

CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Tropical AgriSciences



Czech University of Life Sciences Prague

**Faculty of Tropical
AgriSciences**

**Empowering women for
sustainable and market-oriented farming systems**

BACHELOR'S THESIS

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Declaration

I hereby declare that I have done this thesis entitled Empowering women for sustainable and market-oriented farming systems 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, 20 April 2018

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Dominika Dvořáková

Acknowledgement

I would like to express my sincere acknowledgement to my supervisor Vladimír Verner who has overseen my bachelor thesis from the very beginning. I want to thank him kindly for his valuable help, guidance, time, inspiring advice and academic support during completing of the thesis.

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Special thanks goes to my friends and other people who have helped me during finishing my bachelor studies and supported me.

Abstract

This thesis deals with the role of women in agriculture, with special attention given to financial literacy. Sustainability of production is linked to household resources capacity and use as well as to commercialization tendencies. In order to create sustainable market-oriented farming systems, farmers must be aware about the market chains, added value and basic principles of market function to avoid losses of production and gap extension between poor and rich. At these days, agriculture feeds more than seven billion people globally and over 50% of the whole world production is grown by women. However, even though women work the most on farm, they are not considered as “farmers” and being commonly overlooked by policies, development efforts and particularly they are rarely adequately recognized by local economy players. Nevertheless, as men are continuously moving to cities for better paid jobs, women are left behind to take care of farm production, both in subsistence and market level. Thus, this study analyses so far published studies pursuing the need of women empowerment, as it positively improves household security and food productivity. Furthermore, empowering women by increasing financial literacy in farming systems. This thesis is separated into two parts, while first describes current state of art dealing with financial literacy and second part analysis the data gathered among female farmers in Eastern province, Zambia. Results show exponential increase of studies dealing with financial literacy, however with lack of case studies from developing countries. Data from the field shows the main pros and cons of commercialisation of farm production via using participatory SWOT analysis. Main barriers of more efficient and sustainable commercialization very often dealt with infrastructure limits, food safety issues, and proper planning of production and sales.

Key words: financial literacy; nutrition; farm calendar; SWOT analysis; literature review; participatory methods; Eastern Province; Zambia

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List of the abbreviations used in the thesis

FAO: Food and Agriculture Organization of United Nations

GDP: Gross Domestic Product

GII: Gender Inequality Index

GPI: Gender Parity Index

GPR: Gender Parity Ratio

HDI: Human Development Index

MDGs: Millennium Development Goals

OECD: Organization for Economic Co-operation and Development

PPP: Purchasing-power-parity

RRA: Rapid Rural Appraisal

SDG: Sustainable Development Goals

UNDP: United Nations Development Programme

WAR: Women Achievement Ratio

WEAI: Women's Empowerment in Agriculture Index

WEI: Women Empowerment Index

WoS: Web of Science

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1. Introduction to sustainable development of farming systems

Agriculture feeds more than 7 billion people globally. While human population is growing and economic is developing, agriculture is put under massive pressure because the demand for agricultural products is raising. One of the Sustainable Development Goals (SDGs) is “Zero hunger” meaning multiple efforts to reduce hunger and malnutrition. It is improved by more investments in agriculture to increase agricultural productivity, maintaining genetic diversity of plants and animals as well (United Nations 2017). Some serious strategy on doubling agricultural production must be proceeded, as the population is rising with expected 50% increase by 2050 (Tilman et al. 2002). Food production is given by agricultural practices proceeded on “useable” lands. To achieve doubled production, various amounts of nitrogen and phosphorus are added to the soil and due to the pressure, issues with production may occur. Besides, sustainable agriculture can be described as “practises that meet current and future societal needs for food and fibre, for ecosystem services, and for healthy lives...” (Tilman et al. 2002). It is also important to mention another SDG to preserve and use Earths ecosystems sustainably, furthermore to manage forests sustainably and protect nature whose areas are important for its biodiversity (United Nations 2017). Furthermore, sustainable development of agriculture means to improve overall life quality in rural areas and to raise farmer incomes, to maintain in future the capacity of production, raise production without devastating environment nor endangering nature. According to European Commission (2003), the European Union also supports livestock in ways of strengthening veterinary services, cooperation and coordination on regional and international level in the field of implementing livestock sector, also increasing capacity to develop production of livestock.

There are certain factors critical in determining comparative advantage and suitable reaction to it. Except from agricultural potential which includes rainfall, soil depth and type, altitude, diseases etc., other factors like access to markets and population pressure

are also important. It needs to be considered that agricultural potential is not stable due to climate changes and other changing conditions of nature. In terms of market access, no community can be financially secured unless it has where to sell. Having close position to urban markets and roads is essential for good business. It is a complex multi-dimensional sector (Pender et al. 1999). Furthermore, population pressure affects agriculture by land/labour ratio, developing technologies and investments. Overall, interaction between factors is narrow and shows in different variations (Pender et al. 1999).

Additionally, access to local and regional agricultural markets may be critical for smallholder farmers who are experiencing difficulties such as price fluctuation, poverty, no link to markets. The European Union helps support development of effective way of connecting smallholders with markets. European Commission (2003) stated that the European Union “seeks to improve the competitiveness of commodity chains by improving support services at producer level to link them up with competitive markets...”. Value chain can be improved by interaction on the market where value creation along the chain is defined by the nature of linkages between actors. However, agricultural markets in developing countries face other risk than price instability, such as diseases, natural disasters, conflict, resources uncertainty, natural disasters. The capacity to invest is reduced by unsureness about resources availability due to price volatility (European Commission 2003).

