

PROCESSOR BUSINESS SCHOOL



Fruits & Vegetables

Training Manual

- Setting Up a Business
- Managing Finance
- Managing Process Flows
- Marketing
- Managing Staff
- Managing Quality



Market-Oriented Agriculture Programme
Ministry of Food and Agriculture of Ghana





This training manual has been developed within the frame of the Value Chain Business School concept to strengthen the skills of fruit and vegetable processors in Ghana to produce more profitably for the market. It achieves this by building the capacity of entrepreneurs to apply simple standard business management practices. The aim of the Value Chain Business School approach is to make fruit and vegetable value chains more productive and competitive and thereby improve the livelihoods of smallholder farmers, processors, traders and service providers in the country.

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PREFACE

This manual covers the important aspects of running a fruit processing business, including choosing a product, preparing a feasibility study and a business plan, finding and developing suitable markets, selecting equipment, choosing a site and setting up the premises.

The example given is the production of fruit juice for the local market in Ghana and assumes that an entrepreneur has made the decision to produce juice and is faced with the task of finding funds to purchase equipment, adapting the premises to the needs of hygiene and quality management, and establishing a customer-base with a product that is of the necessary quality and sold at a competitive price.

There are several technical challenges when producing fruit juice. However, the purpose of this manual is to draw attention to the business requirements necessary for a business to remain a viable enterprise.

Before you start, consider the following:

| Market for product | Market for inputs and equipment |
|--|---|
| Who needs the product and wants to buy it? | Who sells the necessary inputs and equipment? |
| The quality of product that is demanded by the market (specifications) | The quality of the inputs and equipment |
| The price of the product compared to other markets | The price of sale of the inputs and equipment compared to other markets |
| The location of the market for the product | The transport costs of acquiring inputs and equipment |

Tip

This manual contains a memory stick containing an example of an Excel spread sheet of a cash flow for a juice factory of 100 litres/hour capacity. It contains calculations for which costing can be adjusted and varied showing how they can affect the viability of a business.



MODULE 1: BUSINESS START-UP PLANNING

The Feasibility Study

The Feasibility Study outlines and analyses several alternatives or methods of achieving business success. The feasibility study helps to narrow the scope of the project to identify the best business scenario(s). The Feasibility Study consists of:

Description of the Business: The product or services to be offered and how they will be delivered.

Market Feasibility: Includes a description of the industry, for instance current market, anticipated future market potential, competition, sales projections and potential buyers.

Technical Feasibility: Assesses how you will deliver a product or service (e.g., materials, labour, transportation, where your business will be located, technology needed).

Financial Feasibility: Projects how much start-up capital is needed, sources of capital, returns on investment.

Organisational Feasibility: Defines the legal and corporate structure of the business (including professional background information about the proposers and what skills they contribute).

Conclusions: An honest assessment of how the business can succeed.

The Business Plan

A Business Plan defines your business, identifies your goals, and serves as your company's base information. Usually, it will be written with the intention of convincing a lending institution that the projected business is likely able to repay any loan according to the lending conditions and on schedule. Having said so, Business Plans also guide the management of your operation and finances and help in the promotion and marketing of your business.

The Business Plan helps you allocate resources and is therefore a tool to make appropriate business decisions. Before you begin writing your Business Plan, consider the following:

- What is the **purpose** of the business?
- Does it fill a **need**?
- Who and where are the potential **customers**?
- Why will they purchase from you ("**unique** selling proposition")?
- How will you **reach** the customers?
- Where will you get the financial resources to start the business (**source of finance**)?

The basic components include a **description of the business** and the entrepreneur, a current and projected **market analysis**, a **management plan**, a **profitability analysis**, and a **cash flow analysis**.

Description of the business:

Cover: Includes the company name, address, phone number, e-mail, author and designation and should be dated

Summary: What is the business about? What is the size of the business?

Description of product: Composition, quality, packaging, size of a unit, sales price

Description of owner and business: Relevant experience of the owner as well as his goal, objectives and guiding principles (e.g. product quality, community focus, passion for the business)

Company structure: E.g. sole proprietorship, corporation, general partnership, limited partnership

Outline of perceived opportunity: Why is the opportunity available to you?

Time projection: Is the time available limited or not?

Market summary: Who are the customers? Commercial, government, industrial, local, regional, overseas?

Financial summary: Total amount of funds sought for the venture; estimated start-up costs; projected average monthly expenses; projected average monthly revenue

Market analysis:

Target market: Describe the different market segments for your product; identify the market segment which you are targeting; describe the consumers (sex, age, income, education level, lifestyle, religion, occupation, location) and accordingly the points of sale.

Trends and future projection: Estimate the present and potential demand and your market share; graph past price developments in relation to cost-of-living development and currency exchange rate developments; how has this industry done in the last several years, how is it doing today, and what is predicted?

Entry barriers: Are there permits or regulatory approvals required? Do you need to gain or employ skills?

Analysis of competition: How will your product compare with others on the market? Who are the competitors (from inside and outside the country)? What will you do different, what are your core competencies, why do you think you will succeed? Think about quality, packaging, speed, service, price, convenience, location!

Marketing strategy: Demonstrate how you will tell customers what you will do better than the competition (e.g. quality, packaging, speed, service, price, convenience and location).

Sales strategy: Describe your distribution channels and additional services (e.g. telephone hotline).

Promotion strategy: How will you promote your product to the customer (e.g. labelling, packaging design, advertising, degustation)?

Pricing strategy: What will your costs be compared to competitors? How will you reduce your costs? Do you plan to undercut competitor prices? Or rather receive a price premium over the competition?

Management plan:

Operational procedures: How is the product made, what is the product flow?

Capacity: How much product do you aim at producing in a given time? And how much in a year given your weekly working hours and the seasonality of your business?

Management: How are the operations managed? Who can take which decisions? Will you need to employ an accountant? What are the most important aspects of your quality management system? Will you have a traceability system?

Employees: Number and type of employees needed (in administration and production), their positions and responsibilities, required skills, knowledge and certificates; what in-house training will be necessary?

Factory site: Water supply and sufficiently large water tanks? Reliable and inexpensive energy supply? Size of the generator?

Factory layout: Separation of dirty and clean (“high risk”) areas? Are “high risk” areas protected from flies and dust? Straightforward delivery of raw material supply, safe storage of inputs, safe evacuation of waste, secured and hygienic storage of final product? Space needed for employees (toilets, changing rooms, canteen)? Costs of building of factory and the timetable of construction?

Environmental impacts: What impacts will the environment have on your factory (dust, pests) and what impacts will your factory have on the environment (air and water pollution, noise)?

Equipment: A list of all equipment and machinery needed as well as their individual costs and lifespans.

Insurance: What insurance is needed and what cover does it provide?

Raw material: Source of fruit (spot market or contracted farms)? Long term supply and consistent quality assured? Obligatory use of crates for raw material delivery? Policies for hygiene during transport? Availability of other ingredients and packaging?

Contracts: Which agreements with suppliers and buyers regarding credit and transport will be necessary?

Profitability and cash flow analysis

Success parameters: Identify the most important success parameters for your business (e.g. x kg of fruits per crate of juice; x kg of fruits per kg of dried fruits; x kg of gas per crate of juice; x crates per work force of 10 per day; etc.) and define realistic targets (from trials, literature and talking to your colleagues)!

Product and service pricing: List all the products. How will they be priced? What are the projected quantities to be sold each month in Year 1 and in the following years?

Profitability analysis: Calculate:

- i) Your expected **gross margin per unit** for every product you produce: Income minus variable costs (such as fruits, energy, hired labour, packaging material);
- ii) Your expected **net profit per year** for the entire business: Sum of gross margins minus fixed costs (depreciation of machinery and buildings, employed staff, rental payments, financing costs) and minus taxes and fees;
- iii) The **Internal Rate of Return IRR**: Prepare a table in Excel with your yearly capital outflow (investment and running costs) and your yearly revenue (capital inflow). This is also called the Cash Flow Projection.

Cash Flow Projection for a 5-year project

| | A | B | C | D | E | F |
|---|-----------------------|---------------|---------------|---------------|---------------|---------------|
| 1 | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| 2 | Capital outflow (GHC) | 80.000 | 20.000 | 25.000 | 25.000 | 25.000 |
| 3 | Capital inflow (GHC) | | 40.000 | 60.000 | 80.000 | 80.000 |
| 4 | Net cash flow (GHC) | -80.000 | 20.000 | 35.000 | 55.000 | 55.000 |

Now calculate the IRR with Excel: =IRR(B4:F4)

In the above project, the Internal Rate of Return is 30%. You may compare this with the lending rate and with the IRRs of other possible investments.

Monthly cash flow projection: Prepare a monthly cash flow analysis to know your monthly net cash flow. This will show you when you need loan disbursements for capital investments and working capital and when you can best repay the loan. Show the detailed monthly cash flow in the appendix of your Business Plan.

Funding Sources: Explain where you intend to obtain funding and how much you will receive from each source.

Appendices

CVs of key personnel; detailed monthly cash flow projection; break-even analysis (what are the volumes and yields at which you break even); sensitivity analysis (what happens if the prices and volumes increase or decrease)

Selecting a location for the business

Consider the following factors:

- Proximity to the source of crops
- Availability of services (especially potable water and electricity)
- Proximity of a suitable site for disposal of solid and liquid wastes
- Proximity to customers

Many processors choose to locate their production facilities in a rural area close to the source of crops. This has advantages because bulky raw materials do not need to be transported long distances, which is not only less expensive but also reduces the risks of damage to the crops. Also, the level of rent, price of land and labour costs are generally lower in rural areas, and disposal of wastes is usually also easier or cheaper than in urban centres. However, these benefits need to be balanced against a number of disadvantages of a rural location. In particular the poor quality of rural roads may often create difficulties for:

- Access to markets and cost of distribution of finished products
- Access for production staff (poor public transport, long distances)
- Access to energy supplies, repair services and spare parts for equipment

In addition, the provision of services in rural areas is often substandard or intermittent. Large volumes of clean water are needed for all fruit and vegetable processing, and it may be necessary to drill a borehole for factory use and/or install water-treatment facilities.

