The Inter-American Convention on the Prevention, Punishment, and Eradication of Violence against Women). Conventions state that women should possess equal opportunities as men and have the right to live a life free of sexual, physical and psychological violence, whether in the public or private

sphere and this basic human rights should be asserted within a society. A national public policy should be established in order to protect and defend women´s rights and consider different forms of gender-based violence, including those occurring in times of internal army conflict (OAS 1994).

A very important step taken towards women´s empowerment in Peru was when the government has implemented joint property rights between spouses and cohabitants.

Partial community property right is the default marriage regime in the Peruvian civil code. Assets acquired during marriage or cohabitation are the joint property of the man and the woman, with one important exception: inherited and inter-vivo transferred assets from parents remain the individual property of the heir. However, regulations arising from the new land titling laws require land to be jointly titled between the man and the woman who share their life with a nuclear family.

The Wiggs´s (2016) analysis of households in the Peruvian communities showed a significant empowerment effect of titled plots. Women living in communities with titled plots participated in 70.2% of the household decisions that were effectuated, compared to 64.9% in the communities without titled plots.

Despite these legal mechanisms, the situation of women is far from promised reality especially for rural indigenous and Amazonian women. Among many other reasons mentioned in Agenda de las mujeres rurales, andinas y amazónicas del Perú lack of training and attention of local institution representatives on a care and punishment of acts of violence are causing evident gender inequality. Even though the law prohibits discrimination and mistreatment, many cases of sexual violence or economic exploitation, sanctions are inadequately imposed or not at all (Flora not dated).

The basic source of capital that can be used by human are personal property, wage earnings, and revenues from paid work or entrepreneurship. Significant disparities between men and women are observed in this sphere. To provide statistical data of socio-economic situation of Peruvian women The National Institute of Statistics and Informatics (INEI) carried out the census in the year 2013 and 2015. The wide difference was shown in labor force participation rate at the national level. Male represent 82% of active labor force participation while women represent just 64.5%. This indicates an important underestimation of their economic autonomy (INEI 2013).

Significant disparities are significant also in income. Average women´s monthly income is 1.130 of Peruvian soles while men earn 1. 768 of Peruvian soles (INEI 2015). Majority of women do not possess enough family assets or wealth. Money that would be used as a support to their families, for capacity building, education or to start new businesses is drawn from wages they earn and save (Uchuypoma & Zambrano 2017).

Women who do not receive any income are 28.7 %, men 14.8 % in urban areas. In the rural region, the difference is even higher, as men with no fixed income are 15.7%, while women represent almost 40% (ECLAC 2013). They carry responsibility for the unpaid work such as care for children, elderly and household activities. Many times they are forced to accept informal jobs that do not provide any benefits and are unreliable, poorly paid or even abusive (APEC & USAID 2016).

Numbers stated above represent a general situation of Peruvian women in urban and rural zones. However rural zones of the Andes and Amazonian region are inhabited by a significant group of indigenous Peruvian women. Not only does it constitute 23.8% of the total number of women (in total 13'693,398 at the national level), but also 50.2% of the total number of indigenous people (ECLAC 2013). Yet no statistical data have been provided about their socio-economic disparities. This matter complicates an adequate design and implementation of public policies and relevant projects (Uchuypoma & Zambrano 2017).

Another relevant source of capital is the property right. For many years the property rights did not mean anything for Peruvian citizens as the majority of private lands were held by few owners. Women´s interest in holding legal title to real property was ignored. However due to land reform after 1960 interest in real property ownership rapidly grew and women were left off land titles. Land titles are important, because a person has a stronger sense of responsibility and ownership for the land and production, secure an access to income if used well and add personal value (APEC & USAID 2016). Until today majority of property rights are not resolved in rural communities due to conflicts between landholders and mining and forestry companies operating in the region. The institutional mechanisms which role is to protect property rights are functioning poorly and are lacking interaction with women. In indigenous communities, the voices of women are mostly disregarded when reaching community decisions concerning land and collectively managed natural resources (USAID 2010).

3. Thesis aims

The main objective was to identify women´s role in agriculture and analyse their decision-making power in agriculture and household. The case study was conducted among cocoa female farmers in Peru.

Specific objectives are:

- To analyse socio-economic characteristics that have an impact on the role of women in the selected Peruvian agricultural region (mainly their educational background, age, marital status);
- To identify women´s role (agricultural activities, workload and leisure time);
- To analyse their decision-making power in agriculture and household related to participation in income generating activities, backup position and land ownership.

Hypotheses

The following hypotheses were interconnected with specific objectives and served to deeply analyse women´s agricultural role and their decision-making power within their environment and work.

No.1:H0: There is no significant relation between women‘s educational qualification and decision-making power in a household and agriculture.

No.2:H0: There is no significant relation between the ownership of land and their decision-making power in agriculture.

No.3:H0: There is no significant relation between woman as a main field worker and her decision-making power in agriculture.

4. Methodology

4.1. Research design

The secondary and primary data were collected for the purpose of research. In order to reach the objectives of the study and to better understand gender relations in agriculture, combination of qualitative and quantitative data collection was used.

Secondary data were collected by different sources, appropriate for the purpose of this study. They were mainly taken from international organizations such as Food and Agriculture Organization, International Food Policy Research Institute, World Bank among many others. Other secondary data sources used were scientific journals such as World Development, Environment & Urbanization, Agricultural Economics, Land Economics, Revista de Ciencias Sociales de la Universidad Iberoamericana. Chosen key words were women´s empowerment, decision-making power and gender equality.

As the main method of primary data collection, the methods of Participatory Rural Appraisal were used to integrate local people into research and reflect the reality of the community. The primary data were collected in the field from July to September 2017 in the region of Chazuta with support of local cooperative and family.

4.2. Data collection tools

The first primary data collection tool used was the questionnaire survey. Questionnaires were consisting of nineteen questions, divided into four parts. The main aim of the first part was to identify women´s agricultural activities and their workload on the field, household and leisure time. The second part was designed to identify their decision – making power about agricultural activities and household. Type of the agricultural activities and household decisions were chosen based on the master thesis of Puntaca (2017) and the article of Bohumangi et al. (2011), where four main categories of agricultural activities are (i) what to plant, (ii) what to sell from cocoa production, (iii) how much of production to sell and (iv) how to spend generated income from sales. Multiple choice questions were selected as a main type of questions. The third part of questionnaires analysed women´s fallback position and women´s land ownership, and an inspirational article written by Twyman et al. (2015) was used. The

fourth part served to collect basic demographic and social indicators using closed questions.

The draft of questionnaires was firstly made in the English language, secondly translated by the author into Spanish and modified by a woman leader of local cooperative in Chazuta to make it understandable for the informants. To fill out the questionnaire, it took around 20 minutes per respondent and took place at homes or on the field of respondents where the author was taken and presented by extension agents. Questionnaires were translated backward to English to analyse data.

The second data collection tool was semi-structured interview in order to provide general views on women´s empowerment and problems they face in the district. Interviews were conducted in the Spanish language and took approximately 20 minutes.

The third data collection tool was direct observation that was an ancillary source of knowledge. Observations served to provide general view on women´s activities on the field and in the household. Also, this method was used to observe interactions between men and women in their natural environment and the division of labor.