Furthermore, women are responsible for most of the production, however, almost never involved in the management decisions and commercialisation. Women are more than willing to cooperate with men, nevertheless many countries struggle with rights and claims where either husband and wife share all of the goods, income and services, or they divide by gender attributes such as “women’ crop” and “men’s crop” (Orr et al. 2016). Nevertheless, the moment both sexes contribute on the field like clearing the field which is a typical men labour, or planting and weeding for women, output begins inseparable by gender (Doss et al. 2011).

Generally, based on the resources identified, financial literacy influences many areas of life, specifically women’s life and also their involvement in commercial agriculture.

2. Literature review

2.1. Women role and empowerment in agriculture

Besides, as women contribute in the household and agriculture their role in the rural sustainable development is significant (Majumder & Shah 2017). They know traditional agriculture well, yet are not reluctant to modernization, however their contribution is less noticed and never acknowledged. Even though women work the most on farm, they are not considered “farmers”. However, women grow more than 50% of the whole worlds food production and as men move to urban areas for better jobs, the percentage of women in agriculture will be increasing. It has been found that the newer technologies are used, the smaller is the number of employment opportunities for women, even though they do most of the work on farm (Majumder & Shah 2017). They manage not only to take care of household and agricultural crops, but also other work such as collecting fuel and water, additionally even be involved in trade and marketing (Doss et al. 2011). Furthermore, women in most developing countries provide nutrition, so empowering their role in household could have positive impact on the health status of the household (Zereyesus 2017). Reasonably, another SDGs is to achieve gender equality and empowerment of women to eliminate gender-based discrimination.

According to Masamha and others (2018) women empowerment is a creation of “awareness, consciousness, choice, resources, advocacy, agency and active participation considered to enhance women’s ability to make strategic life choices”. The finding of this study was that men proceed more decision making than women. The study also showed that women feel less in control of productive resources as their husbands own most of their lands and do most of the credit decisions. Due to these findings, demographic areas such as age or marital status and level of education were irrelevant.

Gender Inequality can be even measured. Even though improvement has been recorded, women have not yet gained gender equity. According to United Nations Development Programme, women being discriminated is a crucial obstacle to human development as

it has impact on women health, education, politics and freedom of choice. There are three indicators to measure Gender Inequality Index (GII) – reproductive health, empowerment and economic status to show more detailed structure of differences between women and men.

Organization called The Hunger Project (2014) has stated that it is critical to overcome gender inequality as women are mostly responsible for satisfying the needs of household. Empowering them would benefit the overall society “Though women’s empowerment is a mainstay feature for many international organizations programs and practices, a standard, collective approach for tracking progress is still missing” (The Hunger Project 2014). Moreover, many studies had proved that women’s empowerment can also be even measured. To overcome the rural poverty and empowerment issues Women’s Empowerment Index (WEI) has been created. It is comprised of five domains: Agency, Income, Leadership, Resources and Time. From being able to make decisions, to benefit from economic activities, across being encouraged to speak in public, to have access to resources etc.

The Hunger Project (2014) created a questionnaire where all 5 domains are divided into 11 indicators where weight of each domain equals 20 points a total of 100 points can be gained. Furthermore, Women Achievement Ratio (WAR) – sufficient achievement, and Gender Parity Ratio (GPR) – compared to men’s performance, need to be counted. Out of 100 points, 80 points has been set as a sufficient level of empowerment.

$$WEI = \sum_{i=1}^{11} [(0.60 \times WAR_i + 0.40 \times GPR_i) \times weight_i]$$

In 2012 there has been launched Women’s Empowerment in Agriculture Index (WEAI) by International Food Policy Research Institute, Oxford Poverty and Human Development Initiative, and USAID’s Feed the Future. It is more specific and aimed precisely at agriculture where the five domains are Production and Decision making, Access to Productive Resources, Control over Use of income, Community Leadership and Time Allocation. Sub-indexes such as The Five Domains of Empowerment (5DE)

and Gender Parity Index (GPI) need to be counted. This index is useable for areas with successful empowerment or in areas where women's autonomy is behind:

$$WEAI = (0.90 \times 5DE) + (0.10 \times GPI)$$

where, $5DE = H_e + H_d \times A_e$ (H_e – percentage of empowered women; H_d – percentage of disempowered women; A_e – average absolute empowerment score among the disempowered and $GPI = 1 - H_{GPI} \times I_{GPI}$ (H_{GPI} – percentage of gender parity-inadequate households; I_{GPI} – average empowerment gap between women and men living in households that lack gender parity.” (The Hunger Project 2014).

Female participation in labour force reached worldwide 49%. Compared to men who participate in labour force by 75% share worldwide. In developing countries, the percentage of women in agricultural labour force represent 60-80%. In Rajasthan for instance, girls aged between 14-19 have been recorded highest contribution on agriculture by spending up to 60% of their whole on agriculture (Jain 1996).

Women are discriminated and affected by social, cultural and economic issues. According to United Nations Development Programme (UNDP) employment is vulnerable by not being involved in businesses, being underpaid or by such factor as care burden (UNDP not dated). Women in developing countries also show higher percentage participation in unpaid labour force than men. In Middle East and North Africa, the statistic is between 60-95% of women involved in unpaid work in total work, compared to 10-40% of men share of unpaid work (Charmes 2015). Literature points out mentioned main barriers for women to more contribute to agriculture development and to be more involved in decision making processes. One of them is also financial illiteracy.

2.2. Financial literacy and agriculture

There are many studies describing the issues and connections of financial literacy. According to the Organization for Economic Co-operation and Development (OECD) this is the definition of financial literacy:

“A combination of awareness, knowledge, skill, attitude and behaviour necessary to make good financial decisions and ultimately achieve individual financial wellbeing.”