Many processors therefore choose to set up their operation in a peri-urban area or rural growth centre in order to obtain the benefits of ease of access, better provision of services and lower costs than urban locations.

There are also potential marketing disadvantages of processing in a remote area, which depend on the marketing mechanisms and customer contacts that are built into the business, for example, supplying through distributors and wholesalers from a remote processing plant versus direct sales to retailers and large customers from a semi-urban area requiring closer and more frequent contacts.

How to formalise your business

1. Visit Ghana Revenue Authority – Internal Revenue Service (IRS).

What you need: Original and two coloured photocopies of a valid national ID card, i.e. Driver's License, health insurance, passport or Voter's ID Card.

Register for a Tax Identification Number (TIN). Registration is free of charge!

For the TIN forms visit:

www.gra.gov.gh/index.php/tax-information/taxpayer-registration-tin-tax-type

2. Then visit the Registrar General's Department.

Purchase Business Registration Forms for Certificate of Incorporation and Certificate to Commence Business.

Categories: Sole proprietorship, partnership, limited liability.

Cost: Depending on the business type.

3. Finally, visit the Social Security and National Insurance Trust (SSNIT).

Register for a SSNIT number for your organisation to pay workers the SSNIT contributions.

After the setup of your business and during product trials, do the following:

4. Visit the District or Municipal Public Health Office for testing of common food-borne illnesses for staff and claim Medical Certificates for staff.
5. Register with Food and Drugs Authority. NB: Registration with FDA is a process and could take up to 6 months to get products certified depending on outcome of factory inspections and microbiological analysis results.

MODULE 2: MANAGING FINANCE

There are two types of finance needed. The first is required before a business is set up and while the processing unit is being established to pay the **investment costs** (also referred to as start-up costs or capital costs). The second type is required to meet the costs that arise during operation of the processing unit and the selling of the product (**operating costs**), and this is met first by the working capital and later by the income from the sales of products.

Investment costs

The investment costs (or 'start-up' costs) are associated with:

- Preparation of a business plan
- Travel to obtain licenses from authorities and the cost of licenses
- Fees to architects, accountants, solicitors etc.
- Building work, supply of equipment
- Initial packaging and raw materials
- Testing of products
- Recruitment and training of staff

Some examples of how to reduce investment costs are as follows:

- Increase the amount of equity to reduce interest payments
- Choose suppliers through competitive bidding
- Negotiate with suppliers for discounts and extended credit facilities
- Set budgets for different types of expenditure and do not exceed them

Sources of investment finance

Investment by the owner is known as 'equity' and does not have to be repaid. Equity financing is usually from personal savings, or from profits or earnings from another job or business.

Borrowing from family, friends or banks is known as loan financing and requires repayment. Commercial banks often charge high interest rates. They claim that the high administration costs of relatively small loans as well as the risks involved are the reason for high interest rates.

Another source of finance for processors is to seek investors who are willing to invest in a business and become shareholders in the business. These are frequently unrelated to the business owner, but they are willing to invest because they can see a high return on their investment from either a share of the profits or payment of an annual dividend. Both private investors and financial institutions are likely to require a processor to have a Business Plan to demonstrate the expected profitability and performance of the business.

Operating costs

Operating costs are categorized into two types: 'fixed' and 'variable'.

Fixed costs (also known as 'overheads') are those that do not change if there is an increase or decrease in the amount of production. Examples include:

- Salaries (fixed salary costs are those paid to staff and management regardless of whether anything is produced or not)
- Utilities (service charges for telephone, water and electricity): Here we consider only the fixed charge paid to utility companies regardless of the amount used
- Rental payments
- Depreciation of buildings and equipment
- Interest paid on loans
- Some types of taxes

Variable costs change according to the volume of production. Examples include:

- Raw materials and ingredients
- Packaging materials
- Wages for operational staff
- Electricity, gas and water charges that depend on the amount used
- Fuel for vehicles
- Repair of equipment, machinery and vehicles
- Office materials

Operating costs can also be described as 'direct' and 'indirect' costs. Direct costs are those that arise directly from the production process (e.g. materials and labour costs for production workers), whereas indirect costs include salaries for office staff and delivery drivers, vehicle costs etc.

Calculate your profitability

There are two basic ways to maximize profits:

1. The first is to **increase income**, either by increasing the price of products, increasing the output and sales of products, or by finding buyers for by-products that were previously discarded.
2. The second is to **reduce expenditure**, and to do this a processor must first identify where costs occur in the business.

Only if all income and costs are identified when planning a business (and later recorded), you will be able to find out whether you are making a profit or a loss. Use the following calculations to determine whether your operations generate profit:

Gross margin per unit:

$$\text{Gross margin per unit} = \text{Income minus variable costs}$$

Remember: Variable costs are for fruits, energy, hired labour, packaging material

Typically, you will calculate gross margins for different products and different production methods in order to identify the most profitable among them. The gross margin per unit needs to be big enough to contribute to paying for the fixed costs of your operation.

Net profit per year for the entire business:

$$\text{Net profit} = \text{Sum of gross margins minus fixed costs and minus taxes and fees}$$

Remember: Fixed costs are for depreciation of machinery and buildings, employed staff, rental payments, financing costs

The net profit needs to be positive, otherwise you are losing money and you should bring the business to a close.

Breakeven analysis:

This analysis is used to determine the production level at which revenues are equal to the costs incurred (i.e. the business is neither making a profit nor loss). The level of production should always be above this level to ensure that the business is profitable.

Example: A business sells a pack of juice for 4.95 GHC and the total fixed costs are calculated at 260 GHC per day. The unit variable cost is 2.65 GHC per pack.

$$\text{Break-even point} = 260 \text{ GHC/day} / (4.95 \text{ GHC/pack} - 2.65 \text{ GHC/pack}) = 113 \text{ packs per day}$$

Below is an indicative income/cost spreadsheet. It is used in planning (for the Business Plan), but also in controlling. The spreadsheet would be constructed every month to allow the yearly sheet to be prepared using the monthly datasheets. This spreadsheet for small businesses is available in Excel.

Example of spreadsheet of monthly income and expenditure for a fruit-juice business

Fruit juice processing Cells shaded dark grey can be changed Change n° of pineapples: N° of cases, bottle, caps, labels and gas change automatically

| <i>Investment costs</i> | | | | | <i>Running costs</i> | | | | <i>Production costs</i> | | | <i>Price</i> | <i>Total</i> |
|-------------------------|----|--------------|---------------|--------------|-----------------------------|---------------|------------------|--------------|-------------------------|-------|------|--------------|--------------|
| Item | N° | Initial cost | Life (months) | Depreciation | Staff costs | Amount | Unit cost | Total | | | | | |
| Crusher | 1 | 10000 | 60 | 167 | Workers | 8 | 150 | 1200 | No Boxes | 938 | 1.33 | 1247 | |
| Boiler | 1 | 0 | 60 | 0 | GM | 1 | 400 | 400 | No Bottles | 22500 | 0.21 | 4725 | |
| Cooler | 1 | 0 | 60 | 0 | Other | 1 | 500 | 500 | No Crowns | 22500 | 0.06 | 1350 | |
| Filling tank | 1 | 3000 | 60 | 50 | Total staff costs | | | 2100 | No Labels | 22500 | 0.33 | 1800 | |
| Pasteuriser | 1 | 2500 | 60 | 42 | Input costs | Amount | Unit cost | Total | Total cost | | | | 9122 |
| Pump | 2 | 0 | 60 | 0 | Pineapples | 15000 | 0.80 | 12000 | | | | | |
| Corker | 1 | 300 | 60 | 5 | Gas bottles | 9.4 | 160 | 1500 | | | | | |
| Laptop | 1 | 500 | 60 | 8 | Labels | | 0.08 | 1800 | | | | | |
| Phone | 1 | 140 | 60 | 2 | Crowns | | 0.06 | 1350 | | | | | |
| Printer | 1 | 0 | 60 | 0 | Bottles | | 0.21 | 4725 | | | | | |
| Vehicle | 1 | 1000 | 60 | 17 | Boxes | 938 | 1.33 | 1247 | | | | | |
| Borehole | 1 | 7000 | 60 | 117 | Rent | | 0 | 0 | | | | | |
| Other | 1 | | 60 | 0 | Call credit | | 50 | 50 | | | | | |
| Other | 1 | | 60 | 0 | Electricity | | 50 | 50 | | | | | |
| Other | 1 | | 60 | 0 | Water | | 0 | 0 | | | | | |
| Other | 1 | | 60 | 0 | Depreciation | | 407 | 407 | | | | | |
| Other | 1 | | 60 | 0 | Other | | | 0 | | | | | |
| Other | 1 | | 60 | 0 | Other | | | 0 | | | | | |
| Other | 1 | | 60 | 0 | Total input costs | | | 23129 | | | | | |
| Total | | | | 407 | Grand total of costs | | | 25229 | | | | | |

| | |
|---|--------------|
| Income per crate | 32 |
| Crates produced | 938 |
| Total income | 30000 |
| Total income | 30000 |
| Total expenditure | 25229 |
| Profit (red:loss; amber:warning; green:OK) | 4771 |

Notes: 16 pineapples required for enough juice for 24 bottles of 330 ml (1 crate)
 All cells containing a formula (blue) are locked.
 Assumptions: All pineapples weigh 1 kg
 50% yield of juice (volume to weight)

Pricing of products

The price charged for a product should ensure that the income meets all of the costs and generates sufficient profit. The simplest method to determine the correct price for a product is to add up all the costs of production and then add on a percentage profit (mark-up pricing). Many processors use a profit margin of 20–30 percent, although lower margins are possible if the efficiency and productivity of the business are high. Conversely, if a product has little competition and/or a high demand, a higher profit margin may be possible.