Table 1: Methods of data collection

Objective	Specific goal	Tools	Number of respondents
Women´s role in agriculture	1. Agricultural activities 2. Workload 3. Leisure time	Structured questionnaires Direct observation	90
Women´s decision – making power	1. In agriculture 2. In a household	Structured questionnaires Semi – structured interviews	90 3
Women´s economic empowerment	1. Income 2. Ownership of assets and land	Structured questionnaires	90

Socio – economic characteristic	1. Age 2. Marital status	Structured questionnaires	90

4.3. Study sample

The major group of interest, where the primary data were collected from in order to achieve all three objectives of the research, are women selected on the principles of snowball sampling. Women were selected based on three main specific criteria. Criteria for the respondents were (i) female farmers harvesting and processing cocoa beans, (ii) in productive age and (iii) who had been dwelling in the district of Chazuta at least for 5 years. Data were collected by means of structured questionnaires with the final size of sample 90 respondents.

The second method used in order to provide wider perspective on women´s empowerment and its limitation in the district and amend the reliability of first group respondents were semi – structured interviews with female representatives of the main two cooperatives and a women´s empowerment project manager from the Instituto de Cultivos Tropicales. Representatives of cooperative were chosen as a source of knowledge of women´s role and their level of participation. Mentioned cooperatives are based or include women´s empowerment in their strategies. The project manager provided general view on women´s empowerment potential and limitations in the district. Respondents, called as "key informants" (Disman 2002) were selected based on non – probability purposive sampling technique and the final size sampling is three respondents.

4.4. Study site

The research was conducted in the city called Chazuta. Chazuta is situated in the San Martin Department of the Peruvian Amazon about 260m over sea level, 06◦36'15'' South, 76◦10'30'' West. It is located in a narrow valley by the Huallaga river and between peaks of over a thousand meters of Cerro Escalera and Cordillera Azul mountain ranges.

Tarapoto, the region´s largest city, is 43 km distant and well accessible via bumpy road by local transportation. Chazuta counts with various primary and secondary

schools, drugstores and health clinic. The nearest hospital is in the city of Tarapoto. However, many Chazutinos still rely on the traditional use of medicinal plants.

It has tropical climate and it is more humid than in most parts of San Martin due to its proximity to the lowland Amazon. The average annual temperature of the region is 29°C. Temperatures rarely dip below 18°C at its coolest month

The District of Chazuta has an area of 966.38km^2 and a population of 9.563 people (INEI - InstitutoNacional de Estadística e Informática, 2005), where half of the inhabitants live in the town Chazuta and the rest of the inhabitants live in rural communities and smaller settlements. According to ethnic census (INEI, 2007) nearly 50% of population is indigenous.

Three main income–generating activities are agriculture represented by 44%, hunting by 20% and fishing by 19% (Del Campo & Wali 2007). Many of the farmers still rely on ancient land management practices such as burning. Nonetheless, Chazuta has the traditional agriculture based on diversification and imitation of the forest structure was changed into monoculture cultivation during the past (Marquardt 1998). Two monoculture cultivations, promoted by the Government in the seventies, were rice and maize. However the Government could no longer supported the programme and it was replaced by coca production in the eighties. Production of the coca brought food insecurity, violence and drug-trafficking.

In the nineties a substitution of coca for cacao production was implemented by the Ministry of Agriculture and the Regional Government of San Martín with a value-added approach to increase income and improve the quality of life of small farmers and the production of cacao has been increasing until now (FAO 2016).

Figure 2: Location of Chazuta city within the district San Martín, Peru

Source: © Wikimedia Commons

4.5. Methods of data analysis

The data were mainly collected from a group of women in total 90 using the questionnaire survey. All collected data were rewritten into Microsoft Excel and were subsequently coded in order to process them. Basic descriptive statistics such as cross-tabulation computation and frequency analysis were carried out to describe main features of sampled data. Results obtained from basic descriptive statistics were visualized for clearer understanding.

To reject or accept set hypotheses inferential statistics were carried out using cross-platform software package GRETL for econometric analysis. Inferential statistics tools were correlation and regression analysis. Obtained p-values were compared to selected significance level 0.05 or 0.01. Firstly, a non-parametric test Spearman´s Rho correlation was carried out to examine the degree of association between two variables.

The following formula was used to calculate the Spearman´s rank correlation:

$$\rho = 1 - \frac{6\sum d_i^2}{n(n^2-1)}$$

where,

ρ= Spearman´s rank correlation
di= is the difference between the ranks of chosen variables
n= number of observations (n=90)

For the obtained results see Chapter Hypotheses testing.

Secondly, regression analysis was performed in testing of first and second hypothesis. Regression analysis served to examine strength of the relationship between dependent variable (Y) and one or more independent variables X1, X2, Xx. For results and selected independent and dependent variables see chapter Hypotheses testing.

The following procedures were performed in order to test correlation and regression analysis and are described below.

a) No.1:H0 There is no significant relation between women‘s educational qualification and decision – making power in a household and agriculture.

In the first hypothesis, Spearman´s Rho testing was done in three parts, where correlation was tested between (i) education and decision – making power in a household, (ii) education and decision – making power in agriculture and (iii) between education and total decision – making power.

(i) To perform analysis variables X (education) and Y (decision-making power in a household) were chosen. To process the data women´s responses were ranked in ascending order. Values of X (education) are explained in the following table:

Table 2: Ranking of education

Response options:	None	Primary	Secondary	Higher
Value of responses:	0	1	2	3

To analyse variable Y (decision-making power in a household) women were asked to choose from four options. Options were ranked in ascending order to be able to process the data in GRETL. Each option was ranked as follows, where value of 0 means no decision-making power and value of 3 means sole decision-making power.

Table 3: Ranking of decision-making power in a household

Response options:	Others	My husband/partner	Jointly	I decide on my own
Value of responses:	0	1	2	3

(ii) To perform second analysis variables X (education) and Y (decision-making power in agriculture) were chosen. Ascending ranking for X (education) was preserved from previous **(i)** testing.

To analyse variable Y (decision-making power in agriculture) identical ranking was performed as in decision-making power in a household, where value of 0 means no decision-making power and value of 3 means sole decision-making power.

Table 4: Ranking of decision – making power in agriculture

Response options:	Others	My husband/partner	Jointly	I decide on my own
Value of responses:	0	1	2	3

(iii) To perform third analysis variables X (education) and Y (total decision-making power) were chosen. Total decision-making power is the sum of decision-

making power in agriculture and decision-making power in a household for each respondent, where higher number means stronger total decision-making power.

b) No.2:H0: There is no significant relation between ownership of land and women´s decision – making power in agriculture.

To examine statistical significant relationship between ownership of land and women´s decision-power in agriculture, Spearmen´s Rho correlation and regression analysis were conducted.

To perform statistical significance testing between two independent variables X (ownership of land) and Y (decision-making power in agriculture) were chosen.

To analyse variable X (ownership of land) women were asked to choose from four options. Options were ranked in ascending order to be able to process the data in GRETL. Each option was ranked as follows, where value of 0 means no ownership of land and value of 3 means sole ownership of land.

Table 5: Ranking of ownership of land

Response options:	No	My husband/partner	Jointly	Yes
Value of responses:	0	1	2	3

See chapter Hypotheses testing for results and selected variable (Y) and independent variables X1, X2 and X3 in regression analysis.

c) No.3:H0: There is no significant relation between woman as a main field worker and her decision – making power in agriculture

To examine statistical significant relationship between woman as a main field worker and her decision-power in agriculture, two independent variables X (main field worker) and Y (decision-making power in agriculture) were chosen.