Having financial knowledge is to help individuals make positive financial decisions by being well-informed and provide them the ability to compare financial services and products occurring on market. Furthermore, individuals should be capable to manage their financial issues, and in future possibly be more incorporated in stock market alternatively to start retirement planning (OECD 2016).

OECD (2016) has stated that financial behaviour is “what ultimately shape individuals financial situation and well-being in both – short and longer-term”. Furthermore, organization has stated there are no noticeable differences, although women showed more positive attitude towards the longer-term savings.

Additionally, aspect also needed to become more financially literate is self-efficacy. The meaning is that individuals are convinced of themselves being capable of controlling events and affect their life actively. Also having faith in their own abilities to organize and to execute activities needed to obtain some positive or negative results. Closely connected to self-efficacy is ability to have self-control. That is a skill needed in case of wrong behaviour to break bad habits, to be resistant to temptations, considered as bad decision making, and overcome the first impulses. Individuals failing in self-control manners, are very likely to behave in non-optimal way, which usually occurs as procrastination (Noveský & Balabán 2009). As Strömbäck and his team (2017) have found in their research, self-control does affect financial behaviour and furthermore financial well-being. Also, individuals with positive self-control are more likely to

report money-saving from pay checks resulting in better managing of future expenses and retirement plans.

Effort of financial literacy should be ability to motivate people, to lead them to start thinking about lifetime upcoming projects and to define them in wider context of economical behaviour. Financially literate person understands the issues between money and prices. However, it is not only about being able to count incomes and outcomes. Being financially literate is connected to the ability of making future actions such as retirement planning, savings, income versus outcome, wealth, social and health insurance etc. (Noveský & Balabán 2009). Besides, Lusardi and Mitchell (2011) stated that four concepts of financial literacy can be discussed. The components used in the questionnaire of their study, were risk diversification, inflation, numeracy, compound interest, claiming that person is financially literate when being well acknowledged in at least three components. Based on these statements, the result was that only 33% of adults worldwide are financially literate. Nevertheless, financial illiteracy occurs all over the world, not only in developing countries. Developed countries have also reported issues with financial literacy. The OECD (2016) stated that countries having experience with some issue in recent years tend to show higher financial knowledge – for example recent inflation in Italy. Moreover, even though some countries had reached high levels of financial knowledge, their overall level of financial literacy was average, or worse than average.

Furthermore, financial illiteracy is caused by people being financially unsophisticated. Less sophisticated individuals tend to be more engaged in high-cost credit-card borrowing, high-cost debts, and pay high fees when using financial services. Financial literacy differs by demographic factors – sex, age, education, geographical location, religious, self-rating etc. This study has shown that people acknowledged in financial literacy tend to do retirement planning as they count with economic characteristics and economic circumstances. Also, younger members learn from behaviour of older members from family in a way that they are less likely to display low financial literacy (Lusardi & Mitchell 2011). For instance, a situation in Zimbabwe is that 52% of people do not save at all. People from older generations showed lower financial literacy than

younger generation and women showed lower financial literacy than men (Murendo & Mutsonziwa 2014). Furthermore, they found that urban areas showed higher financial literacy than rural areas. Considering the fact, that men tend to move to urban areas, and women stay in rural areas, additionally with women recording lower financial literacy, the topic on financial literacy of women demanded wider research.

2.3. Financial literacy of women and agriculture

Financial illiteracy is an issue affecting the whole world. Throughout many studies, it has been found that women are generally less financially literate than men. It is strongly connected to the history, where the mission of women was to take care of household and family, and men were supposed to secure family by bringing movable things, later securing family financially. Older women tend to be less involved in the market, as they fulfil their role to be at home and take care of children (Bucher-Koenen et al. 2017).

It is crucial that the number of women becoming the head of a household is increasing. For instance, the percentage of women being responsible for households was 22.2% in 2000. By 2015 the percentage has reached 40%, bearing the importance of women empowerment. Additionally, as women gain ground in the labour market and participate in more consumer decisions, income management, and debt decisions this situation becomes more worrying. Moreover, low financial literacy can affect incomes, possibly lower children educational level and endanger financial future (Potrich et al. 2018).

Several studies on financial literacy are based on questionnaires. Women tend to answer unsuccessfully on financial questions and are more likely to answer “do not know” when possible in questionnaire. Also, financial literacy among the young is rather low than high, and comparing gender differences, young women scored worse in question of financial literacy than young men. Men are also more willing to invest in risky financial assets compared to women. Furthermore, women compared to men do not see money as an object of power (Bucher-Koenen et al. 2017; Potrich et al. 2018). Additionally, women’s contribution on stock market is lower than men’s. In general, even though women are more educated than men, they indicate lower financial literacy and lower

risk-taking than men. Moreover, women in general have lower incomes than men. Even though men project lower participation in agriculture, in most cases they occupy leadership positions in farm groups. As a result, women's influence in any further group discussions and possible decisions is endangered (Almenberg et al. 2015; Nakazi et al. 2017). Additionally, Farnworth and others (2018) stated that that male low productivity may be apparently caused by gender inequalities. Moreover, if women had the same access to resources and market like men, they would be able to increase agricultural production up to 20-30%. Single women have stated, that they even have visions with lands inherited after their parents, however do not have sufficient money to achieve them and they struggle being considered beggars when asking for help. Nevertheless, they showed higher interest in livestock over men, as it might be a way to achieve their visions due to livestock independency on land ownership (Farnworth et al. 2018).