Example: Calculating the price of a product

| | | |
|--|---|----------------------------------|
| Total production costs per litre juice | = | GHC 4.44 |
| Add 23% profit margin | = | GHC 1.02 |
| Selling price (GHC/L) | = | GHC 4.44 + GHC 1.02 = GHC 5.46/L |

This pricing strategy does not allow for the fact that the price of a product depends largely on what the market will accept and the price that competitors are charging. A judgement must therefore be made about how much a product can be sold for in a particular market *and* whether the costs of making it will produce an acceptable profit. A company should have a policy on how the prices of its products compare with those of its competitors. It may simply follow what competitors do, cutting or raising prices when they do (“**competitive pricing**”). Alternatively, it may have a “**low-pricing**” policy trying to undercut competitors’ prices to increase its market share, or a “**high-pricing policy**” to create a perception that its product is of better quality or is more prestigious than competing products. Few customers buy solely on the basis of price. For many consumers, low price can be interpreted as a “cheap” and possibly poor product.

Other factors that influence the buying behaviour of customers include **easy payment terms**, **friendliness of staff**, or the **permanent availability** of the product. It is therefore important to learn what motivates customers to buy a product, and to find ways to use this knowledge to both set the product price and use appropriate promotion and marketing techniques. Price is the most flexible element of the marketing mix because it can be changed quickly and easily.

Other considerations may apply to specific products:

- A new product may be introduced at a special low price
- The price of an old product that is facing increased competition from new or better products may be cut (or the product can be improved)
- The business may also consider how much demand may be reduced by increases in price (a product’s price sensitivity or the price elasticity of demand)

The following principles assist in setting a price:

- Produce products for which there is a strong demand
- Know the break-even cost of production and marketing
- Be aware of current market prices

Financial record-keeping

Financial management causes some of the most common and serious problems for many small-scale processors. Causes of failure include:

- Over-spending
- Using company income for personal needs and
- Treating profits as personal income
- Incorrect costing of inputs and/or pricing of products
- Too many debts or creditors
- Poor record keeping

To manage finances successfully, processors must have a good idea of how cash comes into a business, where it is at any time and where it goes. This requires financial records.

In some small-scale processing businesses, the owners keep all the financial information in their heads and write nothing down on paper. Some may be illiterate, whereas others believe that if they do not keep records they can avoid paying taxes. This is not usually successful, and if the owner falls ill, no one else will know what is happening in the business. The basis of good financial management is to keep and use records.

***Keeping records is useless
unless they are used to monitor, evaluate and control a business***

Processing enterprises at all scales of operation need to keep financial records. From these they know how much income from sales has been received, how much has been spent and for what purpose. Depending on the size and type of business, processors may also keep records of production, stocks, sales, staff, equipment maintenance, quality assurance and cleaning schedules.

The benefits of keeping records include:

- Being able to analyse business finances to reduce costs
- Knowing whether a product range should be expanded or reduced
- Knowing which customers owe money and how much
- Detecting fraud or theft

Usually you keep your records on paper in a book. However, small processors may find it easier to use the smartphones to record all money-in and money-out of the company. For small enterprises in Ghana, an app has been developed that helps entrepreneurs to record the finance and do simple monthly summaries: ***TrackApp***. Just enter “TrackApp” and “Numida Tech” into Google to get to Google Play for a free download.

Records of income

When a customer buys products on credit (i.e. they do not pay immediately), the processor should give an **invoice** that has an individual number, the customer's name, the products that were bought and how much is owed.

Copies should be made (e.g. by using carbon paper under the page of a duplicate record book).

Example of a page from an invoice book

| | |
|---|-----------------------------|
| Your company's details and registration number | |
| Add your account details if you want your customer to pay via wire transfer | |
| INVOICE No: | Date: |
| To: | Address: |
| Order No: | Item: Quantity: |
| Amount (GHC): Please settle this account within 30 days | |
| Signed: | |
| Manager | |

If you are VAT registered, you need to separately put the net amount (in GHC), the VAT (in % and GHC) and the gross amount (in GHC).

When the customer pays the bill, a **receipt** should be issued.

Example of a page from a receipt book

| | |
|---|------------------------------------|
| Your company's details and registration number | |
| Add your account details if you want your customer to pay via wire transfer | |
| RECEIPT No: | Date: |
| Received from: | Address: |
| The sum of: | Payment for: Order No: |
| <input type="checkbox"/> Cash | |
| <input type="checkbox"/> Cheque no: | |
| Signed: | |
| Manager | |

A **cashbook** is used to record all transactions that are made in cash.

Example of a page from a cashbook

| Cash Income (GHC) | | | | Cash Expenditure (GHC) | | | | |
|-------------------|-----------------|--------------|--------------|------------------------|--------------|--------|---------------|-------------|
| Date | Amount received | Customer | Product sold | Date | Amount spent | Seller | Spent for | Receipt no. |
| Date | 240.00 | ABC Stores | 8 crates | Date | 500.00 | Lydia | Salary | 54 |
| Date | 120.00 | Star Canteen | 4 crates | Date | 20.00 | Market | Phone credit | 55 |
| Date | 725.00 | Palm Hotel | 20 gallons | Date | 160.00 | Shell | Gas | 56 |
| | | | | Date | 60.00 | Ali | 80 pineapples | 57 |
| | | | | Date | 20.00 | Doris | Daily wages | 58 |
| | | | | Date | 160.00 | Ali | 200 mangoes | 59 |

Each week or month, sales records are compiled from the entries in the cashbook (don't forget the money paid into your bank account) to show the total sales income.

Example of a sales book

| Sales Year: | | Month: | | Amount: | | | |
|--------------|--------------|----------------------|-------------|-----------------------|-----------------------|--------|-----------------------|
| Date of sale | Customer | Product and amount | Invoice no. | Invoiced amount (GHC) | Amount received (GHC) | | Bank paying-in number |
| | | | | | Cheque number | Amount | |
| Date | ABC Stores | 8 crates mixed | 001/16 | 240.00 | | 240.00 | |
| Date | Star Canteen | 4 crates pineapple | 002/16 | 120.00 | | 120.00 | |
| Date | Palm Hotel | 20 gallons pineapple | 002/16 | 725.00 | 12347 | 725.00 | 00042 |

Records of expenditure

When goods have been paid for, the receipts should be kept numbered and in date order in a separate file. Small receipt slips should be glued on A4 paper.

Records of expenditure are taken from the cashbook each week or month and entered into an **expenditure book** to show how much money the processor has spent on different categories such as fruits, gas, wages & salaries, office running, etc.

Example of a page from an expenditure book

| Expenditure Year: | | Month: | | Amount: | | | | |
|-------------------|-------------|------------|------|------------|------------|------------|-----------|----------|
| Date | Receipt no. | Payment by | | Category | | | | |
| | | Cheque | Cash | Fruits | Gas | Staff | Office | Misc.* |
| Date | 54 | | x | | | 500 | | |
| Date | 55 | | x | | | | 20 | |
| Date | 56 | No 3251 | | | 160 | | | |
| Date | 57 | | x | 60 | | | | |
| Date | 58 | | x | | | 20 | | |
| Date | 59 | | x | 160 | | | | |
| TOTAL: | | | | 220 | 160 | 520 | 20 | 0 |

* Miscellaneous entries can include purchases that are made infrequently, such as machinery, office furniture etc.

A **General Ledger** contains a summary of all business income and expenditure in date order so that the owner can see the day-to-day activities of the business. It is based on a 'double entry' system, which has two parts, known as the 'debit' (in) part and the 'credit' (out) part. Every activity is entered in the ledger and has a date, a short description of the transaction, an identification number and the amount of money involved. However, double-entry bookkeeping is more complex than many small businesses require and a simplified recording system based on a **sales book** and an **expenditure book** may be easier to use and to understand.

Financial statements

There are two categories of accounting information:

- **Financial accounting** for the **public**, shareholders, customers, suppliers, creditors, regulatory bodies or tax authorities: This includes the financial position, liquidity (the ability to convert assets into cash) and profitability of an enterprise
- **Managerial accounting** for **internal** use within the business: This includes the relationship between production costs, profits and sales volumes; calculation of productivity; pricing decisions; capital budgets; etc.

This Chapter is about financial accounting. Typical financial statements used in a business include:

- Bank statements to show bank account transactions
- Balance sheet statements, which show the financial position at a particular time
- Cash flow statements, which show the available cash at a particular time
- Break-even analysis (see Chapter “Calculate your Profitability”)
- Profit & Loss accounts (see Chapter “Calculate your Profitability”)

The two most important reports generally accepted for accounting for small businesses are the Balance Sheet and the Cash Flow Statement. They show the past performance of the business and are used to project what might happen in the future.

Creating a Balance Sheet

The balance sheet is the financial report that lists all accounts of a company along with their balances. This report follows the formula:

$$\text{Assets} = \text{Liabilities} + \text{Owner's equity}$$

Assets are what a company owns (e.g. cash, debtors, machinery, stocks).

Liabilities are what a company owes (e.g. invoices to be paid, loans, taxes owed).

Owner's equity is how much money company owners have invested in the business.

Example of a Balance Sheet

| Assets | Amount (\$) | Liabilities | Amount (\$) |
|---------------------|-------------|-------------------------------------|-------------|
| Cash in bank | | Accounts payable | |
| Credit to customers | | Notes payable | |
| Machinery | | Total liabilities | |
| Stocks | | Owner's equity | |
| TOTAL ASSETS | | TOTAL LIABILITIES AND EQUITY | |

Let's create a basic balance sheet with the following accounts for Mr Mensa's Fruit Juice Company:

Assets:

Cash in bank = \$4,500
 Inventory = \$23,000,
 Office Supplies = \$2,500
 Office Equipment = \$5,000

Liabilities:

Accounts payable = \$15,000 (Invoices to be paid)
 Notes Payable = \$10,000 (Loans from banks)
 Owner's Equity: Capital = \$10,000

The heading is the first item that needs to be entered. The **first line** will say 'Mr Mensah's Fruit Juice Company.' The **second line** will say 'balance sheet.' The **third line** will say 'March 31, 2016' as the owner reports his financial information quarterly and the time period for this quarter is January 1 to March 31.