To be able to process variable X (main field worker), responses were ranked as 0-1, where 0 means no participation as a main field worker and 1 means woman as a main field worker.

Table 6: Ranking of main field worker

	Yes	No
Farm management	1	0

4.6. Limitations of the research

One of the most critical limitations of the research was that during data collection privacy was often not respected. In most cases, the male extension agent was present during the data collection together with family members, especially husbands/partners. As in some cases, women were illiterate or were working, the author/researcher was asked to read the questionnaire and mark the answers. Third persons had tendency to interfere and express their own opinions about the topic or it was visible that women were observing their spouses/partners´ reactions in order to answer "correctly". Unfortunately, because of the local cultural norms and hospitability of the people, it was impossible to insist on them to leave.

The second limitation was selected methodology for gathering the data. Snowball sampling is a non-probability method and any conclusions reached in a research may be biased. The study sample may include large representation of individuals who share similar characteristics and very often it is hard to determine the sampling error and can affect the result in generalization (Magnani et al. 2015). Also sample size impedes the generalization of the population.

The third limitation of the study was the knowledge and fluency of the language, because double translation was needed.

As a non – native speaker of English and Spanish and even thought Spanish was corrected by a native speaker, it is possible that meaning of some questions was lost or questions were formulated differently than in an original language.

Other factors such as adjusting answers in order to look better in front of the third persons, adjusting answers how women wished it to be in real life or as mentioned by Disman (2002) while filling in the questionnaire women were introduced to attitudes that they did not know before the first contact with the researcher (such empowerment, decision-making power).

5. Results

5.1. Socio-demographic characteristics

There were 90 females among the respondents and their social – demographic characteristics are shown in the Table 7. The age distribution was divided into four subcategories and according to results the sample was mostly leaning towards middle age category, with the age 41-60 representing 45.6% of all participants.

In the category of education is mostly common that women obtain primary education accounting for 18.9%. Many women from the sample also did not receive any education at all and very rarely obtained higher education that goes for high school or university.

Majority of women are married, followed by living in free union with their partners. Chazuta household mainly consists of women sharing the same dwelling with their husbands/partners and kids accounting for 70% in total. The second most common household model is a woman living with other members of a family.

Table 7: Social-demographic factors of the respondents

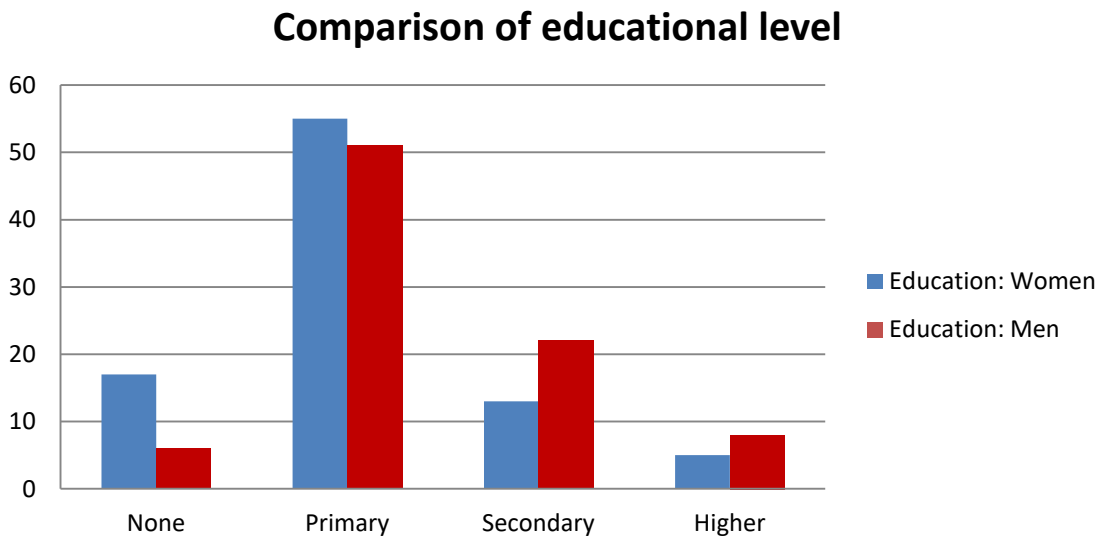
Characteristic	Frequency (n)	(%)
Sample	90	100
Age		
15-25	6	6.7
26-40	42	46.6
41-60	28	31.1
>61	14	15.6
Education		
None	17	18.9
Primary	55	61.1
Secondary	13	14.4
Higher	5	5.6
Marital status		
Single	3	3.3
Married	69	76.7

Divorced	0	0.0
Free union	18	20.0
Widowed	0	0.0
Household		
Husband/partner and children	63	70.0
Alone	1	1.1
Alone with children	7	7.8
Other	19	21.1

The following Graph 1 shows comparison of education obtained by women and by men as education is considered as one of the factors influencing women´s decision-making power.

The data analysis showed that there are considerable differences between education of men and women. In general, most common type of education obtained is primary education both for men and women. As shown in the graph even more women account for primary education than men. However, in the case of the other categories – secondary and higher education men represent larger share than women. Additionally, many women did not receive any education at all.

Graph 1: Education men vs. women

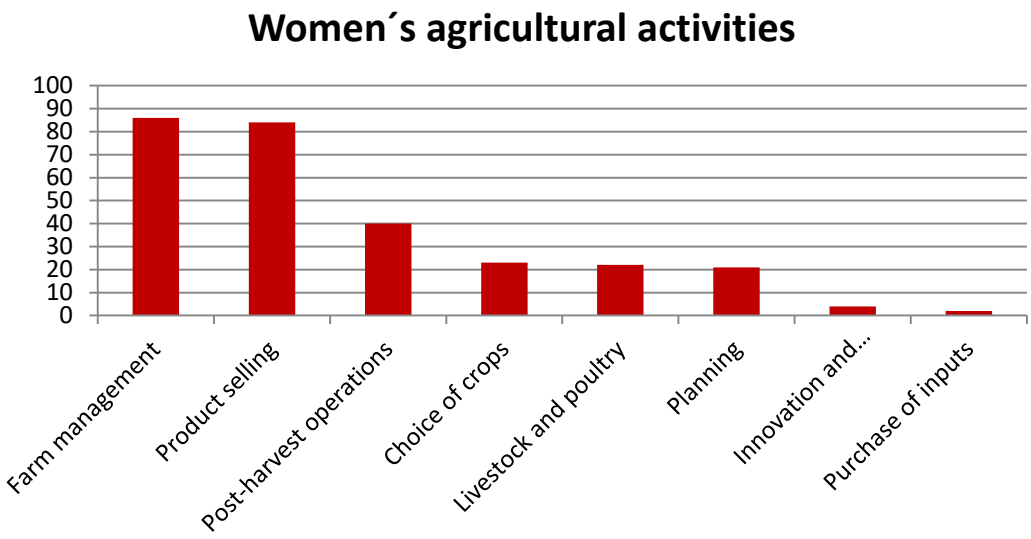


5.2. Women´s role in agriculture

In order to identify women´s role in agriculture, respondents were asked to mark their daily agricultural activities they are involved in.