Participation of women on the market is rather low, because they are most likely to take care of household. However, even if they do participate on the labour market, they are more likely to engage in self-employment work. Additionally, this leads to women being more involved in informal arrangements and part time jobs where the salary is rather low. Additionally, female participation has been recorded rather in seasonal jobs, than year-round jobs where the salaries are higher with the possibility of additional non-salary benefits (Doss et al. 2011).

3. Aims of the Thesis

The aim of the thesis was twofold. Firstly, thesis reviewed scientific articles available on the current stage of knowledge on the role of women in farming systems development, particularly with clear focus on sustainable commercialisation of agricultural production and financial literacy. Special attention was given to role of women empowerment in agriculture and an improvement of financial literacy regarding rather bad condition of that issue worldwide. Special attention was also given to the methods used in selected studies.

Secondly, thesis analysed materials and data gathered among female farmers in Eastern province of Zambia on their business plans.

4. Methodology

4.1. State of art review and methods used in identified studies

Scientometric approach was applied and Web of Science (WoS) database chosen for creating the state of art. Multiple key words (financial literacy; women; empowerment; sustainable; agriculture etc.) were used and their subsequent connection by conjunctions: and, or, not. Research was firstly refined only on articles despite there were other document types such as proceedings paper, review, editorial material, meeting abstract, book chapter etc. Secondly irrelevant topics from Web of Science were excluded and thirdly insignificant countries were removed. Regarding years of publication, the aim was on the articles written in recent years, however no articles have been excluded. Additionally, if needed, either research areas or Web of Science categories have been modified. The emphasis during research was on participatory methods used in the field. Especially, articles published either about or from developing countries were target articles.

4.2. Analysis of available documents from Zambia

Data were collected among female farmers in Zambia by Vladimír Verner in 2017. The research was carried out in Eastern province and purposively aimed at Women Empowerment in local farming systems.

4.2.1. Study site

Zambia, originally named the Republic of Zambia is a country in Southern Africa. In the beginning of 20 century, Zambia (at that time Rhodesia) was colonized by the British, obtaining independency in 1964. President of this country is Edgar Lungu. According to Food and Agriculture Organization of United Nations (FAO), Zambia is now divided into 9 provinces – Central, Copperbelt, North-western, Western, Southern,

Lusaka, Eastern, Muchinga, Northern, Luapula; being further divided into 103 districts, 156 constituencies and 1 281 wards (FAO).

In 2016 the population of Zambia was 16,591,390. This country reports high demographic growth rate and has also very high urbanization throughout the years. Since 1980 till 1990 growth rate reached 3.2 % per each year. When Zambia gained independency, there was only 20 % of people living in urban areas. Since then the percentage of people living in urban areas has raised up to 41.8 % in 2017 (FAO).

This country is landlocked as it has borders with 8 countries – Malawi, Tanzania, Democratic Republic of Congo, Angola, Namibia, Botswana, Zimbabwe and Mozambique. Zambia shows a total country area over 752 600 km², from which 743 390 km² is a land area, where 488 016 km² is a forest and 238 360 km² is used as an agricultural area from which around 38 000 km² is an arable land and 200 000 km² is used as permanent meadows and pastures. Zambia reaches from 1 000 to 1 600 meters above sea level. Zambia is a country in a tropical belt, however three seasons can be captured – the cool dry season which starts during April and ends in August, the hot dry season lasting from August to November and in November starts the hot wet season. Mean monthly temperatures are between 10°C - 30°C with rainfall varies from 700 mm to 1500 mm where most of the rainfall occurs on the north (FAO).

A Human Development Index (HDI) experienced increase since 1980 when HDI in Zambia was 0.422 and in 2014 HDI reached 0.586 (Rasmussen et al. 2017). However, even experiencing improvement, compared to all 188 countries on Earth, Zambia still ranks among under average HDI countries. In the terms of Gross Domestic Product (GDP), GDP per capita based on purchasing-power-parity (PPP) reached 3 997 current international dollars in 2017 (see Figure 1). GDP per capita based on PPP is completed using GDP, transforming it to international dollars by purchasing power parity rates and separate by population in total (KNOEMA).

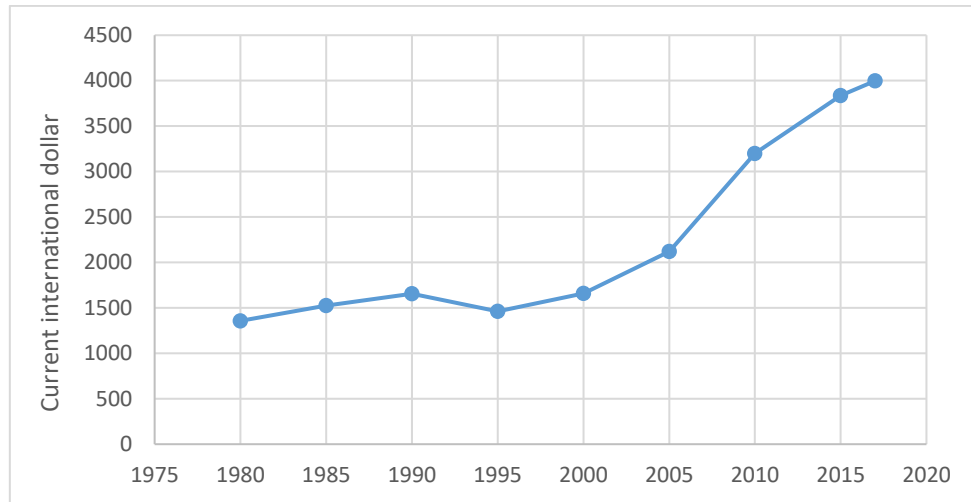


Figure 1: Gross Domestic Product per capita based on PPP since 1980 – 2017 shown in current international dollar.

