LIQUIDITY INFORMATION

CREATION OF A MODEL WHICH PROVIDES CURENT AND FUTURE LIQUIDITY INFORMATION, WHILE TAKING THE EFFECTS OF CHANGES OF VARIABLES INTO ACCOUNT.

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ABSTRACT

Gold Coast Fruits (GCF) is a pineapple company located in Adeiso, Ghana. The company produces pineapples mainly for export to Europe. In the beginning of 2012 GCF came into liquidity problems, which were resolved by restructuring the outstanding debt. A main reason for running into liquidity problems was the absence of periodical information about the current and future performance. Currently a monthly performance overview is created, but this overview does not contain the desired liquidity information for the management. Also the current monthly performance overview lacks information on the future liquidity developments. Central matter of this thesis is to provide a model which provides the management of the desired liquidity information and takes the effects of changes in certain variables into account. The main research question is formulated below.

"What information is required to have an overview about the current liquidity position and the liquidity developments, while taking the influences of relevant variables into account?"

At first a literature study was conducted to form a theoretical framework for this thesis. The main subjects of the theoretical framework are cash flows, budgeting, standard costs & variance analysis and liquidity position. After the creation of the theoretical framework data was gathered. For the data gathering records of GCF were analyzed and several interviews with stakeholders were conducted.

The first step in providing an overview about the current liquidity position and the liquidity developments was the analysis of the current cash flows. In this analysis all the cash flows were divided in three major categories; cash from operations, cash from investments and cash from financing. Later the cash flows were even further classified. After the classifications of the cash flows, budgets were setup to project the future cash flows. The budgets were setup by analyzing the old cash flow records and interviewing department managers. Some cash flows could be related to the activity level of the company and be variable budgeted. Other cash flows could not be related to the activity level and were fixed budgeted.

After the formulation of the budgets, all the information was combined and incorporated in a model. This model contains all the different cash flows separately in tabs and combines the cash flows in the financial statements. Furthermore an interface was created to provide the user with a quick overview of the company's performance and provide the user with the option to simulate some future scenarios by changing certain variables. Finally a maintenance manual is written to ensure a correct maintenance of the model.

The created model meets the content requirements, which were derived from the discrepancy analysis between the desired and current situation. The created model provides a monthly performance overview; it contains information about the current liquidity information, the operating profitability and variance analyses. Furthermore it projects the developments of the liquidity and the operating profitability. Finally the model is able to simulate future scenarios, which provide the management with flexible information. Next to the content requirements the model also meets the formulated design requirements. The model presents the information in a clear way, it is easy maintainable and the simulation of the variables is easy.

There is still room for improvement to the model. The most important recommendation for GCF is to improve the operational cash flow budgets. This can be done by standardizing the fuel-costing operations and the employee activities. Another recommendation is to keep records specified to cost centers, this enables the possibility for more specific variance analysis. The last recommendation is to improve the depreciation records, so the full income statement instead of the EBITDA can be incorporated in the model.

ACKNOWLEDGEMENTS

This bachelor thesis has been written as the final step for my Bachelor of Science degree in Industrial Engineering Management at the University of Twente. Research for this thesis was conducted at GCF, a pineapple farm in Adeiso, Ghana. I have done an internship of eleven weeks in Ghana. Most of the time I have spent at the head office of GCF located in the suburbs of Accra, but I also have had the privilege to visit the pineapple farm itself.

My period in Ghana was an extraordinary and educational experience for me. I have improved a lot of my academic skills by gathering information, having contact with multiple stakeholders and writing this thesis. I have also learned a lot on a personal level by the experience with the Ghanaian culture and meeting new people.

I sincerely thank everyone who helped my during my internship at GCF. A warm thank you to my colleagues at the head office for all the help in the data gathering and answering my questions. My thanks also goes to the department managers at the pineapple farm. Thanks for helping me understand the pineapple growth process and showing me around at the farm. At last I especially want to thank everyone at GCF for the enjoyable period I have had.

A special thanks goes to my supervisor at GCF, managing director Dominik Klotzbach. He gave me a warm welcome in Ghana. Furthermore he supervised by sparring with me and providing me with feedback. I also thank Walter Hetterschijt, managing director of the Annona Sustainable Investment Fund, for providing me the possibility to do this internship. Finally I want to thank Ger Vergeer for supervising my thesis for the University of Twente. His flexibility and tips helped me a lot in Ghana and his supervision back in the Netherlands supported me in the final steps of this thesis.

Thomas Hooijman

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GCF	Gold Coast Fruits limited
GHS	Ghana Cedi (Official Ghanaian Currency)
EUR	Euro
USD	United States Dollar
GCB	Ghana Commerical Bank
EDIF	Export Development and Investment Fund
Annona	Annona Sustainable Investment Fund
Stanbic	Stanbic Bank Ghana

1. INTRODUCTION

This chapter introduces the central issue of this thesis. In paragraph 1.1. the background of GCF is explained; the main activities and the pineapple lifecycle is described. Then in paragraph 1.2. the main problem of this thesis is identified. This is done in a structured process; starting with the context, then describing the discrepancy between the current and desired situation and finally the formulation of the research questions. Finally the research design of this thesis is explained in paragraph 1.3.

1.1 INTRODUCTION TO GCF

This paragraph provides an introduction to GCF. In paragraph 1.1.1. the background of GCF is briefly described. Then the pineapple growth cycle is explained in paragraph 1.1.2. to provide the reader with a better understanding of the current problems of GCF.

1.1.1. COMPANY BACKGROUND

GCF is a pineapple farm located in Adeiso, Ghana. Adeiso is situated in the so-called pineapple belt of Ghana, this area has this name because the soil condition and the amount of yearly rainfall is well suited for pineapple cultivation. The farm was founded in 2005 and has gradually increased the farming. Currently 1230 acres are registered to GCF. The office of the company is located in Pokuase, at a distance of approximately forty kilometers from the farm.

GCF is a private limited liability company and has German and Ghanaian shareholders. Ghanaian government stimulates foreign investments in certain business areas in Ghana. GCF is a company that benefits from this government stimulation program, which is called Ghana Free Zones. The most important advantage is the tax exemption for the first 10 years of the company.

GCF is according to the 2009 sea-export statistics the fourth largest pineapple exporter in Ghana with a market percentage of eight percent.[1] The market percentage is calculated via the quantity of shipped pallets. The two largest pineapple producers of the country are Golden Exotics and Bomarts and they share common borders with GCF. The summary of the total production, the sales and the profit of GCF of the last five years is displayed in the table below.

Year	2007	2008	2009	2010	2011
Fruits Produced (tons)	400	1.200	2.500		
Sales (GHS)	1.592.841	1.247.014	2.884.983		
Profit (GHS)	-295.341	-358.013	10.066		

Table 1 Annual Fruit Production, Sales and Profit[1]

Almost all the produced fruits are exported, only five percent is sold locally. The biggest export market for GCF is Europe. The Middle East and North Africa are two smaller markets. The two major customers are Agrofair, located in The Netherlands, and Canavese, located in France. [2]

Since June 2008 GCF is a Fair Trade certified company. This means that the company meets the requirements set by the Fair Trade. These requirements ensure high social, economic, environmental and 'health & safety' standards. GCF gets a premium on the conventional price with every Fair Trade product sold.

[1] Short Profile October 2010 by GCF
[2] Sales Export Report 2012

GCF currently employs 306 people. Twelve of them work at the office and the rest works at the farm. Forty percent of the workforce does not have a contract. These employees are paid on daily basis. The management organizational chart of the company is illustrated below.

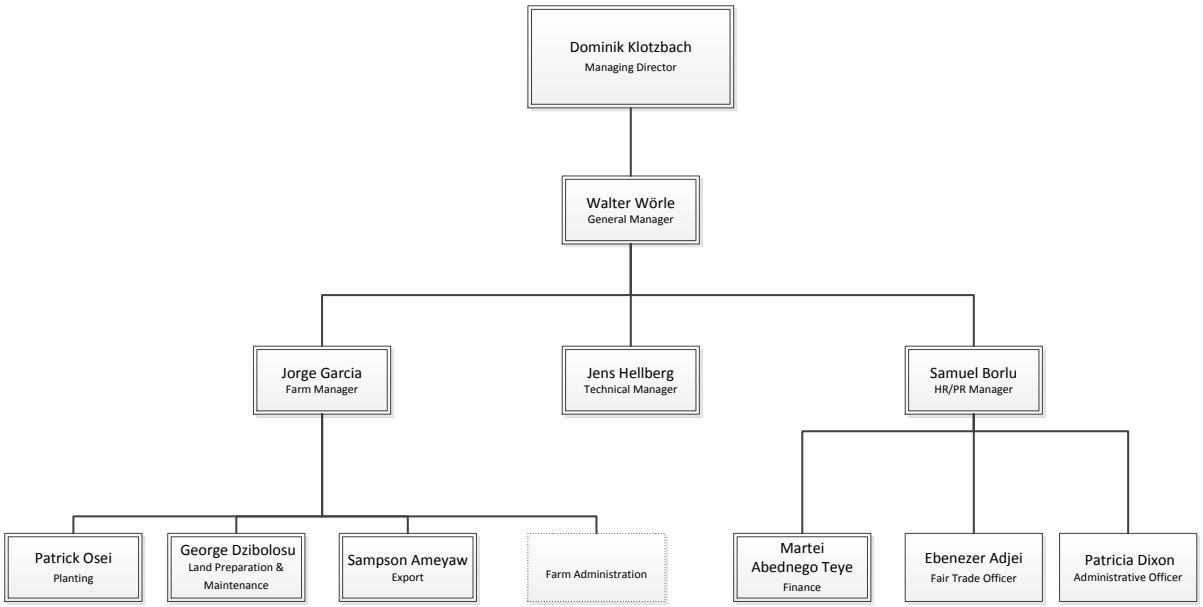

Figure 1 Organizational Chart

1.1.2. PINEAPPLE LIFECYCLE

To understand this thesis better this paragraph briefly describes the pineapple growth cycle. In this way readers can obtain a basic knowledge about the production processes at GCF, which form a framework for the problems and the proposed solutions in this thesis. The lifecycle of the pineapple can be divided in eight stages, every stage is described below. (J. Garcia, personal communication, September 2012)

The time between the finishing the land preparation and the actual planting differs. This is due to the fact that big areas of land are prepared at the same time. Planting cannot be immediately after the finishing of all this area. For this reason the planting of the suckers is used as the start of the count of the lifecycle time. The months described are therefore months after planting.

The growth of pineapple is a natural process; a lot of factors which are out of human control play a role. For example the fertility of the soil, the weather conditions, the quality of the plants all influence the time it takes and to mature, the size and quality of the fruits. The times between stages described below are thus not exact times, but only average values.

1. Land Preparation

For an efficient pineapple cultivation the lands have to be properly prepared. First all the old plants and weeds are removed from the plots, this is done by the application of a herbicide and cultivating the land with machines. Then tranches are created to prevent that the pineapple plants will stand in still water. The distance between tranches is 40 centimeters. The tranches of the pineapple plants are covered with mulch foil this is done to stimulate the growth of the root system and to maintain the moisture.

2. Planting (Start of cycle)

In the second stage the suckers, the seeds of the pineapple plant, are planted by the workers. The suckers are planted on 25 centimeters of each other. This is done to secure that every plant has enough sunlight.

3. Plant Maintenance (Month 1-9)

After planting the suckers start to develop themselves into a pineapple plant. During the growth of the plant maintenance takes place. Pesticides are applied to protect the plants against animals and weeds. Fertilizer is applied to stimulate the growth. Several application methods are used in this process. The first method is granular application; the fertilizer is applied on the plant with a spoon. The second method is spraying with a knapsack; the pesticide or fertilizer is mixed with water and then applied via knapsacks which are carried by workers. The last method is called boomspraying; the pesticides or fertilizers are mixed with water and applied via a boomspray machine which is coupled to a tractor. The method of appliance depends on the availability of machines and workers.

3. Forcing (Month 10)

The time to full maturing is related to the sucker size. On average suckers are fully matured 40 weeks after planting. When the pineapple plant is matured a chemical is applied by workers. This chemical triggers the start of the growth of the fruit. A plant can only produce one fruit a time.

4. Fruit Maintenance (Month 10-14)

During the growing process of the fruits also maintenance takes place. The maintenance is done to ensure a good growth of the fruit. For this reason a pesticide and fertilizer program is used. The same application methods as used with the plant maintenance are used.

6. Fruit Harvest (Month 14)

When the fruits are fully grown, usually 20 weeks after forcing, the fruits can be harvested. Workers break the fruits from the plant and put them in boxes. These boxes are transported to the packaging plant. In the packaging plant the fruits are cleaned and packed. After packaging the exportable fruits are stored in the cool cell and finally transported to the port of Tema for shipment to their destination. Fruits that are sold locally are transported to local customers at the end of each day.

7. Sucker Maintenance (Month 14-28)

After the fruit harvest workers trim the leaves of the pineapple plants. This ensures that the plant put all its energy in producing suckers. During the sucker production the plants need maintenance. The plants are provided with fertilizer and pesticides to ensure a good sucker production. The same application methods as with the plant maintenance are used.

8. Sucker Harvest (Month 17-28)

12 weeks after the start of the sucker production the first suckers are matured and can be harvested. The suckers are broken down from the plants and are put upside-down on the plants. This is done to dry the steem, the place on the bottom of the sucker from which it was attached to the plant. The drying prevents the development of mold. After drying the suckers are gathered and graded. After this process the suckers can be plant in a prepared plot. After a sucker harvest the pineapple plant starts to produce new suckers. The cycle for producing suckers can be repeated several times. However the quality of the produced suckers declines after a while. Currently GCF does 6 sucker harvests. After the first sucker harvest it only takes 9 weeks for a new harvest.

The summary of the lifecycle of a pineapple is schematically displayed in the figure below. The relevant average time between stages is displayed in the figure.

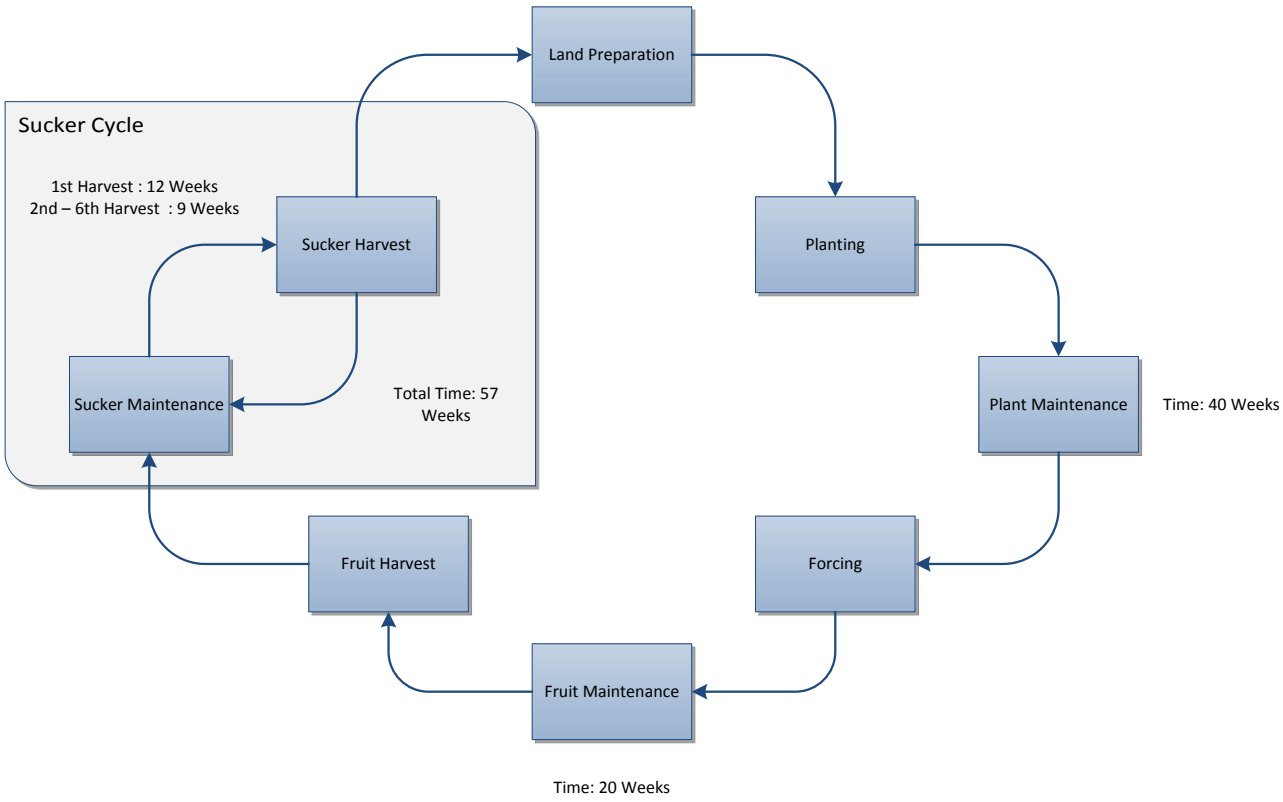

Figure 2 Schematic Overview Pineapple Lifecycle

1.2. PROBLEM IDENTIFICATION

This paragraph explains the central problem of this thesis in a structured method. Paragraph 1.2.1. describes the context for writing this thesis. Then in paragraph 1.2.2. the current situation regarding liquidity information is examined. In paragraph 1.2.3. the desired situation regarding liquidity is described. Subsequently in paragraph 1.2.4. the discrepancy between the current and desired situation is analyzed. After this in paragraph 1.2.5. an analysis of all the problem owners and their relationship with the problem is made. In paragraph 1.2.6. the problem is defined and the research questions are formulated. Finally in paragraph 1.2.7. the reasons for the adaption of the original research questions to the current questions are explained.

1.2.1. CONTEXT

In 2011 GCF had liquidity problems and was forced to restructure their then existing loans. A main reason for running into the problems was the lack of good management information about the current liquidity position and the future liquidity developments. In 2012 GCF finished talks with several banks and investment funds and realized to restructured old loans and to acquire new loans. After granting the loans the banks and shareholders also demanded to be kept updated with information of the current liquidity position and the future liquidity developments periodically.

Presently there is no information about the current liquidity position because no standard monthly update containing this information is produced. The absence of information about the future liquidity developments is caused by the absence of a good own projection of the incoming and outgoing cash flows. The lack of the above

described management information leads to an impossible task for the management of GCF to make well-founded decisions about operational, investment en financing issues.

To prevent similar problems in the future GCF wants to have better control over the company's liquidity. To acquire better control over the liquidity situation the company has to have better information about the company's current and future liquidity position.

1.2.2. CURRENT SITUATION REGARDING LIQUIDITY INFORMATION

The current situation of the liquidity information at GCF is analyzed and explained in this paragraph. First the situation of the current liquidity information and then the situation of the future liquidity information is described. The information about the current situation regarding liquidity information is obtained from a review of the current reporting. For this analysis the financial statements and the monthly cash flow report are reviewed. Also personal interviews with mister Klotzbach, the managing director, and Martei, the finance manager, have been conducted.

There is currently little information about the current liquidity situation at GCF. Information about the current liquidity situation used to be only available from the financial statements, which are created twice a year. However in June this year GCF started an initiative to produce a monthly cash flow overview. This monthly overview is produced by mister Martei, the finance manager. This overview however still has a lot of shortcomings. An example of this report is attached in appendix A.1.

The main defect is that the 'monthly cash flow overview' is not actually a cash flow overview. The overview displays operational costs instead of operational cash flows. This is provided because the management is also interested in the operational profitability. The monthly cash flow overview also misses all the financial cash flows. All the headings of the 'monthly cash flow overview' are accumulated to calculate the current liquidity position. This is however an incorrect calculation because of the use of operational costs instead of cash flows and the missing of the financial cash flows. The calculated liquidity position is therefore also incorrect.

The second defect of the current overview is the misallocation of costs. GCF does not have any cost classifications. The consequence of the absence of a strict cost classification is that some costs are allocated to different categories every month. The effect of this misallocation is that the management cannot use the information from the monthly report to make decisions. Furthermore it eliminates the use of historical category costs for benchmark purposes, because every month different costs are included.

GCF's management currently obtains information about the future liquidity situation from a business projection model provided by Annona. Annona is a Dutch Sustainable Investment Fund and is since 2012 shareholder of GCF. The business projection model was created by Annona to obtain relevant information for their investment in GCF. This model however is not optimal for use by the management of GCF for several reasons.

The main reason is that the model is static. By this is meant that it is hard to update the projections when several variables of the model change or the actual revenue and costs differ from the budget. It is hard to change both the external variables, such as the market price and exchange rates, and the internal variables, such as the planting quantity. Besides it is currently not possible to use the actual revenue and costs for the projections. Both of the above reasons make the projections less reliable further in the future. This makes the information only usable as a planning tool and not as a good liquidity projection tool.

A second disadvantage of the Annona model is that the information is unclear for the GCF's management. The first reason for the unclearness is that there is no logical structure for GCF's management in the Excel file. The information is scattered across the file and is not displayed in a clear way. Secondly a lot of information in the model is unnecessary for GCF's management. For example a lot of financial ratios are displayed which are not

needed in the day to day operations. Both of the reasons of the unclearness are of course understandable since the model was designed to provide information for Annona.

1.2.3. DESIRED SITUATION REGARDING LIQUIDITY INFORMATION

In the desired situation the management of GCF has a good insight in the current liquidity position and the future liquidity developments. This information enables GCF to cope optimally with the company's liquidity. When cash surpluses are expected, investments or early repayment of loans can be considered. When cash deficits are foreseen the best ways of raising cash can be examined.

Preferably GCF has a monthly overview of the realized cash flows and the liquidity position. This overview should include all the cash flows and provide an accurate calculation of the liquidity position. Besides the cash flow overview the management also wants an overview of all operating the costs and revenue. This is desired to obtain knowledge about the operating profitability of the company.

The costs are classified and therefore the costs are always allocated correctly. By this the management can also compare the budgeted with the actual performance. It provides the management with more control over the costs and enables the management to take adequate measures when big variances occur.

An overview of the future liquidity developments is obtained by an insight in the incoming and outgoing cash flows and the influences of the internal and external variables on them. The management of GCF can project liquidity developments and simulate the effect of changes of certain internal or external variables. With the knowledge of the future liquidity developments the management can make well-founded management decisions. With the option to simulate several scenarios the management can prepare an adequate measures when certain variables change.

The model that provides the overview of the current liquidity and the liquidity developments is easy accessible for the management. This means that the desired information can be retrieved easily and the simulation of the variables is understandable.

Furthermore the model has to be easily maintained. An accountant of GCF has to be able to do all updating. Inputting of the realized data should be simple and also fail-proof. When changes in the production process occur and the assumptions in the model are no longer valid, the accountant also has to be able to adapt the calculations in the model to the new situation.

1.2.4. DISCREPANCY BETWEEN CURRENT AND DESIRED SITUATION

The main discrepancy between the current and desired situation is the lack of an adequate and easy to obtain insight of the current liquidity and the liquidity developments. This thesis aims to solve this problem by constructing a model that provides information on the current liquidity position and the future liquidity developments.

To construct a model with this information first the specific requirements have to be determined. The requirements of the model can be divided in two sorts. The first sort are the content requirements and the second sort are the design requirements. The content requirements are demands concerning the content of the model. This is all the information which is desired to be in the model. The design requirements are demands concerning the format and layout of the model.