After the heading is complete, it's time to divide the balance sheet into left and right sides. Be sure that there is a distinct separation between the **asset side** of the report and the **liabilities and owner's equity side** of the report.

Assets, recorded on the **left** side of the equation, are listed individually along with their balances. The assets will be the cash in the bank, inventory, office supplies and office equipment. After all the assets are recorded, the total of the assets is calculated and written on the bottom line of the balance sheet. For 'Mr Mensah's Fruit Juice Company', the entry to record total assets will be written as: Total Assets = \$35,000.

The liabilities side of the balance sheet (**right** side) follows the same format as the assets. All liabilities are recorded first. For 'Mr Mensah's Fruit Juice Company', the liabilities will be accounts payable (invoices to be paid) and notes payable (loans to be paid). Following the last entry for the liabilities, the total liabilities are recorded. The owner's equity is also reported under the liabilities section. On the last line of the balance sheet, the total of liabilities and owner's equity is reported: Total Liabilities and Owner's Equity = \$35,000. Once you verify that both sides of the balance sheet are **equal**, the balance sheet is complete.

**Mr Mensah's Fruit Juice Company
 Balance sheet
 31 March 2016**

| Assets | Amount (\$) | Liabilities | Amount (\$) |
|---------------------|--------------------|-------------------------------------|--------------------|
| Cash in bank | \$4,500 | Accounts payable | \$15,000 |
| Inventory | \$23,000 | Notes payable | \$10,000 |
| Office supplies | \$2,500 | Total liabilities | \$25,000 |
| Office equipment | \$5,000 | Owner's equity | \$10,000 |
| TOTAL ASSETS | \$35000 | TOTAL LIABILITIES AND EQUITY | \$35,000 |

Cash Flow Statement

A cash flow statement is similar to an income and expenditure statement, but also indicates the flow of money in and out of the business and whether the business is generating profits or making losses.

Examples of cash flow statements

Monthly

| Month | 1 | 2 | 3 | 4 | 5 |
|--------------------------|--------------|--------------|--------------|--------------|--------------|
| <i>Cash inflow:</i> | | | | | |
| Balance b/f* | | (350) | (200) | 400 | 550 |
| Sales | | 2 000 | 2 350 | 1 800 | 2 000 |
| Equity | 2 500 | | | | |
| Total income | 2 500 | 1 650 | 2 150 | 2 200 | 2 550 |
| <i>Cash outflow:</i> | | | | | |
| Investment | 1000 | | | | |
| Expenditure | 950 | 950 | 950 | 950 | 950 |
| Rent | 200 | 200 | 200 | 200 | 200 |
| Labour | 200 | 200 | 200 | 200 | 200 |
| Stock | 500 | 500 | 400 | 300 | 200 |
| Total expenditure | 2 850 | 1 850 | 1 750 | 1 650 | 1 550 |
| Net cash flow | (350) | (200) | 400 | 550 | 1000 |

* b/f = brought forward

The net cash flow in Month 1 and 2 are negative, which in reality is not possible. There is no such thing as negative money. For months with predicted negative net cash flow therefore you will have to ensure to receive a loan disbursement or have an overdraft facility.

Yearly

| | |
|---|----------------|
| Cash flows from (used in) operating activities | |
| Cash receipts from customers | 9,500 |
| Cash paid to suppliers and employees | (2,000) |
| Cash generated from operations (sum) | 7,500 |
| Interest paid | (2,000) |
| Income taxes paid | (3,000) |
| Net cash flows from operating activities | 2,500 |
| Cash flows from (used in) investing activities | |
| Proceeds from the sale of old equipment | 7,500 |
| Net cash flows from investing activities | 7,500 |
| Cash flows from (used in) financing activities | |
| Dividends paid | (2,500) |
| Loan repayment | (2,000) |
| Net cash flows used in financing activities | (4,500) |
| Net increase in cash and cash equivalents | 5,500 |
| Cash and cash equivalents, beginning of year | 1,000 |
| Cash and cash equivalents, end of year | 6,500 |

Actively managing finances

Successful processors not only keep and analyse records of their finances as described above, but also take active steps to reduce costs and maximize their income. Some examples of methods used for **cost control** are:

- Train staff to prevent wastage of materials & energy and to increase productivity
- Set budgets for different types of expenditure (e.g. product promotion, vehicle costs, etc.) and do not exceed them
- Conclude written contracts with suppliers and keep good working relationships
- Choose suppliers through competitive bidding
- Negotiate with suppliers for discounts or extended interest-free credit facilities
- Follow up debtors regularly to shorten payment times and restrict the amount of credit that is offered to customers
- Minimise the amounts of materials held as stock
- Check income and expenditure records each week and follow up any anomalies

Management methods that **increase income** include:

- Increase the demand for products using advertising and promotions
- Invest in improved packaging to add value to a product and relocate it upmarket
- Increase the production capacity of existing equipment

Managing working capital: Many small businesses concentrate on maximizing profits by increasing sales and reducing costs. However, too few companies consider the importance of managing working capital. This can make the difference between business survival and failure. Strategies to improve working capital include:

- Increase credit lines with suppliers of raw materials and services
- Control stock levels and minimize the amounts of materials held as stock
- Check the credit worthiness of customers and improve credit control methods

Example: An analysis of a fruit processing business shows: It holds stocks of juice equivalent to 90 days' sales, worth 9,600 GHC. It offers 60 days' credit to customers and has 12,000 GHC outstanding in unpaid bills and 1,000 GHC in the bank. It also owes 1,500 GHC to suppliers who have a 30-day credit limit. The amount of money tied up as working capital is therefore: $9,600 + 12,000 = 21,600$ GHC.

Stock is expensive to keep: High stock levels require larger warehouse facilities, higher rent, electricity, etc. and there is a higher chance of stock becoming damaged or stolen. If debtors are allowed a longer period for payment, there is a greater chance that debts will turn into bad debts, or they will take more cost to collect. This is in addition to the costs involved in financing the working capital. With improved management of working capital, the company could make the following savings:

- Reduce stock levels to 30 days' worth of sales to release 6,400 GHC.
- Insist that customers pay within 30 days (the same as the credit limit offered by suppliers) to release 6,000 GHC

This increases the amount in the bank from 1,000 to 13,400 GHC – money that has previously been used to finance the extra stock and debtors. It also saves on the costs of warehousing and bad debts. This money could be used to finance improved marketing of the juice.

MODULE 3: MANAGING STAFF

Good staff management

Staff are the most important resource of your business because they have unlimited potential if they are properly trained, managed and motivated. However, owners of small businesses frequently overlook this and they recruit friends, relations or neighbours to work in the business. This may be because owners feel that these people are more trustworthy, but they may not have the best skills for the jobs that need doing. Likewise, many small business owners refuse to train staff because they think that a more skilled worker will ask for higher pay, or they will be tempted away by a competitor. These attitudes are myopic, and the correct selection of staff and investment in their development are keys to the success of a small processing business.

The aim must be to promote cooperative relations between the management and staff and to avoid the often adversarial behaviour in traditional industrial relations. Good management involves motivating staff to achieve their best performance. This means giving them a clear understanding of the aims of the business and how each person can help to achieve company goals. Providing necessary skills, tools, working conditions and resources to enable workers do their jobs properly is essential. Targets for the amount of work and the quality standards that employees are expected to achieve should be set clearly. The performance assessment needs to be fair with constructive criticism and rewards for successful employees.

Some tips on **good staff management style** are:

- Regular competency-based training with an assessment at the end of each unit
- Setting of achievable individual targets with deadlines
- Regularly checking on the progress of achieving these target
- Prompt reprimanding and discussion of shortcomings with individual staff members and mutual agreement on how to improve
- Enforcement of discipline firmly but fairly
- Relating pay to an employee's performance
- Rewarding well performing employees with increased responsibilities
- Giving credit for initiative and critical assessment of current practices
- Appreciation for a well-done job ("Feedback is the Breakfast of Champions")
- Involving employees on any changes to their work: Consult regularly with them for any business decisions

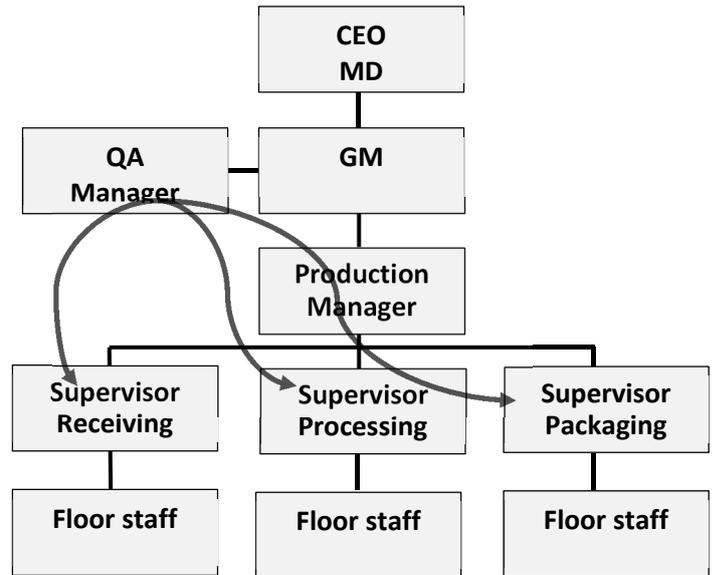
Some key points that the good manager keeps in mind in delivering a **reprimand**:

- The good manager reprimands immediately.
- The good manager tells the subordinate specifically what he/she did wrong.
- The good manager communicates clearly how he/she feels about the subordinate's error.
- The good manager shakes hands or shows gestures that express warmth and concern, indicating that he/she is trying only to help the subordinate.
- The good manager does not take the subordinate's last mistake as if it were representative of his/her entire behaviour pattern (no generalisation).
- When the reprimand is over, it is over and no resentment is held.