When targeting on the Eastern province of Zambia, it has borders with Malawi and Mozambique and three other provinces of Zambia – Northern, Central and Lusaka. Capital city of Eastern province is called Chipata. In 2014, according to UNDP (2016) the population of Eastern province was 1 766 300 inhabitants. Compared to other provinces, Eastern province scored lower than average in HDI. Comparing other fields, Eastern province has also showed highest intensity of poverty around all provinces (UNDP accessed 2018).

4.2.2. Analysis of available materials

Three types of material were collected during the field trip in Zambia. It was focused on participatory methods, specifically farm calendar, Rapid Rural Appraisal (RRA) of household resources and SWOT analysis of commercialization of agricultural production. Data on household resources and farm calendar were rather irrelevant to thesis topic and even were incomplete. On the other hand, SWOT contained most of the data that deal with financial literacy and commercialisation. Generally, SWOT analysis uses 4 indicators. Strengths, Weaknesses, Opportunities and Threats. Strengths and weaknesses aim on location, services and products, personnel, facilities, opportunities and threats focus on the economic, political, social and technological field (Dyson 2004).

5. Results

5.1. State of art

Even though many key words were used on Web of Science, financial literacy and women empowerment seemed to show the most interesting results. Both topics had shown rising interest throughout the years as the topic seems to be actual matter. Also, conjunctions of various key words have been performed, however, it did not show very interesting results, as most of them were irrelevant to the topic. In the following sections results on key words Financial literacy and Women's empowerment may be observed. All information stated in following section have been reached in March 2018. Articles on financial literacy in Figure 2 were distanced by 2 years due to usability of data. Articles on women empowerment were separated by 5 years as sufficient data have been collected.

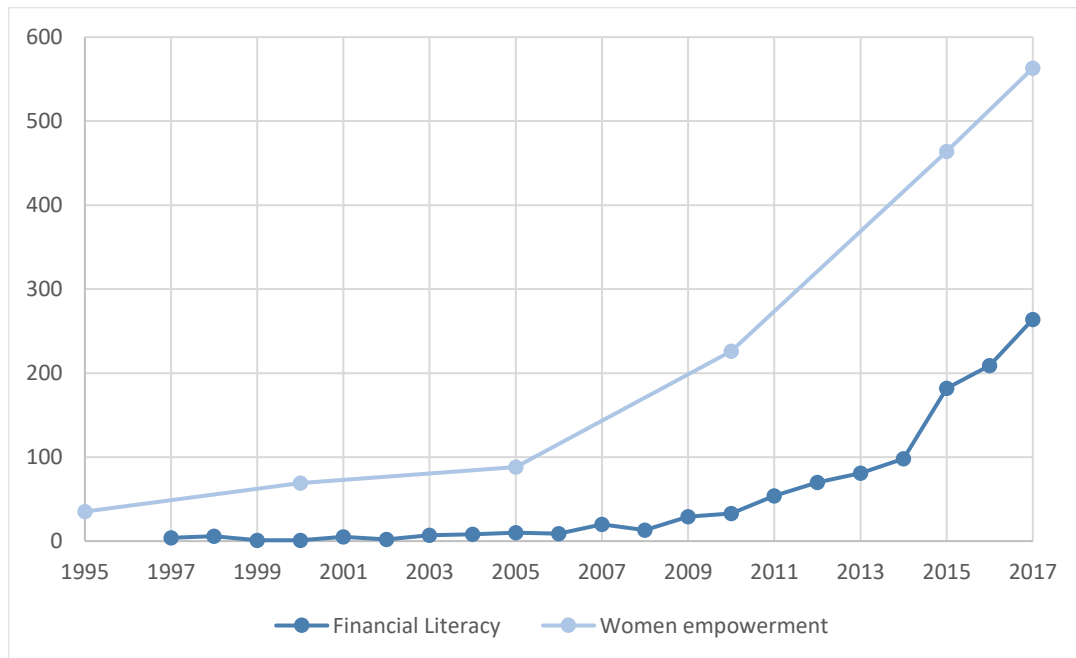


Figure 2: Comparison of articles published in years using key word: Financial literacy and Women empowerment. Source: WoS, 2018

5.1.1. Financial literacy at Web of Science

Usage of Web of Science tools by alternative key words showed interesting results. Concerns about financial literacy have risen throughout the years. In 1977 there was only one article written. The interest in financial literacy grew since 2008 as since then the number of documents published is rising, reaching the number of 265 documents in 2017. When putting a key word “Financial literacy” and excluding other types of documents than articles, the total number reached 1106 articles with increasing state in recent years (see Figure 2).