The first content requirement is a cost classification. A formal classification of all costs has to be formulated. This to ensure that every month a cost category contains the same costs. It also ensures that a good comparison between the actuals and the budgets can be made.

Secondly the model has to contain a monthly performance overview. This overview has to be updated every month and has to contain three things; an overview of the liquidity position, an income statement and an actual versus budget overview. The liquidity position shows the current liquidity of GCF. The income statement shows the monthly profit or loss. Finally the actual versus budget overview provides more detailed information about the company's performance.

The final content requirement is that the model contains a future performance overview. This overview has to consist of three components; an overview of the liquidity developments, an income statement and a possibility to simulate changes of certain variables. The overview of the liquidity developments displays the trends in the liquidity and provides the management with a tool to manage the company. The income statement provides the management with information about the future profitability of the company. Finally the possibility to simulate changes of variables provides the management a possibility to see the effects of changing circumstances.

The model's design requirements are threefold. Firstly the model has to present all its information in a clear way. This means that the desired information is obtained in an easy way by the management. At the same time the trends and comparisons of the actuals and budgets have to be easy spotted. The goal is that the model is maintained by the accountant of GCF. To ensure a good maintenance, this process has to be as easy as possible. Finally the ability to simulate the variables has to be easy and usable by the management.

The figure below summarizes all the above described requirements of the model. The division of the requirements in a content and design category is also maintained. The content requirements are colored green and the design requirements are colored brown.

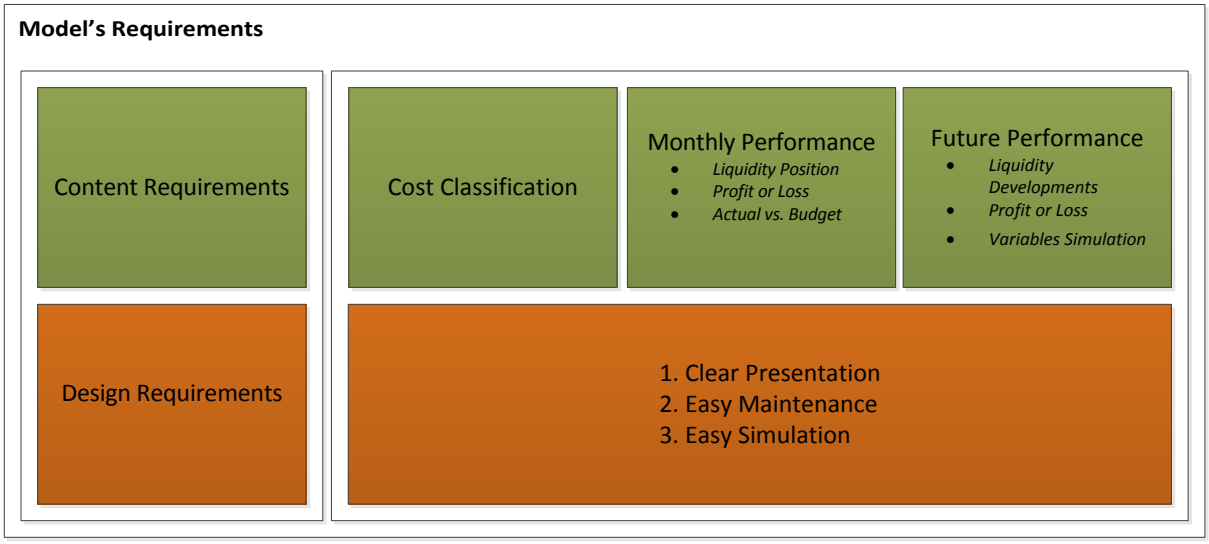

Figure 3 Schematic Overview of Model's Requirements

1.2.5. PROBLEM OWNERS

A problem owner is the management team, because the management team currently does not have the desired information about the present and the projected performance of the company. This makes it difficult for the management to take adequate measures for keeping the company in track of the long-term goals. The difficulty to receive and the quality of the current projections of the developments of the liquidity make it hard to make well-founded decisions. It also causes the inability to prepare adequately for certain developments.

The management now makes decisions based on past performances. The source of this information are the monthly costs and revenue reports. Only the knowledge of past performances causes that the management decisions are always running behind the actual situation. Currently the reports also have misallocation of costs,

due to the absence of cost classification. This makes it for the management even harder to make correct decisions.

Another problem owner is the finance manager, because he has to create the monthly reports. This process currently has no fixed structure. The absence of a fixed structure is caused by the missing of a fixed cost classifications and a template for an adequate monthly report. The accountant now evaluates the costs and is adapting the structure of the monthly report every month again.

1.2.6. PROBLEM DEFINITION

In paragraph 1.2.4. the discrepancy between the current and desired situation is explained. This analysis is summarized in figure 3, this figure shows which content and design requirements can be distinguished. After consultation with mister Klotzbach, the managing director, the main focus of this thesis is put on the current liquidity position and the future liquidity developments. The focus has been put on this subject, because liquidity is vital for a company. Furthermore GCF wants to meet the future payment requirements at all costs, after the liquidity problems in 2012. Keeping this focus in mind the main research question of this thesis has been formulated as follows:

"What information is required to have an overview about the current liquidity position and the liquidity developments, while taking the influences of relevant variables into account?"

To answer the main research question of this thesis six sub-questions are formulated. With all the answers of the sub-questions together the main research question can be properly answered. The following sub-questions have been formulated:

1. What are cash flows and what is the liquidity position?
2. What are the relevant cash in- and outflows?
3. What is the timing of these cash flows?
4. What are the fixed and variable cash flows and in what method can these be budgeted?
5. What are methods to display the relevant management information in an easy-accessible way and make the model easy to use?
6. What are the requirements to ensure that the model is easy maintainable?

1.2.7. ADAPTION ORIGINAL RESEARCH QUESTIONS

Before the start of this thesis a plan of action was created. This plan of action contained a problem description, research questions, a methodology and a planning. However at the start of the internship the research questions have been adapted.

This change has occurred because the problem at GCF was slightly different than expected in advance.. The original main research question was formulated as follows:

"How can the Anona model be improved, so GCF has insight in the short and long term risks and developments in liquidity?"

The biggest difference between the original and the current main research question is that the original only is focused on the future. The decision to shift my thesis' focus also to the current liquidity performance and position is undertaken after interviews with the management and my own assessment of the environment at GCF. In the interviews the management indicated that this information was strongly desired.

In interviews with the management it was found that the missing of a good monthly performance overview was a great shortcoming. Without this information the management could not make well-founded

management decisions. This especially due to the fact that they miss knowledge about the costs of categories and the income.

The management also wanted to use the monthly performance overview to compare the actuals versus the budgets. This to more effective steer the company. For example to make and control certain performance agreements with department managers.

In my assessment of the current 'monthly cash flow overview', which is created by the finance manager of GCF, a lot of shortcomings in the current management information were found. Misallocation occurred which made it impossible to compare costs. Furthermore the knowledge about cash flows and costs and revenues was minimum. As a result the accountant used in the monthly costs and revenue overview both cash flows and costs and revenues.

In my opinion the future developments of the liquidity cannot be correctly forecasted without an adequate monthly performance overview. For this reason this thesis also has included the monthly performance and the research questions have been adapted.

1.3. RESEARCH DESIGN

This paragraph describes the research design of this thesis. First paragraph 1.3.1. explains the used research method. Then paragraph 1.3.2. describes the stakeholders of the problem and their relation to it. Paragraph 1.3.3. determines the scope of this thesis. Then the limitations are drawn in paragraph 1.3.4. Finally the structure of the thesis is explained in paragraph 1.3.5.

1.3.1. RESEARCH METHOD

This thesis is a case study, this research method enables a researcher to closely examine the data within a specific context. (Zainal, 2007) GCF forms the specific context for this thesis. An explanatory case study method is conducted to examine the research questions and finally a conclusion is drawn based on the gathered information.

In the use of a case study method examination of the data is conducted within the problem context. This ensures that the research can be applied on the company. Another advantage of this research method is that it can zoom into the complex environment of the actual situation.

A disadvantage of the case study method is that it is hard to generalize the research conclusions for further scientific purpose. This problem however can be overcome by doing comparing the outcome of this case study with comparable ones. With this comparison similarities can be discovered and some generalizations can be drawn. Generalization is however not very relevant for this thesis, because it specifically focus on GCF.

1.3.2. STAKEHOLDERS IN PROBLEM SOLVING

There are multiple stakeholders in the problem solving of this thesis. The management team is the first stakeholder; they have to provide operational and financial information. The management team also has to be asked about their preferences for the design of the model.

The accountants of the company are the second stakeholders. They have to provide historical data of the company. Also questions about current record keeping can be provided by them. The intention is that the accountants are going to work with the model. This means that the model has to be accessible for them. This has to be assured by creating a manual.

The final group of stakeholders are the department managers at the farm. For the model to work correctly some additional information has to be recorded. The intention is that the department managers at the farm

will keep these records. To ensure good record keeping they exactly have to know which data to record and how to do this.

1.3.3. SCOPE

As stated above this thesis is a case study, therefore the research is conducted in context of GCF. All the relevant cash flows are examined to achieve a complete picture of the current liquidity position and to create an adequate liquidity projection. This means that operational, investment and financing cash flows are analyzed. The research only focuses on the currently occurring cash flows and the cash flows which will certainly occur in the nearby future. No further research to possible new cash flows is conducted. There is also no analysis conducted to the developments of the characteristics of the cash flows. This thesis assumes that the timing and size of the cash flows remains the same for the nearby future.

In this thesis variables which influence the cash flows are examined. In this analysis the variables' relation and their effect on the different cash flows are examined. There is only focused on the current variables, no research is conducted to possible future variables.

The discrepancy analysis of paragraph 1.2.3. also describes the need for profitability and budget information. In the problem definition in paragraph 1.2.6. the main focus is put on the liquidity information, due to the indications of the management. The profitability and budget information is studied in this thesis, however it is of less importance than the liquidity information.

Furthermore this thesis focuses on the methods to present the management information in an easy accessible way. The design requirements are derived in a practical way and just have to provide the manager with a good model.

Finally the maintenance requirements of the model are analyzed. This is done to ensure a good maintenance. The manual, which contains the maintenance requirements, is based on the capabilities of the current finance manager. If in the future another person will maintain the model it is assumed that this person has the same or even better skills than the current finance manager and so will not occur any problems in the maintenance of the model.

1.3.4. LIMITATIONS

The research for this thesis is conducted in eleven weeks at the office of GCF in Pokuase. During this period all the information has to be gathered to answer the research questions. When unexpected circumstances or delays in the data gathering process occur, it can be necessary to treat some parts more superficially.

The data gathering process is limited by the availability of the correct information at GCF. The operational records and the financial statements and their correctness is important. Also different managers have to be available for interviews to gather information.

As stated in the scope this thesis only focuses on the current occurring and the in the future certainly occurring cash flows. This automatically means that all other future cash flows are not considered in this thesis. Also this thesis does not examine the chance of a possible change of the characteristics of the relevant cash flows and how this will affect the stated budgets.

1.3.5. THESIS STRUCTURE

In the following chapter the theoretical framework will be lined out. This framework provides the theoretical knowledge for this thesis. In chapter 3 the applied research methodology is explained. The analysis and classifications of the cash flows is described in chapter 4. Then the cash flows are budgeted in chapter 5. In

chapter 6 the structure and the measures to ensure an easy maintenance are clarified. Finally chapter 7 draws the conclusions of this thesis. This chapter also describes recommendations to improve the created model.

2. THEORETICAL FRAMEWORK

This chapter forms the theoretical framework for this thesis. To answer sub-question 1 the meaning and characteristics of cash flows and the liquidity position is explained. Furthermore the concepts of budgeting, standard costs and variance analysis is a component of this framework. These elements are incorporated to have a theoretical background for sub-question 4. This chapter is divided in four paragraphs. Paragraph 2.1. examines the characteristics of cash flows. Then paragraph 2.2. explains the concept of budgeting. In paragraph 2.3. standard costs and variance analysis are described. Finally paragraph 2.4. focuses on the liquidity position.

2.1. CASH FLOWS

This paragraph describes different characteristics of cash flows. First in paragraph 2.1.1. the term cash flows is defined and the concept is further explained. Then the different cash flow types are explained in paragraph 2.1.2.

2.1.1. CONCEPT

Cash flows are the flow of money into and out of the business. Cash inflow is money coming into the business and cash outflows are money going out the business. (Berry & Jarvis, Accounting in a Business Context, 2006) The overview of all the cash flows in a certain period is captured with the cash flow statement. This statement shows the increase or decrease of money over time.

Another important financial statement is the income statement. This statement shows the increase or decrease in wealth by displaying the revenue and expenses in a period. The income statement shows an overview of all the revenue and expenses in that period. The main difference between revenue and expenses and cash in- and outflows is the timing of the event. Revenue and expenses can be realized within a certain period, however the agreements may state that the actual receipt or payment and so the cash flow takes place in a later stage. Furthermore some revenue and expenses are not related to cash flows at all. This is the case with depreciation or an increase of the assets value.

The cash flow statement is becoming more used by companies. (Berry & Robertson, Overseas bankers in the UK and their use of information for making lending decisions: Changes from 1985, 2006) Berry & Robbertson (2006) indicate two possible reasons. Firstly cash flow statements provide an overview of liquidity, which is becoming an more important indicator. Secondly cash flows statements are better understandable and less manipulative than the other financial statements, which are becoming more and more complex.

2.1.2. TYPES

Different type of cash flows can be distinguished in a business context. The International Accounting Standard IAS 7 uses three different cash flow types based on which activity the cash flow is derived from. The three different cash flow types are; cash from operating activities, cash from investing activities and cash from financing activities. (IFRS, 2012)

OPERATING ACTIVITIES

Operating activities are defined by IFRS (2012) as the principal revenue-producing activity of the entity and other activities that are not investing or financing activities. The primary cash from operating activities is derived from revenue-producing activities. Therefore they generally result from transactions that enter into the determination of profit or loss. The cash from operating activities is a key indicator of the extent to which a company can run its activities without the need of external financing.

There are two ways to formulate the cash flows from operating activities. The first is the direct method, in this method the cash receipts and payments are directly processed to the financial statements. The second is the indirect method; this procedure derives the cash flows from the profit or loss in a period. The profit or loss is adjusted for the effects of transactions of non-cash nature, any deferrals or accruals of past or future operating cash receipts or payments, and items of income or expense associated with investing or financing cash flows.

INVESTING ACTIVITIES

Investing activities relate to investments in non-current assets and sales of those assets. The importance for this category is caused by the fact that these cash flows represent the extent to which expenditures have been made for resources intended to generate future income. Generally the items of this category affect the balance sheet and the cash flow in the same way.

FINANCING ACTIVITIES

Financing activities are activities that result in changes in the size and composition of the contributed equity and borrowings of the entity. So these activities include the money raised or used by issuing or redeeming shares, debentures and loans. This category is important because it is useful in predicting when capital suppliers are claiming their capital.

2.2. BUDGETING

This paragraph describes elements of budgeting, with the main focus on its planning function. First in paragraph 2.2.1. the concept of budgets is explained. Finally the different budget types and their characteristics are clarified in paragraph 2.2.2.

2.2.1. CONCEPT

To create a cash flow projection it is necessary to have a planning of the company's future operation. Planning is the design of a desired future and of effective ways of bringing it about. (Drury, 2006) Planning can be split into short-term and long-term planning. A long-term plan is a statement of the preliminary targets and activities required by an organization to achieve its strategic plans together with a broad estimate of the resources required. Short-term planning is concerned with the implementation of the operational decisions of the long-term plan. Budgets are the medium by which these short plans are operationalized within a business environment. Long-term planning is done on a strategic level and provides no concrete information for the cash flow projection. For this reason this theoretical framework only focuses on budgeting.

According to Drury (2006) a budget has five major purposes; planning (1), coordination (2), communication (3), motivation (4) and performance evaluation (5). In the context of this thesis the relevant functions of the budget are planning and performance evaluation. Therefore these two functions are described in more detail below.

PLANNING

Planning is the main function of budgets for this thesis' context. The budget operationalizes the long-term planning of the company. The budgeting process ensures that managers plan for future operations. By looking to the future the management is in a good position to anticipate potential problems. A good anticipation will minimize hasty decisions that are made on the spur of the moment and are not based on good reasoned judgment.

PERFORMANCE EVALUATION

Budgets can be used for performance evaluation. To do this the actual performance is compared with the budgeted performance. Deviations between the budget and actual situation are reviewed and corrective measures can be developed.

2.2.2. BUDGET PERIODS AND ADJUSTMENTS

The most common budget period is one year. The main reason for this period is the periodic requirements for publishing accounts by the law; financial statements usually have to be drawn at the end of the year. (Berry & Jarvis, Accounting in a Business Context, 2006)

Mainly for control purposes the budget of the yearly budget is broken down in quarterly, monthly or weekly periods. The extent to which a budget period is broken down depends on the requirements of the company. When the company operates in a very competitive market it is needed to more actively monitor the performance than in a relative stable market.

Some companies use a rolling budget, also known as continuous budget. This budgeting method reviews the period during the year and when certain market or internal information change, the budget also changes. Furthermore this budgeting method always budgets for a certain period. When for example one quarter ends a new quarter is added to the budget. Rolling budgeting ensures that the company always has a specific budget period available. It also ensure that planning not only takes place once a year but is a continuous process. A disadvantage of rolling budgets is that it creates a uncertainty for managers because of the continuous changing budgets. (Drury, 2006)

Flexible budgets are budgets that in contrast with static budgets adjust to the actual activity level. Static budgets only uses the budgeted activity level. The use of flexible budgets resolves one of the main shortcomings of static budgets; the performance evaluation. By not taking the differences between the budgeted and the actual activity level in consideration variances can be quite misleading. The main cause of this problem is that variable costs are related to volume.

2.3. STANDARD COSTS & VARIANCE ANALYSIS

This paragraph describes the principles of standard costing and variance analysis. Standard costing is relevant for this theoretical framework because it forms the input for the budgets. Variance analysis has a function in the performance evaluation component of budgeting and is therefore also relevant. First the concept of standard costing is explained in paragraph 2.3.1. Then the process of setting standards is treated in paragraph 2.3.2. This is followed in paragraph 2.3.3. by the explanation of the cost standard types. Finally paragraph 2.3.4. describes the variance analysis.

2.3.1. STANDARD COSTING

Budgets deal with total expected costs. Most of the total expected costs are calculated via quantity and price standards. Standards are the predetermined expectation of inputs necessary to achieve a unit of output. (Walther & Skousen, 2009) Standard costs provide an assessment of what these inputs should cost.

2.3.2. SETTING STANDARDS

Setting standard can be done in several ways. The two main methods are historical and engineering. The historical method uses historical data to set standards. The engineering method set standards by doing a careful study of every operation. An observation is made of the materials, labour and equipment used and a standard is derived from this knowledge. The standards should originate from the people who understand the productive process the best. (Drury, 2006)

Standard setters have to take in account all the inefficiencies that occur during normal production processes. For example machines breakdowns and human errors have to be taken into account.

2.3.3. COST STANDARD TYPES

With standard setting the question rises how high the standards should be set. Standards are classified in two main categories. (Walther & Skousen, 2009)The first category is achievable standards. These standards are realistic and within reach. Such standards take into account all the inefficiencies that can occur in the production processes. These standards are intended to let the workers reach the benchmarks. It is thought that achievable standards reduce frustration in comparison with unachievable standards.

Ideal standards are the second category. These kind of standards may never be reached. These standards represent the perfect working scenario. The idea of ideal standards is that workers may never rest and always can improve. A lot of companies do not use ideal standards because it has an demotivating effect on workers, because workers never reach the goal.

2.3.4. VARIANCE ANALYSIS

Next to forming input for the budget setting, standards are also used for performance evaluation. Standard costs resulting in budgets are compared to actuals and the differences between those two are called variances. (Berry & Jarvis, Accounting in a Business Context, 2006) Favourable variances occur when actual costs are lower than standard costs, and vice versa. The process of examining these variances is called variance analysis.

The basic relationship between the actual and standard cost is illustrated in the figure 4. Variance analysis can be performed for each factor of productive input; material, labour and overhead. Variance analysis is the logical examination of the deviations in an attempt to identify areas for improvement. This analysis form an important part of effective control of an organization. (Walther & Skousen, 2009)

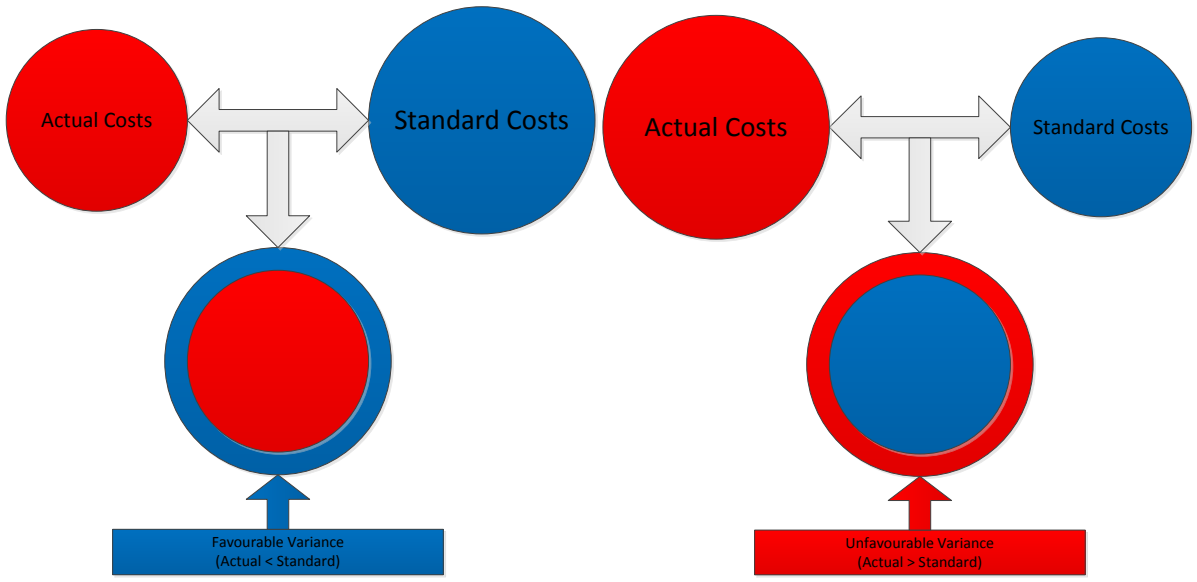

Figure 4 Favourable and Unfavourable Variances (Walther & Skousen, 2009)

2.4. LIQUIDITY POSITION

This paragraph explains the concept of liquidity position. The basic concept is clarified in paragraph 2.4.1. Then paragraph 2.4.2. explains the future liquidity developments.

2.4.1. CONCEPT

Liquidity is a term used in accounting context. According to Berry & Jarvis (2006) liquidity refers to the ease with which assets can be converted to cash in the normal course of business. Liquidity is an important indication for the financial health of a company, because it states how fast a company can acquire cash. When

a company can quickly turn their assets into cash, it means that the business can meet its payment obligations and continue its normal business. Liquidity position is the measurement of a company's liquidity.

