

MENDEL UNIVERSITY IN BRNO

Faculty of Regional Development and International Studies

**The Impact of Value Addition to Fresh Mangoes
on the Socio-economic Development of Small Scale Mango Farmers
in Ghana**

Diploma Thesis

Author of thesis: Ing. Ivana Jašková

Thesis supervisor: Ing. Samuel Antwi Darkwah, Ph.D.

Brno 2014

Declaration

I declare that I carried out this thesis: “The Impact of Value Addition to Fresh Mangoes on the Socio-economic Development of Small Scale Mango Farmers in Ghana” independently, and only with the cited sources, literature and other professional sources.

I agree that my work will be published in accordance with Section 47b of Act No. 111/1998 Coll. on Higher Education as amended thereafter and in accordance with the Guidelines on Publishing University Student Theses.

I understand that my work relates to the rights and obligations under the Act No. 121/2000 Coll., the Copyright Act, as amended, in particular the fact that Mendel University in Brno has the right to conclude a license agreement on the use of this work as a school work pursuant to Section 60 paragraph 1 of the Copyright Act.

Before closing a license agreement on the use of my thesis with another person (subject) I undertake to request for a written statement of the university that the license agreement in question is not in conflict with the legitimate interests of the university, and undertake to pay any contribution, if eligible, to the costs associated with the creation of the thesis, up to their actual amount.

In Brno, 27th December 2014

.....

Ing. Ivana Jašková

Acknowledgement

I would like to thank to Ing. Samuel Antwi Darkwah, Ph.D., the supervisor of my diploma thesis, for his helpfulness and guidance given me throughout the elaboration of this work and exploring Ghana.

I would also like to thank to my family and friends, especially to my father, Jan Žáček for his great support and patience during my studies.

Abstract

Jašková, I. *The Impact of Value Addition to Fresh Mangoes on the Scio-economic Development of Small Scale Mango Farmers in Ghana. Diploma Thesis. Brno, 2014.*

This diploma thesis aims to analyse the possibilities of processing the mangoes that farmers in Ghana regularly discard. Furthermore, it demonstrates, that by adding a value to the mango processing industry, the income of a farmer in Ghana could be considerably increased, leading to higher standard of living. The practical part of the thesis is based on literature research and introduces a business plan for the mango jam production in the Eastern Region, using simple and technologically undemanding processes. The study also provides economic calculations and overall project assessment. The estimated socioeconomic impacts of processing the mango surplus on the farmer can be found at the end of the thesis.

Key words: added value, mango, farming, Ghana, business plan, jam, production.

Abstrakt

Jašková, I. *Vliv přidané hodnoty čerstvého manga na socioekonomický rozvoj farmáře malého rozsahu v Ghaně. Diplomová práce. Brno, 2014.*

Tato diplomová práce si klade za cíl analyzovat možnost zpracování manga, které běžně farmáři nezpracují a vyhodí. Dále demonstruje, že pomocí přidané hodnoty by bylo možné markantně zvýšit příjem farmáře v Ghaně a zlepšit jeho životní úroveň. Praktickou část práce, která se opírá o východiska z literární rešerše, tvoří podnikatelský záměr na výrobu mangového džemu v oblasti Eastern Region za pomoci jednoduchých a technologicky zcela nenáročných výrobních postupů. Studie je doplněna ekonomickými kalkulacemi a celkovým zhodnocením záměru. V závěru práce jsou odhadovány socioekonomické dopady realizace zpracování přebytečného manga na vybraného farmáře.

Klíčová slova: přidaná hodnota, mango, farmaření, Ghana, podnikatelský záměr, džem, produkce.

Content

Introduction.....	8
1 Aim of the thesis.....	9
1.1 Methodology	9
2 Literature research.....	11
2.1 Demographics	11
2.2 Geography	11
2.2.1 The Eastern Region.....	11
2.3 Agriculture	12
2.4 Tourism in Ghana	12
2.4.1 National Tourism Development Plan.....	13
2.4.2 Cultural tourism	14
2.4.3 Ecotourism	15
2.5 Value addition.....	15
2.6 Mango	17
2.7 Mango farming	18
2.7.1 Storage of fresh fruit	19
2.7.2 Price of mango	19
2.8 Business	20
2.8.1 Definition of the business	20
2.9 Business plan	20
2.9.1 Business plan structure.....	21
2.10 Financial plan and evaluation of investment efficiency	22
2.10.1 Net present value.....	23
2.10.2 Internal rate of return	24
2.10.3 Payback period.....	25
2.10.4 Profitability index	26
2.10.5 Break-even point.....	27
2.11 Risk evaluation	27
2.12 Marketing mix	28
2.13 SWOT analysis	29

2.14	Gantt Chart	31
2.15	Standard of living and quality of life.....	31
3	Practical part.....	34
3.1	Chosen farm.....	34
3.2	Mango harvest	34
3.3	Mango processing	35
3.3.1	Mango jam production	37
3.4	Target group of the product	39
3.5	Possible competitors	39
3.5.1	Ghanaian souvenirs	40
3.6	Marketing plan.....	40
3.6.1	Marketing mix.....	41
3.7	Risks.....	42
3.8	Financial plan analysis.....	42
3.8.1	Net investment	42
3.8.2	Loan and interest.....	43
3.8.3	Costs.....	44
3.8.4	Cash flow	44
3.8.5	Payback period.....	45
3.8.6	Profitability index	45
3.8.7	Internal rate of return	46
3.8.8	Net present value and present value	46
3.8.9	Break-even point.....	46
3.8.10	Pessimistic version.....	47
3.8.11	Optimistic version	49
3.9	SWOT analysis.....	51
3.10	Gantt chart	53
4	Discussion and recommendation	54
4.1	Socio-economic consequences of the mango jam production implementation	54
4.1.1	Economic consequences	55
4.1.2	Social consequences.....	56

4.2 Recommendation.....	59
5 Conclusion	60
References.....	62
List of tables	67
List of figures.....	68
Appendices.....	69

Introduction

Agriculture is the key sector for all developing countries. In Ghana, the industry employs around 70 % of people and it brings around 50 % to the GDP. Less developed countries are usually well known for exporting their crops, becoming a standard part of today's globalized world. The countries have become dependent on each other and the world is more and more interconnected. Yet, the developing countries have the chance to gain a better market position by adding value to the exported crops.

Currently, mostly small and medium scale farmers do the agriculture on their plantations. There are many associations supporting the farmers and helping them to develop their businesses. By adding value to the planted crops and implementing new projects and processes, they could bring to the market wider product range and use their harvest to the max. This would not only lead to employment increase, but also improve the economy, productivity and performance. High quality products and precise projects could increase the competitiveness of Ghanaian farmers on the global market.

International trade and economic growth are closely related. The politics does have a big influence on this issue. Ghana offers to the investors a relatively stable political environment, when considered in African conditions, and the government supports the agriculture by tax holidays and other incentives. The most popular and mostly dealt with export products are cocoa beans. Yet, Ghana also offers other products with high potential with not so many stakeholders involved.

This thesis deals with the possibility of full exploitation of the fresh mango and the business development of the small-scale farmer. The theoretical part, facts and knowledge gained from the existing literature sources can be found in the first part of the thesis. The second part consists of concrete project proposals and relevant calculations that were designed based on this research. The project presents the business opportunity in mango jam production and its prospective impacts on the farmer's socioeconomic situation and quality of life.

1 Aim of the thesis

The main aim of the diploma thesis is to analyse the possibilities of the value addition to fresh mango production in Ghana, to formulate its socioeconomic impact on the chosen farmer, as well as, to give recommendations for further development. Sub-objectives include implementation of results from theoretical research into the value addition process to fresh mango processing done via mango jam production.

1.1 Methodology

Various methods were used while compiling the diploma thesis. Focused interview, a qualitative method using investigative questions about the respondents' own experience, was used to gather primary data. The interview was conducted with a representative of a mango farm close to Somanya, who at the same time is a member of Yilo-Krobo Mango Farmers Association. This person was interviewed during the author's field research in Ghana. More data and information were collected during the visit to the Eastern Region and other parts of the Ghana country, as well as, during the visit to the local radio station at the University of Ghana.

An experimental production of mango jam was done during the field visit. The test confirmed the simplicity of the production process, with no need for special education, experience or technical equipment.

The results from the interview, field visit learnings, together with information from the National Tourism Development Plan document, various Internet sources and facts from existing literature can be found in the first chapter of this thesis, Literature research. Secondary data, such as territory and economy facts or target group information were also processed and are presented here.

In the practical part of the thesis, various methods for evaluation of the proposed business plan and its success were used. Among them being Capital budgeting analysis

and other models for evaluation such as payback period, profitability index, internal rate of return, net present value, break-even point, etc.

Marketing plan, SWOT analysis and Gant chart were used for better comprehensibility of the presented work. Statistical methods such as correlation and regression analysis were used to formulate the consequences of the value addition to fresh mangoes on the socio-economic development of small-scale mango farmers in Ghana.

At the end of the thesis, the method of synthesis was applied. Obtained data, information and learnings were all integrated into the discussion part. The both methods, analysis and synthesis, complement well each other and it is appropriate to use them together. The method of comparison was also used. The data from main research were compared with the results from the focused interview. Based on the results from all above-mentioned methods, the proposals to improve current situation were formulated.

2 Literature research

2.1 Demographics

There live 24 millions of people in Ghana. Accra is the capital and the largest city as well with a total of 4 million people. Other important towns are Tamale, Kumasi and Takoradi. Based on estimations about half of Ghanaians live in urban centres, where 37% of the population is under 15 years. Ghana is home to a variety of ethnic groups, for example Akan, Mole-Dagbon, Ewe and Ga-Dangme. The official language is English, but there are still widely spoken native languages. The most often used local tongues are Asante, Ewe and Fante. The majority of Ghanaians are Christian with following of Islam and animism (Jeffreys, 2012).

2.2 Geography

The Republic of Ghana covers an area of 238 533 km². The country is divided into ten administrative regions: Ashanti, Brong Ahafo, Central, Eastern, Greater Accra, Northern, Upper East, Upper West, Volta and Western Region. The country is bordered by Gulf of Guinea in the south, Togo in the east, Burkina Faso in the north and Ivory Coast in the west. The land is full of contrasts. You can find savannahs; cave systems, woodlands, forests, nature reserves, estuaries, coastal line and many others there. The coastal line includes important ports that are necessary for the foreign trade (Government of Ghana, 2014).

2.2.1 The Eastern Region

The target farm lies in the Eastern Region. The Eastern Region is the sixth largest region in terms of land area. The Volta Lake covers part of the region and there are located the dams Akosombo and Kpong. This water sources give high potentials for irrigation, farming and water transport. The region is rich in minerals. The forest and savannah type of soils are more than suitable for the cultivation of various crops such as cocoa, pineapple, oil palm, maize, citrus, ginger, cashew nuts and mango, which are gaining importance as export commodities. The location close to the sea and capital means the advantageous position for trade. The beautiful natural setting makes this region an impressive tourist area characterized by highlands, woody valleys

and waterfalls. The Eastern Region is characterized by two rainfall seasons. The temperatures are high and the relative humidity varies between 70 and 80 % (Ghana Districts, 2014).

In the southeaster part (the Lower and Upper Manya Krobo Districs and Yilo Krobo district) of the region is agriculture the most important part of the economy. The land is owned by farmers or leased to cultivation. Mangoes are grown on a small, medium to large-scale farms and get higher and higher popularity for its low requirements of care. Plantations became very important source of income as a result of interventions made by Ministry of Food and Agriculture in cooperation with many international organizations (for example ADRA, TIPCEE, KROBODAN and so on). Mango tree is the major crop cultivated in Lower Yilo because of its ecological and economical potential (Ministry of Food and Agriculture, Republic of Ghana, 2014).