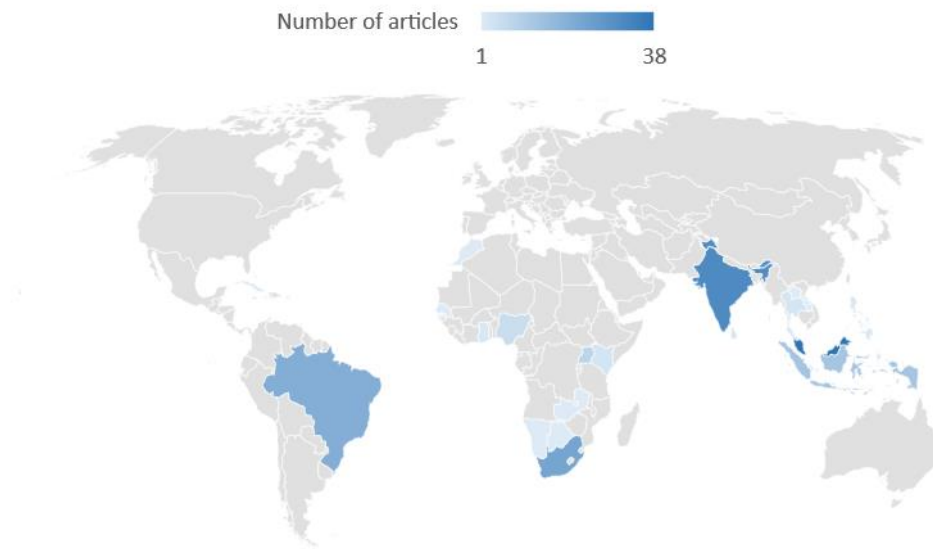


Figure 3: Volume of articles in developing countries using key word: Financial literacy.

Source: WoS, 2018

When focused on articles divided by countries, still using the key word: financial literacy, the most publishing country was the United States of America the total of 534 articles, followed by Australia with 110 articles and England with 88 articles published. However, articles published from particular country are not always regarding the area. Nevertheless, by excluding developed countries, more relevant results were gained see Figure 3). The highest number of articles published was in Malaysia with 38 articles, followed by India with the total number of 31 articles published and then South Africa with 23 articles.

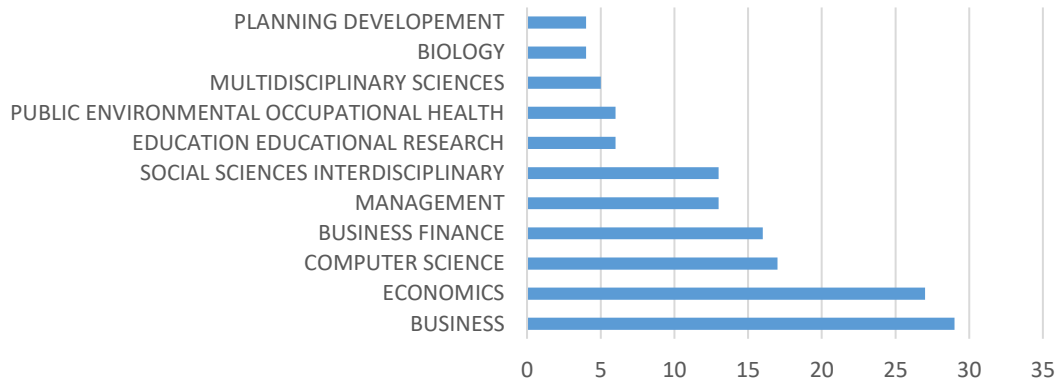


Figure 4: Number of articles published on the topic financial literacy, divided by research areas. Source: WoS, 2018

Additionally, applying countries from Figure 3 for further analysis of research areas of articles, results are shown in Figure 4. After excluding irrelevant categories in research areas relating health care in general, sports, television, linguistics etc. From a total number of 156 articles, most common were categories: Business, Economics, Computer Science, Business Finance, Management and Social Sciences Interdisciplinary. Figure 3 and figure 4 are limited on the top 10 results. Journal most discussing the issue of financial literacy is Journal of Consumer Affairs with 43 articles, second with 28 articles was Journal of Pension Economics Finance, followed by International Journal of Consumer Studies with 25 articles (see Figure 5).

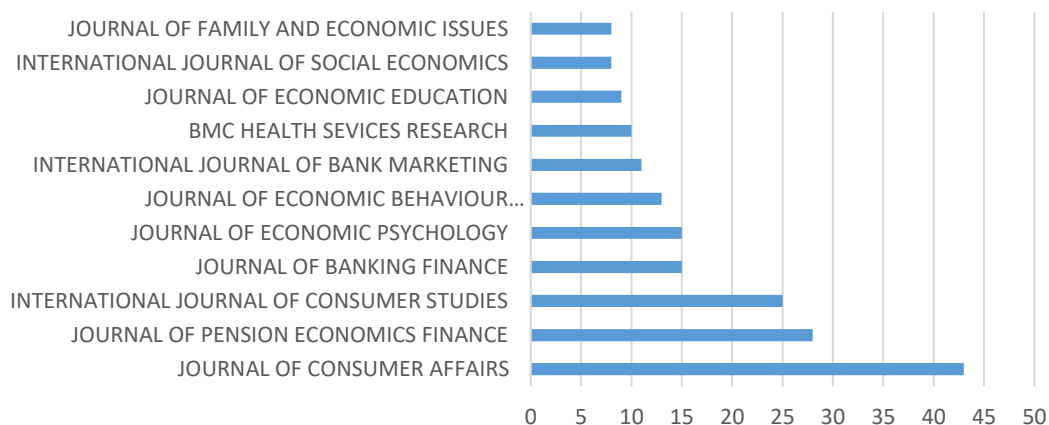


Figure 5: Number of articles published on the topic financial literacy, divided by journals. Source: WoS, 2018

5.1.2. Web of Science: Women Empowerment

When focused on the key word Women Empowerment, a wide increase of articles published throughout the years has been recorded. As shown in Figure 4, during past 30 years the number of articles regarding the topic of Women Empowerment has risen from 2 to over 450 articles published on Web of Science (see Figure 6).