Assets which can be easily converted to cash are called liquid assets. A liquid asset has some or all of the following characteristics; it can be sold rapidly, with minimal loss of value and at any time within market hours. An important factor of a liquid market is that there are always ready and willing buyers and sellers. Cash and marketable securities are for example the most liquid asset, because it can be used immediately to fulfill on the business' wants and needs. An illiquid asset is an asset which is not readily saleable due to uncertainty about its value or the lack of a market in which it is regularly traded.

Liquidity ratios provide an indication of the liquidity of a company. The major concern for liquidity is the short term, because it wants to know if a company can meet its commitments as they fall due. For this reason liquidity ratios use the current liabilities as a reference. Three important liquidity ratios are the Current, Quick and Cash Ratio. (Allen, Myers, & Brealey, 2008) The difference among these ratios is the degree of liquidity of the current assets that are used.

$$Current\ Ratio = \frac{Current\ Assets}{Current\ Liabilities}$$

The Current Ratio consists of the current assets and the current liabilities. The current assets are all the assets that can quickly be turned into cash. The current liabilities are expected payments of a company in the nearby future. The current ratio measures the margin of liquidity and so measures how many times you can suffice your current liabilities with your current assets.

$$Quick\ Ratio = \frac{(Cash + Short - Term\ Securities + Receivables)}{Current\ Liabilities}$$

There is difference in the ease of which some current assets can be turned into cash. Selling inventories can for example be not a very quick process. For this reason the Quick ratio only focuses on cash, short-term securities and accounts receivables.

$$Cash\ Ratio = \frac{(Cash + Short - Term\ Securities)}{Current\ Liabilities}$$

The most liquid assets are cash and marketable securities. The Cash Ratio only uses these current assets for its calculation.

In this thesis the cash amount is considered as the degree of liquidity. This is done because it is easy controllable. Furthermore because of the fact that it is harder in Ghana to quickly convert current assets into cash. This is caused by the fact that there is only a limited number of buyers of current assets in Ghana.

2.4.2. FUTURE LIQUIDITY DEVELOPMENTS

To ensure that a company can keep paying its bills and so remain liquid, detailed plans are needed. These detailed plans have to forecast the company's cash needs. Cash budgets are the operationalization of these plans and forecast the future sources and uses of cash. Cash budgets are a form of budgeting as discussed in paragraph 2.2., but because of its relevancy for this thesis is now treated in more detail below.

The main source of cash inflows are the sales of a company. Sales itself are not the same as cash inflows, because sales first become accounts receivable. Cash inflow only comes from the collections of accounts receivable. To forecast the future cash inflows it is therefore needed to have an idea of the average time it takes for customers to pay their bills. Next to sales there exist other sources of cash inflows. This can for

example be cash raised by selling stock or additional lending. All these cash inflows are labeled 'other' in finance literature.

There are many sources for outgoing cash flows. Allen, Myers, & Brealey (2008) condensed the different sources to four categories.

Outgoing Cash Flow Sources	Description
Payments on Accounts Payable	Bills for raw materials, electricity, etcetera have to be paid. Not all bills have to be paid immediately, usually you a supplier agrees to a certain payment term. By only looking at the payments on the accounts payable only cash outflows are considered.
Labor, Administrative and Other Expenses	This category includes all other regular business expenses.
Capital Expenditures	All capital investments are gathered in this category.
Taxes, Interest and Dividend Payments	This final category includes all taxes, interest and dividend payments

Table 2 Outgoing Cash Flow Sources

Cash budgets are a good effort to forecast the future cash flows. However there are always uncertainties in the estimates of the future cash in- and out flows. Changing internal and external conditions can influence the future cash flows. To tackle a part of this problem you can perform a sensitivity analysis. In this analysis you can inspect how a company cash flows will be affected with the change of certain variables.

3. METHODOLOGY

This chapter describes the used methodology in the thesis. First paragraph 3.1. describes the different research methods and their pros en cons. Then paragraph 3.2. describes the applied methodology.

3.1. RESEARCH METHODOLOGY

The research methodology describes the used methods for data gathering and data analysis. Both qualitative and quantitative research methods are used in this thesis. By using both these research methods the gathered information can be compared and validated.

Mr. Klotzbach, the managing director, has indicated that in the current situation validation is desirable because of two reasons. Firstly it is uncertain that all the financial statements and operational records are entirely correct. This uncertainty is caused by the abuses of the last finance manager. (D. Klotzbach, personal communication, September 2012) The second reason for the desirability to validate is that all the accounting personnel is only recently employed. They do not already know everything precisely, for this reason it is good to check their statements.

The validation process takes place by comparing the gathered data from qualitative methods with the gathered data from quantitative methods. When discrepancies are discovered both data sources are double checked for errors. If the double checking does not offer a solution, a data source is chosen in consultation with the mister Klotzbach, the managing director. The figure below displays schematically the validation process when both research methods are used.

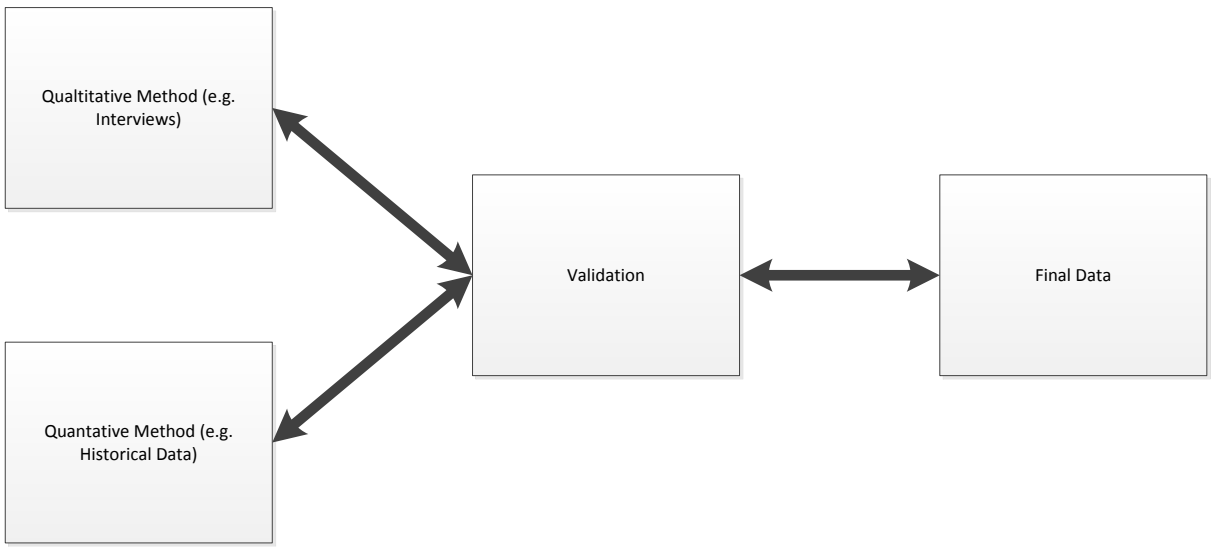

Figure 5 Schematically Overview Processing Qualitative & Research Methods

3.2. APPLIED METHODOLOGY

Below the methodology is broken down into four different phases. The different phases cover one or more sub-questions. With this division there is zoomed into each data gathering and analysis process. The first sub-question is treated in the theoretical framework and therefore omitted in the methodology description below.

3.2.1. PHASE 1

The first phase covers the second sub-question. This phase examines what the relevant cash in- and outflows are. The data gathering consists of a qualitative and a quantitative component. After that the gathered data from both sources are compared and validated. All the three steps are described below.

i. Qualitative: *Interviews Finance Manager & Managing Director*

Interviews with the managing director and the financial manager are held to analyze all the relevant cash flows. In these interviews also the cost classification is discussed. Both interviews are conducted according to the general interview guide approach. In this interview method general areas of information are formulated and the interviewees are asked about these areas. This method ensures that the same general areas of information are collected from each interviewee. But it still has freedom and adaptability in getting the information from the interviewee. (Turner, 2010)

ii. Quantitative: *Historical Cash Flow Records*

The historical cash flows are analyzed by examining the old cash flow overviews. Also the current cost classifications are examined.

iii. Validation

The information obtained from the interviews is compared with the information from the historical data. Any discrepancies which are detected are discussed with the managing director. After the discussion a final cash flow analysis and cost classification is formulated.

3.2.2. PHASE 2

The second phase covers sub-questions 3 & 4. This means that first the timing of the cash flows is examined, then the variability and the best method to budget the cash flows are examined. The data gathering consists of a qualitative and a quantitative component. After the data gathering from both sources, the data is compared and validated. Finally the best budgeting method for all the relevant cash flows is picked. All the mentioned steps are described in more detail below.

i. Qualitative: *Interviews Farm Managers & Finance Manager*

Several interviews are held with the department managers and the financial manager about the timing and variability of the cash flows. These interviews are again conducted according to the general interview guide approach. Below the interviewees and the subject of their interviews are described.

- Mr. Patrick Osei (Planting Manager)

The cash flows occurring in the planting phase are discussed. Also the timing and the variability of these cash flows are treated.

- Mr. George Dzibolosu (Maintenance Manager)

The interview subjects are the maintenance processes. These processes create the framework for the examination of all the cash flows occurring in the maintenance phase. The timing and the variability of all these cash flows are also discussed.

- Mr. Sampson Ameyaw (Export Manager)

All the occurring cash flows in the export phase are examined. Both the timing and the variability aspects of the relevant cash flows are discussed.

- Mr. Jens Hellberg (Technical Manager)

All the processes where Mr. Hellberg is in charge of is are examined. The cash flows resulting from these processes are discussed. The interview also treats the timing and the variability of these cash flows.

- Mr. Jorge Garcia (Farm Manager)

All the production processes combined are discussed. Especially the timing of the specific cash flows are discussed.

- Mr. Martei Abednego Teye (Finance Manager)

All the cash flows resulting from the production processes are discussed. This is done to check if all cash flows discussed with the farm managers correspond with the cash flows which the finance manager treats. With the finance manager also the non-production cash flows are discussed. The timing and variability of the non-production cash flows is also treated.

ii. Quantitative: *Historical Cash Flows Records & Production Schedules*

The historical cash flow records and production schedules are examined. With the productions schedules the planting quantity, maintenance and harvesting quantities are meant. Both records are examined to find the timing of cash flows and the variability of the cash flows.

iii. Validation

The information obtained from the interviews is compared with the information from the historical data. Any discrepancies which are detected are discussed with the managing director. After the discussion a final description of the timing and variability of the relevant cash flows is formulated.

iv. Budgeting methods

With the knowledge about the timing and the variability of the cash flows the relevant cash flows are budgeted. The theoretical framework provides guidance for budgeting the different cash flows.

3.2.3. PHASE 3

In the third phase sub-question 5 is treated. The methods to display the relevant management information in an accessible way and how to make the model easy to use are examined. After this examination the methods are chosen and implemented.

Only qualitative research is conducted to gather data for this sub-question. The managing director is interviewed to obtain information about his vision of the model's structure. Besides the interview some desk research is conducted. This desk research focus on comparable models and analyzes their structure. After the information gathering best methods are chosen and implemented.

3.2.4. PHASE 4

The last phase covers sub-question 6. So it examines the requirements to ensure that the model is easy maintainable. For the last sub-question only qualitative research is conducted. The finance manager is interviewed to assess his computer skills. This assessment is made to know which requirements the model should meet to be easy maintainable. Besides the assessment some desk research is conducted. The desk research examines some methods used by comparable models to simplify their maintainability. When the analysis is finished the final requirements are formulated and if necessary implemented.

3.2.5. OVERVIEW

The table below summarizes the used methodology in the four phases. It shows which sub-question is covered in which phase and which research methodology is used. As stated in paragraph 3.2. sub-question 1 is treated in the theoretical framework and thus omitted in the table below.

Phase	Sub-Question	Question	Methodology
Phase 1	Sub-Question 2	What are the relevant cash in- and outflows?	Qualitative & Quantitative
Phase 2	Sub-Question 3	What is the timing of these cash flows?	Qualitative & Quantitative
	Sub-Question 4	What are the fixed and variable cash flows and in what method can these be budgeted?	
Phase 3	Sub-Question 5	What are methods to display the relevant management information in an easy-accessible way and make the model easy to use?	Qualitative
Phase 4	Sub-Question 6	What are the requirements to ensure that the model is easy maintainable?	Qualitative

Table 3 Summary Research Methodology

4. CASH FLOW ANALYSIS AND CLASSIFICATION

This chapter will analyze and classify the cash flows of GCF. Different types of cash flows can be identified. The International Financial Reporting Standards (2012) divides cash flows in three different categories; cash from operating activities, cash from investment activities and cash from financing activities. The division in these three categories is also used to analyze the cash flows of GCF. This chapter forms the basis for the projections of future developments of cash flows in the next chapters. Firstly in paragraph 4.1. the cash from operations are analyzed. Then in paragraph 4.2. the cash from investments are examined. Finally the cash from financing is classified in paragraph 4.3.

4.1. CASH FROM OPERATIONS

This paragraph will analyze all the cash flows that are a result of the operations of GCF. First the cash inflows are examined in paragraph 4.1.1. After that the outflows are analyzed in paragraph 4.1.2.

4.1.1. INFLOWS

GCF has two forms of operating inflows both are the realized by the sale of pineapples. The primarily inflow is the export sales. Export sales contain all the sales of pineapples outside of Ghana. The second inflow is the local sales, these are all the sales of pineapple inside Ghana. This division is currently also used by the accountants in the current records. (Gold Coast Fruits, 2011) Below the two inflow categories and a short description are summarized.

Inflow Categories	Description
Export Sales	Sales outside Ghana
Local Sales	Sales inside Ghana

Table 4 Cash from Operatoins – Inflows Revenue Centers

4.1.2. OUTFLOWS

There are a lot of different operating outflows at GCF. In order to still create a good structure for the analysis, the outflows are therefore categorized. In the financial statements GCF uses six categories to categorize the operating costs. (Gold Coast Fruits, 2011) Below the used cost categories are displayed.

Outflow Categories	Description
Cost of Sales	Cash Flows as a result of the packaging, cooling and transporting process.
Farm Consumables	Cash Flows as a result of the purchase of materials used in the land preparation and the cultivation of plants and suckers.
Employee Costs	Cash Flows as a result of employees.
General and Administrative Costs	Cash Flows as a result of managing the business.
Farm Expenses	Cash Flows as a result of managing the farm.
Finance Costs	Cash Flows as a result of the financing activities.

Table 5 Cash from Operations – Outflow Categories

The current cost categories are maintained, because the costs are divided specifically enough. Most management books also use this division. (Berry & Jarvis, Accounting in a Business Context, 2006) As stated in

the discrepancy analysis in chapter 1, there is no strict cost classification. For this reason below a more detailed specification of the categories is provided.

COST OF SALES

The export process has been analysed in consultation with mister Ameyaw, the export manager. This analysis concluded that this cost centre includes all the costs that occur during the process of packaging, cooling and transporting the fruits. However the labour costs that occur in this process are not included in this cost centre.

The packaging process starts at the delivering the fruits to the packaging plant. The plants are cleaned, graded and then packed into cartons. Then the cartons are packed onto pallets for efficient transport.

After the packaging process the pallets are moved to the cooling facility at the packaging plant. In this cooling facility the pallets are stored until they can be shipped to the port. The cooling facility is responsible for almost all the farm electricity bill. For this reason all the farm electricity costs are allocated to this cost centre.

Finally the products are transported to the port of Tema for transport to their final destination. This transport is done with truck. From the port of Tema the customers bear the further costs of transportation. The farm's electricity costs are also included in the cost of sales. This is done because the vast majority of the energy usage is related to the washing and cooling of the fruits. Appendix B.1. displays an overview of all the costs in this cost centre.

FARM CONSUMABLES

This cost centre includes all the cost of all materials used for the cultivation of the plants, the suckers and the land preparation. After consultation with mister Dzibolosu, the maintenance manager, there is concluded that the farm consumables costs can be divided in four main categories; chemicals, fertilizers, fuel and lubricants and other farm consumables. This division is also currently used in the records of GCF. The materials in each category are stated in the table in appendix B.2.

EMPLOYEE COSTS

This cost centre includes all costs that are a result of the employment of personnel. All the costs as a result of the employment have been analysed in consultation with the mister Martei, the finance manager. The main part of the employee costs are the employee wages. The cost of the wages include the salary of the employee and as well the mandatory income tax and social security expenses that GCF has to pay. Employees can make overtime, the extra costs as a result from the overtime are included in the employee costs. Finally GCF pays medical costs for farm workers, these costs are also included in this cost centre. The table in appendix B.3. shows an overview of all the costs that belong to the employee costs category.

GENERAL AND ADMINISTRATIVE COSTS

This cost centre includes all the cost that occur when managing the business. All the administrative costs occurred at the farm are excluded from this cost centre and included in the farm expenses cost centre. The different costs in this costs centre have been analysed by consultation with mister Martei, the finance manager. Examples for the general and administrative costs are the office rent, auditor expenses and travelling expenses. The table in appendix B.4. shows an overview of all the costs in this cost centre.

FARM EXPENSES

This cost centre includes all the costs for managing the farm. Mister Osei, the planting manager, currently is in control over the farm expenses budget. After consultation with him the following costs could be distinguished; phone costs, cost for the transportation of employees and repair and maintenance costs. The table below in appendix B.5. shows an overview of all the costs that belong to the farm expenses category.

FINANCE COSTS

The finance costs include all the costs that are a result of the financing activities. In consultation with mister Martei, the finance manager, the following activities are distinguished to result in finance costs; access to debt, making bank transfers and having a bank account. Interest is charged by the loan providers over the outstanding debt. The bank charges GCF for international and national bank transfers and for having a bank account. An overview of all the finance costs is displayed in the table in appendix B.6.

4.2. CASH FROM INVESTMENTS

Cash flows from investments occur when selling or buying non-current assets. GCF owns several non-current assets, for depreciation purposes GCF uses five categories. (Gold Coast Fruits, 2011) These five categories are listed below.

Cash from Investments Categories	Description
Land and Building	This category include investments in obtaining land. It also includes investments in new buildings and the maintenance of old buildings.
Plant and Machinery	The investments in the packaging plant are included in this category. Further it includes investments in machinery at the farm. Machinery includes tractors and other land cultivating machines.
Office Equipment and Furniture	This category include all the investments in the office equipment like computers, lights and ventilators. It further includes the investments in the furniture.
Motor Vehicles	All the motorized vehicles are included in this category. So it contains the cars and motor bikes of GCF.
Hired Machinery	All the hired machinery is included in this category. GCF incidentally hires machinery to cultivate the land. The costs of this hiring is capitalized.

Table 6 Cash from Investments – Cash Flow Categories

For categorizing the cash from investments the above categories are used. This is done because they provide a complete picture of the investments and because they are already familiar to the accounting personnel of GCF.

4.3. CASH FROM FINANCING

Cash from financing at GCF is a result from the issuance or redemption of loans or shares. In an interview with mister Klotzbach, the managing director, all the cash flows resulting from financing activities became clear. Below the relevant cash flows are analyzed.

GCF currently has three mid-term loans and access to one overdraft facility. The providers of the mid-terms loans are; Export Development and Investment Fund (EDIF), Ghana Commercial Bank (GCB) and Annona Sustainable Investment Fund (Annona). GCF has an overdraft facility at Stanbic Bank Ghana (Stanbic). The cash flows as a result of the three mid-term loans and the overdraft facility are allocated to these four financial

institutions. This allocation assigns the costs to the sources and therefore provides the best overview for the management.

As already stated in the introduction chapter GCF is a private limited company with German and Ghanaian stockholders. The cash as a result of the issuance or redemption of shares is considered to be one category. The categories of the cash from financing and a short description are summed up in the table below.

Cash from Financing Categories	Description
EDIF	Cash flows as a result of the EDIF loan
GCB	Cash flows as a result of the GCB loan
Annona	Cash flows as a result of the Annona loan
Stanbic	Cash flows as a result of the Stanbic overdraft facility
Stocks	Cash flows as a result of the issuance or redemption of shares

Table 7 Cash from Financing – Cash Flow Categories

5. CASH FLOW BUDGETING

This chapter outlines the budgeting process of cash flows. In this process the timing of the cash flows is analyzed in order to form good budgets. In paragraph 5.1. first a short introduction of the budgeting process is stated. Then in paragraph 5.2. the planting budget is formulated, this forms the basis for the operational cash flows. Hereafter the cash from operations is budgeted in paragraph 5.3. Subsequently paragraph 5.4 covers the budgeted cash from investments and finally paragraph 5.5. covers the budgeted cash from financing.

5.1. INTRODUCTION

To create a projection for the developments of the cash flows, it is necessary to look in the future. To acquire the projection for the cash flows an operational planning has to be set up. As stated in the theoretical framework budgets are an operationalization of a short-term planning, for this reason this chapter focuses on budgeting the different cash flows to form a picture of the future liquidity developments of GCF.

For budgeting the cash flows at GCF the division of the cash flows as described in the previous chapter is used. First the cash flows are grouped in to cash from operations, cash from investments and cash from financing. Then the cash flows are further divided to the different cost categories as formulated in the previous chapter. Budgeting the cash flows in the same way, provides the option to easily compare the actuals versus the budgets.

Cash flows are a result of the costs or income. Therefore for budgeting the cash flows first the costs or income is studied and projected. Then the timing of the resulting cash flows is analyzed and the costs or income are adjusted so that the cash flows are properly budgeted.

In budgeting a distinction between variable and fixed costs has to be made. Variable costs are costs that vary in direct proportion to the volume of activity. Fixed costs are costs that remain constant over wide ranges of activity for a specified time period. (Drury, 2006) In the theoretical framework it is stated that for budgeting variable costs a standard cost per unit output has to be set. This standard cost is derived by engineering or historical studies. To budget fixed costs a historical study and consultation with the management is undertaken. The different methods to budget the different kinds of cash flows are also used in budgeting the cash flows of GCF.

As stated above the variable cash flows are related to the activity level of the company. At GCF the driver for the variable cash flows is the quantity pineapples planted. For this reason in next paragraph the planting budget is first setup to form input for the budgets of the variable cash flows.

All the budgeting is based on the historical records or engineering studies. For both methods an analysis tot the quantity usage and the prices of the different products or services is conducted. If the data of GCF comes in short the management is consulted to create an adequate budget. The budgets which are set after consultation with the management are perhaps less precise, but are still a good yardstick for the budget due to the knowledge of the management.

5.2. PLANTING BUDGET

The planting budget is the basis for most of the other budgets, because most of the in- and outflows are related to the activity level of the company. GCF keeps no stock, due to the fact that pineapples keep on maturing and will become worthless after a while. This causes that everything what is produced is immediately sold.

The planting quantity of a period is the number of suckers planted in a certain period. In calculation of other budgets hectares are used to calculate costs and revenues, therefore the number of planted hectares is also calculated in the planting budget. The number of hectares is calculated to divide the number of suckers planted by 72.000. (J. Garcia, personal communication, September 2012) In the past it is counted that this amount of plants is planted in one hectare, and this figure is therefore used for internal calculations.

The planting budget can be adapted by the management if wanted. However the management has to take into account the restraining factors for the planting, such as the quantity of prepared land. To keep the budget simple and taking into account the currently big unused area, restrictions of this sort are not modeled in this budget. Management self has to keep these restrictions in mind.

5.3. CASH FROM OPERATIONS

Most the operational cash flows are related to the activity level and thus are variable costs. Other operational costs do not depend on the activity level of the company and are therefore fixed costs. In the following paragraphs the operational cash flows are categorized and then budgeted.