Staff organisation

Design the **organigram** of your business. A production management for juice making could look like this:

One shortcoming often observed among small processing businesses is poor **delegation**. The concept of delegation is an integral part of good leadership management. Delegation is the assignment of responsibility or authority to another person – from a manager to a subordinate – to carry out specific activities. Delegation empowers a subordinate to make decisions, it is a shift of decision-making authority from one organisational level to a lower one. The person who delegated the work remains accountable for the outcome of the delegated work. Delegation is good and can save money and time, help in building skills, and motivate people.



When delegating tasks you should consider:

- Assess ability and training needs
- State required results
- Agree on deadlines
- Give feedback on results

10 levels of delegation

1. "Do exactly what I say." This is instruction. There is no delegated freedom at all.
2. "Look into this and tell me the situation. I'll decide." The person delegating retains responsibility for assessing options prior to making the decision.
3. "Look into this and tell me the situation. We'll decide together." This level of delegation encourages and enables the analysis and decision to be a shared process.
4. "Tell me the situation and what help you need from me in assessing and handling it. Then we'll decide." This level is helpful in defining coaching relationships.
5. "Give me your analysis of the situation and recommendation. I'll let you know whether you can go ahead." The boss wants to check the thinking before deciding.
6. "Decide and let me know your decision, and wait for my go-ahead before proceeding." This level of delegation can be frustrating for people if used too often.
7. "Decide and let me know your decision, then go ahead unless I say not to." The other person begins to take control. The subtle increase in responsibility saves time.
8. "Decide and take action – let me know what you did and what happened." This level of delegation also enables a degree of follow-up by the manager.
9. "Decide and take action. You need not check back with me." Feedback and review remain important, although the relationship is more likely one of mentoring.
10. "Decide where action needs to be taken and manage the situation accordingly. It's your area of responsibility now." This is delegation of a strategic responsibility.

Company Policies

It is important that all staff – no matter which level they are working in – respect the Company Policies. From the CEO and General Manager down to the sweeper, these policies need to be known and always adhered to.

Company Policies are written down by the top management (CEO and General Manager) and made known to everyone through training, announcement and notice.

Some examples of Company Policies for fruit processing enterprises:

Hygiene Policies

- “Smoking is not allowed at the premises!”
- “The use of mobile phones, i-pods and other music devices are not allowed in the factory!”
- “Hands must be thoroughly washed at the washing basin, any time when entering or leaving the factory!”
- “Boots must be sterilised by stepping through the foot bath when entering or exiting process areas!”
- “No staff member can enter the factory without protective clothing!”
- “No staff member can take the protective clothing, boots and the hairnet out of the premises except for cleaning and washing!”
- “Wearing of dirty clothing is not allowed at the premises! Protective clothing needs to be washed on daily base: Boots, dresses, gloves, and aprons!”
- “Hair must be covered totally and hairnets need to be replaced on a daily base!”
- “If suffering from cold or sinus, mouth masks need to be worn!”
- “Visitors are not allowed to enter the factory without protective clothing and hairnets!”
- “Outside foods cannot be taken or eaten in the processing areas!”
- “No raw or finished material can be taken away or eaten in the production area!”

Safety Policies

- “Visitors are only to be brought onto company premises with the prior consent of management!”
- “Alcoholic beverages are not to be brought onto, or consumed at premises!”
- “Sleeping during working hours is forbidden!”
- “Exit marks are to be kept clear! Demarcation areas must be respected to ensure safe movement!”
- “All staff must report any lost or loose bolts, damaged protection shields/guards and malfunctioning machine parts!”

Anti-Harassment Policies

- “The company is committed to providing a safe, healthy and fair working environment where all employees are treated with dignity and respect.”
- “The company will not tolerate any form of bullying and harassment and it will take all practicable steps to avoid and eliminate this.”

Staff payment

A characteristic of successful businesses of any size is that they have workers who are willing to work for the company because they feel that they have a future with it – the staff are motivated. The owner should ensure that staff are reasonably paid, their salaries are paid on time, and that there are good working conditions.

Relating pay to performance is a good way to motivate people. Although some small-scale businesses pay staff on a piecework basis, more commonly it is a fixed rate of pay for a particular job. In newer management methods, the pay varies according to an **individual's performance** and/or the **profitability of the business**. This involves a regular appraisal of each employee's performance and development of a clear profit-sharing scheme. Everyone should know how he or she would benefit from bonus pay arising from an improvement in the performance of the business. However, to make this a motivating factor it is important to demonstrate the link between the individual performance and the success of the company.

Other benefits that keep workers motivated include:

- Housing, travel or medical allowances
- A contribution to the cost of medical bills or educating their children
- Subsidised meals or the ability to buy products at a reduced cost

Paterson Grading System

In most countries workers are paid according to a job evaluation system that has become known as the Paterson system. It requires that jobs are described in the smallest detail and then graded in relation to other jobs within the same unit. Wages are then assigned to each type of job.

The Paterson system grades jobs according to how many decisions a worker has to make in his or her job, and how important these decisions are in the running of the overall unit. Paterson has laid **six levels** of decisions making, which he called Bands.

These levels are:

| | | |
|--------|-------------------------|----------------------|
| Band A | Defined decisions | Unskilled workers |
| Band B | Automatic decisions | Semi-skilled workers |
| Band C | Routine decision | Skilled workers |
| Band D | Interpretive decisions | Middle management |
| Band E | Programming decisions | Senior management |
| Band F | Policy making decisions | Top management |

Apart from this broad grading system, there is further grading within each band.

- Variety of task: The more tasks or more complicated the tasks within a job the higher the sub-grade that the worker falls under.
- Length of a task: If the task takes longer to do or if it involves any other activities the worker is placed in a higher sub-grade.
- Pressure of the work: The higher the mental or physical stress in a job the higher the sub-grade that the worker falls under.
- Tolerance or precision: Jobs that require a high level of precision rank in a higher sub-grade. The same goes for jobs where errors of workers would have serious effects.

How to apply the Paterson system in your company:

1. Identify the different kind of jobs.
2. Workers describe their jobs with assistance of the supervisors.
3. The job descriptions go to a grading committee under chairmanship of the CEO.

| Band | Decision Level | Title | Grades | Definition of Grade |
|------|----------------|-------------------|-----------------------|---|
| A | Defined | Unskilled | 1 2 3 | Cleaners, Laundry, Crate washers Loading (on/off) raw materials Security guards |
| B | Automatic | Semi-skilled | 1 2 3 4 5 | Fruit washers De-coring Peelers, slicers, trimming Sorters Packers |
| C | Routine | Skilled | 1 2 3 | Machine operators Mechanics, electricians Overseers |
| D | Interpretive | Middle Management | 1 2 3 | Line Managers Store Manager, Utility Manager QA Assistants to production |
| E | Programming | Senior Management | 1 2 3 4 5 | Production Managers Plant Engineer R&D Manager QA Manager General Manager |
| F | Policy making | Top Management | 1 2 | Managing Director, CEO Board of Directors |

Staff recruitment

The number of staff is based on the intended production volumes and an assessment of those parts of the process which are mechanised and those which require manual operation. Staff required for other types of work, including sales, deliveries to retailers, accounts/record keeping and quality assurance are also considered. A convenient way of planning this is to draw an activity chart which shows the type of work to be done, the number of people involved and the work packages that can be done by one and the same individual as they happen consecutively.

When the total number of employees has been decided, the business owner should then set about recruiting and training suitable staff in a systematic way. It is important that the processor prepares a **job description** for each job. This helps in deciding exactly what type of work the new person will be expected to do, and what skills, qualifications or experience are needed to do the job. Jobs are then advertised in newspapers, radio, by public notices, by recommendation of friends or through other employees. The owner then compares applications with the criteria in the job description and selects potentially suitable people for interview.

Interviews are useful for a number of reasons: They show the personality and the interest the candidate has in the job and the company; they can be used to reveal decision-making or technical skills; they give the applicant a chance to understand the job and what will be required of him/her. Businesses should operate a policy of not discriminating against applicants because of their sex, religion, race or age.

After an applicant has been selected, a letter should be sent, confirming the appointment and when the person should start work. The new employee should be given an **employment contract**, containing the job description, details of the salary (be aware that the daily minimum wage has been pegged at 7 GHC for 2015) and other benefits as well as the duration of the employment and notice periods. As for most countries, the law in Ghana requires a medical examination for workers who handle foods to ensure that they have no food-borne illness that could be passed on to consumers and cause food poisoning.

When employing staff you need to get them registered with SSNIT (Social Security National Insurance Trust) and IRS (Internal Revenue Service). Those employees who do not have a Social Security Number and Tax Identification Number will be issued one by these bodies. On behalf of your employees you will then have to pay monthly **Social Security Contributions** as well as their **Personal Income Tax Deductions** (Pay As You Earn, P.A.Y.E). This is how you calculate them:

1. From the Monthly Gross Salary, the employee pays 5.5% Social Security Contributions. The employer pays 13% Social Security Contributions.
2. Then the Personal Income Tax is deducted: 12.5 GHC for the first 290 GHC of the Monthly Gross Salary **plus** 17.5% of the amount which is made up of: Monthly Gross Salary minus 290 GHC minus employee's Social Security Contributions.

Example:

| Gross salary | Employee's SS Contributions | Employer's SS Contributions | Income Tax deducted | Salary paid to Employee |
|--------------|-----------------------------|-----------------------------|---------------------|-------------------------|
| 500.00 GHC | 27.50 GHC | 65.00 GHC | 44.44 GHC | 428.06 GHC |
| 1000.00 GHC | 55.00 GHC | 130.00 GHC | 127.13 GHC | 817.88 GHC |

MODULE 4: MANAGING PROCESS FLOWS

What is a process flow?

The process flow in food production is the way how a raw product is transformed in to an edible product in a certain form in a certain packaging and with a specified shelf live.

Observing a process line we see a flow of different activities; some process flows are long with aggregated sub-divisions; other process flows are more basic. Within every activity we may have different sub activities: All these activities need to be managed.