Most of the articles discussing Women Empowerment come from the United States of America with the total number of 1792 articles, followed by United Kingdom and Canada. When withdrawing all developed countries and aimed specifically on countries of Africa (Figure 6), following results have been gained. Most of the articles published derive from South Africa with the total number of 166 articles, followed by Nigeria with 48 articles, Kenya, Ghana etc. However, it needs to be stated, that after adjustments in scientometrics mentioned earlier, resulting articles are mostly discussing women rape, violence or health care (such as HIV, care of children, malnutrition etc.).

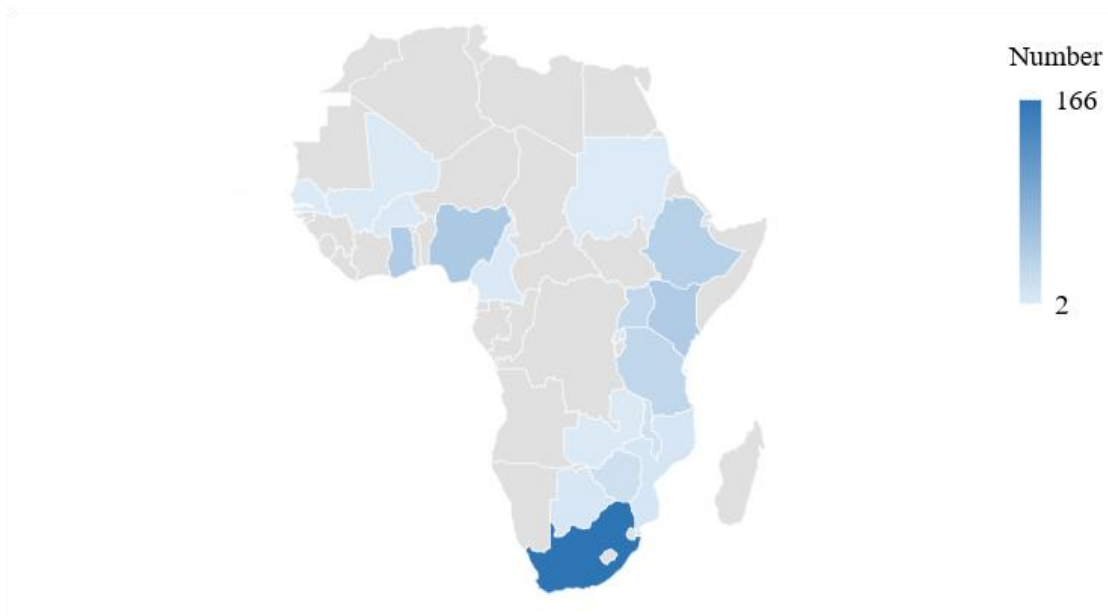


Figure 6: Volume of articles using the key word: Women Empowerment in Africa
Source: WoS, 2018

5.1.3. Most commonly used methods in studies

Most of the studies analysed were based on questionnaires and surveys. Each questionnaire in every study was prepared specifically to the topic examined, potentially some studies edited the previous questionnaires. However, they usually cover small samples, and report of various fields, and differ in methods. The aim of this thesis was on participatory methods. It is less used, but more effective to teach farmers in developing countries through professionals - how to plan the work and moreover, how to do it on their own.

5.2. Documents from Zambia: SWOT Analysis

Even many materials were gained, due to the completeness and usability of material, the SWOT approach became the main aim of the analysis. Teams of women created a SWOT analysis, with the selection of 6 products in total – tomatoes, flatbread, dry fish, chicken, potatoes and eggs.

The project held in Eastern Province, Zambia collected data on SWOT analysis. The results of the project will be stated in this section, using a table of strengths, weaknesses, opportunities and threats collected from 8 teams of women. The SWOT analysis focused on 6 specific products: tomato, Quench drink, eggs, dry fish, potato and flatbread. SWOT analysis was gained for each product, however due to valuable data processing, only one widespread SWOT analysis has been created.

Table 1: Common SWOT analysis of all six products (tomatoes, flatbread, dry fish, Quench drink, potatoes and eggs).

Strength	Score (%)	Weakness	Score (%)
Easy to manage (sale, transport)	41	Complications with planning	37
High demand (whole year product)	19	Product degradation (disease, storage)	25
Good income	13	Price fluctuation	11
Enough resources (water, manpower)	9	Lack of transport	11
Knowledge, skills (in harvesting)	9	Low skills	8
More uses of a product	9	Thieves	8
Opportunity	Score (%)	Threat	Score (%)
Market possibilities	44	Fragile product	26
Cooperation possibilities	22	Weather condition	22
Transport	15	Product degradation (disease, storage)	22
Required product (daily)	11	Market frequency	17
International trade	8	Bad communication	13

In Table 1, in the terms of strengths, answers were divided into most common answers: easy to manage, high demand, good income, followed by knowledge and skills and more uses of a product. With a total 41% of responds were that product is easy to manage because of good possible transportation, good spatial location, durability of a product or positive sale on market. As high demand can be considered a product, which is available on market during whole year or in terms that it is a likeable product. Moreover, opportunities were detached into groups such as: market possibilities with the score of 44%, cooperation possibilities with 22%, followed by transport, daily required product and international trade (see Table 1). Market possibilities were specifically aimed on market being easily found – local market, when having connections, women stated customers come to them. Additionally, group of women selling Quench drink had most market opportunities at nearby schools as they were the only ones at the market.

As weaknesses most stated by women were (see Table 1): product degradation, price fluctuation, complications with planning, lack of transport followed by low skills and thieves. Research recorded crucial issue in the terms of complications with planning. It was either wrong selection of seeds, problems with electricity, shortage of resources

needed or simply a bad sale plan. Another considerably high issue was with limitation of medicine also in association with the storage of products. Poor storage leads to unsustainability of a product, like rot and diseases.