5.3.1. VARIABLE CASH FLOWS

This paragraph describes and budgets the variable operational cash flows. The variable operational cash flows are considered to be the sales, the cost of sales and the farm consumables.

SALES

The sales budget contains the expected sales of GCF. The sales strongly relates to the planting quantity and therefore is variable. The first step of preparing the sales budget is determining the harvested quantity. With knowledge of the management it is established that on average pineapples need thirteen months to fully mature. This means that the projection for the number of plots to be harvested is the number of plots planted thirteen months ago.

The yield for a hectare of pineapples differs. The first reason for this is that a changing number of plants die during the growing process. This is due to unfavorable environmental factors such as drought or diseases. The second reason is that the size of the harvested pineapple differs. This is also caused by changing environmental factors. The management of GCF thinks that the average yield per hectare is 70.000 kilogram of exportable fruits. This yield is based on the knowledge that on one hectare grow 72.000 plants and that each fruit weighs about one kilogram. Exportable fruits are fruits that have a such quality that they meet the export requirements. This yield is used to calculate the exportable produce per hectare.

Pineapples for export are classified in different categories. These categories are determined by size. Pineapple of the same categories are packed in boxes and shipped overseas. Each box from a category has the same number of fruits and the same price. The number of fruits and the price per box vary per category. There is no way to project the size distribution of pineapples per hectare, this makes it also impossible to calculate the number of boxes per size category.

To obtain the number of boxes and the price of the exportable produce, one price and one weight per box is assumed. The price is set by the market and changes over the time. The weight per box that is used is to calculate the number of boxes, is the average weight of the boxes of the different size categories. The average weight of the boxes is 12 kilograms.

The export sales are finally calculated to multiply the budgeted number of boxes with the market price per box. The international customers are located in Europe and also pay their orders in Euros. For budgeting the market price therefore has to be exchanged to Ghana Cedis.

Finally the local sales are derived from the export sales. Based on historical data management estimates that the local sales are five percent of the export sales. The figure below summarizes the above described calculation of the export and local sales.

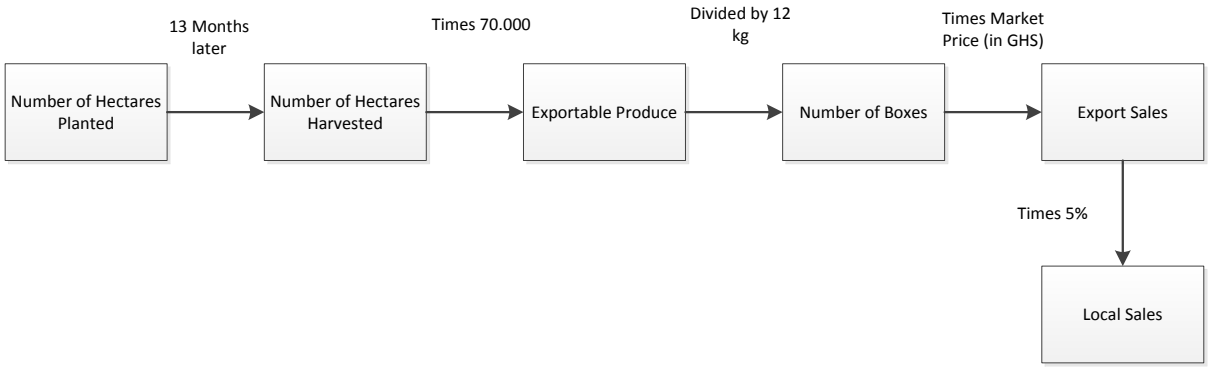

Figure 6 Sales Budgeting Process

TIMING

The local and export sales differ in the timing. The local sales are paid in cash and therefore the cash flow equals the revenue of that period. The cash inflow as a result of the export sales occurs later than the realized revenue. This is caused by the fact that all the customers have payment agreements with GCF. As stated in the introduction in chapter 1, GCF has two major regular customers and some small others. GCF has payment agreements with the two largest customers; Agrofair and Canavese. The percentage of sales in 2012 and the term of payment are displayed in the table below. The payment agreements have become clear after the consultation with mister Klotzbach, the managing director. The percentage of sales is calculated by analysis of the sales records of 2012.

Customer	Percentage of sales 2012	Term of Payment	
Agrofair	50%	50% 2 weeks after shipment in Tema, 50% 4 weeks after shipment in Tema	= 0,69 month
Canavese	39%	4-6 weeks after shipment in Tema	= 1,38 month
Other (HPW, Exoya, Milani)	10%	4-6 weeks after shipment in Tema	= 1,38 month
Weighted Average	**100%**	**± 4,5 weeks**	**= 1,04 month**

Table 8 Customer Payment Agreements

With the percentages and the payment terms the weighted average of the payment terms is calculated. The calculation of the weighted average shows that the average cash flow occurs one month after the shipment of the fruits. For this reason the budget of the cash flow for export sales is delayed one month.

COST OF SALES

The cost of sales budget consists of a fixed and a variable component. First the fixed component is described and budgeted, then the same is done for the variable component. After both analysis the timing of both components is analyzed. Finally everything is taken together and the total cost of sales budget is formulated.

FIXED COMPONENT

The fixed component of the cost of sales is considered to be the farm electricity. The farm electricity is all electricity costs occurred at the farm. This cost is considered to be fixed because the electricity used is only little depended on the actual production level. In the beginning of 2012 new machines were purchased and used at the farm, for this reason the budget for the farm electricity is only based on the historical costs in 2012. The historical electricity costs of the first half of 2012 are displayed in the table below.

2012	Farm Electricity Costs
January	GHS 1.963,45
February	GHS 3.524,85
March	GHS 2.484,89
April	GHS 1.612,89
May	GHS 3.918,87
June	GHS 4.572,14
Average	**GHS 3.012,85**

Table 9 Historical Farm Electricity Costs

It is assumed that the electricity costs will not remarkably change and therefore GHS 3.000, the rounded average, is used as an estimate for the monthly farm electricity costs.

VARIABLE COMPONENT

The variable costs are the all the other materials and services used in the packaging and transporting the fruits. The variable costs are related to the number of boxes exported. The standard costs of the cost of sales is formulated by analysis of the quantity of materials used per box and the price of these materials. The quantity used also include inevitable waste, the quantities are formulated after an interview with mister Ameyaw, the export manager and a study of the packaging process. The unit price of the products is calculated by analysis of the most recent invoices.

The next table shows the quantities used per material and the material price. The cartons are imported from South Africa and the supplier provides the costs in Euros. These costs are converted to Ghana Cedis for further calculation.[3] The total standard cost for one box is calculated by summing up the costs. To calculate the budget for the variable costs the standard price per box is multiplied with the number of boxes exported.

Material	Average Usage / Box	Price / Unit	Cost / Box
Rubber Bands	8	GHS 0,033	GHS 0,27
Labels	8,000	GHS 0,032	GHS 0,26
Cartons	1,050	€ 0,97	GHS 2,49
Pallets	0,0133	GHS 10,00	GHS 0,13
Strapping Bands	0,0004	GHS 55,00	GHS 0,02
Haulage to Port	0,0007	GHS 800,00	GHS 0,53
Total Cost			**GHS 3,71**

Table 10 Standards for Variable Component of the Cost of Sales

[3] Exchange rate of EUR:GHS 2,45 is used. From www.xe.com at 22-10-2012

TIMING

GCF works with an inventory for all the products used in the export process. When the inventory of a certain product is running low, the office purchases a bulk of products and herewith replenish the inventory. For the different products and services of the cost of sales GCF has payment agreements with the suppliers.

To budget the cash flows resulting by the cost of sales, there should be looked to the expected cash flows and not to the expected costs. To do this the moment of replenishing the inventory and the payment agreements should be taken into account. However GCF does not have purchase standards and the payment agreements of all the suppliers differ. To still provide the best projection of the cash flows of cost of sales, the expected costs are used as an indication.

TOTAL COST OF SALES BUDGET

The total cost of sales budget takes the variable and fixed component and the timing aspect together. Therefore the monthly cost of sales budget can be formulated as follows:

$$Total\ Cost\ of\ Sales\ Budget = 3{,}71 * quantity\ of\ boxes\ exported + 3.000$$

FARM CONSUMABLES

The farm consumables consists of all the products used in the maintenance of the plants and the fuel and lubricants for running the farm machines. The products used for the maintenance of the plants are considered to be the variable component of the farm consumables budget. The fuel and lubricants are considered to be the fixed component of the budget. The explanation and the budget are described below.

VARIABLE COMPONENT

During every lifecycle of pineapples the same farm consumables are used. The chemicals and fertilizers are applied according to a plan and this forms the basis for the quantity standards of these products. The standard quantities used for the category “other farm consumables” are determined after conversation with the department heads. The standard price is determined by the analysis of the product invoices.

The total bill of materials of the farm consumables is divided in four categories; land preparation, fruit maintenance, export and sucker maintenance. This division is also created to take the time distribution of the usage of the farm consumables into account.

LAND PREPARATION (MONTH 1)

The land preparation is the stage in which the land is prepared for new planting. In this stage two farm consumables are used. First a herbicide is applied on the field to kill a the remaining plants and weeds. For the herbicide application the chemical Glyphosate is used. Furthermore mulch foil is used to cover the beds of the pineapple plants. All the materials are used in the first month of the pineapple lifecycle.

The quantity of the herbicide application and the mulch foil used is derived from conversations with the Planting Manager who is responsible for the appliance of these materials. The unit price is calculated by analysis of the most recent product invoices. Below the table with the quantities and price of the usage of the farm consumables for land preparation is displayed.

Material		Quantity	Unit Price		Cost / Hectare	
Herbicide Application	Glyphosate	15	GHS	3,32	GHS	49,73
Mulch Foil		9000	GHS	0,18	GHS	1.620,00
Total Cost					**GHS**	**1.669,73**

Table 11 Bill of Materials for Land Preparation

FRUIT MAINTENANCE (MONTH 1-12)

Fruit maintenance is the period from the planting to the harvesting of the fruits. During this period fertilizers and pesticides are applied according to the fertilizer and pesticide plans. The appliance of the pesticides and fertilizers takes place in cycles of two weeks until the harvest of the fruits. Also one herbicide application takes place, this takes place in the first month of the lifecycle. After an average of seven months of growth the plants are "forced", after this process the pineapple plant starts to develop a fruit. The forcing is done by appliance of several chemicals.

GCF works with standard maintenance schedules, these schedules state the quantity and the moment of appliance of a certain maintenance product. The required quantities of the maintenance products for the fruit maintenance are calculated by analyzing the maintenance schedules. The unit prices are calculated by analysis of the most recent product invoices. The table below summarizes the quantities and price of the usage of the farm consumables for the fruit maintenance.

Material		Quantity (Total for Lifecycle)	Unit Price	Cost / Hectare
Herbicides	Bromacil (Agribroma)	7,5	GHS 39,80	GHS 298,50
	Diuron	7,5	GHS 17,80	GHS 133,50
Forcing	Calcium Carbide	45	GHS 2,23	GHS 100,35
	Activated Carbon	11,25	GHS 4,96	GHS 55,80
	Phosphoric Acid	30,375	GHS 6,00	GHS 182,25
Fertilizers	MAP	200	GHS 2,85	GHS 570,00
	Zinc-Sulfate	70,3	GHS 2,38	GHS 166,96
	Urea	975	GHS 0,78	GHS 759,53
	Agrotain	2,885	GHS 42,05	GHS 121,31
	SOP	440	GHS 1,98	GHS 869,44
	Potassium-Nitrate	315	GHS 2,96	GHS 933,66
	Calcium-Nitrate	230	GHS 1,37	GHS 314,64
	Iron-Sulfate	90	GHS 1,86	GHS 167,58
	NPK 15-15-15	1180	GHS 0,80	GHS 941,64
	Kieserite	410	GHS 1,39	GHS 568,67
	Boron (Borax)	50	GHS 1,86	GHS 93,10
	MOP	325	GHS 1,46	GHS 475,48
Pesticides	Aliete (Athlete)	15	GHS 11,32	GHS 169,86
	Chrlorpyrifos (Pyriforce)	10	GHS 0,10	GHS 1,00
	Ridomil Gold	12,4	GHS 33,61	GHS 416,75
	Citric Acid	0,51	GHS 3,60	GHS 1,84
Total Cost				**GHS 7.341,85**

Table 12 Bill of Materials for Fruit Maintenance

EXPORT (MONTH 14)

The export process covers the operations just before harvest and the packaging. Just before harvest the operation "de-greening" takes place, this is the name of the process in which the fruit's color transforms from green to yellow. This process is activated by the appliance of the chemical Ethephon. The Ethephon is applied about five days before harvest, it thus takes place in the thirteenth week of the lifecycle.

In the packaging process three chemicals are used. First chlorine is used in a bath through which the pineapples are cleaned. Then fungicide is applied on the pendicule, the place at the bottom of the fruit with which it was attached to plant, to prevent diseases. At last a wax is applied on the fruit to add a protective layer and an extra glance. The packaging takes also place in the fourteenth month of the pineapple lifecycle.

The quantities of the materials used are derived after an interview with the Export manager, who is responsible for the appliance of the materials. The unit price is calculated by the analysis of the product invoices. The table below summarizes the quantities and price of the farm consumables used for the export.

Material	Quantity	Price / Unit	Cost / Hectare
Etephon	2,16	GHS 10,15	GHS 21,93
Chlorin	6,48	GHS 5,16	GHS 33,44
Fungicide (Mirage)	1,30	GHS 1,25	GHS 1,62
Wax (Sta-fresh)	77,78	GHS 11	GHS 855,56
Total Cost			**GHS 912,55**

Table 13 Bill of Materials for Export

SUCKER MAINTENANCE (MONTH 13 – 24)

The sucker maintenance is the period after the harvest and ends when no more suckers are harvested from the plants. The ending time of the sucker maintenance can differ, this depends on what the management wants. In the calculations of the quantities it is assumed that a twelve month period for sucker producing is used.

After the fruit harvest herbicides are applied to the plant, this is done in the thirteenth month. In this period fertilizers and pesticides are applied according to the fertilization and pesticide schedules. These schedules require an appliance from fertilizers and pesticides about every two weeks. The table below summarizes the quantities, price and the moment in the lifecycle of the usage of the farm consumables.

Material		Quantity / Hectare	Unit Price	Cost / Hectare
Herbicides	Bromacil (Agribroma)	7,50	GHS 39,80	GHS 298,50
	Diuron	7,50	GHS 17,80	GHS 133,50
Fertilizers	Urea	1639,90	GHS 0,78	GHS 1.279,12
	White Potassium Chloride	386,40	GHS 1,35	GHS 521,64
	Magn Sulfate	462,00	GHS 1,39	GHS 640,79
	Iron Sulfate	7,92	GHS 1,86	GHS 14,73
	Zinc Sulfate	6,16	GHS 2,38	GHS 14,66
	Boric Acid (Borax)	3,08	GHS 1,86	GHS 5,73
	Calcium Nitrate	672,60	GHS 1,37	GHS 921,46
	Phosph. Acid (Ltrs/Ha)	147,20	GHS 6,00	GHS 883,20
Pesticides	Alliette (Athlete)	5,00	GHS 11,32	GHS 56,60
	Clorpyrifos (Pyriforce)	20,00	GHS 0,10	GHS 2,00
	Citric Acid (g/ha) *	1,87	GHS 3,60	GHS 6,73
Total Cost				**GHS 4.778,67**

Table 14 Bill of Materials for Sucker Maintenance

FIXED COMPONENT

The usage of the fuel and lubricants is related to the quantity of hectares in cultivation. First the tractors and other farming machines have to prepare the land before planting. Then tractors are used to apply the herbicides, fertilizers and pesticides to the plots. Finally tractors are used to destroy the remains of the plants after the end of sucker production. To form a good budget for the fuel and lubricants an analysis of all the tractor operations have to be done. In this study the standard operations and standard times can be determined. This study however did not fit in the time of this thesis. For this reason the fuel and lubricants are assumed to be a fixed cost and the historical costs are examined to form an indication for the budget. Below the historical fuel and lubricant costs of April to June 2012 are displayed. Only these months are analyzed because these were the only available records.

2012	Unit Price	Quantity	Costs
April	GHS 1,53	7.619	GHS 11.687,55
May	GHS 1,53	9.097	GHS 13.954,80
June	GHS 1,53	10.560	GHS 16.199,04
July	GHS 1,53	14.686	GHS 22.528,32
August	GHS 1,53	16.337	GHS 25.060,96
September	GHS 1,53	15.642	GHS 23.994,83
Average (April - June)			**GHS 13.947,13**

Table 15 Historical Fuel and Lubricant Costs

The fuel and lubricant costs rise in the months July to September enormously. After inquiries with mister Klozbach, the managing director, it was pointed out that this was due to the hiring of heavy machinery. Heavy machinery was hired for three months to prepare the land. This hiring was an incidental occasion and for this reason the budget for the fuel and lubricants costs is based on the average of the months April to June. The monthly budget for fuel and lubricants is set to GHS 14.000, which is the rounded average of the period April to June.

TIMING

The variable component of the farm consumables are related to specific weeks in the pineapple lifecycle. However the plans are not always exactly executed. This be caused by a lack of availability of machines or products. Another reason is that the fruits grow slower than expected. Due to the fact that the plans are not always precisely executed, a general distribution is used for the four different categories. The costs for the planting are allocated to the first month of the pineapple lifecycle. The costs of the fruit maintenance are allocated to the first twelve months of the pineapple lifecycle. Then the export category is allocated to the fourteenth month of the lifecycle. Finally the costs for the sucker maintenance are allocated to months thirteen to twenty-four of the pineapple lifecycle. Adding all these costs of delivers the following cost distribution.

Cost Allocation	% of Lifecycle Costs	2012
Month 1	16%	GHS 2.282
Month 2	4%	GHS 612
Month 3	4%	GHS 612
Month 4	4%	GHS 612
Month 5	4%	GHS 612
Month 6	4%	GHS 612
Month 7	4%	GHS 612
Month 8	4%	GHS 612
Month 9	4%	GHS 612

Month 10	4%	GHS 612
Month 11	4%	GHS 612
Month 12	4%	GHS 612
Month 13	3%	GHS 398
Month 14	9%	GHS 1.311
Month 15	3%	GHS 398
Month 16	3%	GHS 398
Month 17	3%	GHS 398
Month 18	3%	GHS 398
Month 19	3%	GHS 398
Month 20	3%	GHS 398
Month 21	3%	GHS 398
Month 22	3%	GHS 398
Month 23	3%	GHS 398
Month 24	3%	GHS 398

Table 16 Farm Consumables Cost Distribution

Just as with the products for the cost of sales, GCF works with an inventory for the farm consumables. For this reason the budget for the farm consumables is also only based on the expected costs.

TOTAL FARM CONSUMABLES BUDGET

The total farm consumables budget is calculated by adding the costs for the variable component with the costs of the fixed component. To calculate the costs for the variable component the number of hectares in a specific month in the lifecycle have to be multiplied with the standard costs for that month, which are described in table 8. This is done for all the 24 months and then these figures are accumulated. Finally the costs for fixed component are added to calculate the total farm consumables budget. The equation below summarizes the process.

$$Total\ Farm\ Consumables\ Budget = \sum_{i=1}^{24} (\#\ hectares\ in\ month\ i * standard\ cost\ month\ i) + 14.000$$

5.3.2. FIXED CASH FLOWS

This paragraph describes and budgets the fixed operational cash flows. The fixed operational cash flows are considered to be the general and administrative expenses, the farm expenses, the finance costs and the employee costs.

GENERAL AND ADMINISTRATIVE

The general and administrative costs are considered to be fixed costs. This is considered because of the fact that the general and administrative costs do not have a strong relation with the production level. Study of the historical costs also shows that the monthly general and administrative expenses are almost constant.

For the establishment of the budget the historical costs and the budget used in the Annona model are analyzed. The only records of the general and administrative are the financial statements. The yearly costs are

divided by twelve to calculate an average monthly costs for that period. The table below states the historical and the budget used in the Annona model.

Date	General and Administrative Expenses	Average Monthly
dec-07	GHS 149.598,00	GHS 12.466,50
dec-08	GHS 180.988,00	GHS 15.082,33
dec-09	GHS 143.692,00	GHS 11.974,33
dec-10	GHS 160.612,00	GHS 13.384,33
dec-11	GHS 191.547,00	GHS 15.962,25
jun-12	GHS 208.960,00	GHS 34.826,67
Average		GHS 17.282,74
Annona		GHS 19.000,00

Table 17 Historical General and Administrative Expenses

The budget from the Annona model is 10% higher than the average historical costs. Quite remarkable are the monthly costs of the first half of 2012. After inquiries with the managing director it was pointed out that the high costs in this period were due to the liquidity problems in that time. GCF had to make a lot of legal and financial expenses to overcome these problems.

The average general and administrative costs of the five year period is about GHS 2.000 lower than the budget used in the Annona model. After consultation with the management the Annona budget, GHS 19.000, is chosen to be used. This budget is chosen because it is expected that the general and administrative expenses are somewhat increased with respect to the last five years and that they will stay higher.

TIMING

The timing of the cash flow for the general and administrative expenses differs because of the different payment agreements for the services. However the general and administrative expenses are considered to be every month constant. So the cash flow equals the expenses and therefore is budgeted as GHS 19.000.

FARM EXPENSES

The farm budget is considered not to be related to the activity level. This because of the fact that the farm administrative costs always occur and the transportation and food costs are also a fixed cost. The costs for farm tools and repair and maintenance are related to the production level, but because of the fact that it is hard to estimate the relationship and the relatively small portion, these costs are considered to be fixed. The historical data for the farm expenses for the first nine months of 2012 is showed in the table below. Only these months are displayed below because the farm expenses are only recorded since January.

2012	Farm Expenses
January	GHS 5.315,70
February	GHS 7.532,06
March	GHS 7.948,60
April	GHS 7.121,60
May	GHS 13.012,47
June	GHS 10.647,77
July	GHS 7.927,00

August	GHS 12.435,50
September	GHS 11.252,00
Average	**GHS 9.243,63**

Table 18 Historical Farm Expenses

The average farm expenses of 2012 is around GHS 9.000. In consultation with the management the management it is illustrated that the average value is an indication for the future farm expenses and therefore a good budget.

TIMING

The vast majority of the farm expenses have to be paid immediately. This means that the cash flow equals the expenses of a period. For this reason the cash flow budget set to be GHS 9.000.

FINANCE COSTS

The finance costs consists of the interest of the loans and the bank charges. For the three mid-term loans GCF has fixed agreements. To budget the interest payments the loan agreements are studied. From the loan agreements fixed payment and interest schedules are calculated, which are attached in appendix C.14. – 16. The interest from the overdraft facility is calculated by multiplying the budgeted amount of overdraft with the interest rate. The bank charges GCF for some wire transfers, these charges fluctuate in size every month and are very small in respect to the interest payments. For this reason no budget is made for these finance costs.

TIMING

The interest costs and the bank charges have to be paid immediately and therefore the cash flow is equal to the costs.

EMPLOYEE COSTS

The total employee costs of GCF is semi-variable. The fixed component are the permanent workers, they work on a permanent basis at GCF and their wages do not depend on the activity level. GCF also employs daily rated workers, these people are paid on a daily basis. These costs do depend on the activity level, and are therefore variable.