The data analysis showed that the main women´s tasks are daily activities connected with the hard work on the farm and processing of cocoa beans with post-harvest operations. According to the Graph 2 most common task performed by women is the farm management. More than 95% of women do the hard work on their farm such as soil preparation for seeding, plantation, and harvesting. Second most frequent activity, in total 93.3%, where women are involved, is product selling. Third activity performed by 44% of women is post-harvest operation. The least represented agriculture activities are purchase of inputs and innovations (2.2%) and technology (4.4%). However, many farmers claimed that they do not use inputs.

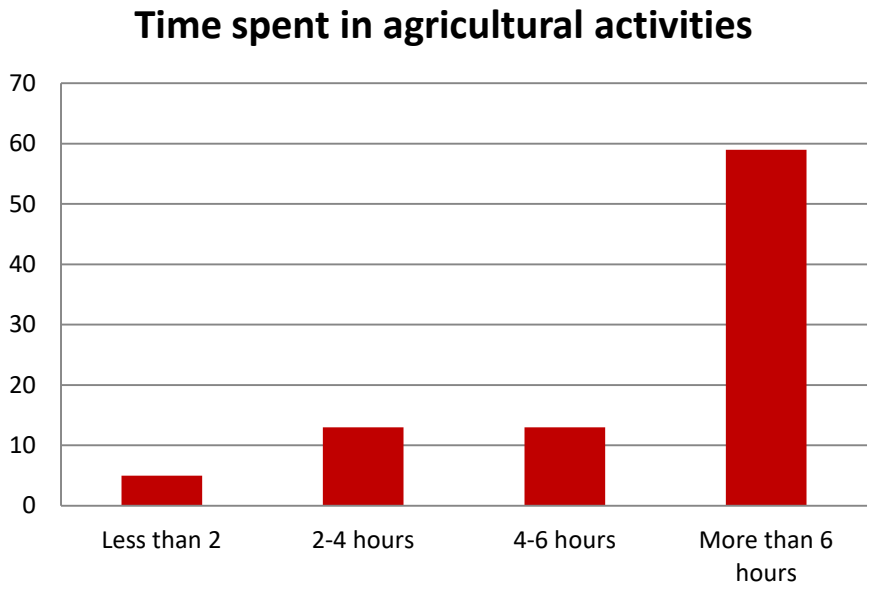
Graph 2: Distribution of women´s responsibilities in agriculture



Women´s workload

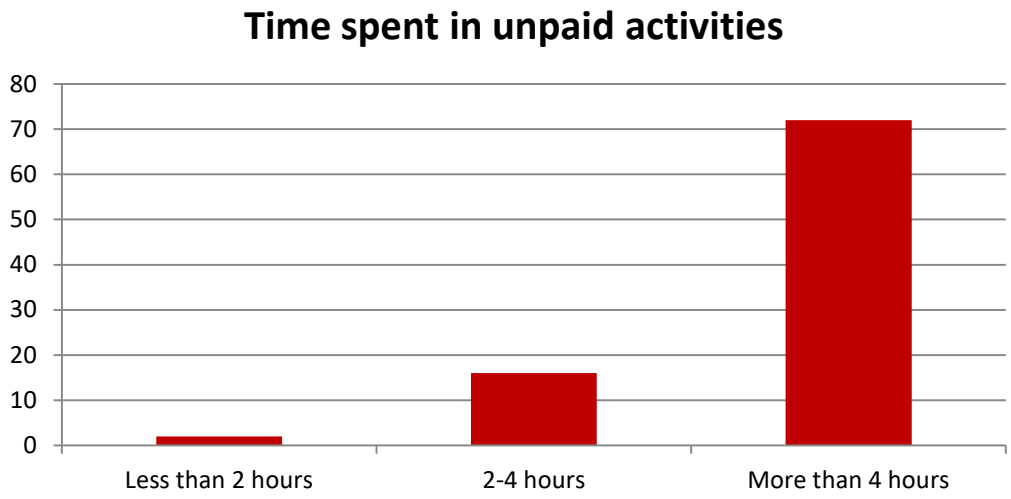
Following Graphs 3 and 4 show women´s workload according to the time spent in agriculture and bulk of unpaid care work they are responsible for. As agricultural tasks represent main generating income activities majority of women indicated that they spend more than six hours by performing tasks needed for production and processing of cocoa.

Graph 3: Time spent in agricultural activities



Nevertheless, after coming home from the field, more than 80% women dedicate four and more hours to unpaid activities such as care for family, household, elderly, etc.

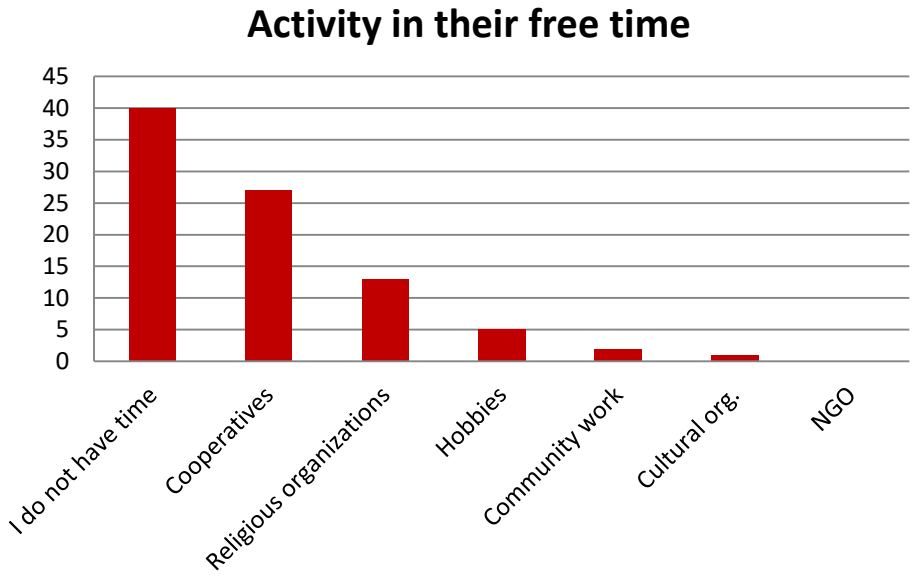
Graph 4: Time spent in unpaid activities



Overall, women spend more than 10 hours by performing tasks in order to generate income and maintain household´s needs.

The Graph 5 shows main activity that women dedicate their time to in a case they do not work on the field or take care of their household. It can be observed that as many women spend more than 10 hours in activities mentioned above they do not have free time for other. However, in a case that women have free time, they mostly choose to participate in cooperatives or religious organizations.