2.3 Agriculture

It is crucial to the economy accounting for nearly 30 % of GDP and 60 % of employment; agriculture is a government priority for further development. Together with economic growth opportunities, a push for a stronger food security policy has created a drive to modernise farming in recent years. Ghana is a forefront of change, as one of the several African countries in which mixes of public, private and non-governmental actors are experimenting with new approaches to farming. The country has rich soil; untouched arable land and water rich climate have attracted new investment and programmes that aim to address infrastructural weaknesses, cultivation techniques and access to financing (Jeffreys, 2012).

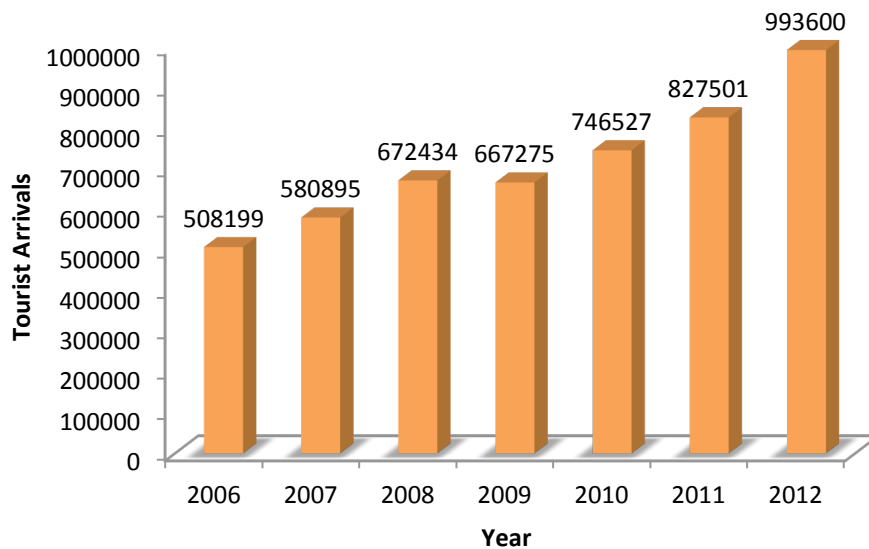
2.4 Tourism in Ghana

Ghana is very interesting and attractive country but not fully discovered by the tourists. The original atmosphere is not disappearing like in Kenya for example, where come millions of tourists each year. But the government already realized, that tourist could bring more money to the country and stimulate the economy.

2.4.1 National Tourism Development Plan

The Government made the Integrated Tourism Development Program, which culminated into the 15-Year National Tourism Development plan (1996-2010). The tourism sector was placed as a driver of growth and development, was supposed to increase investments in tourism facilities and contribute to gross domestic product. This support was successful, so the Ministry of Tourism with the financial and technical support from the United Nations Development Programme, United Nations Economic Commission for Africa and World Tourism Organization made National Tourism Development Plan (2013-2027) to provide stakeholders in the public and private sector a guide to the long-term development of the tourism sector. The Plan assesses how tourism can contribute to national and local economic development and make its role stronger as a leading sector for employment creation, revenue generation, environmental conservation and national cohesion and overall economic growth (National Tourism Development Plan, 2012).

Figure 1: Tourist arrivals to Ghana



Source: Own work based on National Tourism Development Plan, 2012

Ghana hopes to capitalize on its image as a well-managed and peaceful West African state to further develop its tourism industry because today tourism accounted for 5,4 % of GDP only. Sustainable forms of tourism are gaining ground and a largely untapped potential around numerous beach spots is set to attract a growing number of leisure visitors in the future. Sector development is going to be accelerated by legislative changes that will increase financing for expanding and promoting Ghana's tourism products across international markets (National Tourism Development Plan, 2012).

Tourism outlook is quite clear. Ghana's tourism sector looks set to receive heightened investment. This should release financing for infrastructure, assuming the regulatory framework is developed to make it more attractive to potential investors. Marketing and promotion should be a priority, as will enhancing the quality of tourism offerings. Small things could have a big impact. Reducing the price of tourism visas would make traveling to Ghana more attractive. The sector's total GDP contribution is expected to rise by 4,3 %, in 2012, and at an annual rate of 5,4% over the following 10 years (Ghana Online News, 2014).

2.4.2 Cultural tourism

Historical sites receive more attention. Elmina Castle, one of several old fortresses classified as UNESCO World Heritage Monument has seen tourist numbers almost double from 48 000 in 2006 to more than 81 000 in the year 2011. Cape Coast Castle, where visitors can learn about Africa's slave trade, was toured by 97 500 tourists in 2011. On an international level, the Ghana Tourist Association expects that increased promotion of festivals and traditional celebrations will eventually foster the emergence of a genuine tourism identity. The marketing director of the GTA said that Ghana is light year away from countries like South Africa or Tanzania in terms of the tourism products that can offer. It is necessary to leverage the traditional events that are unique to our identity (Jeffreys, 2012).

2.4.3 Ecotourism

Ecotourism is proving an efficient way to increase expenditure and promote the rural development. Unable to compete with the vast game reserves and safari possibilities in for example Kenya, Ghana is nevertheless well positioned to develop its own version of the green traveller's dream, anchored on densely forested areas and wildlife habitats, as well as 22 natural parks and animal reserves. The Ghana Rural Ecotourism and Travel Office is charged with promoting the growth of sustainable tourism. Historically driven by foreign visitors, ecotourism is becoming the choice of Ghanaians, as rising incomes and a growing number of lodges and accommodation facilities encourage leisure travel within the country. In 2005 only 30 % of visitors to ecotourism sites were locals (Jeffreys, 2012).

2.5 Value addition

Value added refers to the additional value created at a particular stage of the production or through the image and marketing. Value added agriculture is a process of increasing the economic value and consumer appeal of any agricultural commodity. It is an alternative production and marketing strategy that requires a better understanding of the rapidly changing food industry and food safety issues, consumer preference and effective management. It may not be inferred that value addition, means only processing a raw material into the form of canned food. There are various ways of adding value to the chosen commodity. The scope of value addition is mind-boggling for the reason of availability of raw material as well as the large market size (Walia, 2007).

Value added agriculture mean changing a raw agricultural product into something new through packaging, processing, cooling, drying, extracting or any other type of process that differentiates the product from the original raw commodity. Examples of value added agricultural products include garlic braids, bagged salad mix, artisan bread, lavender soaps, sausages or jam. Adding value to agricultural products is a worthwhile endeavour because of the higher returns that come with the investment, the opportunity to open new markets and extend the producer's marketing season as well as the ability

to create new recognition for the farm. Value added products are hitting the local market as producers take advantage of high-demand product niches. This is the key to success in value added agriculture; niche markets are where smaller producers can be most successful in creating value and establishing a profitable business (Matthewson, 2007).


A study of fourteen farmers in the US identified ten keys to success when pursuing a value added business. These include: starting small and growing naturally; making decisions based on good records; creating a high-quality product; following demand driven production; getting the whole family or partners involved; keeping informed; planning for the future; continuing evaluation; persevering and having adequate capitalization. These recommendations has to me taken into mind when is designed the product and business plan (Matthewson, 2007).

There are many challenges for the value added business for example starting a value added business is putting together your recipes or formulations for the product you are developing. For instance, making soap from your lavender flowers requires time and effort in finding the right recipe for quality soap. You will also want to research the market potential for your product in order to define your customer profile, so that you are not wasting your time in formulating a product that will be not sold. Starting a value added agricultural business is an exciting opportunity for the small farmer interested in diversifying and exploring new markets, but starting small and finding your niche is key to the long term success. There has to be evaluated the risks associated with the business and prepared a solid plan (Matthewson, 2007).

2.6 Mango

Compared to other West African origins, the presence of fresh mangoes from Ghana on international markets is low, amounting less than 3 % of EU imports in terms of volume supplied from ECOWAS countries. Mango has been identified as one of the main traditional fruits that has demand as an export commodity and is therefore promoted in Ghana, to become a major potential foreign exchanger earner in the future. There are varieties of mango cultivated in Ghana, but three most favourite varieties are Keitt, Kend and Palmer. Other popular varieties cultivated include Haden, Tommy Atkins and Irvin. In some parts of Ghana is the biggest advantage of producing mangoes guaranteed a dual harvest in a year. This is huge competitive advantage because it is one of the few regions in the world that the climate allows such a harvest (Farm Management Services limited, 2014).

Figure 2: Types of Mangoes

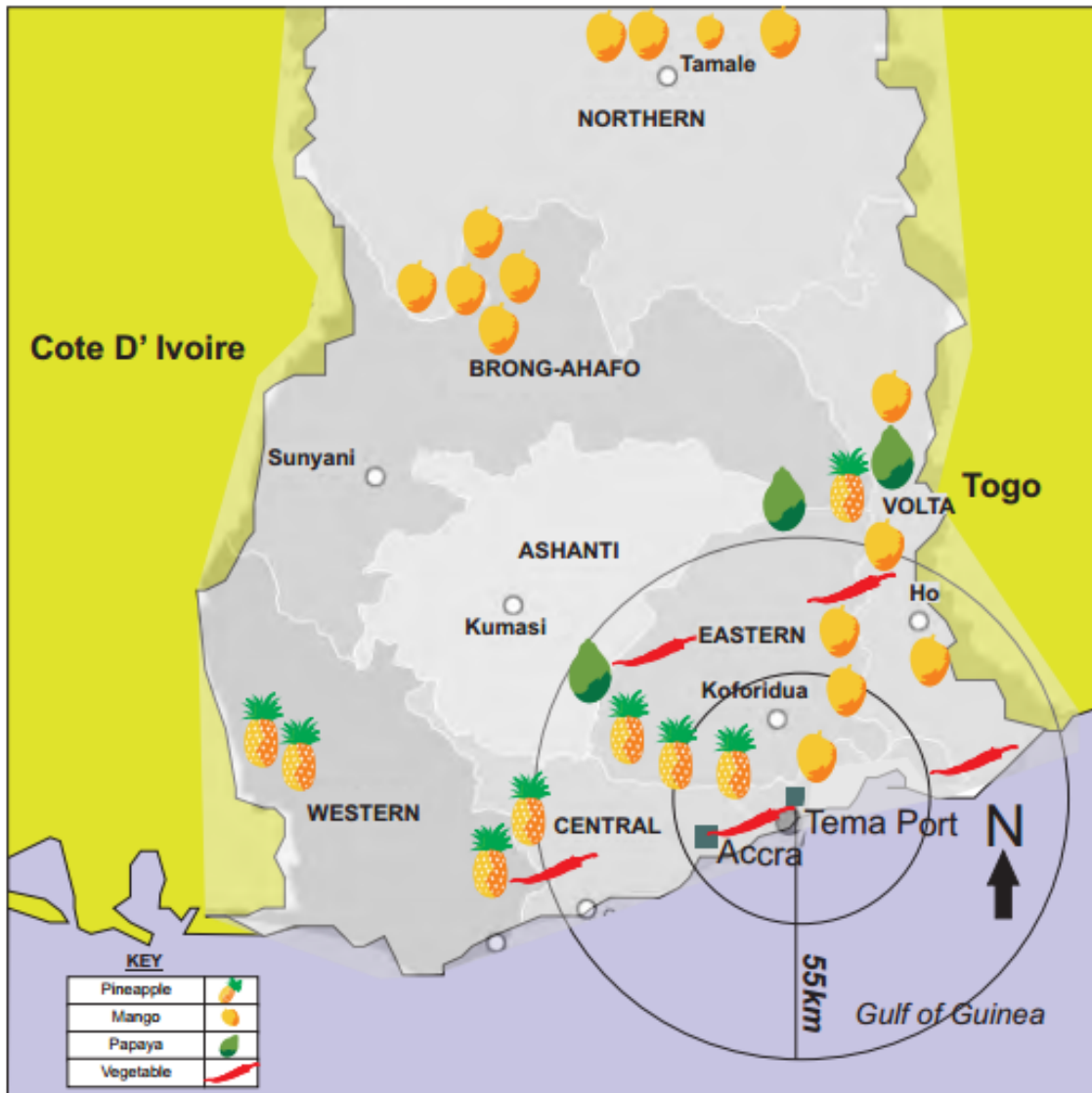
Types of Mangos						
Name of Mango	Place of Origin	Season	Flavor	Shape	Color	Texture
Haden 	Mexico, Ecuador, Peru	October to December March to May	Luscious	Medium to large and oval to round shape	Green to yellow with red highlights	Firm
Tommy/Atkins 	Mexico, Brazil, Ecuador, Peru	Year-round	Mildly sweet	Medium to large with oval or oblong shape	Golden to greenish skin with crimson blush	Firm, fairly fibrous texture
Keitt 	Mexico	June to August	Rich and fruity	Large, oval shape	Green with slight dark red blush	Very smooth
Kent 	Mexico, Ecuador, Peru	January to March May to August	Vibrant	Large oval shape	Greenish skin with dark red blush and small yellow dots	Juicy and tender