In accordance with HACCP, Food Safety and GMP, management is necessary at every level of activity to ensure a consistent flow wherein ***processes are monitored, products are monitored, staff is managed and quality is assured.***

We must see a process flow as an integrated string of stand-alone processes. Products are passed on from one to the next process as if they were separate production units. Therefore each of these "units" needs the following actions:

Receiving products from the previous "unit":

- Acceptance on quality
- Acceptance on quantity
- Traceability records

Processing:

- Follow defined process methods and formulations
- Quality control
- Production records
- Signing-off and passing-on to the next processing "unit"

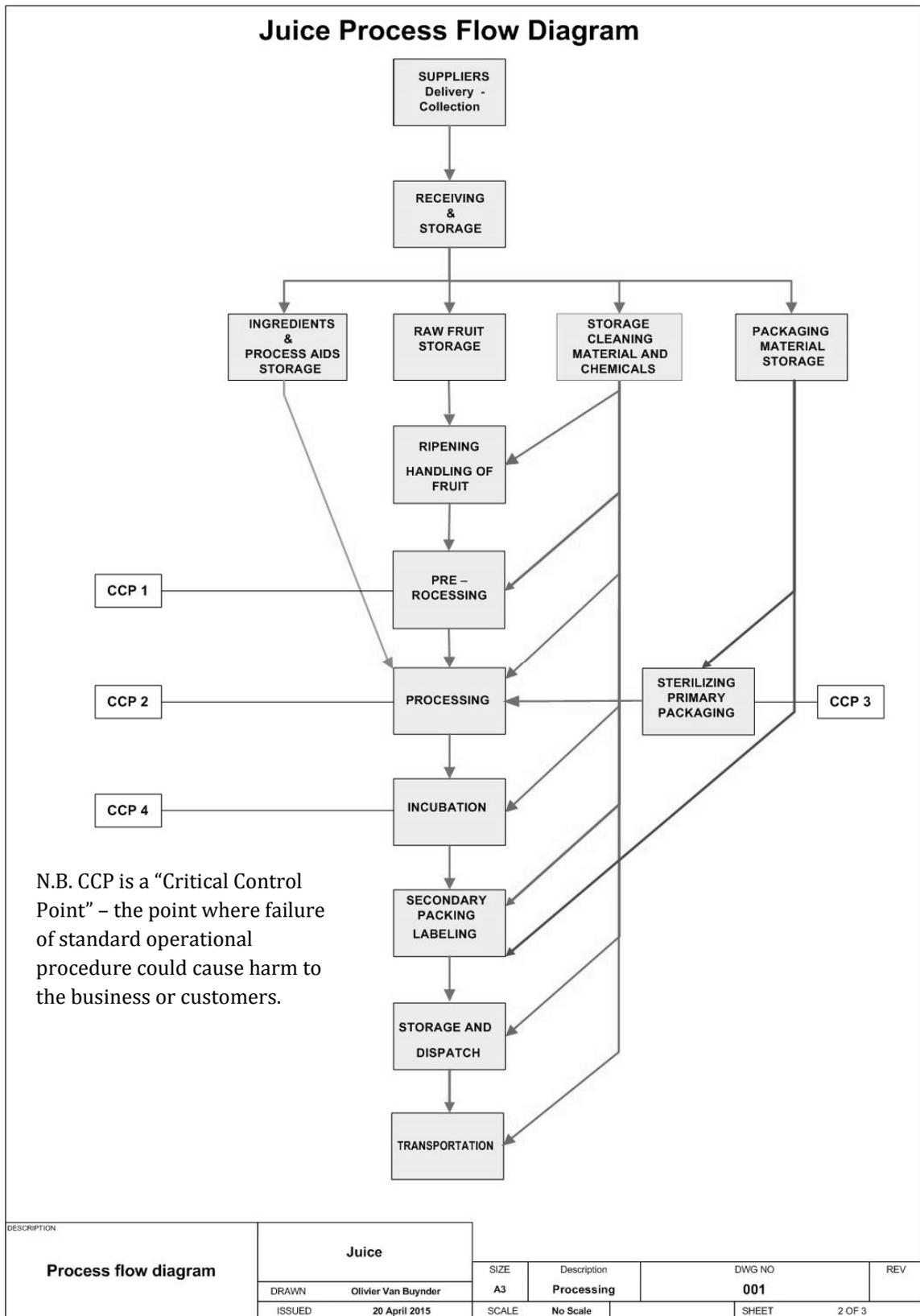
Designing a process flow

Let's design a layout of the process from the farm gate to the dispatch of the finished packed product:

1. Harvesting
2. Transport from farm gate
3. Receiving
4. Pre-processing
5. Processing
6. Packing
7. Storage
8. Transportation
9. Warehousing and Distribution

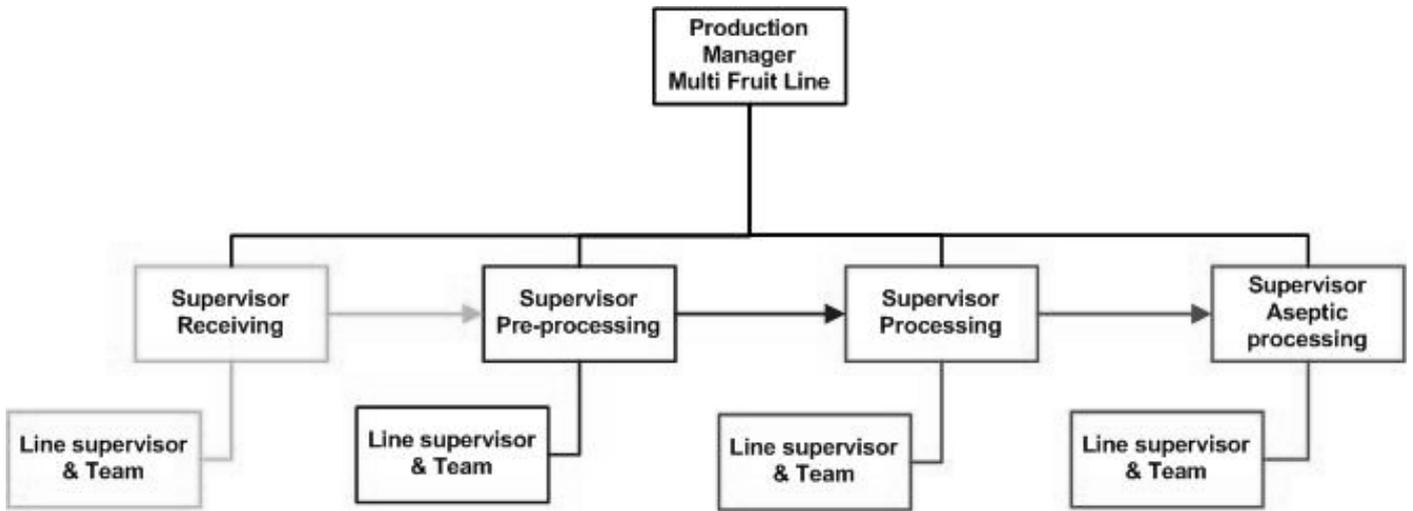
With the layout properly done we can identify the following requirements per processing "unit": ► Staff needs ► Supervision needs ► Quality Control needs

This is a typical process flow diagram:



Every "unit" needs to be managed, but not necessary by highly skilled staff. More complicated, automated or higher risk "units" require higher skilled supervision. A "unit" supervisor may have a number of line supervisors, for example one for every sorting table or belt. The Production Manager monitors all process "units".

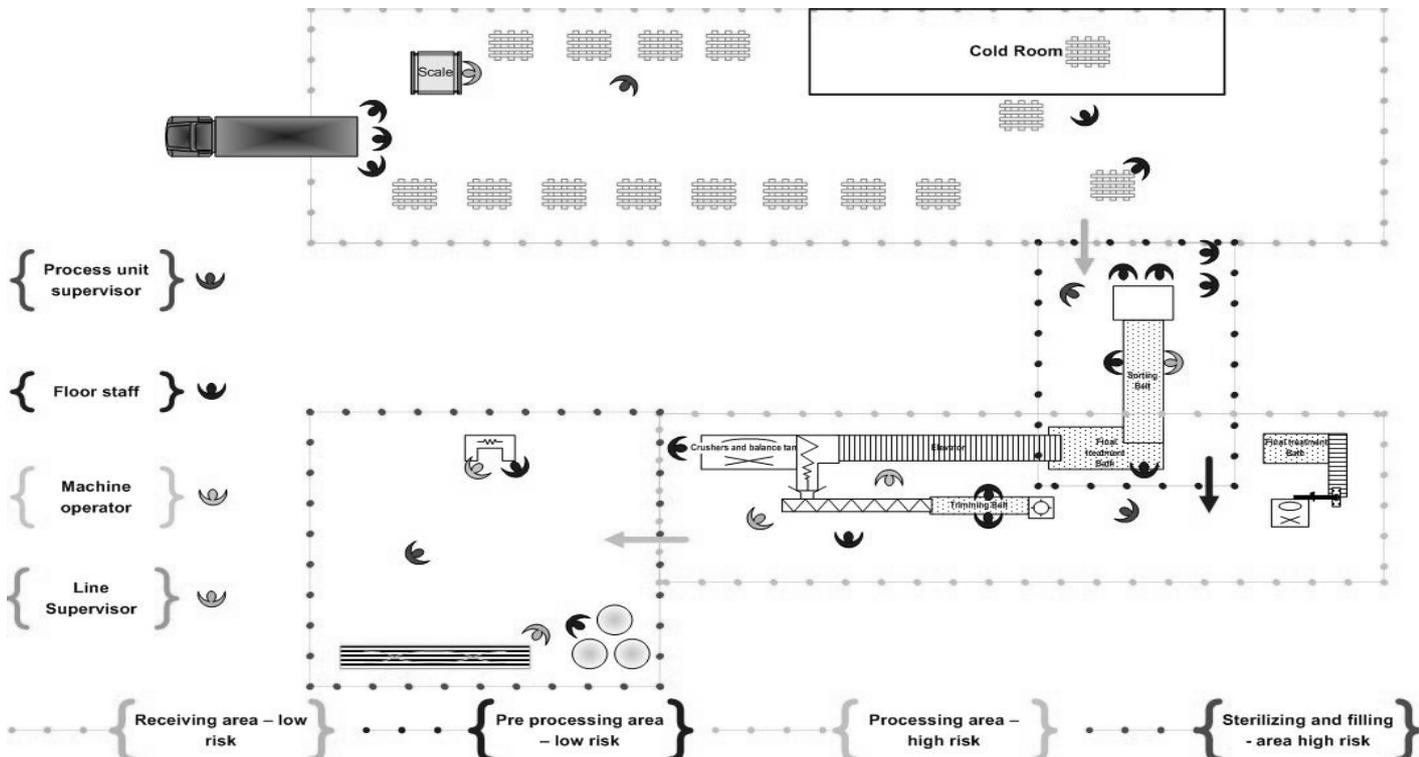
This interaction process flow chart shows the Production Manager coordinating and monitoring all process units. Each unit has a Unit Supervisor and Line Supervisors.