Graph 5: Free time activity



5.3. Decision-making power

Decision-making power in a household

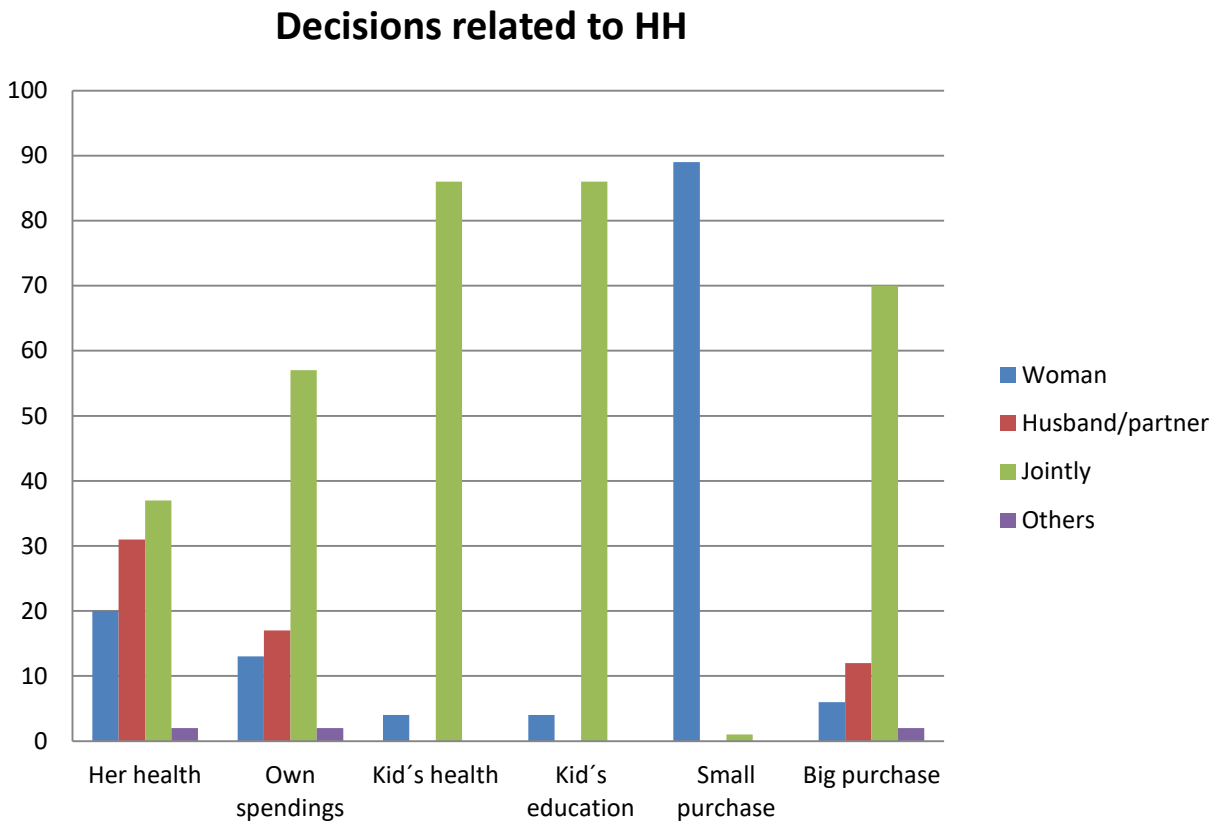
The decision-making power in the household was divided into six subcategories which are (i) decision power about own women´s health, (ii) their own spending, (iii) children´s health, (iv) children´s education, (v) small purchases such as food, water, clothes and (vi) big purchases such as electronic devices, car etc.

Regarding to the decision power about their health women in major share indicated that they and their husbands or partners take the decision jointly or just their partners are the ones who decide about women´s health. Minority of women take decisions about their health by themselves.

It is observed that in the category of own spending joint decision increased considerably, up to 60%. However, in almost 20% of cases man is the one who decides solely about woman´s own income. Moreover, women´s sole decision power about their income decreased and only 14% women have a chance to decide by themselves. The major difference in women´s decision power can be firstly observed when it comes to children´s health and children´s education where women and man have absolutely equal say. Exceptions are women who are single mothers, where a man is not present. No women indicated that only husband/partner would decide about children´s health and education.

Secondly, almost every woman solely decides about small purchases such as food, water and other essential purchases for daily needs of a household. Women´s decision power also increases in the category of big purchases such as electronic devices, cars etc. as almost 80% of women indicated that they decide together with their partners. Only 13% of men decide by themselves about such purchases.

Graph 6: Decision-making power in a household



Decision-making power in agriculture

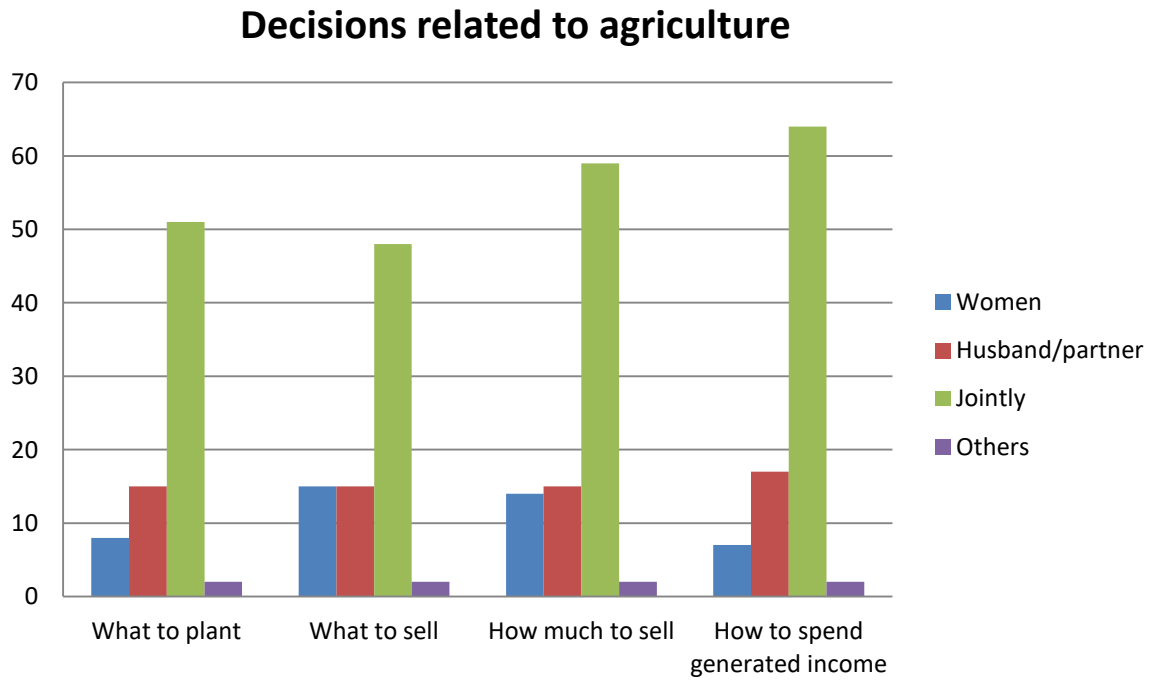
Decision-making power in agriculture was divided into four main categories of agriculture activities where women can participate on decision-making. Such categories are (i) what to plant, (ii) what to sell from cocoa production, (iii) how much of production to sell and (iv) how to spend generated income from sales divided according to Bohumangi, Doss, and Meinzen-Dick (2011).

Generally, women and men participate jointly in agricultural decision-making. However, it varies regarding to categories. Differences are broken into details as follows. Regarding the issue "to what to plant" more than half of the women indicated that they take the decision jointly or that partner´s decision prevails. However, small share of women decide on their own. In the category of "what to sell" women´s joint participation on decision-making slightly decreases. Nonetheless, their sole decision-making power increased and represents equal portion as men who decide on their own. Joint decision in the penultimate category of "how much production to sell" also

prevails with slight increase from previous category. Almost equal share of women and men as joint decision takers is still preserved.