Source: Farm Management Services limited, 2014

2.7 Mango farming

The representative of Yilo-Krobo Mango Farmers Association introduced me in February 2014 the process of mango cultivation and provided the following data about mango.

Figure 3: Mango regions



Source: Agrofood West Africa, 2014

Yilo-Krobo Mango Farmers Association (YKMFA) provides support to mango farmers with the view of contributing substantially to growth and development of the mango industry. They help with the production and marketing. This association had in February 19 member farmers.

Mango trees start bearing from the fourth year onward. The plantation size tree (ca.5-15 years) yields about 500 pieces of fruit (100kg) per year. In the most productive age 20-50 years it can be up to 500 kg per year. Then can the tree start to decline or as was seen in the countryside grow even more so it is not impossible to see the huge tree approximately 200 years old which have a lot of fruits.

2.7.1 Storage of fresh fruit

There are not many storage facilities that would be suitable for the export selling with modern equipment as refrigerators and so on. Usually farmers have only crib or barn. These facilities are used for maize and beans, mango, vegetables or cassava are usually kept outside and not stored for the future use. Farmers are used to sell not stored fruit on the nearest markets. The price is usually determined by the buyer and can be depressed due to lack of storage facilities. The farmer needs to sell directly after the harvest (Ghana Districts, 2014).

2.7.2 Price of mango

Mango for export is the best quality mango, mostly green, without any defects and yield from the tree. The price of this fruit is 1 cedi/kg. The second quality mango (yield from the tree, hard, with very small stains) is sold for 80 pesewas/kg, those are usually sold for the juice production already frozen without the peel. All other mangoes are thrown away or can be sold on a local market or by the roads for 0,5 cedi/pcs (price for locals, tourists pay 1 cedi in the south of the country and 2 in the north)

2.8 Business

Business is necessary for successful value addition. There are various challenges faced by small, medium enterprises. These businesses, which are such an important engine for economic growth and poverty reduction, attract more attention (Vinck, 2014).

2.8.1 Definition of the business

Business has many definitions and of course in each society it can vary little bit. Based on Czech commercial code it is defined as a systematic activity carried out independently by an entrepreneur in his own name and on his responsibility with the objective of generating profit (Business center, 2014).

2.9 Business plan

Business plan is defined as a document used by the entrepreneur as a communication tool with partners or stakeholders, for example banks, suppliers, important customers, state authorities, unions, investors, key employees and other local or foreign business partners. It has to represent the aim of the entrepreneur and the sources for its realization. It has to be clear, what are the targets of the businessman and how he plans to achieve them. It is possible to compare it to the road map, which leads the management of the company by various roads over the different difficulties to the set goal. The length and scope of the business plan depends on the complexity of the chosen business and may be in the range from 2 to 100 or more pages. It is the first document of the strategic planning of the new company or of the emerging product where are set the goals (Baume, 2012).

There is not any legal regulation, that would govern the business plan, but these are the basic recommended characteristics of the business plan:

- convincing but not untruthful,
- brief and intelligible,
- without too technical language,
- proper and realistic,
- taking in account all the risks,
- avoiding all unsupported allegations (Baume, 2012).

2.9.1 Business plan structure

Each author can call the parts of the business plan in different way, because it is not defined. In general almost all the business plans have similar structure. It contains front page, executive summary and company characteristics with the basic aim of the enterprise, market and competition analysis, financial forecast, risk evaluation, managerial and personnel requirements and appendixes (Koráb, Peterka, Režňáková, 2007).

Front page should include the basic information about the company. For example the name and establishment of the company, its identification and tax number, contact, bank account, date of incorporation, financial resources, business activity and other data (Hisrich, Peters, 1996).

Executive summary is the shorter form of the business plan and consist of one or two pages. In many cases it is the only part that is read or which points the reader to the right place for further and more detailed information. It is usually written after the completing whole business plan and it identifies the key ideas (Peterson, Tiffany, Barrow, 2004).

Company characteristic provides the place for the observations about the nature of the business. There is discussed the industry, customers, offered products and services. The company history should not be forgotten. In this part could be described also managerial and personnel requirement if they are not in the special chapter (Peterson, Tiffany, Barrow, 2004).

Market and competition analysis shall be given together in the chapter business environment. There should be covered all the major aspects of the company's situation that are beyond the immediate control, including the nature of the industry, the direction of the market place and the intensity of the competition. All these information should be detailed to provide the lists of opportunities that the business environment offers and the threats that the company faces (Peterson, Tiffany, Barrow, 2004).

Financial forecast is necessary for the possibility of the qualified decision, if the business plan should be realized. All the data from the previous parts should be transferred to the economic level and the entrepreneur should prepare financial evaluation of the impact from the investment realization (Scholleová, 2009).

Risk evaluation describes all risk aspects and how to reduce or eliminate them. The particular solution can have a positive impact on the potential investors. Possible methods how to eliminate the risks are constant monitoring of the market and competitors, customers engagement in the business, business insurance and creation of the financial reserves (Koráb, Peterka, Režňáková, 2007).

Materials which could not be added to the previous parts are usually attached as **appendixes**, for example contracts, picture documentation, results from the primary research, important correspondence and so on (Koráb, Peterka, Režňáková, 2007).

2.10 Financial plan and evaluation of investment efficiency

The financial plan is one of the most important things for the business and also one of the most complicated for the elaborating. The plan determines disposable financial resources for financing of the business activities. It is based on the company strategy and specifies it for the chosen time period. Summary of all things, cash resources and rights, which belongs to the entrepreneur and are used for the business is called asset. Each company has to keep records about the asset as a basic information source for the planning of the financial company targets. The financial plan can be long or short term based on the time horizon for which it is calculated. Long-term plan is for the period longer than one year and does not process all the partial areas but focuses only on the target aggregate indicators. The financial plan for the short period (less than one year) is compiled with a high degree of precision in the form of budgets for individual segments of the activity. The output of the year plan should be a plan of revenues, expenses and profit, cash flow plan and plan for the external financing (Koráb, Peterka, Režňáková, 2007).

It is recommended to start with the list of all start up costs and operational costs. This data can be determined accurately even without company's history data. The worse situation comes with the estimation of the revenues. The start up capital should be clear, determining of the revenues from the contracts that mean the basic cash flow to the company can be determined only by the estimation based on the marketing plan. By the calculation of the revenues, costs and other financial statements the plan does not end but start. Individual plans have to be monitored and adjusted in time according to the real data so the financial plan can show accurately the actual situation (Koráb, Peterka, Režňáková, 2007).

The financial plan should be made in more varieties. Each of them is different; usually there is optimistic, realistic and pessimistic version (Koráb, Mihalisko, 2005).

It is important to compare initial and further capital expenditures on investment with the effect of the initial investment in the form of revenue (income) during the evaluation of investment efficiency. This we use to consider profitability or return on the investment. Naturally is effective that investment, which future revenues outweigh the expenditures. The main criteria for the assessment of the investment projects are already mentioned profitability, then riskiness (degree of the risk of not achieving the expected results) and liquidity, the time needed for the investment to transform into cash (Synek, Kislingerová, 2010).

The basic evaluation methods are net present value, internal rate of return, payback period and profitability index that consider as a crucial financial effect from the investment and respect of the time factor (Jindřichovská, Blaha, 2001).

2.10.1 Net present value

It is the most often used method of evaluating investment projects. In lay terms it shows, how much will arise the market company value due to investment. In other words it reflects overall investment effect. It is an absolute, differential indicator that respects time factor and as an investment effect counts net cash income

from the investment. Net present value can be defined by the following formula (Hrdý, Horová, 2009):

$$NPV = \sum_{t=1}^n \frac{CF_t}{(1+k)^t} - IN = PVCF - IN$$

Where CF is the expected value of the cash flow in t period,
t represents a period from 1 to n,
k are the capital costs of the investment (discount rate),
IN means the cost of the investment,
n is the investment lifetime,
PVCF represents the present value of the cash flow (Synek, Kislingerová, 2010).

The project, which could be considered as an acceptable, needs positive net present value, higher than zero. That means that the investment increases the market value of the company (Hrdý, Horová, 2009).

2.10.2 Internal rate of return

Internal rate of return is usually understood as an profitability, which provide the project during its lifetime. Numerically the internal rate of return is equal to the discount rate, at which the net present value is equal to zero. If the internal rate of return is higher than the discount rate, i.e. required rate of project return then is advantageous to carry out the project. Otherwise the company has to reject the project. The advantage of the internal rate of return is, that for its determining and using for the deciding about acceptance or rejection of the project is not necessary to know the exact discount rate (Fotr, 1999).

$$IRR = \sum_{t=1}^n \frac{CF_t}{(1+k)^t} - IN = 0$$

Where

- n is the investment lifetime,
- t represents a period from 1 to n,
- CF is the expected value of the cash flow in t period,
- k are the capital costs of the investment (discount rate),
- IN means the cost of the investment (Synek, Kislingerová, 2010).

Based on the above mentioned criteria should be realized the projects, which internal rate of return is higher than the cost of capital or minimal required return on investment. That is determined by the average cost of capital of the company or by return achieved on the capital market (Hrdý, Horová, 2009).

2.10.3 Payback period

Payback period is defined as the time required to cover the total costs of the project by its future revenues. This means that during the period of payment gets the investor back his invested resources into the project. Determination of the payment period is not complicated and is based on the cash flow of the project, which consists of revenues and expenditures for the entire life of the project. The main advantage of the payment period is its clarity and simplicity. Of course there are also disadvantages as an ignoring project income after payment period, so perhaps their divergence payment period is not affected, underlines too quick financial return of the project and does not respect time factor. This means that the payback period is not very reliable criterion for project evaluation, but it can be considered as additional aspect, especially for projects with short life expectancy and risky projects (Fotr, 1999).

$$PB = t + \frac{b - c}{d - c}$$

Where t is the last year where is the cumulative cash flow lower than initial investment,
 b represents the initial investment,
 c is the cumulative cash flow during the year t ,
 d is the cumulative cash flow in year $t + 1$ (Haley, Schall, 1991).