Lastly, threats were separated into five groups: fragile product, weather condition, product degradation, market frequency and bad communication (see Table 1). As a category fragile product can be mentioned dependence on a season, for instance group of women with dry fish stated that there is a fish ban in Zambia from December to March. Or flatbread group said that during holiday there is no business, shortage of wheat can be threatening or issue with customers having no money. Furthermore, various products are dependent on weather, meaning inappropriate conditions equals slow business. When there is competition there is price fluctuation. Moreover, team of dry fish stated that they struggle with bad communication in ways like lack of interest and lack of teamwork.

6. Discussion

This thesis results have ambition to contribute to worldwide debate on one of the Sustainable Development Goals (SDGs) and Millennium Development Goals (MDGs) signed in 2000 by United Nations, which was to eliminate hunger. Similarly, to Tilman and others (2002), findings pointed out that agriculture is continuously put under tremendous pressure as the population is expected to increase by 50% in 2050. In addition, giving various amounts of soil additives to achieve greater production is detrimental to the environment which is in dispute with another out of SDGs and MDGs as well, to ensure environmental sustainability. Although agriculture is in centre of development efforts, it still is crucial for smallholder farmers who struggle with various difficulties such as price fluctuation, poverty and no link to the markets, which is in accordance with study published by Pender and others (1999).

Furthermore, thesis specifically targeted the issue of the role of women in agriculture. Even though women contribute the most in both agricultural and household activities, they are not considered as “farmers” and being neglected by many development efforts despite they grow over 50% of whole world production and this percentage is still increasing (Doss et al. 2011). This opinion is supported by Majunder and others (2017) who stated, that it is because men move into urban areas for better jobs. On the other hand, when newer technology is purchased, the percentage of women job opportunities is lower. In this case, thesis showed that women should be in the centre of development and capacity building activities and, moreover, that female farmers could become competitive sellers if they have adequate knowledge and support. Without such support, women would feel less in control of marketing and farm, as the land is owned by their husbands and they are also key players in decision-making processes (Masamha et al. 2018). Nevertheless, Farnworth and others (2018) stated their study has proved, that single women, in case of inheriting land, have visions. Although they struggle with insufficient money to achieve their visions. Additionally, Almenberg and others (2015) says that even women are more educated in some cases, they display lower financial literacy than men. This is supported by a statement by Nakazi and others (2017), who said that women’s contribution on stock market is lower than men, furthermore they are

less risk taking, negatively affecting their possible positions on leadership positions. Most studies found were based on questionnaire or survey. Although, they mostly proved positive results, there were some studies based on participatory methods which deserve more detailed exploration regarding not only women empowering but strengthening all agriculture in order to achieve market, environmental and gender sustainability.

There are more articles available on Web of Science, however, due to this research it has been found that most articles discussing the issue of women empowerment were aimed on women rape, violence, health care like HIV, children care etc. Such works were irrelevant to this bachelor's thesis. Nevertheless, the number of articles being published on such topics is recorded to be growing each year, meaning such topics remains up-to-date in these days. Most of the articles discussing financial literacy have been discussed in journals such as the Journal of Consumer Affairs which analyses business, individual, and government actions and decisions affecting marketplace. Second most publishing journal was the Journal of Pension Economics and Finance followed by the International Journal of Consumer Studies focusing on the economics and finance of pensions and possible retirement income and well-being with security. It is worth of mentioning that impact factor of five the most publishing journals on financial literacy was at least 1.2 or higher. So, in general, thesis proved that financial literacy is being currently frequently discussed topic in scientific literature.

Data gathered in Eastern province in Zambia for SWOT analysis showed that biggest strengths were that products were easily manageable, and there was always a place on market for them. Moreover, as opportunities women stated they had many market possibilities and cooperation possibilities with universities, such as loans, advertisement, to pay no rent. Although women stated as weaknesses, that they dealt with complications with planning (37%), and 25% of answers were concerned about difficulties with product degradation. Lastly, results on threats were balanced, mostly women's smallholder farms were endangered by weather condition, product sale is fragile massively dependant etc. Compared to Stainback and others (2012) Zambia does not have, nor study did not show, so many opportunities like communities based on

helping each other and creating partners. However, as a weakness they struggled with high price of tree seeds, which study in Zambia have not recorded. Although, these two studies and furthermore Kazemi and others (2018), all observed same weaknesses and that were lack of farmer knowledge and skills and furthermore lack of planning or coordination. Additionally, all studies even shared similar threat such as weather conditions.

7. Conclusions

This Bachelors' thesis analysed literature sources available on the topic of empowering women in farming systems in developing countries. It has been observed that publication tendency on the topic women empowerment and financial literacy is growing. However, women showed being more positive attitude towards longer-term savings than men. Alternatively, women in fact have visions with lands inherited, however, they do not have sufficient amount of money to fulfil them. Furthermore, they have impact in the inter-household decisions, nevertheless, they do not have a free word in marketing matters. Apart from various aspects having impact on sustainable development of agriculture, it has been found that financial literacy represents important part. Not only developing countries but the whole world is dealing with low financial literacy, only 33% of adult population can be considered as financially literate. Even though not many studies connecting financial literacy and agriculture has been found, managing money and creating strategic plans on farms showed impact. Special regard has been given to SWOT analysis based on data gathered in Zambia. Women stated, that one of biggest strengths were high demand of a product and easy management of a product. Additionally, biggest opportunities were market and cooperation possibilities offered from neighbouring schools. Although, weaknesses and threats endangering farm and production was complications with planning and product degradation closely associated with threats such as weather condition, bad communication causing low bad business.

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