The last category of "how to spend" generated income has the highest share of men and women as joint decision takers. Nonetheless, the option of man as the main decision taker has the biggest percentage from all four categories, in total 18.9% and women as the main decision makers considerably decreased - in total only 7.8%.

Graph 7: Decision-making power in agriculture



5.4. Economic factors

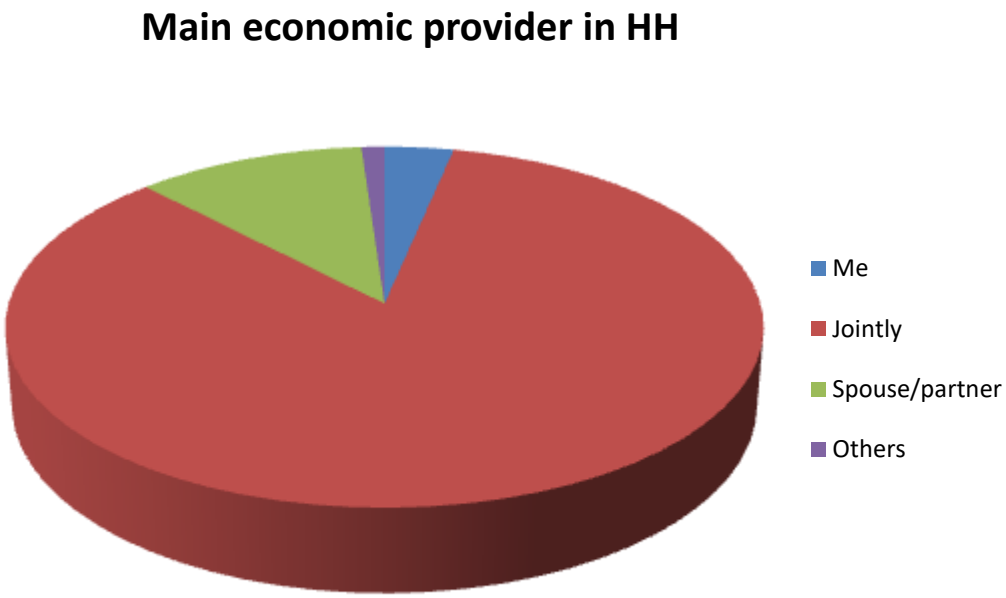
Economic factors influencing women´s empowerment are shown in the Table 8. Half of the households have income between 410-750 soles per month and receive a typical average income for the region of Tarapoto. Majority of households participate jointly as income providers to the household budget and according to their responses majority of women are equally involved in decision-making process. Just in 7% of cases the man decides solely. House property, as one of the factors that represents women´s economic empowerment, possess almost every woman in the community.

Table 8: Economic factors

Characteristic	Frequency (n)	(%)
Sample	90	100
Income		
0-409 soles per month	35	38.9
410-750 soles per month	44	48.9
>751 soles per month	11	12.2
Main economic provider in HH		
Me	3	3.3
Jointly	76	84.4
Spouse/partner	10	11.1
Others	1	1.1
Decision on spending		
Always me	3	3.3
I am a part of the decision	8	8.8
My spouse/husband decides	6	6.7
We have an equal say	73	81.1
Ownership of a house		
Yes	87	96.7
No	3	3.3
Ownership of land		
Mine	13	14.4
Jointly	63	70.0
Spouse/partner	10	11.1
Other	4	4.4
How they acquired the land		
Heritage	20	22.2
Through marriage	34	37.8
Lenders	4	4.4
Other means	32	35.6

As seen in the Graph 8 majority of women own the land together with their spouses or partners, where they indicated that they acquired it through marriage or they bought it together. However, interesting fact is that the second most common land acquisition is that a woman is the sole owner.

Graph 8: Land acquisition



5.5. Hypotheses testing

This section assesses the analysis of data with respect to the predetermined 3 hypotheses.

1. There is no significant relationship between women‘s educational qualification and decision – making power in a household and agriculture

The table 9 presents results of the Spearmen´s Rho correlation between two variables, education and decision-making power in the household. The test showed significant relationship between variables, where P value is 0.001 and chosen level of significant is 0.05, P< 0.05. In a result, first null hypothesis was rejected and alternative hypothesis was accepted. As women receive higher education their decision-making power in the household is increasing.

Table 9: Education and decision-making power in a household-GRETL results

R=	0.32202192
Two-tailed p-value	0.0019

Education and decision-making power in agriculture

Table 10 presents the results of the Spearmen´s Rho correlation between two variables. The test showed statistical dependence of variables of education and decision-making power in agriculture, where P value is 0.024 and the level of significant is 0.05, P < 0.05. The null hypothesis of no correlation between education and decision-making power in agriculture was rejected and the alternative hypothesis was accepted. As women receive higher education, their decision-making in agriculture as well as in the household is increasing.

Table 10: Education and decision- making power in agriculture-GRETL results

R=	0.23517011
Two-tailed p-value	0.0248

Education and total decision power

The Table 11 presents results of the third Spearmen´s Rho correlation analysis between two variables. The test showed statistical dependence of variables of education and decision-making power in general, where P value is 0.005 and the level of significant is 0.05, $P < 0.05$. The null hypothesis of no correlation between education and decision-making in general was rejected and the alternative hypothesis was accepted. Overall, higher level of education obtained by women has a significant influence on their decision-making power.

Table 11: Education and total decision power-GRETL results

R=	0.29100030
Two-tailed p-value	0.0051

Regression model

Model 1 presents the results of the regression model of women´s overall decision power related to their obtained level of education and education obtained by their partners. In the regression model two chosen variables do not have statistically significant effect on women´s decision power. Even though, Spearmen´s Rho correlation between education and decision power was proved, women who have higher level of education are not likely to have significantly higher decision power in agriculture and in the household than women with lower level of education. The predicted variable for partner´s education shows that women whose partner has higher level of education are also not more likely to participate on decision-making more than the ones with partners with same or lower level of education. The confidence interval was selected on the level of 95%.

Also according to R-squared value, the model is explained only by 9% of the chosen independent variables.

In order to predict strength of the relationship between dependent and independent, variables were chosen as following:

Y (dependent variable): Decision power

X (independent variables):

X1: Education of woman

X2: Education of husband/partner

Values of dependent and independent variables were processed in GRETL program.

Model 1: Regression-Education

	Coefficient	Std.Erro	p-value	
const	16.6424	1.27569	13.0458	***
Education	0.672368	0.923349	0.7282	
Education_of_spouse/partner	0.684194	0.968266	0.48178	
Age	0.616871	0.440085	0.16473	
Mean dependent var.	19.71264			
Sum squared resid	998.7772			
R-squared	0.098427			
S.D. dependent var	3.589092			
Adjusted R-squared	0.065840			
P-value(F)	0.034308			

2. There is no significant relation between ownership of land and their decision-making power in agriculture.

To examine statistical significant relationship between ownership of land and women´s decision-power in agriculture, Spearmen´s Rho correlation was conducted. Later on, regression analysis was applied.

Table 12 shows results of the Spearmen´s Rho correlation between decision-making power in agriculture and land ownership. The test showed statistical dependence of variables, where P value is 0.00 and the level of significant is 0.05, $P < 0.05$. The second null hypothesis of no correlation between land ownership and decision-making power in agriculture was rejected and alternative hypothesis was accepted.