2.10.4 Profitability index

The relative indicator profitability index considers the time factor and the effect of investment is also the financial income. It is calculated as the proportion of the discounted cash incomes from the investment and disposable (resp. discounted) capital expenditures (Hrdý, Horová, 2009).

$$PI = \frac{\sum_{t=1}^n \frac{CF_t}{(1+k)^t}}{IN}$$

Where n is the investment lifetime,
 t represents a period from 1 to n ,
 CF is the expected value of the cash flow in t period,
 k are the capital costs of the investment (discount rate),
 IN means the cost of the investment (Synek, Kislingerová, 2010).

This is a very useful tool for projects classifying because it allows quantifying the amount of value created per unit of investment. The investment plan should be approved if the value is equal to or greater than one (Jindřichovská, Blaha, 2001).

2.10.5 Break-even point

Break-even analysis gives us the information, when comes the moment at which the company gets from loss to profit. The zero profit is exactly the break-even point. The aim of the entrepreneur is to get as fast as possible to this point and to achieve the expected profit from the business. It is necessary to monitor the fixed and variable costs separately. The amount of the product at the break-even point shall be expressed by the following equation (Blackwell, 1993).

$$Q_b = \frac{FC}{(P - VC)}$$

$$S_b = \frac{FC}{\left(1 - \frac{VC}{Sales}\right)} = Q_b \cdot P$$

Where Q_b is the quantity of products,
FC represents fixed costs,
P is the selling price of one unit,
VC are variable costs for one unit,
Sales = variable expenses + fixed expenses + profit (Krajewski, Ritzman, 2005).

2.11 Risk evaluation

The business plan is subject to many risks – i.e. the deviation from the desired target with a negative impact on the company. Risk analysis will allow us two points of view on a business plan. Besides outlining the likely risk situations will serve as preparation for the measures that will need to be implemented in the event that a given risk situation actually occurs. Each risk situation has its cause. Therefore, we can use risk analysis to find at the same time the proposal of preventive measures that will help reduce the specific material risks (Srpková, Svobodová, Skopal, Orlík, 2011).

Risk management is based on these partial steps:

- identifying of the risk factors - capture the reasons and causes which led the deviation from the desired target,
- risk quantification – numerical representation of risks – for example estimating the likelihood of unwanted consequences arises from and derivation of possible consequences,
- planning crisis scenarios – preparation strategies, plans and procedures in case of an escalation risk factor, its unwanted negative development,
- monitoring and leading – performing phases of plan – permanent control and monitoring of risk related factors (Koráb, Peterka, Režňáková, 2007).

Table 1: Risks

Equity risks	Customer risks	Personal risks
Equity thefts	Long-term liabilities	Employees dishonesty
Business scams	Responsibility for damages	Loss of key employees
Natural disasters	Unrecoverable receivables	Competition of former workers
Fire		

Source: Own work based on Koráb, Peterka, Režňáková, 2007

2.12 Marketing mix

Marketing mix is a set of tactical marketing instruments – product, price, place and promotion (4P) that allow customizing the offer according to the customer on the target market (Kotler, Armstrong. 2004).

The term **product** means not only the product or service itself, but also all the properties and characteristics such as packaging, design, colour, quality, packaging, brand, warranty, spare parts, handbooks, service and other factors that practices within the customers’ decision about how the product will satisfy their expectations. The **price** is a value expressed in monetary terms and as a single component of the marketing mix gives the company a profit. There are many ways to fix the price for example by costs, competition, demand and the benefits that bring the product

to the customer. **Place** determines where and how the product will be sold incl. sales range, distribution channels, access to distribution networks, supply and transportation. **Promotion** is the sum of the activities that have resulted in increased customer awareness about the product. The most common forms of promotion include advertising (in magazines, newspapers, television, radio, flyers), seminars, lectures, literature, sales promotion (free samples) etc. (Kadlec, 1992).

2.13 SWOT analysis

It is one of the most frequently used analytical methods. It was created by Albert Humphrey based on the research in the 60s and 70s, when he tried to analyse inefficiencies in the current planning for the 500 biggest USA corporations and make them new change management system (Grasseová, 2012).

The name is an acronym of English words: **S**trengths (here are recorded facts bringing benefits to both customers and companies), **W**eaknesses (things that the company does not do well, or those in which the competition is better), **O**pportunities (factors which can increase demand, better serve customers and bring success) and **T**hreats (facts, trends and events that may reduce demand and cause customer dissatisfaction). OT analysis concerns on the external environment and SW analysis concerns on internal environment (Jakubíková, 2008).

When is being processed SWOT analysis, there should be considered the following principles:

- Conclusions should be relevant, i.e. processing with the attention to the purpose for which it is formed. Analysis for one purpose should not be applied when dealing other issues.
- Concerning on the important facts and effects. Too many data need reduction.
- If is SWOT analysis part of the strategic analysis, then should be identified only strategic facts (for example inappropriate manager can

be solved by one time personal exchange, so it is not the strategic weakness in comparison to persistent high staff fluctuation.

- There is necessary objective analysis processing, not to include subjective opinions of the processor.
- The most important factors should be somehow highlighted (it is possible to evaluate each single factor) (Keřkovský, Vykypěl, 2006).

Based on the obtained data from the SWOT analysis can be prepared four various strategies:

- SO strategy (Maxi-Maxi) – company uses its internal strengths to evaluate external opportunities. It's offensive entrepreneurial approach from the position of strength.
- ST strategy (Maxi-Mini) – conflict of internal strengths of the company with the external threats in order to eliminate or at least reduce their negative impact.
- WO strategy (Mini-Maxi) - efforts to eliminate internal weaknesses, which are in a majority, with the help of external opportunities, which positively affect the company.
- WT strategy (Mini-Mini) - the least favourable position for the company, it means for example liquidation of the existing products, some solution may be to link the company with another strong company in the worse case, then the firm's liquidation (Hadraba, 2004).

SWOT analysis must therefore be compiled for a particular purpose, involve important facts, be objective, relevant and ideally created by more people who know well researched company (Grasseová, 2012).

2.14 Gantt Chart

American engineer Henry L. Gantt invented this method of time analysis between 1910 and 1914. It is very important and widely used tool in the project management. Gantt charts are used to demonstrate graphical scheduling and records during work. The activities (symbolically and by description) are shown in schedule legend and their time duration. The timeline is in the header according to the units in the specification table. Board lines on the top label the critical activities that follow each other without reserves. Less bold lines below them mark other activities and by thin lines their time duration. It is possible to add interdependencies between activities to the chart. It is advised to mention also several milestone activities – key events, which are easily verifiable or associated with the approval of results previous activity (Nový, Nováková, Waldhans, 2014).

2.15 Standard of living and quality of life

The standard of living is defined as the level of wealth, comfort, material goods and necessities available to a certain socioeconomic class in a certain geographic area. It includes factors such as income, quality and availability of employment, class disparity, poverty rate, quality and affordability of housing, hours of work required to purchase necessities, gross domestic product, inflation rate, number of vacation days per year, affordable (or free) access to quality healthcare, quality and availability of education, life expectancy, incidence of disease, cost of goods and services, infrastructure, national economic growth, economic and political stability, political and religious freedom, environmental quality, climate and safety. The standard of living is closely related to life quality. The standard of living is very often used to compare geographic areas. It can also be used to compare distinct points in time, for example the same amount of work buys an increased quantity of goods and items, that were once luxuries, such as refrigerators and automobiles, are now widely available. Leisure time and life expectancy have increased as well and annual hours worked have decreased (Investopedia, 2014).

Standard of living and quality of life are often referred together in discussions about social well being of countries and its residents. It is not easy to say the difference between those two terms, because they may overlap in some areas. When you think about standard of living, you should think about the things that are easy to quantify (for example life expectancy, inflation rate and average number of paid vacation days workers receive each year). On the other hand quality of life is more subjective and intangible. The United Nations provides a list of factors that can be considered in evaluating quality of life. It was issued in 1948 and includes many things that citizens of Europe and other developed countries take for granted, but that are not available in a significant number of countries around the world. Although this list is almost 70 years old, in many ways it still represents an ideal to be achieved, rather than a baseline state of affairs. Factors that can be used to measure quality of life include the following freedom from slavery and torture, equal protection of the law, freedom from discrimination, freedom of movement, freedom of residence within one's home country, presumption of innocence unless proved guilty, right to marry and have a family, right to be treated equally without regard to gender, race, language and other things, freedom of religion, right to vote, right to rest and leisure, right to education and so on (Investopedia, 2014).

Usually when people think about their own standard of living, the amount of money they bring is the first thing that comes to mind. If their income decreases, they might consider their standard of living to be decreasing along with it. In fact if you consider the other factors, then chances are your overall standard of living is still quite good, despite the present lack of income. For example there is a possibility to have another quality job, your country's economy is generally strong, you have access to health care and costs of goods and services are reasonable that more or less you can get by in the meantime, until you find a new job, then you are doing all right. What one person, would consider a good quality of life, may not be considered as such by another. The main difference between standard of living and quality of life is that the standard is more objective but quality is more subjective (Investopedia, 2014).

To have an imagination of rating countries the Economist Intelligence Unit developed a quality of life index that links the results of subjective life satisfaction survey to the objective determinants of quality of life across countries. The index was calculated for 111 countries in 2005. Quality of life index in Czech Republic is 6,629 what means that it is the country on the 34th place in the list of countries for the year 2005 and Ghana had score 5,174 and it brought it 95th place. The first place got Ireland with score 8,333 (Economist, 2005).

The consequences of the adding value to the mangoes on the standards of living can be predicted and measured. The obtained data from the past can be tested by correlation analysis and regression analysis. Correlation analysis focuses on the level of dependence between the variables x and y . The standard output of correlation analysis is Pearson's correlation coefficient (r) describing the degree of dependence. The coefficient r can have values from -1 to $+1$. The correlation coefficient of -1 expresses a total negative correlation. The correlation coefficient of $+1$ indicates a total positive correlation. If the correlation coefficient is equal to 0 , then there is no observable linear dependence between variables. Regression analysis helps to understand how the typical value of the dependent variable changes when any one of the independent variables is varied, while the other independent variables are held fixed (Adamec, 2007).

3 Practical part

It is obvious not only from the personal visit to Ghana, but also from the literature review, that mango farming has a huge potential for value added production. People in Ghana start to realize the business opportunities in agriculture production. Usually their business activities ends on the level of high managers in multinational companies and small-scale farmers are not included in the process. In the next part of the diploma thesis is described a model example, how could be developed the business activities of one farmer in Ghana and how would it affect his life.

3.1 Chosen farm

One farm was selected for the research purposes of this diploma thesis. The chosen farm lies near to Somanya in the Yilo Krobo district in the Eastern Region. The owner of the introduced farm hires for peak season fifteen workers. There are only four permanent workers for the whole season. The work on the farm is paid 15 cedi per one day. This average farm has 25 hectares; there are ca. 100 trees/ha and one tree gives annually about 100 kg of mangoes. In fact there are not needed all workers but it is a kind of support to the local industry and employment.