Look at the below factory layout!

✂ Assign different colours to the different areas: Receiving Area, Pre-Processing Area (Low Risk), Processing Area (High Risk), Filling Area (High Risk)

✂ Identify the Unit Supervisors and the Line Supervisors



Study the Process Flow of a fruit juice factory on the inserted sheet! Where are the Line Supervisors and the Unit Supervisors? Where are the QA Manager and the Production Manager and why have they been placed there?

Record Keeping – A process flow managing tool

Record Keeping is essential for efficient process flow management!

What records to keep?

Raw materials:

- Date of purchase
- Type of raw material (variety)
- Source: Name of vendor, location
- Quantity (kg, pieces, bags, etc.)
- Maturity index
- Condition
- Transportation

Production:

- Date of production
- Formulations
- Batch number
- Fresh weight, waste weight, juice weight
- Start and end time
- Percentages: waste/fresh, juice/fresh
- Quality assessment (e.g. Brix of batch)
- Final products

If you export:

- HACCP Forms
- Standard Operating Procedures
- Internal Audit
- External Audit

Reports – A process flow managing tool

Reports are essential for efficient process flow management!

What reports to produce?

- Production Performance (graph showing the development of production figures)
- Material Resource Planning (forecasts of raw material needs)
- Statistical Inventory Control (simple checks on storage losses)
- Management Performance (how do management programs perform?)
- Special incidence reports

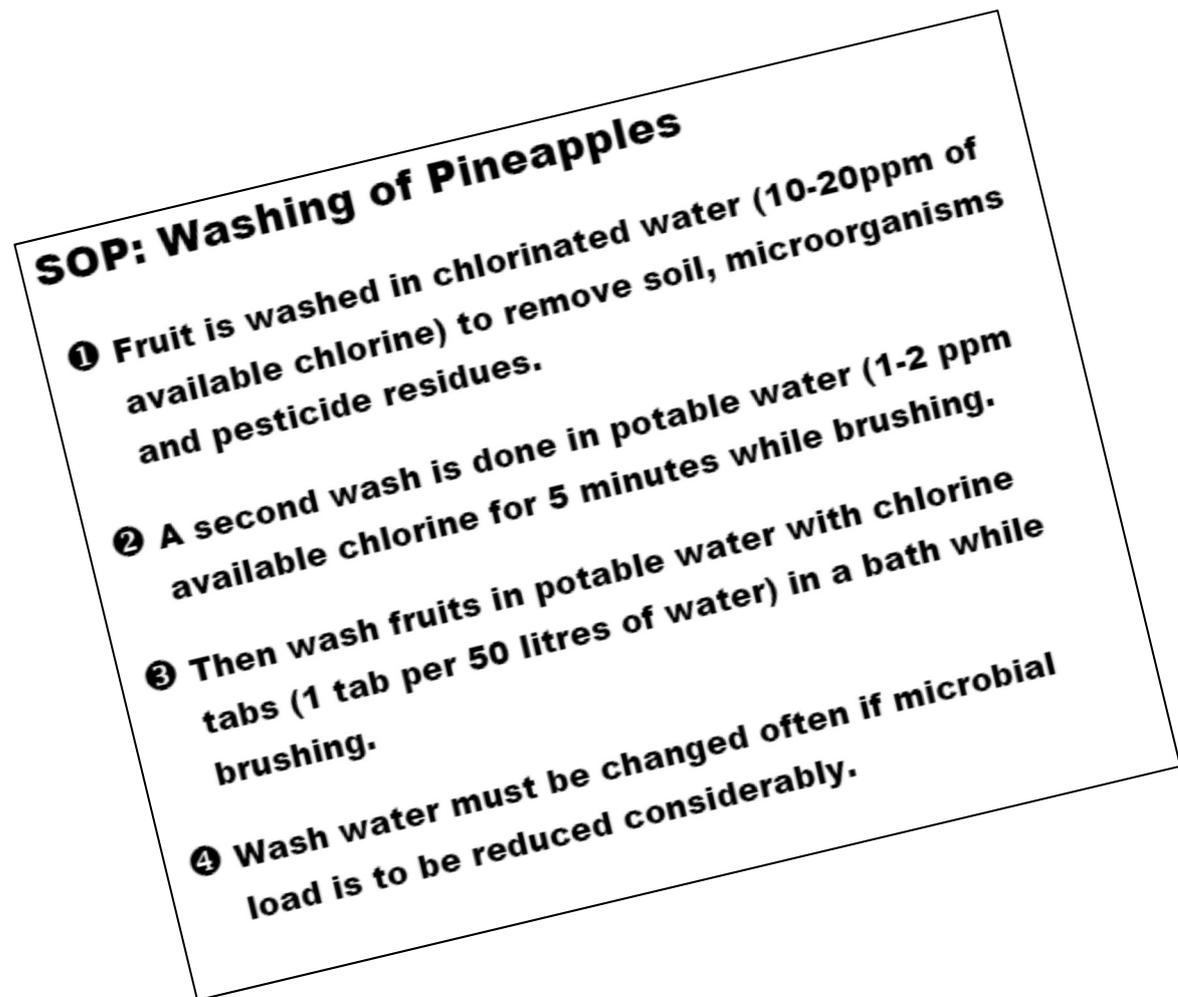
Reports are written every month. They can be simple graphs displayed in the factory. Or they can be short write-ups distributed to among the management staff and discussed in monthly management meetings. Other reports can also be rather complex and designed for investors, shareholders or customers.

Reporting must be a company culture and all senior managers should know and understand the importance of reporting. Reports are used for information sharing and a basis for open discussions on management and production.

SOPs – A process flow managing tool

Standard Operational Procedures (SOPs) are essential for efficient process flow management!

An SOP is an instructive guideline for a sequence of activities to achieve a result (e.g. washing of pineapples or rinsing of bottles). When designing an SOP, use simple language. SOPs need to be checked and approved by an authorising supervisor.



SOPs establish performance standards and function as a performance measuring instrument. All senior managers should know and understand the importance of the SOPs. They save time in decision making, improve effectiveness as well as set and insure standards.

MODULE 5: MANAGING QUALITY

Packhouses and food processing plants are not hospitals. They cannot change poor quality raw material into high quality finished products: **What you get in is what you get out.**

The food quality chain



- Orchard sanitation
- Selection at harvesting
- Pickers' hygiene
- Safe post harvesting produce handling
- Safe storage at harvesting avoiding contact with soil

- Transportation in clean crates
- Hygiene on transport vehicles
- Handlers' hygiene
- Protection of produce during transport



- Hygiene at produce receiving and storage
- Food safe processing lines
- Quality assurance systems at the processing line
- Processing personnel hygiene
- Hygiene at finished produce storage and dispatch

- Hygiene on transport vehicles
- Maintaining cold chain
- Protection of finished product in transport
- Protection of finished products in transit



- Maintaining cold chain
- Hygiene at product receiving at the warehouse
- Protection of finished product at the warehouse
- Protection of finished products during distribution
- Shelf life monitoring at the selling point

Quality parameters

For fruit processors, managing quality means to maintain – and to document – high quality during processing, transport and storage. Quality of food includes all those characteristics of excellence that makes it acceptable to the buyer, such as:

- Organoleptic properties: Taste, smell, colour, texture, cleanness, consistency, size, shape, gloss
- Figure assessed in laboratories: Microbial count, pesticide residues, nutritional value, Brix content, pH, fibre content

In processing, quality is related to i) Method of Preservation and ii) Method of Storage and Transportation.

Food **preservation** involves preventing the growth of bacteria, fungi, moulds/yeasts, and oxidation that cause rancidity. Food preservation may also include processes that inhibit visual deterioration, such as enzymatic browning. The major preservation methods for fruits and vegetables are: ▶ irradiation ▶ controlled use of micro-organism ▶ addition of chemical preservatives ▶ alcohol ▶ lye ▶ sulphur ▶ enzymes such as pectinase ▶ freezing ▶ drying ▶ high pressure food preservation ▶ inert gasses ▶ sterilizing ▶ pasteurising ▶ boiling ▶ curing ▶ salting ▶ pickling ▶ sugaring ▶ jellifying ▶ canning ▶ bottling ▶ aseptic packing ▶ vacuum packing ▶ air-tight packing.

Methods of **storage and transportation** to maintain quality include: ▶ use of crates for transport of raw material ▶ cold chain ▶ low humidity in storage ▶ modified atmosphere ▶ chemical treatment of storage and vehicle ▶ use of cardboard boxes on pallets for transport of finished product

Good preservation, transport and storage translates into longer shelf life. **Shelf life** is the length of time between final processing and when it should be taken off the supermarket shelf for sale. Factors affecting shelf-life are: Microbial counts, pH and water activity (dry products). They are influenced by proper processing, transport and storage methods.

HACCP

HACCP is a method of ensuring food safety during processing, transportation and storage by examining every step in a food operation, **identifying those steps critical to food safety** and **implementing effective control and monitoring procedures at these steps**.