Table 12: Land ownership and decision-making power in agriculture-GRETL results

R	0.46769086
Two-tailed p-value	0.0000

Regression model

Model 2 presents the results of the regression model of women´s decision power in agriculture related to their participation on income generating activities, land ownership and under whose name is land registered. In the regression model all of the three chosen variables have statistically significant effect on women´s decision making in agriculture. Women who solely or jointly participate on income generating activities are more likely to have higher bargaining power than women who do not. The predicted variable for land ownership shows that women with own or joint plots are also more likely to participate on decision-making in agriculture more than the ones without. The confidence interval was selected on the level of 99%.

Also according to R-squared value, the model is explained by 48% of the chosen independent variables.

In order to predict strength of the relationship between dependent and independent, variables were chosen as following**:**

Y (dependent variable): Decision power in agriculture

X (independent variables):

X1: Land registration

X2: Participation on income generation

X3: Land ownership

Values of dependent and independent variables were processed in GRETL program.

Model 2: Regression-Land ownership

	Coefficient	Std.Erro	p-value	
const	4.0596	0.867722	0.63543	
Register_of_land	0.471061	0.235246	0.04835	**
Gen_income	2.71293	0.456501	<0.00001	***
Land	0.856131	0.294503	0.00463	***

Mean dependent var.	7.252747
Sum squared resid	248.3378
R-squared	0.488161
S.D. dependent var	2.321845
Adjusted R-squared	0.470511
P-value (F)	1.18e-12

3. There is no significant relation between woman as a main field worker and her decision-making power in agriculture

In order to accept or reject third hypothesis, Spearman´s Rho correlation was applied.

Table 13 shows results of the Spearmen´s Rho correlation between decision-making power in agriculture and women as a main field worker. The test showed statistical independence of variables, where P value is 0.51 and the level of significant is 0.05, P > 0.05. The third null hypothesis of no correlation between women as a main field worker and decision-making power in agriculture was accepted. After third hypothesis was accepted, no other measurement was conducted.

Table 13: Results decision-making power in agriculture-GRETL results

R	-0.06939115
Two-tailed p-value	0.5134

6. Discussion

The analysis presented in this thesis provides important insights into women´s role both in households and agriculture, and to address questions connected to women´s empowerment. It focuses on analyses of links between women´s decision-making power in a household and in agriculture, their economic fallback, and the ownership of assets and land.

The first objective of the research was to analyse socio-economic characteristics that influence women. According to Klasen (2000), gender gaps in the human capital still pertain to education and skills. These are not only critical in terms of women´s participation in labour markets and economic growth overall, but they also influence their self-esteem, and personal and social skills. Women who have achieved a certain level of education have higher decision-making power in their homes and tend to have fewer kids (Grown 2005). However, among contemporary women, the completion of especially secondary and tertiary levels of education is often disproportionately low (Lloyd 2009).

These results coincide with the level of education attained in the studied area. The results showed that more than half of the women farmers reached only primary education and 18% do not have any education at all. Compared to the level of education achieved by men, a minority of women had access to secondary and higher education. Findings of Kyushu & Abdoul (2016) in Nepal and Ogunbameru et al. (2010) in Nigeria on similar features also revealed that a significant portion of female farmers achieved the level of education mostly up to secondary school. In Nigeria, a low level of education was the major challenge to the participation of women in co-operative activities, as half of the women did not have secondary education.

A majority of women are married and live with their husband and children in the same household. However, an interesting trend can also be observed. Women, who are not married, are living in a free union or they are single. The trend of less "traditional" family situations has been on the rise in Latin America as research done by Liu et al. (2016) shows. According to their research, mainly women aged from 35 to 44 shifted from marriage to different forms of living with their partners such as cohabitation, singlehood, and separation or divorce. The research was conducted in 14 countries. Nevertheless, the recorded increase was moderate in Peru. One of the explanations for

an increasing trend in female-headed households can serve conclusions of research conducted in southeastern Mexico, explaining the phenomenon of higher women´s participation in agriculture is the migration of the men and resulting in the reorganization of farm management and activities (Radel et al. 2012).

Existing empirical studies on the topic of gender in agriculture consistently show that women lack access to resources and control over income. For instance, the CGIAR Gender and Agriculture Research Network emphasizes improving women´s control over resources and income (CGIAR 2014). The research, however, shows that in the studied area, housing, a key resource, is essential for women's economic condition and their wellbeing. Nevertheless, women´s household income ranges between 410-710 Peruvian soles or even lower, which means that most families do not even reach the vital minimum wage of 254 dollars and it is consistent with findings that women lack access to income (MTPE 2016).

However, respondents indicated that in most cases they jointly contribute to the income of the household and have an equal say on spending decisions. Outside of the studied area, Akter et al. (2017) found in Southeast Asia, interestingly, that control over household income and participation in decision-making is more concentrated towards women. Men just occasionally take part in major expenditures.

A second objective of the research was to identify women´s role in agriculture and their agricultural activities that might identify reorganization of farm management and activities as mentioned by Radel et al. (2012). A research undertaken by Bastidas (1999) in Ecuador showed that the main responsibility of man is to do hard physical work in the field, while the woman is responsible for seed's selection, planting, and harvesting. Generally, the woman also decides family income generation by selling products. Our respondents indicated that the majority of them are involved in farm management activities, which means that they are responsible for the hard work on their farms such as soil preparation, seeding, plantation, and harvesting. This is in contrast to findings of Bastidas (1999), which indicated that the hard, physical work responsibilities lie mainly on men. Nevertheless, women in Chazuta are involved in selling products, as well as women in Ecuador. The high level of participation in selling products is also consistent with a study done by Amaya & Alwang (2012) where they

found that women in the Andes often bear a primary responsibility for the marketing of agricultural products.

The phenomenon of higher women´s participation discovered by Radel et al. (2012) in southeastern Mexico resulting in the reorganization of farm management and activities can be observed in the studied area as well. Planning, and the choice of crops are mainly the domain of men, and is performed by 20% of women. Fewer women are involved in innovation and technological adoption, but according to ENPARD (2017), a key factor for the adoption of useful innovation and to keep pace with research and development of new procedures, materials, and practices is education. As mentioned above, women still have a low level of education in the studied area.

An interesting result connected to women´s role in agriculture and their decision-making power was uncovered. Research done by Twyman et al. (2015) and Puntaca (2017) show that women´s participation in the field work is positively and strongly associated with their participation in decision-making on the plots. Nevertheless, our study found that there is no statistically significant relationship between a woman as a field worker and her decision-making.

The burden of work related to activities in agriculture, household maintenance, and family care, according to the Nugussie (2010) & Grigoryan et al. (2015), limits women´s participation in activities – either membership in a co-operative or employment – and makes them more dependent on their partner´s income. As reported by 60% of our respondents, their daily tasks connected with agricultural activities take more than six hours of their time. Additionally, after coming home from the field, more than 80% women dedicate four or more hours to unpaid activities such as caring for family, household, elderly, etc. Overall, more than half of the women spend at least 10 hours performing tasks in order to generate income and maintain household and family needs.

Clear limits of the burden of work as stated by Nugussie (2010) & Grygorian et al. (2015) were observed when respondents were asked what activities they dedicate their time to. Almost 45% of women do not have time for anything. The rest participate in cooperatives or religious organizations. A higher level of interest in the participation in cooperatives, a lower level of education, and the adoption of innovations in agriculture would possibly be interesting subjects of future research.