3.2 Mango harvest

There are two peak seasons of the mango production in the Eastern Region. In January it is low season. In February, March and April grows the fruit very fast, so the farmers are not able to collect all of them before falling down. So all these mangoes what are bruised or damaged are thrown away. April and May have still quite high volume of fruit, but there are needed insecticides and additional works to protect the fruit from pests. June and July continues in the similar conditions with high level of insects because of the rainy season, but the fruits are the largest. In August and September starts to be worse season and mango stops to grow and in October and November does not grow at all. In December it starts to grow slowly again. The most important part of the year for the mango growers is the months from February to July (FAO, 2009).

Following picture shows mango harvesting on the chosen farm during the year. As was mentioned in the literature review, each species can have different seasons; because of the combining different trees the farmer can have the harvest almost during the whole year.

Figure 4: Mango harvest



Source: FAO, 2009

The workers are not able to harvest all the mangoes on time so between 50 – 60 % of the fruit is thrown away. The poor storage methods, pest management and inadequate processing influence it as well. It falls down from the tree so it is unusable for the trade or it can be overripe. They even do not use the mangoes on the trees, which have a stain on the peel bigger than 1 centimetre, even though they could be used for further processing.

Mango can be kept for a ten days from the harvest, if it is cooled as soon as possible to the temperature of 13 °C, it can be kept up to three weeks, but this is not suitable in the conditions of the chosen farmer, because he does not have the cooling boxes.

3.3 Mango processing

Processing of mango is normally diversified at two maturity stages. Green fruit is used for chutney, pickles, curries and dehydrated products and should be freshly picked from the trees. Fruit that is bruised, damaged, or that has prematurely fallen to the ground is usually not processed any more. Ripe mangoes are processed as canned or frozen slices, purée, juices and other various products. The mango processing presents many problems. The fruit has a short storage life. The large number of varieties with their various attributes and deficiencies affects the uniformity of processed products. Many of the processed products require peeled fruit. The lack of mechanized equipment for the peeling of ripe mangoes is a serious bottleneck for increasing

the production of these products. A significant problem in developing mechanized equipment is the large number of varieties and their different sizes and shapes. The cost of processed mango products is too expensive for the general population in the areas where the most mangoes are grown. There is, however, a considerable export potential to developed countries but in these countries the processed mango products must compete with established processed fruits of high quality (Daughy, 1995).

This information given by the Food and Agriculture organization of the United Nations means for the project huge opportunity. People in developed countries know mango jam and jams in general are really very popular. In the last few years people started to change their consumer habits so they are willing to spend more money for the products made by traditional processes as our grandmothers did (for example farmers markets, bio and fair trade products are more and more popular as well). Of course not all people can afford this products, which are more expensive than standard products sold by large retail chains. This fact will not influence the farmers product target group, because if people have enough money to travel many thousands kilometres by plane to Africa, obviously they belong to the social class which is able and willing to spend money for nice presents or quality and typical food of Ghana.

Next thing is the possibility of the processing mangoes from the trees as well as those fallen on the ground. It is known from experience that those fruits are suitable for jam production and usually are even better because they contain higher volume of sugar. In further processing is then not necessary to give additives as a sugar or artificial sweeteners.

As a process that will add value to mango was chosen jam cooking. This process is not technologically challenging and workers do not need any special qualification. Processes can be done in already existing farm with water, electricity and ventilators so this business development will not need many big investment costs in the beginning and during the project lifecycle.

3.3.1 Mango jam production

Cooking of homemade jam is really simple. There are needed only mangoes. Optionally can be added other ingredients as a lemon, chilli, pineapple and other fruits or spices for the taste modification.

The process of mango jam production:

1. Preparation of fruit – picking, peeling and removing the pip.
2. Cutting mango for small pieces, liquidizing part of the pieces for softer consistency if required.
3. Cooking of prepared mango until softens and liquids evaporate and jam gets the required consistency.
4. During cooking is necessary to prepare jars and tops – clean them and sterilize by boiling in hot water.
5. When the jam is cooked then place it immediately hot in clean jars, clean tops of the glasses from mango jam rests if needed and close with boiled (sterilized) caps.

If is needed to modify the taste of the jam, then just add other fruits or spices during the third phase of cooking mango. There is a space for the creativity of the mango jam producer. There can be for example special Christmas editions with cinnamon or Halloween with pumpkins. So the product will be really variable and attractive for the customers. By adding lemon is ensured not only the fresh and sour taste, but also better preservation.

Experimental jam cooking was done from 1,7kg of mango and juice from one lemon. Pictures of the cooking process can be found in appendices.

The calculations for the realistic version of a business plan are based on the following numbers. The experimental farm has 25 hectares, each hectare has approximately 100 trees and each tree gives 100 kg of mango per year. After counting this data we know, that yearly the farmer can harvest 250 000 kg of mango. We count, that he throws away

only 50 % of fruit = 125 000 kg and from this amount he can collect only one third for the mango production. So the farmer gets for the jam production 41 667 kg. Then we have to count with some loss by peeling and ejection of stone and of course there are additional loss of fruit after harvesting so for the purpose of cooking jam was again calculated only one third of the net weight of the collected fruit. Jam will be by the realistic point of view cooked only from 13 889 kg of mango. 25 % of the weight will be lost by cooking so the farmer get 10 417 kg of jam. One bottle has 200 grams volume - he can produce annually 52 083 jars. Some of them can be broken by the transportation or stolen by employees, so there was counted with natural 5 % decrease and for further calculation is used the amount of 49 479 made jams per year.

Table 2: Jam production

Farm (hectares)	25
Trees per hectare	100
Annual harvest from 1 tree (kg)	100
Annual farm harvest in total	250 000
Unused mangoes (50%)	125 000
Collected mangoes for jam (1/3 of unused)	41 667
1/3 of collected mangoes will be for jam	13 889
Cooked jam (25% water evaporation)	10 417
Volume of jam in 1 jar (kg)	0,2
Produced jam jars per year	52 083
Jams ready to sell annually (95% of produced)	49 479

Source: Own work

Jam will be sold in 200g net volume jars. The paper in the colours of the Ghanaian flag (red, yellow, green and black) will cover the top and on the glass will be glued etiquette. It will be visible for the first sight, that it is Ghanaian product so it should attract the attention of the tourists.

3.4 Target group of the product

This diploma thesis research focuses on mango farmer, who does not take an advantage from the harvest several times a year and would like to diversify and increase his income. After implementing this plan he will diversify income and earn money even from the fruit, which has been thrown away. Tourists and Ghanaians going abroad are the target group of this product. Tourists like eatable souvenirs and gifts for their friends and relatives, but till now they could bring only Takai or one mango jam which was possible to buy only in large supermarkets in Accra. Other things were not produced in Ghana. Ghanaians going abroad take presents for their friends as well. Jam from Ghana produced by Ghanaians could be the right choice.

According to the higher price and average wages will be the customers mainly tourists or Ghanaians with high living standards. The typical target customer is tourist coming for holiday and willing to buy presents and souvenirs. The ordinary consumer is interested in sub function not only in nutrition function. Therefore is necessary to focus on esthetical part such as smell, consistency, appearance and especially packaging.

3.5 Possible competitors

In fact there is not any official existing competitors with the identical product on the market. Sara Meyers, the American volunteer, works on the farm of Thomas Ahima. She tried to cook homemade jam from cashew fruit. Customers were tourists and people in the village nearby. She sold all produced jams so it is also a sign showing the space on this market. One mango jam was in a supermarket in Accra Mall. It was the only mango jam found in Ghana during one-month visit. The packaging was very simple just the jar with one label. The photo documentation is in appendices. The name was Christine Home Made Jam, but the webpages does not exist anymore and it was not seen anywhere else except of the supermarket and the product did not have any marketing campaign. Price of this jam was 4 USD per jar. All other marmalades and jams were produced by multinational companies usually in South Africa

for the prices comparable to the prices in Europe (depends on the volume of fruit, usually very low quality from 2 USD to high quality over 5 USD).

3.5.1 Ghanaian souvenirs

There are not many souvenirs that are easy to buy and bring back home. Of course big traditional masks are unbeatable presents, but usually they do not suit many interiors in developed countries and they mean oversized luggage for the tourists and additional costs. In past years became the most popular gifts those that are possible to eat. Belgium is famous for its chocolate, Cuba has own rum, Mexico tequila, from Greece, Spain and Italy you can bring many thing from olives to dried seafood and many other delicacies. Very popular Ghanaian gift on this base is Takai, alcoholic drink, but there is not any other eatable or drinkable souvenir with the Ghanaian place of origin, because almost all food is imported usually from South Africa or other countries.

Mango jam could be the right supplement, which would solve the surplus of mangoes on the farms and meet the demand of tourists for some Ghanaian souvenirs. Farmer could sell the jam to the supermarkets, at the airport and on the touristic places such as national parks, nature reserves and beaches where is high concentration of tourists.

3.6 Marketing plan

The businessman has to plan whole process including the marketing plan. It is necessary for the success of the whole project. Marketing mix can help during this process and lead the entrepreneur. The main principles of the product, which has to be kept, include the following product characteristics: high quality, homemade without additives, attractive packaging, in time supplies to the sellers and production done by local people. The first introduction to tourists will be done already via small advertising areas at the airport in Accra and then on the most popular touristic places in whole country.

3.6.1 Marketing mix

Product

The farmer will produce homemade mango jam in 200g net weight jars with colourful packaging. These jams can find wide application as a presents and souvenirs. Product will be modified during the year and based on demand by additional ingredients and changing the etiquettes. The appendix shows basic type of packaging with proposed labels.

Place

Place represents the distribution channels. It will be sellers and official shops in touristic popular locations. These sellers will sell it forward to the end customers. Very popular national park is called Mole National Park. Last statistic form the year 2007 found out, that in that year officially visited that park 13 520 tourists (Ghana Tourist Board, 2009). According to the product characteristics is not required special storage, so it can be sold even without refrigerators on the beaches or on the streets and in small hats with souvenirs in national parks and nature reserves. The farmer's driver will deliver the jams regularly to the sellers.

Price

Lower price will by set by the entering the market. The further seller will buy the product for only 3 USD to see the interest of the customers and after the first year the price will increase up to 3,5 USD per jar. The price was set according to the competition. The recommended price for the tourists will be between 4,5 – 5 USD. This price is comparable to the prices of pralines in Belgium and for example olive oil in Greece. It will seem to be an adequate souvenir price and the sellers earn at least one USD per jar.

Promotion

Promotion will be concerned not only to the sellers as interlink in the chain but as well on the end customers to support the marketing in the beginning and have better bargaining position with sub sellers. When the tourists start to ask for the jam

from the billboard and reviews on the Internet, sellers will be more willing to sell the jam together with other gifts.

3.7 Risks

In each business exist risks. One of the most important is the lack of interest from the farmer to adopt this project and start his own business and be really responsible and careful. Next risk could be the lack of finance for the start up, which would mean the need of the change in production and slower start with smaller amount of the produced jams. Other risks include schedule failure, natural catastrophe, and failure in quality or reasons influencing incoming tourists. The possible competitors and easy entry to the market represent another type of the risk. It can bring decrease of sales and displace the product in some touristic places.

3.8 Financial plan analysis

Financial analysis illustrates the realistic economic outlook of the project and it is an inseparable part of any business plan. In the end of this chapter is also included optimistic and pessimistic version of this plan.

3.8.1 Net investment

Net investment says, how much money are needed for starting a business. The farmer needs 60 520 USD for the business start-up. There is included vehicle for the transportation of jams to the touristic shops, working tools as pots, knives, chopping boards and other. Office equipment includes, computer for the statistics of the farmer and other items such as papers, letter, envelopes, pens and so on. In marketing costs are included billboards at the airport and close to the popular touristic places. Consultancy is necessary for the business start-up and help with taxes, loan and other formalities. Equipment includes the transportation and packaging for the first production period.