To relate the employee costs to the activity level, standards for the employee operations have to be setup. Currently no such standards are used at GCF. Due to the limited time in which this thesis is conducted, new standards for the employee operations cannot be formulated. The management also has indicated that the daily rated employees are currently always employed, because there is always work to do. For both reasons the total employee budget is therefore considered to be a fixed cost.

The employee budget is derived from historical data and a budget from the Annona model. In the table below the employee costs for the first half of 2012 are illustrated. The average value and the value used in the Annona model are also described. The Annona value is calculated via analysis of the payroll in 2011.

2012	Employee Costs	
January	GHS	48.290,75
February	GHS	53.065,98
March	GHS	59.056,16
April	GHS	67.983,42
May	GHS	73.132,06
June	GHS	66.601,32
Average	GHS	61.354,95
Annona	GHS	68.527,77

Table 19 Historical Employee Costs

The Annona model value is 12% higher than the average employee costs in 2012. After consultation with the management the Annova value is chosen as a budget. This is done because this budget is higher than the half year average and so on the safe side.

TIMING

The cash flows as a result of the employee costs occur directly. For this reason the employee costs are equal to the cash flow.

5.4. CASH FROM INVESTMENTS

As stated in the previous chapter the cash from investments is a result of the purchase or sale of non-current assets. The management decides if non-current assets are purchased or sold. For this reason the budget of the cash from investments can be created after consultation with the management. In consultation with the managing director it appeared that there are no investments planned in the nearby future. For this reason the cash from investments is budgeted to be zero.

5.5. CASH FROM FINANCING

The cash from financing is realized by changes in the outstanding loaned amount and in shares. GCF is a private limited company and no changes in stock ownership in the last five years have occurred. After consultation with the management it is assumed that for the coming time also no changes are going to occur and therefore no cash flows are projected as a result from this process.

GCF has an overdraft facility at Stanbic Bank, the increase or decrease in overdraft also result in cash flows. Currently GCF uses the overdraft facility as a kind of loan. With this is meant that the management does not absorb temporarily fluctuations in the cash deficit or surplus with the overdraft, but uses the overdraft facility as an outstanding loan which the management can decide to in- or decrease. The cash flows as a result of the changes in outstanding overdraft is thus completely in control of the management. The projection for the developments of the overdraft can thus also be planned by the management. For budgeting it is assumed that the amount of overdraft outstanding stays constant. This means that the budget for the cash flow as a result of the overdraft facility is considered to be zero.

The disbursements and the repayments are the cash flows as a result of the loans. The loans all have fixed agreements about the disbursement and repayments. With knowledge the repayment schedules have been calculated, they can be found in appendix C.14. – 16. The payments and disbursements are cash flows. So the fixed disbursements and repayments are used to budget the cash flows.

6. MODEL'S STRUCTURE AND MAINTENANCE

This chapter describes the structure and the maintenance of the model. In paragraph 6.1. the structure of the model is explained. Then in paragraph 6.2. the measures to ensure a good maintenance are explained.

6.1. MODEL'S STRUCTURE

All the budgeting information is put together in a model which is created in Microsoft Excel. In total four models have been created, each model contains the information of one year. In each model the year is split into twelve months, to provide a more detailed view.

The currency in Ghana is the Ghana Cedi (GHS). GCF does its accounting also in this currency and for this reason all the figures in the model are also in GHS. For calculations a lot of cells in the model are interconnected, to ensure that these links keep working properly all the cell which do not require monthly input are password protected. This protection ensures that no use accidentally changes the links in the model and thus make the calculations incorrect. For this great protection is chosen because of the limited computer skills of the accounting personnel of GCF. The cells which do require input are colored blue and are not protected.

Next to the model's main function, namely to project the liquidity developments, the model also can be used as a performance evaluation tool. The model requires that actual figures are put in the model. This figures are then used as input for the liquidity projection and also for a variance analysis. The variances of the budgeted and actual figures are calculated in percentages. These percentages are clarified by the use of a traffic light. Unfavorable variance (< -10%) is red colored, neutral variance (-10% to +10%) is orange colored and favorable variance (> +10%) is green colored.

The model is divided in eighteen tabs, these tabs are grouped and color-coded for easy recognition. Eight categories are created for the tabs. The table below shows which tabs belong to which category.

Tab Name	Category	Color	Appendix
Interface	Interface	Gray	C.1.
Cash Flow Statement (CFS)	Financial Statements	Blue	C.2.
Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA)	Financial Statements	Blue	C.3.
Planting	Planting	Green	C.4.
Sales	Operational Inflow	Orange	C.5.
Cost of Sales	Operational Outflow	Purple	C.6.
Farm Consumables	Operational Outflow	Purple	D.7.
Employees Costs	Operational Outflow	Purple	C.8.
General and Administrative Expenses	Operational Outflow	Purple	C.9.
Farm Expenses	Operational Outflow	Purple	C.10.
Capital Expenditures	Cash from Investments	Red	C.11.
Stanbic OD	Cash from Financing	Turquoise	C.12.
Debt	Cash from Financing	Turquoise	C.13.
EDIF	Miscellaneous	None	C.14.
GCB	Miscellaneous	None	C.15.
Annona	Miscellaneous	None	C16.
Calculation of Cost of Sales	Miscellaneous	None	C.17.
Calculation of Farm Consumables	Miscellaneous	None	C.18.

Table 20 Overview of Tabs in Model

The structure and the contents of all the eighteen tabs are explained in more detail in the sequel of this paragraph. All the tabs will be treated per category.

6.1.1. INTERFACE

The first tab shows the interface of the model. In the interface an overview of the most important trends is provided. Six graphs provide an overview of these trends over a period of two years. The six graphs contain information about the following subjects; cash on hand, net cash flow, planting quantity, EBITDA, operating income and operating expenses. The first two graphs provide information about the liquidity of the firm. The third graph provides an insight in the planting quantity, which is determined in chapter 5 to be an important variable. Finally the last three graphs provide an overview of the operating profitability of the firm. The graphs only display one line. This line corresponds to the budgeted figures, the line will however display the actual figures when they are filled in.

Below the six graphs a table is located, which is named "Simulation Input". This table contains nine variables which the management can manipulate to see the effects of these changes. The variables which can be simulated are:

- Planting Quantity
- Average Box Price
- EUR:GHS
- USD:GHS
- Capital Expenditures (Five Variables)

The first variable which can be simulated is the planting quantity. GCF can simulate a higher or lower budgeted planting quantity and see what for effects it has on the future liquidity and operating profitability. The second simulation variable is the average box price, this is the average price GCF receives for a box of pineapples. The market price fluctuates over a period and so it is good to be able to simulate effects of market price developments in the model.

The third and fourth simulation variables are exchange rates. The first exchange rate is the Euro to Ghana Cedis rate, this exchange rate is important because the vast majority of customers pay in Euros. Furthermore the Annona loan and the Stanbic overdraft facility are in Euros. The Dollar exchange rate was important because first the Stanbic overdraft facility was in U.S. Dollars.

The last simulation variables are combined under the umbrella of capital expenditures. All the five categories of capital expenditures can be simulated. As stated in chapter 5 the management of GCF can decide how much to invest in non-current assets. By simulation of the investing variable the management can check if it is smart decision to invest from a liquidity perspective.

6.1.2. FINANCIAL STATEMENTS

This category contains two financial statements; the cash flows statement and the EBITDA. The cash flows statement is the second tab and provides an overview of the liquidity position and future liquidity developments of GCF. The cash flow statement is divided in three component as described in the previous chapters. It accumulates the cash flows from the three components to calculate the net cash flow in a month. The ending cash balance is computed by adding the net cash flow with the beginning cash balance.

The second financial statement in the model is the EBITDA and provides an overview of the operating performance of GCF. It is chosen to only show the EBITDA and not the entire income statement for multiple reasons. Firstly the depreciation records and the allocation rules in GCF are not entirely clear. In addition the GCF management is especially interested in the operating performance of the company.

The headers of the financial statements are linked to the tabs of the model. Standard the headers display the budgeted figures. However when the actual figures are filled in, they will automatically replace the budgeted figures. This guarantees that the financial statements show the most precise information. It further improves the projection of the rest of the budgeted figures, because the projections are then based on the actual performance.

6.1.3. PLANTING

This category only contains the planting budget. It contains the budgeted and actual quantity of suckers and hectares planted. To easily spot the difference between those two, the percentage of variance is showed. To have a visual overview also a graph is added to see the planting quantity. This graph also compares the actual versus the budgeted quantity.

6.1.4. OPERATIONAL INFLOW

The tab sales is the only tab in this category. This tab states the export and the local sales. For comparison reasons the tabs also contains six other variables, which are important for the sales. The following variables are displayed:

- Plants Harvested
- Number of Hectares Harvested
- Yield (kg/ha)
- Exportable produce (kg)
- Number of Boxes
- Average Box Price

These figures contain a lot of information about the sales and are therefore relevant indicators. If the sales is different than expected, these indicators can be analyzed to find reasons. The tab finally also contains three graphs, which are showing the export sales, the local sales and the average box price.

6.1.5. OPERATIONAL OUTFLOW

This category contains all the operational outflows of GCF, which are formulated in chapter 4. The operational outflows are ordered in size. So the largest outflow is the first tab and the smallest outflow is placed as the last tab.

The first tab in this category is the cost of sales. The budgeted cost of sales consists of a variable and fixed component. The budgeted variable component is related to the number of exported boxes. It works with a flexible budget. This means that when the actual number of boxes exported are put in the model, the variable costs will be based on this number. By using a flexible budget the difference between the actual and budgeted costs provide more insight in the origin of the variances. Furthermore the tab cost of sales contains an overview of the total budgeted and total actual cost per box and a graph of the total cost of sales.

The second operational outflow in the model are the farm consumables. The budgeted costs for this operational outflow consists of a variable and a fixed component. The variable component is based on the number of hectares in cultivation. With the recording of the actual costs of the farm consumables only the total costs are recorded. For this reason only the total actual and budgeted costs of the farm consumables are compared. The farm consumables also use a flexible budget; so when the actual planting quantity is known, this replaces the budgeted quantity. The comparison of the total farm consumables costs is displayed visually by a graph.

The third operational outflow are the employee costs. The budgeted employee costs are considered to be fixed. Therefore only the total budgeted and actual employee costs are compared. For the actual employee costs there is made a division in three categories. This is done to see how the employee costs are structured. A graph at the bottom of the tab provides an visual overview of the total employee costs.

The next operational outflow are the general and administrative expenses. The general and administrative expenses have a fixed budget. For this reason only the total budgeted and actual general and administrative expenses are compared. The actual costs are divided in six categories to provide more insight in the structure of the total costs. This tab also contains a graph to provide an overview of the total costs.

The last operational outflow are the farm expenses. The farm expenses have a fixed budget. So also for these costs only the total variance is calculated. The actual farm expenses are divided in eight cost items to show the structure of the total costs. At the bottom of this tab a graph is placed to display the total farm expenses.

6.1.6. CASH FROM INVESTMENTS

This category only contains one tab, which is named capital. This tab contains an overview of all capital expenditures in five categories. The graph below the tables shows an overview of the total capital expenditures.

6.1.7. CASH FROM FINANCING

This category contains two tabs. The first tab is Stanbic OD, which provides an overview of the overdraft facility at Stanbic bank. It shows the amount of debt outstanding and calculates the expected interest to be paid.

The second tab in the cash from financing category is called debt. This tab provides an overview of all the cash flows as a result of debt. The first table in this tab shows the debt balances, so that the total outstanding debt is easy spotted. Beneath this table finance costs are summed up. This table contains the operating costs and so shows the interest costs and the bank charges. The lowest table contains the payment or disbursements of the loans.

6.1.8. MISCELLANEOUS

This category contains the remaining five tabs. These tabs have in common that they are normally hidden, because they only provide input for the rest of the tabs and therefore are for little interest for the user. The first three tabs are EDIF, GCB and Annona and contain the payment schedules for the loans. These schedules are the input for the figures in the debt tab. The fourth tab is the calculation of the cost of sales and contains the standard costs for the cost of sales. These standards are used in the cost of sales tab to calculate the costs of the different objects. The last tab is the calculation of the farm consumables. This tab contains the records of the hectares in cultivation and the standard costs for the maintenance of these hectares. This data is used to calculate the total costs for the farm consumables.

6.2. MODEL'S MAINTENANCE

The model has a few maintenance requirements. It is necessary that the actual figures costs and revenues are put in the model. Furthermore it is necessary that if circumstances or business process change the standards, both variable and fixed, are adapted. As stated before the model contains a lot of links between cells for calculations, if these are accidentally changed the output of the model is incorrect. For this reason an good maintenance is essential for the model. The computer skills of the employees of GCF is low, this causes that errors in the model can easily be made. To ensure a good maintenance a few measures have been taken, these measures are described below.

The most important measurement is the creation of a manual for the model. The maintenance manual is added to this thesis and can be found in appendix D.1. The purpose of the manual is to ensure a correct and easy maintenance. It does this by providing a walkthrough of the maintenance. Each maintenance step and the corresponding action is explained. The manual is four pages and is written in plain English. The manual starts with the explanation of the purpose and the structure of the model. Then it explains tab for tab the required monthly maintenance to keep the model up to date. Finally it explains how the budget standards can be adapted. As stated in the limitations paragraph of chapter 1, the finance manager is assigned the task to maintain the model. For this reason the finance manager received the model's manual and an extra walkthrough of the model was given to him.

As described in the paragraph about the model's structure, the cells in the model which do not require input are password protected. This enables that the maintainer not accidentally puts the data in the wrong cells. The cells which require input are blue colored and not password protected. The maintainer can so easily spot the cells which require input.

At last a control cell in the cash flow statement is added. This control cells requires the counted cash ending balance as input. This counted cash ending balance should match with the calculated cash ending balance above. When this is not the case then not all cash flows are put in correctly. In this manner the maintainer can easily check if the cash flows are correctly put in.

7. CONCLUSIONS AND RECOMMENDATIONS

This chapter provides the conclusions of this thesis. It furthermore describes further recommendations for GCF. In paragraph 7.1. the main conclusions of this thesis are explained. The recommendations for further improvement are made in paragraph 7.2.

7.1. CONCLUSIONS

This thesis started by identifying the main problem through the discrepancy analysis between the current and desired situation at GCF. In this discrepancy analysis it was concluded that a model providing management information is missing. The requirements of the desired model are summarized in the figure below.

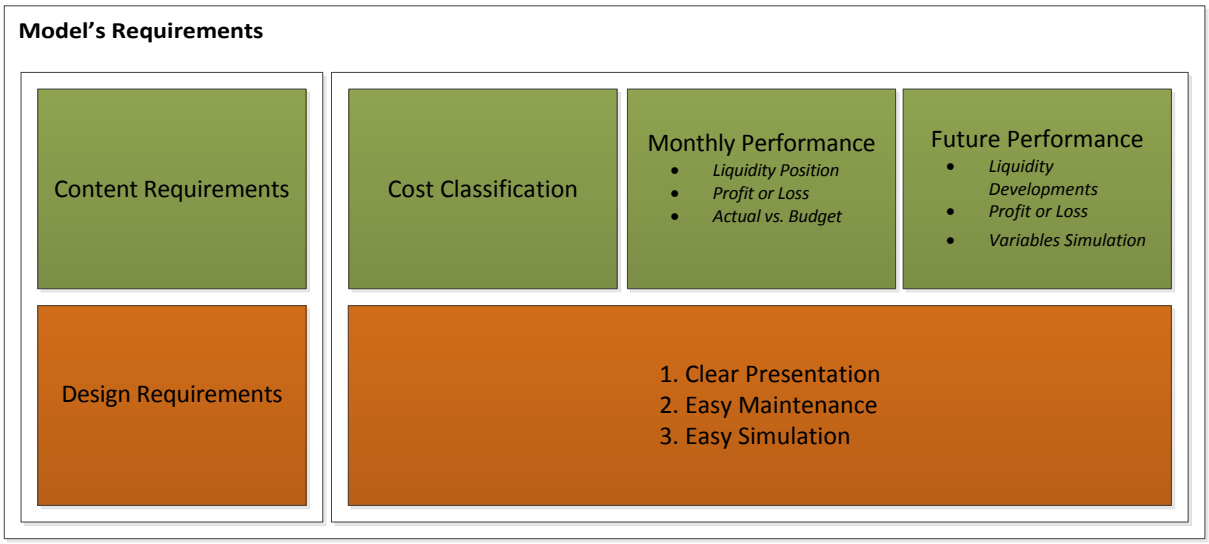

Figure 7 Schematic Overview of Model's Requirements

After discrepancy analysis the main research problem was formulated. This took the discrepancy into account and especially focused on the liquidity problems. The main focus of the thesis was put on this subject due to the necessity of it for GCF. The main research problem is repeated below.

"What information is required to have an overview about the current liquidity position and the liquidity developments, while taking the influences of relevant variables into account?"

This main research problem was divided in sub-questions, which were answered in the previous chapters of this thesis. This conclusion paragraph provides the main conclusions of this thesis and checks if the model's requirements correspond to the created model. To do this the same order of the requirements as used in figure 1 is used, first the content requirements and then the design requirements are analyzed.

7.1.1. CONTENT REQUIREMENTS

The content requirements relate to the desired subjects which are covered in the model. Figure 7 formulated three types of content requirements. The first content requirement was the cost classification. Currently GCF does not have a strict cost classification, which leads to some errors when allocating certain costs. In chapter 4 of this thesis a strict cost classification has been created. This cost classification covers the complete picture

and all costs can be allocated. The cost classification process has done with help of the relevant literature and with feedback of the GCF's management.

The second content requirement was the monthly performance overview. Currently mister Martei, the finance manager, creates a monthly performance overview. This overview is not entirely correct and incomplete and therefore does not meet the desired requirements by the management. From the discrepancy analysis it was found out that the management wanted to see three components in their monthly performance overview; the liquidity position, the profit or loss statement and the actual versus budget overview. This model provides an overview of the liquidity position by showing the cash flow statement and the ending cash balance. This last figure provides the management with most important liquidity information. The model furthermore provides an overview of the monthly operational profit or loss with the EBITDA. Finally the model compares in the different tabs the actual with the budgeted performance with variance analysis.

The third content requirement concerned the future performance overview. This overview is currently completely missing at GCF and the management wanted to have an insight in the future liquidity developments. Just as in the monthly performance overview, the management wanted to see three things in the future performance overview; liquidity developments, profit or loss statement and variables simulation. The model projects the developments of the liquidity by projecting all the cash flows of GCF in the nearby future and gather this information in the cash flow statement. The developments in the operational profit or loss statement is also projected in the same manner as in the EBITDA. Finally the model offers the option to change certain variables to see their effects. This can be done with nine variables on the first page of the model.

7.1.2. DESIGN REQUIREMENTS

The design requirements relate to the layout of the model. In the discrepancy analysis three requirements were formulated. The first design requirement was to have a clear presentation. This is achieved by dividing the information in different tabs in the model. This division has made it sure that not too much data is presented in one tab. The tabs are also grouped so that a user can easily reach the desired tab. Another measurement to ensure a clear presentation is the use of an interface. The interface is the first thing a user sees and provides a summary of the model. The third design feature is the constant use of graphs to improve visibility of the trends and variances. A fourth design feature is the use of traffic lights, which supports the user in quickly spotting the variances. Finally also a management manual has been created, which explains the operation of the model in plain English. The management manual is attached in appendix D.2.

The second design requirement is that the model has to be easy maintainable. This requirement especially meant that a Ghanaian accountant, which normally have a limited understanding of computers, has to be able to maintain the model. The two most important measures to ensure an easy maintenance are the use of protected cells and the creation of a maintenance manual. By using protected cells, the maintainer is only allowed to fill in the cells which need input. The manual provides the maintainer with a walkthrough of the maintenance process; every action which has to be undertaken is stated and explained. The manual also ensures knowledge transfer of the maintenance process when the person in charge of the maintenance changes.

The last design requirement is that it has to be easy to simulate future scenarios by changing variables. This last design requirement is also met. A possibility to change variables and thus simulate future scenarios is provided on the interface tab. An user can adapt the variables in the table and the model calculates the effects. The effects are also immediately visible by looking at the six graphs at the interface tab.

7.1.3. GENERAL

In the last two paragraphs the content and design requirements of the model were walked through. In this walkthrough it was found that the current model meets all the set requirements. In this way the model resolves the discrepancy and provides the management of GCF with a tool which provides them with useful information about the current liquidity position and the future liquidity developments.

The main research question of this thesis was about which information was needed to have insight in the current liquidity position and the future liquidity developments. A structured overview of the current liquidity position is created by the structure of the cash flow statement in the model. To provide an insight in the liquidity developments budgets were developed. In the budgeting process the problem of absence of correct records was often encountered. However by a lot of interviews with department managers and especially consultation with the managing director, good budgets could be derived. So the model also provides information about the future liquidity developments.

7.2. RECOMMENDATIONS

This paragraph describes recommendations for further improvements of the model. One recommendation is described for the general improvement of the model and more recommendations focus on three specific areas; projection of cash flows, variance analysis and profitability analysis. By applying the recommendations the model will provide the management with better information. The improvement in each of these areas will be described below.

The general recommendation relates to the implementation of the model. By implementing the model in the daily operation, the model is used systematically and periodical evaluation can take place. In this periodical evaluation concrete points of improvement can become clear. For this process to achieve a good result, the management as a user has to be involved to achieve actual improvements. By repeating this periodical evaluation a continuous process of improvement can be setup.

The projection of cash flows also can be improved. As stated in the conclusions, paragraph 7.1., correct data at GCF was often missing, which made it hard to formulate a correct budget. There are two improvements which will improve the projection of the cash flows. First of all the fuel-using activities can be standardized, by doing this the fuel consumption budget can be related to the number of hectares in cultivation. By doing this a better indication of the current fixed fuel consumption budget can be created. The second improvement is the standardization of the employee operations, especially the employees who work directly with the pineapples. By doing this the employee budget can be related to the activity level and thus be a better indication than the current fixed employee budget.

The variance analysis also has room for improvement. Two recommendations can be formulated to improve this area. Firstly the farm consumables costs can be recorded per hectare, so that a better comparison between the budgeted and actual costs can be made. Now only the total costs of all hectares are compared and this makes it impossible to spot hectares which exceed the budget. Secondly the fixed budgets for farm and general and administrative expenses can be divided in cost centers. This allows to perform a variance analysis for the different cost centers and so have a better insight in the costs.

The third area which can be improved is the profitability analysis. The current model has a EBITDA statement and thus analyzes the operating profitability. However it should be better to have a picture of the total profitability. This can be realized by upgrading the EBITDA statement to a complete income statement. To implement this the depreciation records of GCF have to be updated and also added to the model.