Besides analysing women´s socio-economic characteristics and identifying their role in agriculture, their decision-making power within a household and agriculture was also examined. Decision-making power in the household was divided into six subcategories which are: decision power about their own health; their own spending; children's health and education; small purchases such as food, water, and clothes; and big purchases such as electronic devices, cars, etc. In the area of their own healthcare, the decision is predominantly taken jointly or by husbands/partners who are the principal decision-makers. It is consistent with a study conducted in western Guatemala where they found women´s husbands or partners were the main responsible persons in getting women to a biomedical care setting – especially when medical expenses were involved (Carter 2002).

In study sites, respondents indicated that decisions regarding the purchase of major family assets are made together with their husbands or partners. Day-to-day household management decisions, such as the purchase of water, food, clothes or groceries, are undertaken mostly by women alone. These findings are consistent with empirical studies on women´s bargaining power conducted by Akter et al. (2017) in Southeast Asia or by Anderson et al. (2016) in rural Tanzania, where women held major decision-making power over small purchases in the household. However, research conducted by Bradshaw (2013) in Nicaragua revealed that income generation is important for decision-making. Women who were not involved in income-generating activities were more likely to report that the man solely made decisions, even in traditionally "women´s" areas such as buying clothes or groceries. Our research also showed the importance of women´s participation on income-generating activities.

In this research, we also directly examined the relationship between variables related to their fallback position, such as women´s land ownership, their participation in generating income for the household and under whose name is the land registered, and women´s participation in agriculture decision-making. Overall, the analysis shows a significant empowerment effect of women´s sole or joint land ownership and participation in income-generating activities on agricultural decision-making. Agricultural decision-making in the studied area is characterized as by a relatively high degree of joint decision-making with regard to the decision of what to plant, what to sell, how much product to sell, and how to spend generated income from sales.

Although, there might be some variations depending on the specific agricultural decision category, these findings are consistent with an empirical study conducted in Uganda. Bomuhangi et al. (2011) found that there is little difference in the participation of men and women in the same agricultural activities as examined in this study. Similar studies were also conducted in Peru by Deere & León de Leal (1982) who found that a large share of decisions are made jointly, and research done by Hamilton (2000) found that Ecuadorian women´s participation and joint decision-making in agriculture is even higher than in Peru. A possible explanation is that Latin American peasant agriculture is characterized as a family farming system. However, Twyman et al. (2015) found that women´s ownership of land might, indeed, be one of the key factors contributing to egalitarian farming system and not to a patriarchal one.

Joint male/female ownership of agricultural land in Peru has been enforced for nearly two decades now. Women who have titled plots reported higher participation in household decision-making than the ones without titled plots. The reported effect was even stronger for agricultural decision-making (Wiig 2013). The aforementioned study is contributing to the importance of women´s land ownership and their general decision-making power as found by this research and the one by Twyman et al (2015).

7. Conclusions

The importance of women´s empowerment and gender equality is on the rise; however, a lack of information about women´s roles and responsibilities in agriculture still remains as a key challenge. Agricultural development agents can benefit from such information to better target their needs when developing interventions.

The research contributes to the identification of women´s role in the Peruvian cocoa-based community, their decision-making power over household and agricultural activities, and their interconnections with both socio-demographic factors and economic factors such as land ownership, fallback position, and participation in income-generating activities.

The main findings showed that socio-demographic factors have an influence on women´s roles and their decision-making power. The level of education achieved influences women´s participation in agricultural and household bargaining power, where women with higher education levels are more involved in decision-making. Another finding has identified a new trend of female-headed households that has been recently on the rise globally. This trend leads to farm management reorganizations; women are becoming essential agents with the main fieldwork, and they also bear a primary responsibility for the marketing of agricultural products. A combination of a low level of education and the visible burden of physical work impedes women´s higher participation in cooperatives and their involvement innovation and the adoption of new technologies.

The most interesting findings were discovered in the analysis of women´s land ownership and participation in income-generating activities. There is an evident significant empowerment effect in decision-making power in agriculture if women are sole landowners or they are joint landowners with their husband and have an equal participation in income-generating activities.

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Appendices

List of appendices

Appendix I: Questionnaire research

1. **What kind of activity do you do in agriculture?**
   - ☐ Planning
   - ☐ Livestock and poultry raising
   - ☐ Choice of crops (what crops to be cultivated in which parcel of land)
   - ☐ Purchase of inputs (purchase of seeds, fertilizers, hiring labor at different times)
   - ☐ Farm management
     - o Soil preparation
     - o Planting
     - o Harvesting
   - ☐ Innovation and technologies
   - ☐ Product selling
   - ☐ Post-harvest operations

2. **How many hours a day do you spend in agriculture activities?**
   - ☐ less than 2 hours
   - ☐ 2 – 4 hours
   - ☐ 4 - 6 hours
   - ☐ more than 6

3. **How many hours a day do you spend in unpaid activities? (such as care for family, household,..)**
   - ☐ less than 2 hours
   - ☐ 2 – 4 hours
   - ☐ More than 4 hours

4. **What do you do during your free time?**
   - ☐ Community work
   - ☐ My hobbies
   - ☐ Participate in religious organizations
   - ☐ Cooperatives
   - ☐ Cultural organizations
   - ☐ NGO´s
   - ☐ I do not have free time

5. **Who in your household usually has the final say (make decision about)?**

   Write me/husband or spouse/jointly
   - ☐ Own health

_____

   - ☐ Own earnings

_____

   - ☐ Children's health

_____

   - ☐ Children's education

_____

- Small daily household (food) purchases

_____

- Large household (asset) purchases

_____

6. Who has the final say? Write me/husband/jointly

- what to plant

  _____

- what to sell

  _____

- how much to sell

  _____

- how to spend money generated from the sale

  _____

7. Who is the main economic provider in your household?

- Me
- My husband/partner
- Jointly

8. How is your decision making in the matter of how to spend income?

- I always decide on my own
- I am involved in decision-making
- My husband/partner always decides
- I have equal say on income expenditure

9. How much is your household income?

- < 409 soles
- 410-750 soles
- >751 soles

10. Do you have your own house?

- Yes
- No

11. Do you have your own land?

- Yes, I owe my own land
- Jointly with my husband
- My husband owns
- I am lendless

12. How did you acquire the land?

- by inheritance

- through marriage
- By leasing from other holders
- Other means

13. Under who are the lands registered?

- in my own name
- in the name of the husband/partner
- in the name of both
- in the leaser's name
- in the name of others

14. What´s your age?

- 15 - 25
- 26 – 40
- 41 – 60
- 60+

15. Your marital status:

- Single
- Married
- Divorced
- Free union
- Widowed

16. Age of your husband/partner in comparison with yours

- Younger than me
- Same age
- 1-3 year older
- 3-6 year older
- More older than me

17. Education: Years of schooling

- None
- Primary school completed
- Secondary school completed
- Higher education

18. Education of your husband/partner: Years of schooling

- None
- Primary school completed
- Secondary school completed
- Higher education

19. Who do you live with?

- Husband/Partner and children
- Alone
- Alone with kids
- Other family members
- Others-Who:_____

Appendix II: Photos from research

RIBOMCH-100% organic chocolate

Mishky cooperative-Award-Winning chocolate