Table 3: Start-up costs

Start-up costs	USD
Vehicle	18 000
Pots and cooking tools	620
Cooker	900
Office equipment	3 000
Marketing	15 000
Consultancy	8 000
Equipment for the first year	15 000
Total	60 520

Source: Own work

3.8.2 Loan and interest

This business plan assumes with initial bank loan to cover the start-up costs (as a guarantee for the loan could be used the estate of the farmer) and is important to count also with an increase of instalment amount about interest payments. According to Bank of Ghana is the actual interest rate 25,8 % per year. The height of the loan is 60 520 USD and together with interest it will be paid within 4 years. The farmer has to pay 103 970 USD in total. The payment schedule is in the table below and is visible, that the farmer will firstly pay the bigger part of the payback as an interest and then the situation changes and start to amortize. The repayments will be done once per year in the end of the period.

Table 4: Loan repayment (in USD)

Year	Repayment	Interest	Amortization	Loan
1.	25 992,40	15 614,16	10 378,24	50 141,76
2.	25 992,40	12 936,57	13 055,83	37 085,92
3.	25 992,40	9 568,17	16 424,24	20 661,69
4.	25 992,40	5 330,72	20 661,69	0,00

Source: Own work

3.8.3 Costs

Costs are differentiated on variable costs and fixed costs. Variable costs include packaging materials, fuel for the jam delivery by own vehicle and electricity, herbs or any other additives to the jam for adjusting the taste and diversification of the product. The last item on the list is water needed for washing and sterilization of the jars. Salaries of the workers are included in the fixed costs as well as Insurance and marketing cost, because these costs have to be paid each month same amount regardless of the amount of the production.

Table 5: Annual costs (in USD)

		Total costs	59 520
		Variable costs	31 120
		Packaging	16 020
		Fuel + electricity	13 100
		Herbs...	1 000
		Water	1 000
		Fixed costs	28 400
4 workers	11 000	Salaries	14 200
Driver	1 200	Insurance	2 200
Consultancy	2 000	Marketing	12 000
Salaries	14 200		

Source: Own work

3.8.4 Cash flow

Cash flow is an integral part of any business plan. It predicts the future flows of money into and out of the company. This cash flow shows realistic variety. Utilized capacity increases in the first four years up to 100 %, then is counted with the risk of easy entry to the market and are expected some competitors, so the farmer will not produce for 100 % and the production can be influenced also by the bad weather conditions, so the utilized capacity is fluctuating. Revenues count for the first year with the price only 3 USD per one jam and later with 3,5 USD per one jar. Depreciation covers two depreciation groups, the first one is for 3 years, where is included cooker and in the second group for five years is classified the vehicle. Taxes are in all years

0 USD. Ghanaian taxes are 0 % in the first 5 years for new businesses in agro-processing and if is the company located outside the regional capitals, case of the model farmer, then there is no taxation at all (PricewaterhouseCoopers, 2012).

Table 6: Cash flow - realistic

In USD	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Utilized capacity	50%	80%	90%	100%	90%	80%	90%	100%	80%	90%
Revenues	74 219	138 542	155 859	173 177	155 859	138 542	155 859	173 177	138 542	155 859
Total costs	54 338	66 352	72 832	80 182	56 408	53 296	56 408	59 520	53 296	56 408
Depreciation	3 850	3 850	3 850	3 600	3 600	0	0	0	0	0
Profit before interest and taxes	16 031	68 340	79 177	89 395	95 851	85 246	99 451	113 657	85 246	99 451
Interest	15 614	12 937	9 568	5 331	0	0	0	0	0	0
Profit before taxes	416	55 403	69 609	84 065	95 851	85 246	99 451	113 657	85 246	99 451
Tax	0	0	0	0	0	0	0	0	0	0
Profit after taxes	416	55 403	69 609	84 065	95 851	85 246	99 451	113 657	85 246	99 451
Net cash flow (NCF)	4 266	59 253	73 459	87 665	99 451	85 246	99 451	113 657	85 246	99 451
Cumulative cash flow	4 266	63 520	136 979	224 643	324 095	409 340	508 792	622 449	707 694	807 146

Source: Own work

3.8.5 Payback period

Payback period for the project Mango jam was calculated **2,07 years**. So it means the payback will be already in the beginning of the third year of the production. Easily said it means, that project will paid itself after two years of operation.

3.8.6 Profitability index

By dividing the present value of expected future cash flows by the amount of the initial cash outlay is calculated **3,7127** as profitability index of this project. The project is usually acceptable if the value is higher than 1, so farmer's project could be agreed as profitable.

3.8.7 Internal rate of return

Internal rate of return together with net present value are two of the most used indicators for evaluating projects and choosing of investments. The project has **72,93 %** of internal rate of return for ten years of operation. It means that IRR again confirms the suitability of the investment, because the rate of return is high.

3.8.8 Net present value and present value

Net present value demonstrates, how much money brings the project during its lifetime. Discount rate for the calculations was set on 25,8 % based on Ghanaian National Bank data. Net present value of the mango jam project is **164 173 USD**. The result is positive and indicates that pursuing the project may be optimal. Present value of projected cash flow is **224 693 USD** today, which is greater than the initial 60 520 USD paid.

3.8.9 Break-even point

Break-even point of this project occurs when the production volume is 9891,86 jars of jam. It means when the company produces and sells **9892 jars** of mango jam there arise neither loss nor gain. The point at which costs and revenues are equal for this project is **34 621 USD**. These numbers are valid from the second year further. The price of one jam was set lower for the first year, so there is the break-even point at 11 978 jars of jam and 35 934 USD.

3.8.10 Pessimistic version

This pessimistic financial plan takes into account a slower than anticipated start-up phase and overall lower sales. During the fifth year is expected very bad harvest due to weather condition. Later the farmer expects high competition and not loyal sellers. The mango jam price is planned for all ten years only at the level of 3 USD.

Table 7: Cash flow - pessimistic

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Utilized capacity	40%	60%	70%	87%	40%	60%	75%	58%	62%	60%
Revenues	59 375	89 063	103 906	129 141	59 375	89 063	111 328	86 094	92 031	89 063
Total costs	51 226	60 128	66 608	76 136	40 848	47 072	51 740	46 450	47 694	47 072
Depreciation	3 850	3 850	3 850	3 600	3 600	0	0	0	0	0
Profit before int. and tax.	4 299	25 085	33 448	49 405	14 927	41 991	59 588	39 644	44 337	41 991
Interest	15 614	12 937	9 568	5 331	0	0	0	0	0	0
Profit before taxes	-11 315	12 148	23 880	44 074	14 927	41 991	59 588	39 644	44 337	41 991
Tax	0	0	0	0	0	0	0	0	0	0
Profit after taxes	-11 315	12 148	23 880	44 074	14 927	41 991	59 588	39 644	44 337	41 991
Net cash flow (NCF)	-7 465	15 998	27 730	47 674	18 527	41 991	59 588	39 644	44 337	41 991
Cumulative cash flow	-7 465	8 533	36 263	83 936	102 463	144 454	204 042	243 686	288 023	330 013

Source: Own work

In comparison with the realistic version of the financial plan is the cumulative cash flow of the pessimistic plan in the end of the project 2,45 times lower.

Payback period

In this case is the payback period **3,51 years**. It is almost one and a half year longer than expected. The project would need one third of the planned lifetime period to repay its own costs.

Profitability index

The profitability index of the pessimistic version of the mango jam production is **1,3505**. The project is usually acceptable if the value is higher than 1, so farmer's project could be again agreed as profitable.

Internal rate of return

Internal rate of return reaches the value of **32,98 %**. It confirms that the investment is suitable even in the pessimistic version but in comparison with the Ghanaian interest rate it is not so attractive because the project is dependent on the unpredictable nature conditions.

Net present value and present value

Net present value demonstrates the amount of money brought during the project's lifetime. Discount rate for the calculations was set on 25,8 % based on Ghanaian National Bank data. Net present value of the pessimistic mango jam project is **22 009 USD**. Present value of projected cash flow is **82 529 USD** today, which is greater than the initial 60 520 USD paid. It means that the project does not bring any astronomical income, but is acceptable and profitable.

Break-even point

Break-even point of this project occurs when the production volume is 11 977,824 jars of jam. It means when the company produces and sells **11 978 jars** of mango jam. The point at which costs and revenues are equal for this project is **35 933 USD**.

The pessimistic version of the financial plan shows, that the mango jam production could be profitable even in a not very good conditions. These indicators could ensure the farmer, that the bad scenario of implementing the project would be only very low profit.

3.8.11 Optimistic version

The optimistic version expects that the price of the jam is 3,5 USD per jar during the whole project and faster start. It does not take in account the bad weather conditions and the threat of the competition. It expects that there is enough space on the growing market for all sellers.

Table 8: Cash flow - optimistic

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Utilized capacity	70%	80%	90%	100%	100%	100%	100%	100%	100%	100%
Revenues	121 224	138 542	155 859	173 177	173 177	173 177	173 177	173 177	173 177	173 177
Total costs	60 562	66 352	72 832	80 182	59 520	59 520	59 520	59 520	59 520	59 520
Depreciation	3 850	3 850	3 850	3 600	3 600	0	0	0	0	0
Profit before int. and tax.	56 812	68 340	79 177	89 395	110 057	113 657	113 657	113 657	113 657	113 657
Interest	15 614	12 937	9 568	5 331	0	0	0	0	0	0
Profit before taxes	41 198	55 403	69 609	84 065	110 057	113 657	113 657	113 657	113 657	113 657
Tax	0	0	0	0	0	0	0	0	0	0
Profit after taxes	41 198	55 403	69 609	84 065	110 057	113 657	113 657	113 657	113 657	113 657
Net cash flow (NCF)	45 048	59 253	73 459	87 665	113 657	113 657	113 657	113 657	113 657	113 657
Cumulative cash flow	45 048	104 301	177 760	265 424	379 082	492 739	606 396	720 053	833 710	947 367

Source: Own work

The optimistic version in comparison with the realistic and pessimistic version of the financial plan has the highest profit and seems the most attractive. It should be a part of the whole plan, but the investors and stakeholders should rather expect the realistic and more feasible version than the optimistic one.

Payback period

In this case is the payback period **1,26 years**. It means that without any difficulties the project would be repaid already after the first year of operation.

Profitability index

The profitability index of this version of the mango jam production is **4,5715**. The index confirms the suitability and favourableness of the project again.

Internal rate of return

Internal rate of return reaches the value of **97,92 %**. It confirms that the project should be implemented because the rate of return almost 100 % is extremely high and attractive for investors.

Net present value and present value

With a discount rate of 25.58% and a span of 10 years, your projected cash flows are worth **278 889 USD** today, which is greater than the initial 60 520 USD paid. The resulting positive NPV of the above project is **218 369 USD**, which indicates that pursuing the project may be optimal.

Break-even point

Break-even point occurs when the production volume is 9891,86 jars of jam. It means when the company produces and sells **9892 jars** of mango jam there arise neither loss nor gain. The point at which costs and revenues are equal for this project is **34 621 USD**. These numbers are the same as in the later years of the realistic version, because the price of the jar is the same.

It is necessary to remember that even though a project offers a positive NPV, the projected cash flows are still estimations. The accuracy of these projected figures depends on the skill and experience of the analyst, and likelihood of these cash flows materializing depends on the financial risk associated with the type of project being pursued.