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APPENDICES

APPENDIX A – FINANCIAL REPORTS

A.1. MONTHLY CASH FLOW OVERVIEW

	CASH FLOW STATEMENT FOR THE MONTH OF JULY 2012									
	Values in US Dollars									
				jul-12		COST OF SALES				
Expected Income	export	EURO	129.694,83	155.633,80		ITEM	QTY		DOLLAR	
	local sales	CEDI	9.805,50	4.902,75		cartons	19.435	19.435,00	23.322,00	euro
				160.536,55		pallets	260	2.210,00	1.105,00	cedi
						haulage		10.700,00	5.350,00	cedi
						straping ba	10	600,00	300,00	
Exp. Cost of Sales	export			31.827,00		labels	175000	3.500,00	1.750,00	cedi
									31.827,00	
Gross Income				128.709,55						
Expected Expenses	farm expenses	cedi	36.612,03	18.306,02						
	STLS HAULAGE	cedi	25.804,00	12.902,00						
	fuel, lub. Fertilizer& chemicals	cedi	51.335,29	25.667,65						
	employees	cedi	53.951,83	26.975,92						
	general admin	cedi	112.996,00	56.498,00						
	interest	GCB		15.129,64						
		EDIF	19.006,85	9.503,43						
		Stanbic OD		3.882,51						
		Rural	384,50	192,25						
Tot Exp Operating Expenses				169.057,40						
Operating Profit (Loss)				(40.347,85)						
Investment Activities	capital investment		phc	21.700,00						
			baywa	99.396,05						
			spa	781,20						
			toyota	12.540,00						
				134.417,25						
	net finance									
Net Cash per Month				(174.765,10)						
Add Opening Balance				196.529,00						
Accumulated				21.763,90						

APPENDIX B – COST CATEGORIES

B.1. COST OF SALES

Cost of Sales
Rubber Bands
Labels
Strapping Bands
Cartons
Pallets
Farm Electricity
Haulage to Port

B.2. FARM CONSUMABLES

Chemicals	Fertilizers	Fuel & Lubricants	Other Farm Consumables
Athlete	Potassium Chloride	Brake Fluid	Plastic Mulch
Agil	Sodium nitrate	Diesel	Citric Acid
Fungi Kill	Sodium Carbonate	Engine Oil	Delta-NHCa
Ivory	Potassium Nitrate	Gear Oil	
Ridomil Gold Plus	Calcium Chloride	Hydraulic Oil	
Agribroma	Ammonium Sulphate	Petrol	
Diuron	Muriate of Potash		
Nitric Acid	NPK (15-15-15)		
Pyrinex quick	TSP		
Pyriforce	NPK(23-17-16)		
Diumex	Urea		
Mirage	Krista-SOP		
Chlorine	Copper Sulphate		
Sta-fresh	Iron Sulphate		
Glyphosate(round)	Zinc Sulphate		
Phospori Acid	Magnesium Sulphate		
Mat (Ethephon)	MAP		
Callel (Ethephon)	Kieserite		
Activated Carbon	Borax		
Calcium Carbide	Calcium Carbonate		
Bayleton	NPK(14-23-14)		
Special 30			
Dize-Bio			
Vedetle-Oxamyl			
Purshade			
K'Optimal			
Agrotain			
Capizad			
Paraquent			

B.3. EMPLOYEE COSTS

Employee Costs
Wages
Overtime Costs
Medical Costs

B.4. GENERAL & ADMINSTRATIVE COSTS

General & Administrative Costs
Office Rent
Insurances and Licenses
Travelling expenses
Fuel and Lubricants (for generators)
Legal Expenses
Auditors fees and expenses
Repairs and Maintenance (for office)
Other administrative expenses (internet, telephone, utilities)

B.5. FARM EXPENSES

Farm Expenses
Lunches for Employees
Transport of Employees
Phone Units
Loading / Offloading
Repair and Maintenance
Stationary
Farm Tools

B.6. FINANCE COSTS

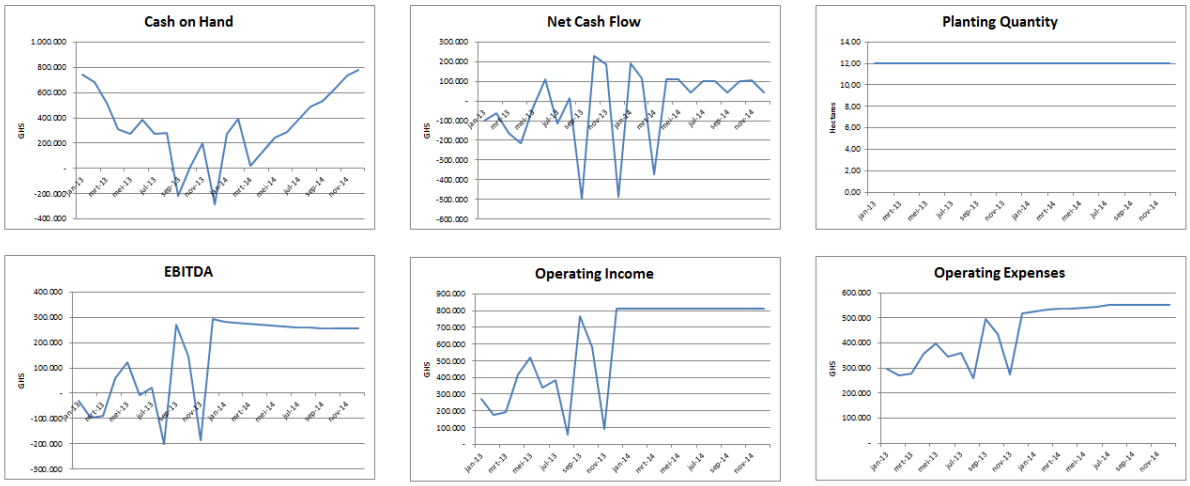
Finance Costs
Interest Costs
Bank Charges

APPENDIX C – STRUCTURE OF THE MODEL

C.1. INTERFACE

Business Simulation Model

Gold Coast Fruits Limited



Simulation Input		January	February	March	April	May	June	July	August	September	October	November	December
Planting Quantity		12	12	12	12	12	12	12	12	12	12	12	12
Average Box Price		4,50	4,50	4,50	4,50	4,50	4,50	4,50	4,50	4,50	4,50	4,50	4,50
EUR:GHS		2,45	2,45	2,45	2,45	2,45	2,45	2,45	2,45	2,45	2,45	2,45	2,45
USD:GHS		1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9	1,9
Capital Expenditures	Hired Machinery	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -
	Land & Building	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -
	Plant & Machinery	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -
	Office Equipment & Furniture	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -
	Motor Vehicle	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -	GHS -

Interface | CFS | EBITDA | Planting | Sales | Cost of Sales | Farm Consumables | Employees | Gen. Admin | Farm Expenses | Capital | Stanbic OD | Debt

C.2. CFS

Cash Flow Statement

GHS in Actuals			2013 January	February	March	April	May	June	July	August	September	October	November	December
Operating Inflows	Export Sales		243.000	256.331	165.375	181.913	396.900	496.125	322.481	363.825	56.023	730.585	551.944	86.002
	Local Sales		12.817	8.269	9.096	19.845	24.806	16.124	18.191	2.801	36.523	27.597	4.300	38.588
Total Operating Inflow			255.817	264.600	174.471	201.758	421.706	512.249	340.673	366.626	92.553	758.182	556.244	124.589
Operating Outflows	Cost of Sales		89.190	58.611	64.171	136.449	169.808	111.430	125.329	21.848	248.632	188.574	31.926	262.472
	Farm Consumables		110.241	111.725	115.071	122.129	127.932	133.474	135.342	136.812	147.185	147.731	143.757	156.510
	Employee Costs		68.528	68.528	68.528	68.528	68.528	68.528	68.528	68.528	68.528	68.528	68.528	68.528
	General & Administrative		19.000	19.000	19.000	19.000	19.000	19.000	19.000	19.000	19.000	19.000	19.000	19.000
	Farm Expenses		12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000
Financial Outflows	EDIF		19.640	19.640	17.740	19.640	19.007	19.640	19.007	19.231	18.822	17.819	18.004	17.027
	GCB		27.805	27.805	27.805	27.805	27.805	27.805	27.805	27.805	27.805	27.805	27.805	27.805
	Annona		-	-	-	-	-	-	-	-	-	-	-	-
	Stanbic OD		9.777	9.777	9.777	9.777	9.777	9.777	9.777	9.777	9.777	9.777	9.777	9.777
	Rural & Bank Charges		-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Outflow			356.182	327.086	334.092	415.329	453.857	401.654	416.788	315.001	551.750	491.234	330.797	573.119
Cash From Operations			**-100.365**	**-62.486**	**-159.621**	**-213.571**	**-32.151**	**110.595**	**-76.115**	**51.625**	**-459.197**	**266.948**	**225.448**	**-448.529**
Investment Activities	Fixed Assets	Hired Machinery	-	-	-	-	-	-	-	-	-	-	-	-
		Land & Building	-	-	-	-	-	-	-	-	-	-	-	-
		Plant & Machinery	-	-	-	-	-	-	-	-	-	-	-	-
		Office Equipment & Furniture	-	-	-	-	-	-	-	-	-	-	-	-
		Motor Vehicle	-	-	-	-	-	-	-	-	-	-	-	-
Cash Flow From Investments			-	-	-	-	-	-	-	-	-	-	-	-
Financing activities	Debt Issuance (Repayment)	EDIF	-	-	-	-	-	-	-38.542	-38.542	-38.542	-38.542	-38.542	-38.542
		GCB	-	-	-	-	-	-	-	-	-	-	-	-
		Annona	-	-	-	-	-	-	-	-	-	-	-	-
		Stanbic OD	-	-	-	-	-	-	-	-	-	-	-	-
Cash Flow From Financing			-	-	-	-	-	-	**-38.542**	**-38.542**	**-38.542**	**-38.542**	**-38.542**	**-38.542**
Net Cash Flow			**-100.365**	**-62.486**	**-159.621**	**-213.571**	**-32.151**	**110.595**	**-114.657**	**13.083**	**-497.739**	**228.406**	**186.906**	**-487.071**
Opening Balance			843.694	743.329	680.842	521.221	307.649	275.499	386.094	271.437	284.520	-213.219	15.187	202.093
Ending Balance			**743.329**	**680.842**	**521.221**	**307.649**	**275.499**	**386.094**	**271.437**	**284.520**	**-213.219**	**15.187**	**202.093**	**-284.978**
Counted Ending Balar	Control Purposes													

C.3. EBITDA

EBITDA

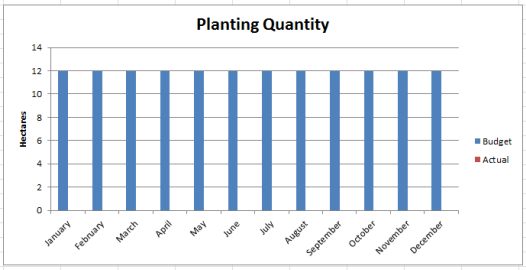
GHS in Actuals		2013 January	February	March	April	May	June	July	August	September	October	November	December
Operating Income	Export Sales	256.331	165.375	181.913	396.900	496.125	322.481	363.825	56.023	730.585	551.944	86.002	771.750
	Local Sales	12.817	8.269	9.096	19.845	24.806	16.124	18.191	2.801	36.529	27.597	4.300	38.588
Total Operating Income		269.148	173.644	191.008	416.745	520.931	338.605	382.016	58.825	767.114	579.541	90.302	810.338
Operating Expenses	Cost of Sales	89.190	58.611	64.171	136.449	169.808	111.430	125.329	21.848	248.632	188.574	31.926	262.472
	Farm Consumables	110.241	111.725	115.071	122.129	127.932	133.474	135.342	136.812	147.185	147.731	143.757	156.510
	Employee Costs	68.528	68.528	68.528	68.528	68.528	68.528	68.528	68.528	68.528	68.528	68.528	68.528
	General & Administrative	19.000	19.000	19.000	19.000	19.000	19.000	19.000	19.000	19.000	19.000	19.000	19.000
	Farm Expenses	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000
Total Operating Expenses		298.959	269.864	278.770	358.106	397.268	344.431	360.199	258.188	495.345	435.833	275.211	518.509
Operating Profit (Loss)		-29.811	-96.220	-87.762	58.639	123.664	-5.826	21.818	-199.363	271.769	143.708	-184.909	291.828

C.4. PLANTING

Planting Quantity

2013 Planting Quantity	January Budget	Actual	Variance	February Budget	Actual	Variance	March Budget	Actual	Variance	April Budget	Actual	Variance	May Budget	Actual	Variance	June Budget	Actual	Variance
Suckers Planted	864.000		0%	864.000		0%	864.000		0%	864.000		0%	864.000		0%	864.000		0%
Hectares cultivated	12	0		12	0		12	0		12	0		12	0		12	0	

2013 Planting Quantity	July Budget	Actual	Variance	August Budget	Actual	Variance	September Budget	Actual	Variance	Oktober Budget	Actual	Variance	November Budget	Actual	Variance	December Budget	Actual	Variance
Suckers Planted	864.000		0%	864.000		0%	864.000		0%	864.000		0%	864.000		0%	864.000		0%
Hectares cultivated	12	0		12	0		12	0		12	0		12	0		12	0	

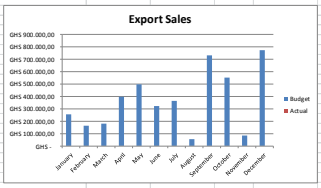


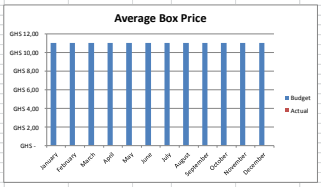
C.5. SALES

Sales

2013 Sales	January Budget	Actual	Variance	February Budget	Actual	Variance	March Budget	Actual	Variance	April Budget	Actual	Variance	May Budget	Actual	Variance	June Budget	Actual	Variance
Exportable produce (kg)	279.000		0%	180.000		0%	198.000		0%	432.000		0%	540.000		0%	351.000		0%
Number of Boxes	23.250		0%	15.000		0%	16.500		0%	36.000		0%	45.000		0%	29.250		0%
Average Box Price	GHS 11,03		0%	GHS 11,03		0%	GHS 11,03		0%	GHS 11,03		0%	GHS 11,03		0%	GHS 11,03		0%
Export Sales	**GHS 256.331,25**		**0%**	**GHS 165.375,00**		**0%**	**GHS 181.912,50**		**0%**	**GHS 396.900,00**		**0%**	**GHS 496.125,00**		**0%**	**GHS 322.481,25**		**0%**
Local Sales	**GHS 12.816,56**		**0%**	**GHS 8.268,75**		**0%**	**GHS 9.095,63**		**0%**	**GHS 19.845,00**		**0%**	**GHS 24.806,25**		**0%**	**GHS 16.124,06**		**0%**

2013 Sales	July Budget	Actual	Variance	August Budget	Actual	Variance	September Budget	Actual	Variance	October Budget	Actual	Variance	November Budget	Actual	Variance	December Budget	Actual	Variance
Plants Harvested				62.720			817.914			617.920			96.282			864.000		
Number of Hectares Harvested	N.A.			0,87	N.A.		11,36	N.A.		8,58	N.A.		1,34	N.A.		12,00	N.A.	
Yield (kg/ha)				70.000			70.000			70.000			70.000			70.000		
Exportable produce (kg)	396.000		0%	60.978		0%	795.194		0%	600.756		0%	93.608		0%	840.000		0%
Number of Boxes	33.000		0%	5.081		0%	66.266		0%	50.063		0%	7.801		0%	70.000		0%
Average Box Price	GHS 11,03		0%	GHS 11,03		0%	GHS 11,03		0%	GHS 11,03		0%	GHS 11,03		0%	GHS 11,03		0%
Export Sales	**GHS 363.825,00**		**0%**	**GHS 56.023,33**		**0%**	**GHS 730.584,64**		**0%**	**GHS 551.944,17**		**0%**	**GHS 86.001,89**		**0%**	**GHS 771.750,00**		**0%**
Local Sales	**GHS 18.191,25**		**0%**	**GHS 2.801,17**		**0%**	**GHS 36.529,23**		**0%**	**GHS 27.597,21**		**0%**	**GHS 4.300,09**		**0%**	**GHS 38.587,50**		**0%**





C.6. COST OF SALES

Cost of Sales

2013 Cost of Sales	January	February	March	April	May	June	July	August	September	October	November	December
Number of Boxes	23.250	15.000	16.500	36.000	45.000	29.250	33.000	5.081	66.266	50.063	7.801	70.000

2013	July			August			September			October			November			December		
Cost of Sales	Budget	Actual	Variance	Budget	Actual	Variance	Budget	Actual	Variance	Budget	Actual	Variance	Budget	Actual	Variance	Budget	Actual	Variance
Strapping Bands	568,33		0%	366,67		0%	403,33		0%	880,00		0%	1.100,00		0%	715,00		0%
Labels	5.952,00		0%	3.840,00		0%	4.224,00		0%	9.216,00		0%	11.520,00		0%	7.488,00		0%
Rubber Bands	6.200,00		0%	4.000,00		0%	4.400,00		0%	9.600,00		0%	12.000,00		0%	7.800,00		0%
Cartons	57.957,11		0%	37.391,68		0%	41.130,85		0%	89.740,04		0%	112.175,05		0%	72.913,78		0%
Pallets	3.100,00		0%	2.000,00		0%	2.200,00		0%	4.800,00		0%	6.000,00		0%	3.900,00		0%
Haulage to Tema	12.400,00		0%	8.000,00		0%	8.800,00		0%	19.200,00		0%	24.000,00		0%	15.600,00		0%
Farm Electricity	3.012,85		0%	3.012,85		0%	3.012,85		0%	3.012,85		0%	3.012,85		0%	3.012,85		0%
Other	-		0%	-		0%	-		0%	-		0%	-		0%	-		0%
Total Cost of Sales	**89.190,29**	-	**0%**	**58.611,20**	-	**0%**	**64.171,03**	-	**0%**	**136.448,89**	-	**0%**	**169.807,90**	-	**0%**	**111.429,63**	-	**0%**

2013	July			August			September			October			November			December		
Cost of Sales	Budget	Actual	Variance	Budget	Actual	Variance	Budget	Actual	Variance	Budget	Actual	Variance	Budget	Actual	Variance	Budget	Actual	Variance
Strapping Bands	806,67		0%	124,21		0%	1.619,84		0%	1.223,76		0%	190,68		0%	1.711,11		0%
Labels	8.448,00		0%	1.300,86		0%	16.964,14		0%	12.816,12		0%	1.996,96		0%	17.920,00		0%
Rubber Bands	8.800,00		0%	1.355,06		0%	17.670,98		0%	13.350,12		0%	2.080,17		0%	18.666,67		0%
Cartons	82.261,70		0%	12.667,01		0%	165.186,93		0%	124.795,90		0%	19.445,23		0%	174.494,52		0%
Pallets	4.400,00		0%	677,53		0%	8.835,49		0%	6.675,06		0%	1.040,08		0%	9.333,33		0%
Haulage to Tema	17.600,00		0%	2.710,12		0%	35.341,96		0%	26.700,25		0%	4.160,33		0%	37.333,33		0%
Farm Electricity	3.012,85		0%	3.012,85		0%	3.012,85		0%	3.012,85		0%	3.012,85		0%	3.012,85		0%
Other	-		0%	-		0%	-		0%	-		0%	-		0%	-		0%
Total Cost of Sales	**125.329,22**	-	**0%**	**21.847,65**	-	**0%**	**248.632,20**	-	**0%**	**188.574,06**	-	**0%**	**31.926,31**	-	**0%**	**262.471,81**	-	**0%**

2013 Cost / Box	January	February	March	April	May	June	July	August	September	October	November	December
Budgeted Cost / Box	3,84	3,91	3,89	3,79	3,77	3,81	3,80	4,30	3,75	3,77	4,09	3,75
Actual Cost / Box	-	-	-	-	-	-	-	-	-	-	-	-

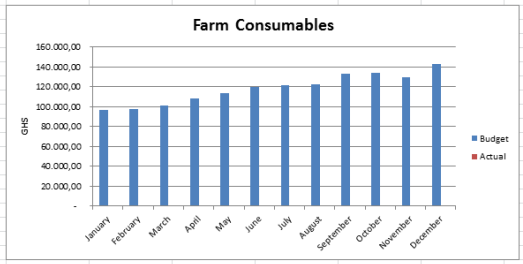
C.7. FARM CONSUMABLES

Farm Consumables

2013	BUDGET											
Farm Consumables	January	February	March	April	May	June	July	August	September	October	November	December
Farm consumable	96.240,95	97.724,66	101.070,93	108.129,36	113.932,00	119.473,78	121.341,52	122.812,20	133.185,39	133.731,10	129.756,52	142.509,78
Fuel & Lubricants	14.000,00	14.000,00	14.000,00	14.000,00	14.000,00	14.000,00	14.000,00	14.000,00	14.000,00	14.000,00	14.000,00	14.000,00
Total Farm Consumables	**110.240,95**	**111.724,66**	**115.070,93**	**122.129,36**	**127.932,00**	**133.473,78**	**135.341,52**	**136.812,20**	**147.185,39**	**147.731,10**	**143.756,52**	**156.509,78**

2013	ACTUAL											
Farm Consumables	January	February	March	April	May	June	July	August	September	October	November	December
Mulch Foil												
Pesticides												
Fertilizer												
Other Consumables												
Fuel & Lubricants												
Total Farm Consumables	-	-	-	-	-	-	-	-	-	-	-	-

2013													
Variance	January	February	March	April	May	June	July	August	September	October	November	December	
Farm Consumable Variance	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Fuel & Lubricants Variance	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total Variance	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**



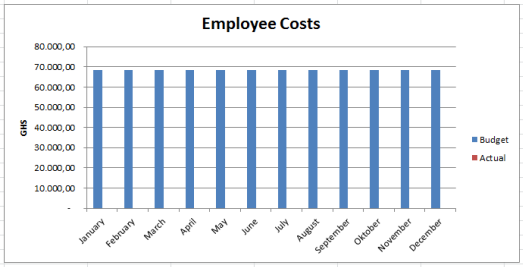
C.8. EMPLOYEE

Employee Costs

2013 Employee Costs	January	February	March	April	May	June	July	August	September	Oktober	November	December
	BUDGET											
Employee Costs	68.527,77	68.527,77	68.527,77	68.527,77	68.527,77	68.527,77	68.527,77	68.527,77	68.527,77	68.527,77	68.527,77	68.527,77

2013 Employee Costs	January	February	March	April	May	June	July	August	September	Oktober	November	December
	ACTUAL											
Wages												
Extra Duty Allowances												
Medical Costs												
Total Employee Costs	-	-	-	-	-	-	-	-	-	-	-	-

2013 Employee Costs	January	February	March	April	May	June	July	August	September	Oktober	November	December
Variance	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%



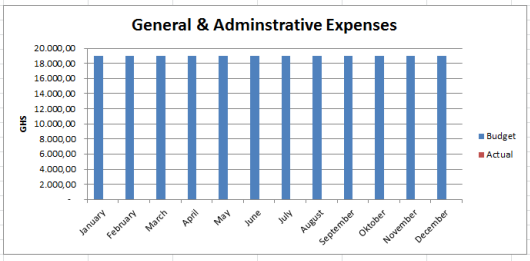
C.9. GENERAL AND ADMINISTRATIVE

General & Administrative Expenses

2013 Gen. Admin. Expenses	January	February	March	April	May	June	July	August	September	Oktober	November	December
	BUDGET											
General & Administrative	19.000,00	19.000,00	19.000,00	19.000,00	19.000,00	19.000,00	19.000,00	19.000,00	19.000,00	19.000,00	19.000,00	19.000,00

2013 Gen. Admin. Expenses	January	February	March	April	May	June	July	August	September	Oktober	November	December
	ACTUAL											
Office Rent												
Insurances and Licenses												
Travelling Expenses												
Legal Expenses												
Auditors Fees and Expenses												
Repairs and Maintenance												
Other Administrative Expenses												
Total	-	-	-	-	-	-	-	-	-	-	-	-

2013 Variance	January	February	March	April	May	June	July	August	September	Oktober	November	December
Variance	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%