3.9 SWOT analysis

SWOT analysis assesses the project as a whole. In the following table are highlighted strengths, weaknesses, opportunities and threats.

Table 9: SWOT analysis

<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> • Mango is harvested 10 months in a year • The first producer on the market • Easy and not technically demanding production • Traditionally positively viewed product • Socioeconomic improvement of the rural people • Focus on the specific target group • High quality product 	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> • Various tourist seasons • Narrow production focus • Product dependent on the nature • Low farmer's business experience
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • New product on the market • Possibility of cooperation with YMFA • Arising amount of the tourists • High variability of the product 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> • Low barriers to entry the industry • Incidence of insect and birds • Lack of people to work in production • Easy imitation of the product

Source: Own work

There are many strengths in this project. The climate in Ghana allows harvesting mango 10 months in a year, enabling almost a whole year production. The farmer would be the first producer of the mango jam for tourists (in the area?). Production of mango jam is easy and not technically demanding. The project does not need a huge initial investment. Traditionally positively viewed product means that goods produced the traditional way become very popular and people are willing to spend more. The higher price is balanced by handmade and limited production compared to cheap bulk production. Implementing of this project could improve socioeconomic situation of people living close to the farm, because there will be new job places for fair salaries. Focusing on a specific target group simplifies the product marketing. It is necessary to be visible on the touristic places as airport, national reserves and other popular places. Good reputation is ensured by high quality product without any additional chemicals.

People are used to share their experience online, so it is very likely that the final product – jam – will be mentioned on the travellers' websites and in travel guides soon.

On the second hand, there are certain threads. Being the first producer on the market brings higher costs for the marketing and the farmer has to make the efforts to convince the sellers about the qualities and possible popularity of his product. Seasonality of the tourist incomes could lead to fluctuating sales during the year. Dependency on the nature and narrow focus of production goes hand in hand. Moreover, possible restrictions of food transportation during pest outbreaks will inevitably lead to decline in sales.

Being a new producer with new product on the market means opportunity. The sellers of tourists' souvenirs do not have any supplier of the mango jam yet, so our project farmer could build a strong market position. YMFA will help with marketing and offer further support. The organisation's main aim is to cooperate with local farmers, as it is useful for both sides. The tourism is rising on yearly basis, so the demand is still arising and there is a space for expansion. Many tourists, who would not consider purchasing, might make purchase if an interesting jam variety is provided or should the label of the product be adjusted in a popular way, such as "Jam for the best dad" etc.

Easy entry into the industry, together with an easy imitation of the product, is the big threat as almost anyone can enter the market with almost identical product. The danger of insects and birds can be lowered by protection mechanisms yet cannot be totally excluded. Creating new working places brings also the risk of relying on the human factor. This could be considered as one of the weaknesses, as it is quite common in this area to be unemployed, so the farmer has to choose the workers really carefully to be sure, that they will cooperate for longer time.

3.10 Gantt chart

Gantt chart in appendices shows the phases of the project. Preparation phase is orange and consist of collecting information for two months, next three months will be the project processed and in the following month farmer has to ensure the bank loan. Last two months of the year 0 and the first month of the first year of the project are for equipping the production. This phase has overlap with training of employees, because farmer can react on their needs during the preparation of the production. Green lines symbolize the realization phase. This realization starts to count in December because it is the first month of the harvest after the two months period without mango. It is better for the workers to learn in the beginning of the season se they get used to the process gradually.

4 Discussion and recommendation

Mango is a very important commodity with a huge potential for the future development of the small-scale farmers in Ghana. There are many possibilities of the value addition to its processing. The harvest could be further used for mango chutney, dried mango, mango puree, fresh juices and other food and snacks. Sample production of mango jam was chosen for the experimental project and the topic of this thesis, as it does not require any special experience or technical equipment. The financial analysis proved the feasibility of the mango jam production and its benefits. The socio-economic consequences of the implementation are described in the following subchapters and compared with the data obtained from the personal interview with one of the farmers.

4.1 Socio-economic consequences of the mango jam production implementation

One of the aims of this thesis is to predict the consequences of the implementation of mango jam production to the farmer's life. The farmer lives on the farm with his wife and their 4 children. They own a car. Two older children study at a boarding secondary school and two younger children are still attending elementary school. The current monthly income from their farming, solely aimed at selling fresh mangoes, reaches 1 305 USD. This amount does not allow any luxury, but it's sufficient for good living standard of the family. When asked during the interview how his life would change if he had earned more money, he provided the data about health care and education expenditures of his family and his future visions and dreams. The farmer's answers are included and compared with the results of the correlation and regression analysis further in the chapter and also in conclusions of this thesis.

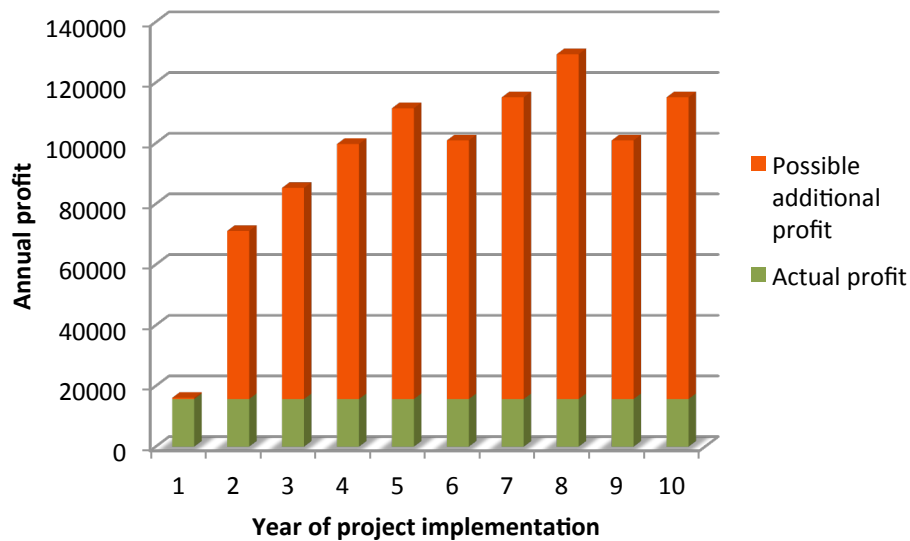
Starting-up a new business project would not only influence one farmer and his family members but other people too. The project would create 5 new job positions and through them influence more families, increasing their living standards. The high product quality and standards allow for spreading good name of Ghana by tourists and food lovers. Increase of their expenditures will influence other sellers and service

providers in the region. In the following subchapters, we are only targeting consequences for only one farmer's family.

4.1.1 Economic consequences

Economic consequences calculated on the basis of the current profit from the mango farm and possible additional earnings from the jam production (realistic variety of cash flow) would be probably major. In the first year, there will be only 2,6% increase. But according to the presented business project, already in the second year the estimated income of the family is expected to rise by 353,6 %. The **average increase** of the income during the planned 10 years of the project lifetime is **503 % annually**, meaning 78 840 USD yearly increase for the whole family.

Figure 5: possible + actual profit



Source: Own work

Higher family income means higher expenditures. The farmer's family will spend more on food, clothing, cars and other products, as well as services – education, repairs, etc. Via their expenditures other families in the region can profit.

4.1.2 Social consequences

Economic impact will also influence the social life of the farmer. Currently, the main concerns for the farmer are the expenditures for the healthcare and education for his children. Healthcare covers important part of the family budget and, as the farmer mentioned, the real expenses vary from the current needs of the family.

Until now, the family had not special expenditures when it comes to healthcare, the only exception being childbirth and glasses for his son. Larger expenses are not expected but cannot be predicted, so the extra financial reserve is more than needed.

The farmer believes that education means better future for his children. Thus he is willing to spend more in this area to allow his children to study. Nowadays, the farmer pays for all necessary expenses but if the family budget allowed, he would also pay for the special courses and private lessons. His dream is to send his children to world-renowned universities for high quality education.

Correlation coefficient verifies the farmer's statement about the expenditures. The following table shows his income from the mango production and family healthcare and education expenditures.

Table 10: Former income and expenditures (in USD)

Income	Healthcare exp.	Education exp.
15 200	320	1 450
14 500	150	1 450
15 000	820	1 510
15 500	490	1 550
14 900	510	1 500
15 700	550	1 600
15 600	1 000	1 550
14 900	800	1 550
16 000	420	1 600
16 100	350	1 600
16 000	410	1 600

Source: Own work

We have to be concerned with the fact that we are calculating the correlation coefficient from 11 variables. This means that in order to work with 95% probability and validity of our model, the correlation coefficient must be higher than 0,602. The obtained results are as follows:

The first question: *Is there a correlation between the farmer's income and the healthcare expenditures?*

Result of the correlation analysis $r = -0,018658816$.

This result shows, that there is not any correlation between the income of the mango farmer and his expenditures on the healthcare.

The second question: *Is there a correlation between the farmer's income and the expenditures on the education of his children?*

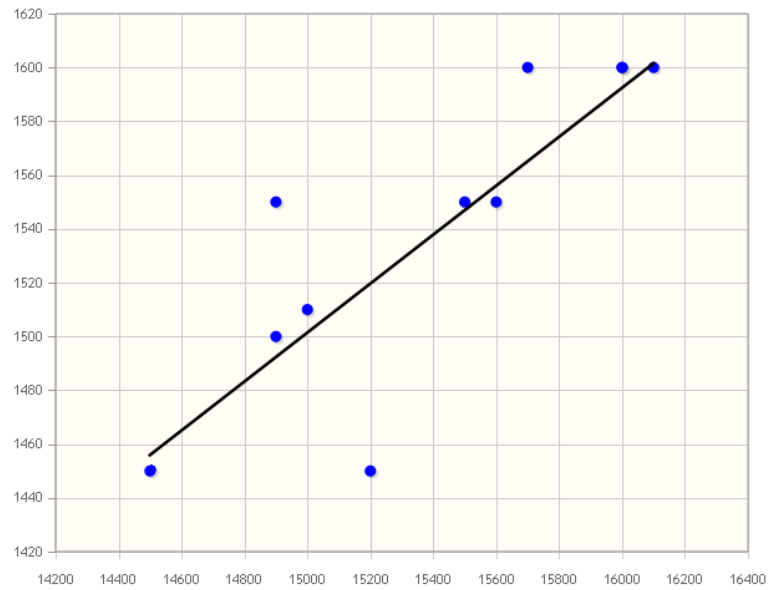
Result of the correlation analysis $r = 0,844930138$.

The result of the analysis for the educational expenditure showed much more significant correlation than in the previous research. The value 0,84493014 points to the strong positive correlation.

In the next step the regression analysis was used. It shows the dependency of the farmer's income and his expenditures for the children's education. Income values were used as dependent variable, while education expenditures are independent variable in the linear model: $Y = a + bX$.

The graph shows the mutual dependence of the variables.

Figure 6: Dependence of income and expenditures on education



Source: Own work

Regression equation of the module: Expenditures on education=136,434+0,091 income. Equation shows that with the rising income grows the educational expenditures.

The correlation and regression analysis confirmed the farmer's statements about the education and healthcare expenditures. So in the future after the implementing of the mango jam production project can be expected high increase of the expenditures on education, but not the change of the healthcare expenditures based only on the income. The healthcare expenditures would increase only if the farmer expects another baby or any of his family members get ill then he would be able to pay even more than in the past.

The correlation and regression analysis confirmed farmer's statements about the education and healthcare expenditures. This confirms that after the implementation of new business projects for his mango farm – mango jam production – the increase of family income will lead into higher education expenses. Thus, the healthcare expenses would only increase in case a new baby would be on the way, or any of the family members would need unexpected special health treatment.

4.2 Recommendation

Government has paid more attention to the agricultural production in Ghana and started offering the incentives to the farmers. The results of this study confirmed that there are significant benefits from the adding value to mango production. Authorities and farmers should focus more on the value addition by changing policies and starting new businesses.

If the processing activities are established close to the plantation, this means lower damage and loss during the transportation, as well as, providing higher quality fruit for further processing. This is strongly recommended. The new private production will represent healthy entrepreneurial activity and can serve as an example for other farmers all over the country.

The Yilo-Krobo Mango Farmers Association and other authorities could undertake a teaching program that will help to educate the farmers about the importance and possibilities of adding value to their mangoes as well as the importance of using and processing the whole harvest.

5 Conclusion

The main aim of this diploma thesis was to analyse the possibilities of the value addition to fresh mango production in Ghana and to formulate its socioeconomic impact on the chosen farmer. Several secondary objectives were used to achieve the main aim. Meeting their individual contribution to the overall aim was documented through the analysis and assessment.

The analysis of economic indicators, such as the net present value, the payback period, internal rate of return break-even point and others proved that the production would be profitable and worthy to operate. Based on the profitability index, the project would generate 3,71 times more in return than invested amount. The payback period demonstrates the return of investments within two years and the net present value indicates that the mango jam production will generate a positive revenue during its lifetime. All the indicators point to the fact that the business plan should be implemented.

The sustainability of the business would depend on several factors. Possible competitors give the threats, as the product can be easily imitated, and the barriers to accessing the market are very low. Moreover, harvest volatility and instable tourist arrivals could result in lower sales. However, the project could improve the position of small-scale mango farmers and their current dependence on the buying up their harvest by the traders for further processing and consumption. Offering them another option how to add value to their product will have a positive impact on the income increase and the socio-economic needs improvement.

At the theoretical level, this thesis confirmed the profitability of the production and high probability of return of initial investments. The project is also expected to create relatively high profit enabling to cover all the costs, even during the lower demand season.

By production high quality homemade mango jam, the farmer would ensure stable income for his family and his new employees. Due to a stable political and economic environment, government support for companies operating in the agribusiness, availability of labor and relative financial and personal security in the country, the viability and sustainability of the proposed project is guaranteed. Similar projects with value addition would be applicable around the whole country of Ghana.

References

Bibliography

ADAMEC, V.: Statistics I. Brno: Mendelu, 2007.

BLACKWELL, E.: *Podnikatelský plán*. Praha: Readers International, 1993.
ISBN 80-901454-1-8.

BUAME, S. K. *Entrepreneurship. Entrepreneurial Education, Venture Creation and SME Management in Ghana*. Accra: Big Mike's Publications Ltd., 2012.
ISBN 978-9988-1-6105-7.

FOTR, J. *Podnikatelský plán a investiční rozhodování*. Praha: Grada Publishing, 1999.
ISBN 80-7169-812-1.

GRASSEOVÁ, M. *Analýza podniku v rukou manažera: 33 nejpoužívanějších metod strategického řízení*. 2. edition. Brno: Computer Press, 2012. ISBN 978-80-265-0032-2.

HADRABA, J. *Marketing: produktový mix – tvorba inovací produktů*. Plzeň: Aleš Čeněk, 2004. ISBN 80-86473-89-9.

HALEY, C., SCHALL, L. *Introduction to Financial Management*. New York: McGraw-Hill, 1991. ISBN 0-07-055117-0.

HISRICH, R. D., PETERS, M. P., *Založení a řízení nového podniku*. 1. edition. Brno: Victoria Publishing, 1996. ISBN 80-85865-07-6.

HRDÝ, M., HOROVÁ, M. *Finance podniku*. Praha: Wolters Kluwer ČR, 2009. ISBN 978-80-7357-492-5.

JAKUBÍKOVÁ, D. *Strategický marketing*. Praha: Grada, 2008.
ISBN 978-80-247-2690-8.

JEFFREYS, A. *The report: Ghana 2012*. London: Oxford Business Group, 2012.
ISBN 978-1-907065-64-4.

- JINDŘICHOVSKÁ, I., BLAHA, Z. S. *Podnikové finance*. Praha: Management Press, 2001. ISBN 80-7261-025-2.
- KADLEC, F. *Začínáme podnikat*. Praha: Management Press, 1992. ISBN 80-85603-22-5.
- KEŘKOVSKÝ, M., VYKYPĚL, O. *Strategické řízení: teorie pro praxi*. 2. edition Praha: C. H. BECK, 2006. ISBN 80-7179-453-8.
- KOTLER, P., ARMSTRONG, G. *Marketing*. Praha: Grada Publishing, 2004. ISBN 978-80-247-0513-2.
- KORÁB, V. MIHALISKO, M. *Založení a řízení společnosti; spol. s r.o., komanditní společnost, veřejná obch. spol. , Založení a řízení společnosti: společnost s ručením omezeným, komanditní společnost, veřejná obchodní společnost*. Brno: Computer Press, 2005. ISBN: 80-251-0592- X.
- KORÁB, V., PETERKA, J., REŽŇÁKOVÁ, M., *Podnikatelský Plán*, Brno: Computer Press, 2007. ISBN 978-80-251-1605-0.
- KRAJEWSKI, L. J., RITZMAN, L. P., *Operations Management: Strategy and Analysis*. New York: Addison-Wesley, 2005. ISBN 978-02015-2580-0.
- National Tourism Development plan (2013-2027)*. Government of the Republic of Ghana: Accra, 2012.
- NOVÝ, M., NOVÁKOVÁ, J., WALDHANS, M. *Projektové řízení ve stavebnictví*. Kuřim: Akademické centrum studentských aktivit, 2014. ISBN: 978-80-905297-2-4.
- PETERSON, S. D., TIFFANY, P., BARROW, C., *Business plans for dummies*. Chichester: John Wiley & Sons, Ltd, 2004. ISBN 978- 0-7645-7026-1.
- SCHOLLEOVÁ, H. *Investiční controlling: Jak hodnotit investiční záměry a řídit podnikové investice*. Praha: Grada Publishing, 2009. ISBN 978-80-247-2952-7.

SRPOVÁ, J., SVOBODOVÁ, I., SKOPAL, P., ORLÍK, T. *Podnikatelský plán a strategie*. Praha: Grada Publishing, 2011. ISBN 978-80-247-4103-1.

SYNEK, M., KISLINGEROVÁ, E. and kol. *Podniková ekonomika*. 5. edition. Praha: C. H. Beck, 2010. ISBN 978-80-7400-336-3.

Internet sources

Agricultural Sector. *Lower Manya Krobo Municipality* [online]. 2014 [cit. 2014-10-05]. Accessible from: <<http://lowermanya.ghanadistricts.gov.gh/>>.

Agrofood West Africe. [online]. 2014 [cit. 2014-10-05]. Accessible from: <<http://www.agrofood-westafrica.com>>.

BUSINESSCENTER. *Obchodní zákoník*. [online]. 1998-2014 [cit. 2014-11-30]. Accessible from: <<http://business.center.cz/business/pravo/zakony/obchzak/cast1.aspx>>.

DAUTHY, Mircea Enachescu. *Fruit and vegetable processing Rome: Food and Agriculture Organization of the United Nations*. [online]. 1995 [cit. 2014-12-13]. ISBN 92-510-3657-8. Accessible from: <<http://www.fao.org/docrep/v5030e/v5030e0p.htm>>.

Economist. *Quality of life index*. [online]. 2005 [cit. 2014-12-14]. Accessible from: <http://www.economist.com/media/pdf/QUALITY_OF_LIFE.pdf>.

FAO, Trade and Markets Division. *Increasing incomes and food security of small farmers in West and Central Africa through exports of organic and fair-trade tropical products: Project impact study in Ghana; Mango*. [online]. 2012 [cit. 2014-12-15]. Accessible from: <http://www.fao.org/fileadmin/templates/organicexports/docs/Impact_survey_Ghana_Mango.pdf>.

Farm Management Services Limited. *Farming Mango*. [online]. 2014 [cit. 2014-12-04]. Accessible from: <<http://www.fmslgh.com/mango.html>>.

Ghana Districts. *A repository of all districts in the Republic of Ghana*. [online]. 2014 [cit. 2014-10-30]. Accessible from: <<http://www.ghanadistricts.com/home/>>.

Ghana Homepage. *Government of Ghana Official Portal*. [online]. 2014 [cit. 2014-10-28]. Accessible from: <<http://www.ghana.gov.gh/>>.

Ghana online news. *Ghana to earn 8.3 billion USD from tourism by 2027*. [online]. 2014 [cit. 2014-11-02]. Accessible from: <<http://ghanaonlinenews.com/ghana-to-earn-8-3-billion-usd-from-tourism-by-2027/>>.

Investopedia. *Standard of living*. [online]. 2014 [cit. 2014-12-15]. Accessible from: <<http://www.investopedia.com/terms/s/standard-of-living.asp#ixzz1VUli2yEI>>.

Investopedia. *Standard of living Vs. Quality of life*. [online]. 2014 [cit. 2014-12-15]. Accessible from: <<http://www.investopedia.com/articles/financial-theory/08/standard-of-living-quality-of-life.asp>>.

MATTHEWSON, M. *Exploring Value-Added Agriculture*. Small farms: the Oregon State University [online]. 2007 [cit. 2014-12-5]. Accessible from: <<http://smallfarms.oregonstate.edu/sfn/su07valueadded>>.

Ministry of Food and Agriculture, Republic of Ghana. . [online]. 2014 [cit. 2014-10-30]. Accessible from: <<http://mofa.gov.gh/>>.

PricewaterhouseCoopers. *Charting tax trends in Ghana*. [online]. 2012 [cit. 2014-10-30]. Accessible from: <http://www.pwc.com/en_GH/gh/pdf/ghana-tax-guide-with-facts-and-figures.pdf>.

Touring Ghana. [online]. 2014 [cit. 2014-11-25]. Accessible from: <<http://www.touringghana.com/>>.

VINCK, S. *Importance Of SMEs Is Grossly Underestimated*. [online]. 2014 [cit. 2014-10-28]. Accessible from: <<http://www.forbes.com/sites/lbsbusinessstrategyreview/2014/12/12/importance-of-smes-is-grossly-underestimated/2/>>.

WALIA, P. *Value Addition in Agricultural Products: A Case Study of Mango Processing*. [online]. 2007 [cit. 2014-11-01]. Accessible from: <http://m08.cgpublisher.com/proposals/221/index_html>.

List of tables

Table 1: Risks	28
Table 2: Jam production	38
Table 3: Start-up costs	43
Table 4: Loan repayment (in USD)	43
Table 5: Annual costs (in USD).....	44
Table 6: Cash flow - realistic	45
Table 7: Cash flow - pessimistic.....	47
Table 8: Cash flow - optimistic	49
Table 9: SWOT analysis	51
Table 10: Former income and expenditures (in USD).....	56

List of figures

Figure 1: Tourist arrivals to Ghana.....	13
Figure 2: Types of Mangoes	17
Figure 3: Mango regions.....	18
Figure 4: Mango harvest.....	35
Figure 5: possible + actual profit.....	55
Figure 6: Dependence of income and expenditures on education	58

Appendices

Competitive product - jam



Raw mango – cooking jam



Home made mango jam



Jam in jars



Proposed packaging



Gantt Chart