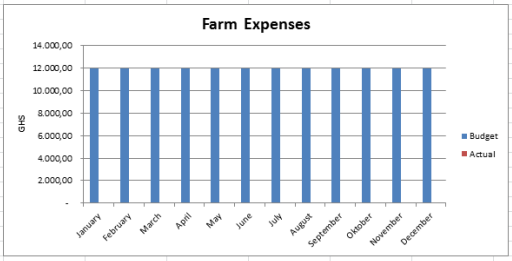
C.10. FARM EXPENSES

Farm Expenses

2013						BUDGET						
Farm Expenses	January	February	March	April	May	June	July	August	September	Oktober	November	December
Farm Expenses	12.000,00	12.000,00	12.000,00	12.000,00	12.000,00	12.000,00	12.000,00	12.000,00	12.000,00	12.000,00	12.000,00	12.000,00

2013						ACTUAL						
Farm Expenses	January	February	March	April	May	June	July	August	September	Oktober	November	December
Food												
Transport												
Phone Units												
Loading / Offloading												
Repair												
Stationary												
Farm Tools												
Other Farm Expenses												
Total Farm Expenses	-	-	-	-	-	-	-	-	-	-	-	-

2013												
Farm Expenses	January	February	March	April	May	June	July	August	September	Oktober	November	December
Variance	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

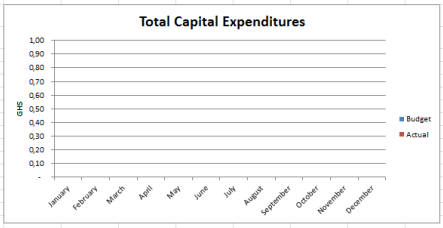


C.11. CAPITAL EXPENDITURES

Capital Expenditures

2013	January			February			March			April			May			June		
Capital Expenditures	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*
Hired Machinery	-		100%	-		100%	-		100%	-		100%	-		100%	-		100%
Land & Building	-		100%	-		100%	-		100%	-		100%	-		100%	-		100%
Plant & Machinery	-		100%	-		100%	-		100%	-		100%	-		100%	-		100%
Office Equipment & Furniture	-		100%	-		100%	-		100%	-		100%	-		100%	-		100%
Motor Vehicle	-		100%	-		100%	-		100%	-		100%	-		100%	-		100%
Total Capital Expenditures	-	-	**100%**	-	-	**100%**	-	-	**100%**	-	-	**100%**	-	-	**100%**	-	-	**100%**

2013	July			August			September			Oktober			November			December		
Capital Expenditures	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*
Hired Machinery	-		100%	-		100%	-		100%	-		100%	-		100%	-		100%
Land & Building	-		100%	-		100%	-		100%	-		100%	-		100%	-		100%
Plant & Machinery	-		100%	-		100%	-		100%	-		100%	-		100%	-		100%
Office Equipment & Furniture	-		100%	-		100%	-		100%	-		100%	-		100%	-		100%
Motor Vehicle	-		100%	-		100%	-		100%	-		100%	-		100%	-		100%
Total Capital Expenditures	-	-	**100%**	-	-	**100%**	-	-	**100%**	-	-	**100%**	-	-	**100%**	-	-	**100%**



C.12. STANBIC OD

Stanbic Overdraft

2013												
Stanbic Overdraft	January	February	March	April	May	June	July	August	September	Oktober	November	December
Beginning Balance	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28
Interest payment	€ 3.990,67	€ 3.990,67	€ 3.990,67	€ 3.990,67	€ 3.990,67	€ 3.990,67	€ 3.990,67	€ 3.990,67	€ 3.990,67	€ 3.990,67	€ 3.990,67	€ 3.990,67
Decrease (Increase) OD	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -	€ -
Ending Balance	**€ 532.089,28**	**€ 532.089,28**	**€ 532.089,28**	**€ 532.089,28**	**€ 532.089,28**	**€ 532.089,28**	**€ 532.089,28**	**€ 532.089,28**	**€ 532.089,28**	**€ 532.089,28**	**€ 532.089,28**	**€ 532.089,28**

Limit	€ 1.070.542,00
Rate	9%

C.13. DEBT

Debt

2013												
Debt Balances	**January**	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**Oktober**	**November**	**December**
Stanbic OD	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28	€ 532.089,28
EDIF	GHC 1.850.000.000	GHC 1.850.000.000	GHC 1.850.000.000	GHC 1.850.000.000	GHC 1.850.000.000	GHC 1.850.000.000	GHC 1.850.000.000	GHC 1.811.458.330	GHC 1.772.916.660	GHC 1.734.374.990	GHC 1.695.833.320	GHC 1.657.291.650
GCB	GHC 2.195.155.680	GHC 2.195.155.680	GHC 2.195.155.680	GHC 2.195.155.680	GHC 2.195.155.680	GHC 2.195.155.680	GHC 2.195.155.680	GHC 2.195.155.680	GHC 2.195.155.680	GHC 2.195.155.680	GHC 2.195.155.680	GHC 2.195.155.680
Ammna	€ 760.000,00	€ 760.000,00	€ 760.000,00	€ 760.000,00	€ 760.000,00	€ 760.000,00	€ 760.000,00	€ 760.000,00	€ 760.000,00	€ 760.000,00	€ 760.000,00	€ 760.000,00
Total Debt	**GHC 9.186.414,520**	**GHC 9.186.414,520**	**GHC 9.186.414,520**	**GHC 9.186.414,520**	**GHC 9.186.414,520**	**GHC 9.186.414,520**	**GHC 9.186.414,520**	**GHC 9.147.872,850**	**GHC 9.109.331,180**	**GHC 9.070.789,510**	**GHC 9.032.247,840**	**GHC 8.993.706,170**

2013		January			February			March			April			May			June		
Finance Costs		*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*
Interest Short Term Debt	Stanbic OD	GHC 9.777.140		0%	GHC 9.777.140		0%	GHC 9.777.140		0%	GHC 9.777.140		0%	GHC 9.777.140		0%	GHC 9.777.140		0%
Interest Medium Term Debt	EDIF	GHC 19.640.411		0%	GHC 19.640.411		0%	GHC 17.735.726		0%	GHC 19.640.411		0%	GHC 19.006.849		0%	GHC 19.640.411		0%
	GCB	GHC 27.805.305		0%	GHC 27.805.305		0%	GHC 27.805.305		0%	GHC 27.805.305		0%	GHC 27.805.305		0%	GHC 27.805.305		0%
	Ammna	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%
Other Costs	Rural & Bank Charges	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%
Total Finance Costs		**GHC 57.222.857**	**GHC -**	**100%**	**GHC 57.222.857**	**GHC -**	**100%**	**GHC 55.322.172**	**GHC -**	**100%**	**GHC 57.222.857**	**GHC -**	**100%**	**GHC 56.589.295**	**GHC -**	**100%**	**GHC 57.222.857**	**GHC -**	**100%**

2013		July			August			September			Oktober			November			December		
Finance Costs		*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*
Interest Short Term Debt	Stanbic OD	GHC 9.777.140		0%	GHC 9.777.140		0%	GHC 9.777.140		0%	GHC 9.777.140		0%	GHC 9.777.140		0%	GHC 9.777.140		0%
Interest Medium Term Debt	EDIF	GHC 19.006.849		0%	GHC 19.231.236		0%	GHC 18.822.060		0%	GHC 17.818.921		0%	GHC 18.003.710		0%	GHC 17.826.969		0%
	GCB	GHC 27.805.305		0%	GHC 27.805.305		0%	GHC 27.805.305		0%	GHC 27.805.305		0%	GHC 27.805.305		0%	GHC 27.805.305		0%
	Ammna	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%
Other Costs	Rural & Bank Charges	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%
Total Finance Costs		**GHC 56.589.295**	**GHC -**	**100%**	**GHC 56.813.681**	**GHC -**	**100%**	**GHC 56.404.506**	**GHC -**	**100%**	**GHC 55.401.367**	**GHC -**	**100%**	**GHC 55.586.156**	**GHC -**	**100%**	**GHC 54.609.415**	**GHC -**	**100%**

2013		January			February			March			April			May			June		
Principal Payment		*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*
Principal Payment Short Term Debt	Stanbic OD	N.A.			N.A.			N.A.			N.A.			N.A.			N.A.		
Principal Payment Medium Term Debt	EDIF	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%
	GCB	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%
	Ammna	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%
Total Payment (Disbursement)		**GHC -**	**GHC -**	**100%**	**GHC -**	**GHC -**	**100%**	**GHC -**	**GHC -**	**100%**	**GHC -**	**GHC -**	**100%**	**GHC -**	**GHC -**	**100%**	**GHC -**	**GHC -**	**100%**

2013		July			August			September			Oktober			November			December		
Principal Payment		*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*	*Budget*	*Actual*	*Variance*
Principal Payment Short Term Debt	Stanbic OD	N.A.			N.A.			N.A.			N.A.			N.A.			N.A.		
Principal Payment Medium Term Debt	EDIF	GHC 38.541.670		0%	GHC 38.541.670		0%	GHC 38.541.670		0%	GHC 38.541.670		0%	GHC 38.541.670		0%	GHC 38.541.670		0%
	GCB	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%
	Ammna	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%	GHC -		100%
Total Payment (Disbursement)		**GHC 38.541.670**	**GHC -**	**0%**	**GHC 38.541.670**	**GHC -**	**0%**	**GHC 38.541.670**	**GHC -**	**0%**	**GHC 38.541.670**	**GHC -**	**0%**	**GHC 38.541.670**	**GHC -**	**0%**	**GHC 38.541.670**	**GHC -**	**0%**

C.14. EDIF

EDIF

LOAN REPAYMENT SCHEDULE

Principal Amount GHS	GHC 1.850.000,000	
Interest Charged	12,50%	per annum
Repayment Period	GHC 60,000	months
Moratorium Period	GHC 12,000	months

Month	Amount Outstanding	Principal payment	Interest Payment	Total Payment
5-6-2012	GHC 1.850.000,000			
5-7-2012	GHC 1.850.000,000		GHC 19.006,849	GHC 19.006,849
5-8-2012	GHC 1.850.000,000		GHC 19.640,411	GHC 19.640,411
5-9-2012	GHC 1.850.000,000		GHC 19.640,411	GHC 19.640,411
5-10-2012	GHC 1.850.000,000		GHC 19.006,849	GHC 19.006,849
5-11-2012	GHC 1.850.000,000		GHC 19.640,411	GHC 19.640,411
5-12-2012	GHC 1.850.000,000		GHC 19.006,849	GHC 19.006,849
5-1-2013	GHC 1.850.000,000		GHC 19.640,411	GHC 19.640,411
5-2-2013	GHC 1.850.000,000		GHC 19.640,411	GHC 19.640,411
5-3-2013	GHC 1.850.000,000		GHC 17.739,726	GHC 17.739,726
5-4-2013	GHC 1.850.000,000		GHC 19.640,411	GHC 19.640,411
5-5-2013	GHC 1.850.000,000		GHC 19.006,849	GHC 19.006,849
5-6-2013	GHC 1.850.000,000		GHC 19.640,411	GHC 19.640,411
5-7-2013	GHC 1.850.000,000	GHC 38.541,670	GHC 19.006,849	GHC 57.548,519
5-8-2013	GHC 1.811.458,330	GHC 38.541,670	GHC 19.231,236	GHC 57.772,906
5-9-2013	GHC 1.772.916,660	GHC 38.541,670	GHC 18.822,060	GHC 57.363,730
5-10-2013	GHC 1.734.374,990	GHC 38.541,670	GHC 17.818,921	GHC 56.360,591
5-11-2013	GHC 1.695.833,320	GHC 38.541,670	GHC 18.003,710	GHC 56.545,380
5-12-2013	GHC 1.657.291,650	GHC 38.541,670	GHC 17.026,969	GHC 55.568,639
5-1-2014	GHC 1.618.749,980	GHC 38.541,670	GHC 17.185,359	GHC 55.727,029
5-2-2014	GHC 1.580.208,310	GHC 38.541,670	GHC 16.776,184	GHC 55.317,854
5-3-2014	GHC 1.541.666,640	GHC 38.541,670	GHC 14.783,105	GHC 53.324,775
5-4-2014	GHC 1.503.124,970	GHC 38.541,670	GHC 15.957,834	GHC 54.499,504
5-5-2014	GHC 1.464.583,300	GHC 38.541,670	GHC 15.047,089	GHC 53.588,759
5-6-2014	GHC 1.426.041,630	GHC 38.541,670	GHC 15.139,483	GHC 53.681,153
5-7-2014	GHC 1.387.499,960	GHC 38.541,670	GHC 14.255,137	GHC 52.796,807
5-8-2014	GHC 1.348.958,290	GHC 38.541,670	GHC 14.321,133	GHC 52.862,803
5-9-2014	GHC 1.310.416,620	GHC 38.541,670	GHC 13.911,957	GHC 52.453,627
5-10-2014	GHC 1.271.874,950	GHC 38.541,670	GHC 13.067,208	GHC 51.608,878
5-11-2014	GHC 1.233.333,280	GHC 38.541,670	GHC 13.093,607	GHC 51.635,277
5-12-2014	GHC 1.194.791,610	GHC 38.541,670	GHC 12.275,256	GHC 50.816,926
5-1-2015	GHC 1.156.249,940	GHC 38.541,670	GHC 12.275,256	GHC 50.816,926
5-2-2015	GHC 1.117.708,270	GHC 38.541,670	GHC 11.866,081	GHC 50.407,751
5-3-2015	GHC 1.079.166,600	GHC 38.541,670	GHC 10.348,173	GHC 48.889,843
5-4-2015	GHC 1.040.624,930	GHC 38.541,670	GHC 11.047,730	GHC 49.589,400
5-5-2015	GHC 1.002.083,260	GHC 38.541,670	GHC 10.295,376	GHC 48.837,046
5-6-2015	GHC 963.541,590	GHC 38.541,670	GHC 10.229,380	GHC 48.771,050
5-7-2015	GHC 924.999,920	GHC 38.541,670	GHC 9.503,424	GHC 48.045,094
5-8-2015	GHC 886.458,250	GHC 38.541,670	GHC 9.411,029	GHC 47.952,699
5-9-2015	GHC 847.916,580	GHC 38.541,670	GHC 9.001,854	GHC 47.543,524
5-10-2015	GHC 809.374,910	GHC 38.541,670	GHC 8.315,496	GHC 46.857,166
5-11-2015	GHC 770.833,240	GHC 38.541,670	GHC 8.183,504	GHC 46.725,174
5-12-2015	GHC 732.291,570	GHC 38.541,670	GHC 7.523,544	GHC 46.065,214
5-1-2016	GHC 693.749,900	GHC 38.541,670	GHC 7.365,153	GHC 45.906,823
5-2-2016	GHC 655.208,230	GHC 38.541,670	GHC 6.955,978	GHC 45.497,648
5-3-2016	GHC 616.666,560	GHC 38.541,670	GHC 6.124,428	GHC 44.666,098
5-4-2016	GHC 578.124,890	GHC 38.541,670	GHC 6.137,627	GHC 44.679,297
5-5-2016	GHC 539.583,220	GHC 38.541,670	GHC 5.543,663	GHC 44.085,333
5-6-2016	GHC 501.041,550	GHC 38.541,670	GHC 5.319,277	GHC 43.860,947
5-7-2016	GHC 462.499,880	GHC 38.541,670	GHC 4.751,711	GHC 43.293,381
5-8-2016	GHC 423.958,210	GHC 38.541,670	GHC 4.500,926	GHC 43.042,596
5-9-2016	GHC 385.416,540	GHC 38.541,670	GHC 4.091,751	GHC 42.633,421
5-10-2016	GHC 346.874,870	GHC 38.541,670	GHC 3.563,783	GHC 42.105,453
5-11-2016	GHC 308.333,200	GHC 38.541,670	GHC 3.273,400	GHC 41.815,070
5-12-2016	GHC 269.791,530	GHC 38.541,670	GHC 2.771,831	GHC 41.313,501
5-1-2017	GHC 231.249,860	GHC 38.541,670	GHC 2.455,050	GHC 40.996,720
5-2-2017	GHC 192.708,190	GHC 38.541,670	GHC 2.045,875	GHC 40.587,545
5-3-2017	GHC 154.166,520	GHC 38.541,670	GHC 1.478,309	GHC 40.019,979
5-4-2017	GHC 115.624,850	GHC 38.541,670	GHC 1.227,524	GHC 39.769,194
5-5-2017	GHC 77.083,180	GHC 38.541,670	GHC 791,950	GHC 39.333,620
5-6-2017	GHC 38.541,510	GHC 38.541,670	GHC 409,174	GHC 38.950,844

C.15. GCB

GCB

LOAN REPAYMENT SCHEDULE

Principal Amount GHS	GHC 2.195.155,680	
Interest Charged	8,00%	per annum
Repayment Period	GHC 84,000	months
Moratorium Period	GHC 24,000	months

Month	Amount Outstanding	Principal payment	Interest Payment	Total Payment
1-1-2012	GHC 2.195.155,680			
1-2-2012	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-3-2012	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-4-2012	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-5-2012	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-6-2012	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-7-2012	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-8-2012	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-9-2012	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-10-2012	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-11-2012	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-12-2012	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-1-2013	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-2-2013	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-3-2013	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-4-2013	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-5-2013	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-6-2013	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-7-2013	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-8-2013	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-9-2013	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-10-2013	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-11-2013	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-12-2013	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-1-2014	GHC 2.195.155,680		GHC 14.634,371	GHC 14.634,371
1-2-2014	GHC 2.195.155,680	GHC 36.585,928	GHC 14.634,371	GHC 51.220,299
1-3-2014	GHC 2.158.569,752	GHC 36.585,928	GHC 14.390,465	GHC 50.976,393
1-4-2014	GHC 2.121.983,824	GHC 36.585,928	GHC 14.146,559	GHC 50.732,487
1-5-2014	GHC 2.085.397,896	GHC 36.585,928	GHC 13.902,653	GHC 50.488,581
1-6-2014	GHC 2.048.811,968	GHC 36.585,928	GHC 13.658,746	GHC 50.244,674
1-7-2014	GHC 2.012.226,040	GHC 36.585,928	GHC 13.414,840	GHC 50.000,768
1-8-2014	GHC 1.975.640,112	GHC 36.585,928	GHC 13.170,934	GHC 49.756,862
1-9-2014	GHC 1.939.054,184	GHC 36.585,928	GHC 12.927,028	GHC 49.512,956
1-10-2014	GHC 1.902.468,256	GHC 36.585,928	GHC 12.683,122	GHC 49.269,050
1-11-2014	GHC 1.865.882,328	GHC 36.585,928	GHC 12.439,216	GHC 49.025,144
1-12-2014	GHC 1.829.296,400	GHC 36.585,928	GHC 12.195,309	GHC 48.781,237
1-1-2015	GHC 1.792.710,472	GHC 36.585,928	GHC 11.951,403	GHC 48.537,331
1-2-2015	GHC 1.756.124,544	GHC 36.585,928	GHC 11.707,497	GHC 48.293,425
1-3-2015	GHC 1.719.538,616	GHC 36.585,928	GHC 11.463,591	GHC 48.049,519
1-4-2015	GHC 1.682.952,688	GHC 36.585,928	GHC 11.219,685	GHC 47.805,613
1-5-2015	GHC 1.646.366,760	GHC 36.585,928	GHC 10.975,778	GHC 47.561,706
1-6-2015	GHC 1.609.780,832	GHC 36.585,928	GHC 10.731,872	GHC 47.317,800
1-7-2015	GHC 1.573.194,904	GHC 36.585,928	GHC 10.487,966	GHC 47.073,894
1-8-2015	GHC 1.536.608,976	GHC 36.585,928	GHC 10.244,060	GHC 46.829,988
1-9-2015	GHC 1.500.023,048	GHC 36.585,928	GHC 10.000,154	GHC 46.586,082
1-10-2015	GHC 1.463.437,120	GHC 36.585,928	GHC 9.756,247	GHC 46.342,175
1-11-2015	GHC 1.426.851,192	GHC 36.585,928	GHC 9.512,341	GHC 46.098,269
1-12-2015	GHC 1.390.265,264	GHC 36.585,928	GHC 9.268,435	GHC 45.854,363
1-1-2016	GHC 1.353.679,336	GHC 36.585,928	GHC 9.024,529	GHC 45.610,457
1-2-2016	GHC 1.317.093,408	GHC 36.585,928	GHC 8.780,623	GHC 45.366,551
1-3-2016	GHC 1.280.507,480	GHC 36.585,928	GHC 8.536,717	GHC 45.122,645
1-4-2016	GHC 1.243.921,552	GHC 36.585,928	GHC 8.292,810	GHC 44.878,738
1-5-2016	GHC 1.207.335,624	GHC 36.585,928	GHC 8.048,904	GHC 44.634,832
1-6-2016	GHC 1.170.749,696	GHC 36.585,928	GHC 7.804,998	GHC 44.390,926
1-7-2016	GHC 1.134.163,768	GHC 36.585,928	GHC 7.561,092	GHC 44.147,020
1-8-2016	GHC 1.097.577,840	GHC 36.585,928	GHC 7.317,186	GHC 43.903,114
1-9-2016	GHC 1.060.991,912	GHC 36.585,928	GHC 7.073,279	GHC 43.659,207
1-10-2016	GHC 1.024.405,984	GHC 36.585,928	GHC 6.829,373	GHC 43.415,301
1-11-2016	GHC 987.820,056	GHC 36.585,928	GHC 6.585,467	GHC 43.171,395
1-12-2016	GHC 951.234,128	GHC 36.585,928	GHC 6.341,561	GHC 42.927,489
1-1-2017	GHC 914.648,200	GHC 36.585,928	GHC 6.097,655	GHC 42.683,583
1-2-2017	GHC 878.062,272	GHC 36.585,928	GHC 5.853,748	GHC 42.439,676
1-3-2017	GHC 841.476,344	GHC 36.585,928	GHC 5.609,842	GHC 42.195,770
1-4-2017	GHC 804.890,416	GHC 36.585,928	GHC 5.365,936	GHC 41.951,864
1-5-2017	GHC 768.304,488	GHC 36.585,928	GHC 5.122,030	GHC 41.707,958
1-6-2017	GHC 731.718,560	GHC 36.585,928	GHC 4.878,124	GHC 41.464,052
1-7-2017	GHC 695.132,632	GHC 36.585,928	GHC 4.634,218	GHC 41.220,146
1-8-2017	GHC 658.546,704	GHC 36.585,928	GHC 4.390,311	GHC 40.976,239
1-9-2017	GHC 621.960,776	GHC 36.585,928	GHC 4.146,405	GHC 40.732,333
1-10-2017	GHC 585.374,848	GHC 36.585,928	GHC 3.902,499	GHC 40.488,427
1-11-2017	GHC 548.788,920	GHC 36.585,928	GHC 3.658,593	GHC 40.244,521
1-12-2017	GHC 512.202,992	GHC 36.585,928	GHC 3.414,687	GHC 40.000,615
1-1-2018	GHC 475.617,064	GHC 36.585,928	GHC 3.170,780	GHC 39.756,708
1-2-2018	GHC 439.031,136	GHC 36.585,928	GHC 2.926,874	GHC 39.512,802
1-3-2018	GHC 402.445,208	GHC 36.585,928	GHC 2.682,968	GHC 39.268,896
1-4-2018	GHC 365.859,280	GHC 36.585,928	GHC 2.439,062	GHC 39.024,990
1-5-2018	GHC 329.273,352	GHC 36.585,928	GHC 2.195,156	GHC 38.781,084
1-6-2018	GHC 292.687,424	GHC 36.585,928	GHC 1.951,249	GHC 38.537,177
1-7-2018	GHC 256.101,496	GHC 36.585,928	GHC 1.707,343	GHC 38.293,271
1-8-2018	GHC 219.515,568	GHC 36.585,928	GHC 1.463,437	GHC 38.049,365
1-9-2018	GHC 182.929,640	GHC 36.585,928	GHC 1.219,531	GHC 37.805,459
1-10-2018	GHC 146.343,712	GHC 36.585,928	GHC 975,625	GHC 37.561,553
1-11-2018	GHC 109.757,784	GHC 36.585,928	GHC 731,719	GHC 37.317,647
1-12-2018	GHC 73.171,856	GHC 36.585,928	GHC 487,812	GHC 37.073,740
2-12-2018	GHC 36.585,928	GHC 36.585,928	GHC 243,906	GHC 36.829,834

C.16. ANNONA

Annona

LOAN REPAYMENT SCHEDULE

Principal Amount GHS	1st withdrawal	13-3-2012	€ 418.000,00
	2nd withdrawal	12-8-2012	€ 342.000,00
Interest Charged		13,00%	per annum

Date	Amount Outstanding	Principal payment	Interest Payment	Total Payment
13-3-2012	€ -	€ -418.000,00	€ -	€ -418.000,00
13-6-2012	€ 418.000,00		€ -	€ -
13-9-2012	€ 418.000,00	€ -342.000,00	€ -	€ -342.000,00
13-12-2012	€ 760.000,00		€ -	€ -
13-3-2013	€ 760.000,00		€ -	€ -
13-6-2013	€ 760.000,00		€ -	€ -
13-9-2013	€ 760.000,00		€ -	€ -
13-12-2013	€ 760.000,00		€ -	€ -
13-3-2014	€ 760.000,00		€ 197.600,00	€ 197.600,00
13-6-2014	€ 760.000,00		€ 24.700,00	€ 24.700,00
13-9-2014	€ 760.000,00		€ 24.700,00	€ 24.700,00
13-12-2014	€ 760.000,00		€ 24.700,00	€ 24.700,00
13-3-2015	€ 760.000,00		€ 24.700,00	€ 24.700,00
13-6-2015	€ 760.000,00		€ 24.700,00	€ 24.700,00
13-9-2015	€ 760.000,00		€ 24.700,00	€ 24.700,00
13-12-2015	€ 760.000,00		€ 24.700,00	€ 24.700,00
13-3-2016	€ 760.000,00	€ 190.000,00	€ 24.700,00	€ 214.700,00
13-6-2016	€ 570.000,00		€ 18.525,00	€ 18.525,00
13-9-2016	€ 570.000,00		€ 18.525,00	€ 18.525,00
13-12-2016	€ 570.000,00		€ 18.525,00	€ 18.525,00
13-3-2017	€ 570.000,00	€ 190.000,00	€ 18.525,00	€ 208.525,00
13-6-2017	€ 380.000,00		€ 12.350,00	€ 12.350,00
13-9-2017	€ 380.000,00		€ 12.350,00	€ 12.350,00
13-12-2017	€ 380.000,00		€ 12.350,00	€ 12.350,00
13-3-2018	€ 380.000,00	€ 380.000,00	€ 12.350,00	€ 392.350,00

C.17. CALCULATION COST OF SALES

Calculation Cost of Sales			
Standards for Cost of Sales			
Variable per Box			
Strapping Bands	0,0244		
Labels	0,2560		
Rubber Bands	0,2667		
Cartons	2,4928		
Pallets	0,1333		
Haulage to Tema	0,5333		
Fixed			
Farm Electricity	3.012,85		
Other	-		

C.18. CALCULATION FARM CONSUMABLES

Calculation Farm Consumables

Cost Allocation	%	GHC 2.013,000
Month 1	16%	GHC 2.281,545
Month 2	4%	GHC 611,820
Month 3	4%	GHC 611,820
Month 4	4%	GHC 611,820
Month 5	4%	GHC 611,820
Month 6	4%	GHC 611,820
Month 7	4%	GHC 611,820
Month 8	4%	GHC 611,820
Month 9	4%	GHC 611,820
Month 10	4%	GHC 611,820
Month 11	4%	GHC 611,820
Month 12	4%	GHC 611,820
Month 13	3%	GHC 398,223
Month 14	9%	GHC 1.310,776
Month 15	3%	GHC 398,223
Month 16	3%	GHC 398,223
Month 17	3%	GHC 398,223
Month 18	3%	GHC 398,223
Month 19	3%	GHC 398,223
Month 20	3%	GHC 398,223
Month 21	3%	GHC 398,223
Month 22	3%	GHC 398,223
Month 23	3%	GHC 398,223
Month 24	3%	GHC 398,223

Standard Operating Cost per Hectare	GHC 2.013,000
Planting	GHC 1.669,725
Fruit Maintenance	GHC 7.341,846
Export	GHC 912,553
Sucker Maintenance (12 Months)	GHC 4.778,671
Total	**GHC 14.702,795**
Total per box	*GHC 2,520*

2013 PRODUCTION HECTARES	January	February	March	April	May	June	July	August	September	Oktober	November	December
Month 1	12	12	12	12	12	12	12	12	12	12	12	12
Month 2	12	12	12	12	12	12	12	12	12	12	12	12
Month 3	12	12	12	12	12	12	12	12	12	12	12	12
Month 4	1	12	12	12	12	12	12	12	12	12	12	12
Month 5	9	1	12	12	12	12	12	12	12	12	12	12
Month 6	11	9	1	12	12	12	12	12	12	12	12	12
Month 7	1	11	9	1	12	12	12	12	12	12	12	12
Month 8	0	1	11	9	1	12	12	12	12	12	12	12
Month 9	5	0	1	11	9	1	12	12	12	12	12	12
Month 10	4	5	0	1	11	9	1	12	12	12	12	12
Month 11	3	4	5	0	1	11	9	1	12	12	12	12
Month 12	0	3	4	5	0	1	11	9	1	12	12	12
Month 13	0	0	3	4	5	0	1	11	9	1	12	12
Month 14	4	0	0	3	4	5	0	1	11	9	1	12
Month 15	5	4	0	0	3	4	5	0	1	11	9	1
Month 16	10	5	4	0	0	3	4	5	0	1	11	9
Month 17	12	10	5	4	0	0	3	4	5	0	1	11
Month 18	10	12	10	5	4	0	0	3	4	5	0	1
Month 19	3	10	12	10	5	4	0	0	3	4	5	0
Month 20	5	3	10	12	10	5	4	0	0	3	4	5
Month 21	4	5	3	10	12	10	5	4	0	0	3	4
Month 22	5	4	5	3	10	12	10	5	4	0	0	3
Month 23	8	5	4	5	3	10	12	10	5	4	0	0
Month 24	5	8	5	4	5	3	10	12	10	5	4	0
Total hectares under production	143	151	154	161	169	175	184	186	187	189	195	203

2013 Costs Farm Consumables	January	February	March	April	May	June	July	August	September	Oktober	November	December
Month 1	27.379	27.379	27.379	27.379	27.379	27.379	27.379	27.379	27.379	27.379	27.379	27.379
Month 2	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342
Month 3	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342
Month 4	818	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342
Month 5	5.251	818	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342
Month 6	6.950	5.251	818	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342
Month 7	533	6.950	5.251	818	7.342	7.342	7.342	7.342	7.342	7.342	7.342	7.342
Month 8	280	533	6.950	5.251	818	7.342	7.342	7.342	7.342	7.342	7.342	7.342
Month 9	2.929	280	533	6.950	5.251	818	7.342	7.342	7.342	7.342	7.342	7.342
Month 10	2.676	2.929	280	533	6.950	5.251	818	7.342	7.342	7.342	7.342	7.342
Month 11	1.861	2.676	2.929	280	533	6.950	5.251	818	7.342	7.342	7.342	7.342
Month 12	0	1.861	2.676	2.929	280	533	6.950	5.251	818	7.342	7.342	7.342
Month 13	0	0	1.211	1.742	1.906	182	347	4.524	3.418	533	4.779	4.779
Month 14	5.779	0	0	3.987	5.734	6.275	601	1.142	14.890	11.249	1.753	15.729
Month 15	2.142	1.756	0	0	1.211	1.742	1.906	182	347	4.524	3.418	533
Month 16	3.976	2.142	1.756	0	0	1.211	1.742	1.906	182	347	4.524	3.418
Month 17	4.707	3.976	2.142	1.756	0	0	1.211	1.742	1.906	182	347	4.524
Month 18	3.821	4.707	3.976	2.142	1.756	0	0	1.211	1.742	1.906	182	347
Month 19	1.338	3.821	4.707	3.976	2.142	1.756	0	0	1.211	1.742	1.906	182
Month 20	2.079	1.338	3.821	4.707	3.976	2.142	1.756	0	0	1.211	1.742	1.906
Month 21	1.733	2.079	1.338	3.821	4.707	3.976	2.142	1.756	0	0	1.211	1.742
Month 22	2.125	1.733	2.079	1.338	3.821	4.707	3.976	2.142	1.756	0	0	1.211
Month 23	3.346	2.125	1.733	2.079	1.338	3.821	4.707	3.976	2.142	1.756	0	0
Month 24	1.835	3.346	2.125	1.733	2.079	1.338	3.821	4.707	3.976	2.142	1.756	0
Total Costs	96.241	97.725	101.071	108.129	113.932	119.474	121.342	122.812	133.185	133.731	129.757	142.510

D.1. MAINTENANCE MANUAL

Accountant Manual for GCF's Business Simulation Model

This is the accountant manual for the Business Simulation model that is developed by Thomas Hooijman. The model displays the current liquidity position and projects the future liquidity developments. The purpose of this manual is to ensure a good maintenance of the model. First the process of monthly updating and then the process to change assumptions is explained.

The model is designed uniformly, this means that every sheet has the same structure. Four things that help in maintaining the model are listed below.

- All the fields which require input are colored blue.
- If a particular cost did not occur, the best is to fill in "0".
- All the figures in the model are in Ghana Cedis, only the sheets containing the loans are in their original currencies.
- The cells which not need monthly updating are protected with a password. The password for all sheets is *"goldcoast"* . The password protection can be removed by clicking on the "remove protection of this worksheet" on the control tab of Excel. The "adding protection to this worksheet" can be used to add password protection again.

The models have interconnections; the models of the previous year and the next year have a link with the model of the current year. The connection with the model of the previous year makes it sure that the calculations for the harvest and farm consumables are updated correctly. The connection with the model of the next year makes it sure that the projections for that year are displayed. To ensure that these connections keep working, the following things have to be kept in mind.

- Do not change the names of the models, the connections then have wrong name and stop updating.
- Keep the files in the same folder, otherwise the connections have the wrong reference and stop updating.

1. Monthly Maintenance

To ensure that the projections are up-to-date the model requires a monthly update. All the sheets that require an update are described below. The updates are described in the same order in which the sheets are in the model. The paragraphs describes the required input for the sheets and the sources from which this information can be derived. At the end of every paragraph a table summarizes all required input for that sheet.

1.1. Cash Flow Statement

This sheet contains an overview of the actual and projected cash flows of the year. The cash flows of the export sales and local sales differ from the data in the EBITDA, because of the difference in time between the sales and the actual inflow. The cost of sales and the farm

consumables also differ from the data in the EBITDA, because there is an inventory used. These four headers therefore require an manual update of the actual cash flow.

As a control function the sheet has a header for the "Counted Ending Balance". This is the actual counted cumulated balance of all the bank and the petty cash balances. This figure has to correspond with the calculated ending balance. If this is not so then something went wrong in the formulation of the calculation of the above cash flows.

The cash flows from export sales, local sales, cost of sales and farm consumables can be obtained by looking into the cash book. The counted ending balance can be calculated by summing all the bank balances and the petty cash balances.

The actual cash flows replace the budgeted. To make it easier to see which are the actual figures, a red taint must be added to the cash flows of an updated month.

Input	Source
Export Sales	Cash Book
Local Sales	
Cost of Sales	
Farm Consumables	
Counted Ending Balance	Accumulate Bank and Petty Cash Balances
Add Red Taint	When model is updated add a red taint to the cash flows to indicated that these are actuals.

1.2. EBITDA

This sheet contains the actual and projected overview of the operating income and expenses. All the figures are automatically updated via connections to the other sheets. The actual figures replace the budgeted figures. To make it easier to see which are the actual figures, a red taint must be added to the revenue and expenses of an updated month.

Input	Source
Add Red Taint	When model is updated add a red taint to the cash flows to indicated that these are actuals.

1.3. Planting

The planting sheet contains the planting quantity of each month and compares the actual with the budgeted planting quantity. The number of suckers planted have to be filled in this sheet. After this input the model automatically calculates the equivalent number of hectares. The number of suckers can be obtained from the monthly farm report.

Input	Source
Suckers Planted	Monthly Farm Report

1.4. Sales

The sales sheet contains a monthly overview of the sales and the harvest quantity. The number of exported boxes, the export sales and the local sales has to be put in. The average box price and the exportable produce is automatically calculated by the model.

The information quantity of exported boxes and the export sales can be obtained from the Export Report. Important is that the shipments with the shipping date (ETD) of that specific month are used! The local sales can be obtained from the Export Manager of the farm.

Input	Source	Remarks
No. of Boxes	Export Document	Use shipping date (ETD) of that month
Export Sales		
Local Sales	Data from Sampson	-

1.5. Cost of Sales

This sheet contains an overview of the cost of sales. It compares the actual with the budgeted costs. The costs for the strapping bands, labels, rubber bands, cartons, pallets, haulage to Tema, Farm electricity and other relevant costs have to be filled in. It is important that also the waste is included in the usage of the products. The cost per box and the number of boxes exported is automatically calculated and does not have to be filled in.

Input	Source	Remarks
Strapping Bands	Monthly Farm Report	Include Waste in Usage
Labels		
Rubber Bands		
Cartons		
Pallets		
Haulage to Tema		
Farm Electricity	Invoice from Electricity Company	-
Other Costs	Monthly Farm Report	Include Waste in Usage

1.6. Farm Consumables

This sheet compares the actual with the budgeted costs of the farm consumables. All the costs of the mulch foil, pesticides, fertilizers, fuel & lubricants and other farm consumables have to be filled in.

Input	Source
Mulch Foil	Farm Consumables Records
Pesticides	
Fertilizer	
Fuel & Lubricants	
Other Farm Consumables	

1.7. Employee Costs

This sheet compares the actual with the budgeted employee costs. The general employee costs have to be filled in. This heading should include the SSNIT and the tax costs. Furthermore the extra duty allowances and the medical costs of that month has to be filled in.

Input	Source	Remarks
Employee Costs	Monthly Payroll	Include the costs of the SSNIT and the taxes
Extra Duty Allowances	Cash and Petty Cash Book	-
Medical Costs	PVs from Farm	-

1.8. General and Administrative Expenses

This sheet compares the actual with the budgeted general and administrative expenses. The expenses of office rent, insurances and licenses, travelling expenses, legal expenses, auditors fees and expenses, repairs and maintenance and other administrative expenses have to be put in.

Input	Source
Office Rent	Cash and Petty Cash Book
Insurances and Licenses	
Travelling Expenses	
Legal Expenses	
Auditors Fees and Expenses	
Repairs and Maintenance	
Other Administrative Expenses	

1.9. Farm Expenses

This sheet compares the actual with the budgeted farm expenses. The costs for food, transport, phone units, loading/offloading, repair, stationary and farm tools and other costs must be filled in.

Input	Source
Food	PVs from Farm
Transport	
Phone Units	
Loading / Offloading	
Repair	
Stationary	
Farm Tools	
Other	

1.10. Capital Expenditures

This sheet compares the budgeted capital expenditures with the actual expenditures. The input that is required are the land & building, plant & machinery, office equipment & furniture and the motor vehicle expenditures. The capital expenditures have to be classified in these categories.

Sometimes GCF hires machinery for cultivating the land. These costs are treated as an investment in the land and therefore capitalized. For this reason the costs of hired machinery also has a header in this sheet and the cost per month must be put in.

Input	Source
Hired Machinery	Cash and Petty Cash Book
Land & Building	
Plant & Machinery	
Office Equipment & Furniture	
Motor Vehicle	

1.11. Stanbic OD

This sheet contains the bank balance of the Stanbic overdraft facility. The ending balance of the overdraft is required as input. The decrease or decrease of the overdraft is then automatically calculated by the model.

The ending balance of the Stanbic overdraft can be obtained from the overdrafts bank balance. Important is that the ending balance is put in as EURO!

Input	Source	Remarks
Ending Balance	Overdraft Balance	Ending Balance have to be filled in as EURO value

1.12. Debt

This sheet contains all the cash flows as a result of the financing. First the interest costs of the Stanbic OD and the EDIF, GCB and Annona loans has to be filled in. Also the total bank charges and rural bank charges have to be filled in. All the cash flows in have to be filled in as Ghana Cedis! The input can be obtained from the bank statements.

In the principal payment tables the disbursements and principal payments of the loans have to be filled in. This requires input from in- and outflows as a result from the Stanbic OD, and the EDIF, GCB and Annona loans. Principal payments or a decrease in the overdraft facility are put in as a positive number. Disbursements or an increase in the overdraft facility are put in as a negative number. All the cash flows in have to be filled in as Ghana Cedis!

Input	Source	
Interest Stanbic OD	Bank Statements	Cash Flows have to be filled in as GHS.
Interest EDIF		
Interest GCB		
Interest Annona		
Rural and Bank Charges		
Decrease (Increase) Stanbic OD	Bank Statements	• Payments and Decrease in OD = Positive <<Input>> • Disbursements and Increase in OD = Negative <<Input>> • Cash Flows have to be filled in as GHS.
Principal Payment EDIF		
Principal Payment GCB		
Principal Payment Annona		

2. Other Maintenance

It can occur that big changes in the company occur and the current assumptions are no longer valid. The assumptions can be changed by replacing the old values with new values. To edit the assumptions first the password has to be removed. For the removal of the protection read the remark on the first page of this manual. To sustain a correct projection the change in assumptions has also to be made in the future models.

Management Manual for GCF's Business Simulation Model

The model provides an overview of the expected cash flows and operating profit. It also provides the management with an easy access to a comparison of the actual and budgeted costs and revenues. Finally it is made possible to simulate future scenarios by changing the planting quantity, market price, exchange rates and capital expenditures. This manual comprehensively explains all the models relevant functions for the management. First the general characteristics of the model are explained and then each component is separately described.

1. General

The model is created to provide a good insight in the future cash flows for the management. For this reason the model will replace the expected cash flows with the actual cash flows, when they are filled in, so the most realistic perspective is displayed.

Another function of the model is to provide an overview of the actual and projected operating income and expenses. Cash flows can differ from costs and revenues in a period. This difference is caused by payment terms and stock keeping.

The model also compares the actual with the budgeted costs. For the comparison of the variable costs a flexible budget is used. This means that the budgeted costs are adapted to the actual production level. The variable costs in the model are the farm consumables and the cost of sales. When the actual number of boxes exported or the actual planting quantity is known, the budget is adapted to this information. This adaption makes it sure that a good comparison can be made between the actual and budgeted costs.

To easily compare the differences between the actual and budgeted costs variances are used. The variances are expressed in percentages and are colored coded. This is done to make it easier to understand for the users. The following percentage range corresponds to each color: - infinity to -10% is red, -10% to +10% is orange and +10% to + infinity is green.

A model displays the cash flows for that year and displays a projection of several developments of the next year. The model contains connections with the model of the next and previous year. The connection of the next year is required for the projections. The connection with the previous year is required for the calculation of the costs of farm consumables and the projection of the harvesting. The models only update themselves when they are opened. For example when the planting quantity in 2013 is changed, the expected harvest quantity in the 2014 model is only updated when this model is opened. The updating of the links only work when the files are saved in the same folder.

For security reasons the user has only limited access to the model. The user can put in simulation data and actual results in the model. Users can also select and copy information from the model. However when the users wants to change anything else the password has to be filled in. The password is "*goldcoast*" and can be remove with by pressing the "remove protection" button in the control tab of Excel.

All the tabs of the model are color coded, this makes it easier for users to browse the model. The table below shows which color corresponds with which tabs.

Color	Contents
Grey	Interface
Dark Blue	Cash Flow Statement and EBITDA
Green	Planting
Orange	Sales
Purple	All Operating Costs; cost of sales, farm consumables, employee costs, general and administrative expenses and farm expenses
Red	Capital Expenditures
Light Blue	Stanbic Overdraft & Debt
No Color	Hidden Sheets

2. Model Components

This paragraph explains the structure of the model. All the components are explained below, for this explanation the same structure as used in the actual model is used.

2.1. Interface

The interface of the model provides the user with an overview of the most important cash flows. The graphs show the information from the current and next year. Under the graphs a simulation table is displayed. Users can adapt this data and see the effects of changes of the variables on the cash flows.

2.2. Cash Flow Statement

The cash flow statement displays all the in- and outflows and the liquidity position. The projected cash flows are replaced by the actual cash flows, when they are put in. The actual cash flows are indicated with a red taint.

2.3. EBITDA

This sheet contains the overview of the operating income and expenses. The projected figures are replaced by the actual figures. To indicate actual figures a red taint is used.

2.4. Planting

This sheet shows the planned planting quantity and the actual planting quantity. The variance and the graph can be used to compare the budgets and the actuals.

2.5. Sales

The sales sheet contain all the sales data. Comparisons between the actuals and budgeted figures of the average box price, export and local sales are displayed in graphs.

2.6. Cost of Sales

The actual and budgeted total cost of sales can be compared in this sheet. All the costs are also broken down, to make comparison on a lower level. Finally the third table shows the overview of the budgeted and actual cost per box of the cost of sales.

2.7. Farm Consumables

This sheet compares the actual and budgeted farm consumables used. The fuel costs are split from the other farm consumables. The variances of the farm consumables and fuel & lubricants are both shown.

2.8. Employee Costs

The actual and the budgeted employee costs are displayed in this sheet.

2.9. General and Administrative Expenses

The actual and budgeted general and administrative expenses are displayed in this sheet. The actual expenses are split into several headings, so it is easier to see how the total cost is built up.

2.10. Farm Expenses

The budgeted and realized farm expenses can be compared. The actual costs are split up in categories, so it is easy to see where the costs are coming from.

2.11. Capital Expenditures

This tab shows an overview of all capital expenditures and the variances with the budget. The actual capital expenditures are split in the categories used by GCF for the depreciation and a category “hired machinery”. This category contains all the costs related to the hiring of machines for land cultivation.

2.12. Stanbic Overdraft

This sheet displays the actual amount outstanding in the Stanbic bank account. This is used for the calculations of the projected interest costs and cash flows.

2.13. Debt

This sheet contains all the finance related cash flows. First it shows the interest costs and the bank charges of GCF. And the lower tables show the cash flows as a result from payments to or disbursement from several banks. No graphs are used in this sheet, because it is not really relevant to compare the actual versus the budgeted cash flows for these cash flows.

2.14. Hidden Sheets

The model has five sheets that are usually hidden. These are the three repayment schedules for the EDIF, GCB and Annona loan. The other two are used in the cost of sales and the farm consumables calculation.