The theory of food safety is based on the desire to keep food safe from contamination of any kind. Microbial contamination is especially important because bacteria that reach the food supply are of public health significance. This is where HACCP is crucial. The principles of HACCP applies to all phases of food production, including

basic agriculture, food processing, food distribution systems and consumer handling and use. The **seven principles** of HACCP are:

- ① Conduct a hazard analysis
- ② Identify Critical Control Points (CCPs)
- ③ Establish critical limits
- ④ Establish monitoring procedures
- ⑤ Establish corrective actions
- ⑥ Establish verification procedures
- ⑦ Establish record keeping and documentation procedures

① Conduct a Hazard Analysis

In a process flow diagram all hazards are identified at each stage of processing, together with the significance of the risks presented and measures for control.

Example: A hazard would be the contamination of fruit juice by physical items (e.g. a piece of glass or a dead insect) or chemicals (e.g. residual cleaning chemicals or pesticide residues). Control measures include training of staff on proper cleaning & disinfection procedures, fruit handling procedures, and personal hygiene, as well as proper inspection procedures. Another hazard would be the contamination of fruit juice by pathogenic micro-organisms (due to improper pasteurisation, i.e. improper temperature distribution and improper calibration). Control measures include appropriate equipment design and construction as well as good calibration monitoring.

② Determine the Critical Control Points (CCPs)

A CCP is a point, step or procedure in a food manufacturing process at which a control measure is essential to reduce a food safety hazard to an acceptable level.

Example: A Critical Control Point (CCP) in the fruit juice processing would be the pasteurisation step. The step is critical because its control is critical to food safety. The possible hazard is pathogen survival in the product due poor heat penetration.

③ Establish Critical Limits

At each CCP a measurable critical limit describes the difference between what is safe and what is not.

Example: In pasteurisation the critical limit is $70^{\circ}\text{C} \pm 2^{\circ}\text{C}$ holding for minimum 15 minutes.

4 Establish a system to monitor the control of the CCPs

For each CCP, monitoring procedures must be implemented and documented to ensure that the critical limit is being met. Monitoring actions, frequency and responsibility should be specified.

Example: Monitoring of temperature during pasteurisation. Recording: Keep temperature-time records. Frequency: Every 2 minutes. Responsibility: Line Supervisor

5 Establish corrective action for when a CCP is not under control

These are predetermined activities that are taken when CCP monitoring results indicate that a deviation has occurred and there is the potential that unsafe food has been, or will be, produced. For each CCP there must be planned, written corrective actions. The objectives of taking corrective actions are to regain control of the hazard, to determine the disposition of the affected product and to prevent a reoccurrence of the problem.

Example: For pasteurisation check heat. If heat is incorrect, stop the process, reset the temperature, isolate that batch of products, rework the batch or discard the entire batch.

6 Establish procedures for verification to confirm HACCP is working

These are all methods, procedures, tests and other evaluations, in addition to monitoring, to determine conformance with the HACCP plan.

Example: Daily, the HACCP Coordinator must review all monitoring records to confirm all critical limits were met and recorded. Monthly: The HACCP Coordinator will perform onsite assessment to confirm the monitoring procedure is being performed as written. Quarterly: Juice samples will be subjected to microbiological laboratory analysis to confirm hazard control. All verification activities are recorded in the production verification record with date, time and verifier initials.

7 Establish documentation and records

Records must be kept to demonstrate the HACCP system is working and corrective action is taken for any breached critical limit.

Example: Records to be kept include records on critical limits control, corrective actions and verification records. Also keep all calibration data.

Documentation for quality management

Documentation is part of quality management. A **HACCP** programme for your company alone requires four types of records:

- The HACCP Plan and support documentation (Flow diagram, hazard analysis, identification of CCPs and critical limits for each CCP, plan of verification activities and procedures, identification of preventive measures)
- Records generated by the HACCP system
- Documentation of methods and procedures used
- Records of employee training programmes

Another area of documentation for quality management concerns **traceability**. Design a traceability system so that you know for each batch:

- Who produced the raw material?
- When did it enter the factory?
- When was it processed and by whom?
- When was it dispatched and to whom?

The Batch ID could read: “15/12/18 EK/ES/01/02” which means: The raw material is from Ekumfi District, Esuohyia Community, Farmer Number 01, Farm 02. It entered the factory on 18 December 2015. Handheld printers (such as the jet stamp 790) are available in Ghana to print the Batch ID onto the individual packaging.



How to continuously improve quality

Instead of having just one QA Manager, some companies have experienced with “Quality Management Circles” consisting of small group of employees in the same workplace organised to conduct quality management activities at a job site. The job is conducted voluntarily and continually. The activities aim at not only improving quality, but also upgrading routine operations.

Example: The Quality Management Circles identified that the untidiness of the work place made all operations cumbersome. The following activities were agreed upon:

1. Dispose of, sell, and recycle such unnecessary things
2. Put what you need in its proper place and put labels
3. Clean the job place
4. Install maintenance systems so that the above order is maintained

MODULE 6: MARKETING

Some processors confuse marketing with selling, but the two are very different. **Marketing** is deciding what to do to make consumers believe that they are buying something special that meets their needs as well as how to make a product more competitive. **Selling** is the action that results in customers buying a product (such as taking telephone orders, delivering to customers, selling from a factory shop, visiting shops and taking orders or providing vendors at public events). This Module helps you devise a Marketing Strategy and a Sales Plan.

The Marketing Strategy

When developing a Marketing Strategy you will have to do quite some research first and answer a number of important questions. In this section, 30 important questions have been put to you. Don't let a Consultant write your Marketing Strategy. Rather discuss these questions with your friends, mentors and perhaps a Business Development Advisor.

Traditionally, a Marketing Strategy has been looking at the well-known **4 Ps (Product, Place, Price, Promotion)**. What product needs to be developed in which packaging, sold in which place and at which price and supported by what kind of promotion in order to increase sales? However, today with consumers having much higher aspirations and constantly using advanced ICT these 4 Ps have been complemented by the **4 Cs** to obtain much more the consumers' point of view (**Customer Value, Cost to the Customer, Convenience for the Buyer, Communication**): What value does the product bring to the customer? What are the costs of getting the product? How convenient is the purchase process? How is the communication between buyer and seller as well as among buyers?

Targeting

The most important aspect in marketing is: **Targeting**. Before you even develop your product, decide on a place, set your price and think about promotion, you need to define: **Who are you targeting?** Consider the demographic segmentation in your target market! Answer the following questions:

1. Do I target especially **women or men** (or do I not care) considering that juice is mostly sold at canteens and chop bars?
2. Do I target especially the **youth or more mature consumers** (or do I not care) considering that I have to compete with soft drinks? Should I target specifically children in urban schools?
3. What **income** group do I target: The large number of low-income consumers? The smaller, but fast growing number of middle-income consumers? Or the small, but demanding group of high-income consumers?
4. Consumers with which level of **education**: Mostly primary school, SHS, university, poor or good command of English, those poorly or well sensitised for a healthy nutrition?

5. What **location** do I target in which consumers buy and consume my product: Mostly chop bars? Canteens? Restaurants? Conference centres? Beach lodges? Posh hotels? – Or kiosks? Corner stores? Supermarkets? – And for immediate consumption or taking the product home? – Or institutions like businesses? Pre-schools? Schools? Universities? Hospitals? Barracks? Prisons? – Just in Accra? In which radius around the production site? In a particular area of Ghana? In other English-speaking countries of West Africa? Or even in Ghana’s French-speaking neighbour countries?

This exercise is not about saying yes to all potential opportunities arising, but tailoring your marketing efforts (product, place, price, promotion) to match them to the target group as best as possible. To be able to do that you need to do a lot of research and get to know your target group better:

“What is their happiest memory?”

“What scares them?”

“What makes them feel safe and cherished?”

“What do they need and how can I meet it?”

Understanding the target groups leads to winning their loyalty – and that is what you want!

Now that you have decided on your target group, you will be led through the 4 Ps (product, place, price, promotion). For your Marketing Strategy you will have to answer these following questions:

Product

6. What is the product and its features (taste, ingredients, manufacturing process, certificates)?
7. What packaging should it be sold in and how will I design the packaging?
8. How do I design the label (messages, colours, font types and font sizes, symbols)?

Test the product, the packaging and the design with your target group. Do they like it? Or are there some aspects of it they dislike?

Linked to the product is the question of branding. A **brand** is a name or symbol differentiating the goods of one seller from those of another. Branding is about making consumers **associate** a number of desirable qualities with your product. We all know that consumers pay extra to be associated with a brand they love.

9. What are the benefits that my product has to offer?
10. Which are the values that my product should “transport”?
11. How should a brand symbol, name or slogan look like that associates my product with those identified benefits and values?

Place

12. From the targeting exercise: What should be the preferred sales outlet(s) where the consumers, which I have identified in the targeting exercise, would usually buy my product?
13. How can I improve the convenience for the buyer to purchase my product (e.g. online orders and home delivery; free of charge delivery; fast delivery)?

Price

14. What is the price that allows for a sufficient profit margin for myself (calculate not per bottle, but per month)?
15. How will I be able to reduce my costs?
16. What is the price that allows for a sufficient profit margin for the retailer?
17. What are the prices of my competitors and will I be successful with my price? Shall I try to undercut competitor prices? Or rather go for a price premium over the competition assuming that they will associate a high price with high quality?
18. Will the customer incur extra costs when procuring my product (Is it time consuming? Must he pay for transportation costs or delivery costs?) and how will I reduce these costs for the customer?

Promotion

Promotion is about making the product known to the target consumers, but also about how to achieve that they feel affectionate to the product. If you decide to have a branded product, promotion is about how to create brand awareness. Questions to answer are:

19. How will labelling and the packaging design promote my product to the customer?
20. What type of advertising will I use (advertisements in newspapers, radio, TV, online portals such as Ghanaweb, on billboards; painting of walls and fronts; stickers which consumers may put onto their cars; posters and calendars for canteens; advertisements in menus; displays on tables in restaurants; printings on the back sides of school exercise books)?
21. Could I get an agreement with other companies to print my advertisements on their packaging or customer receipts (printing on the back sides of ECG bills, on boarding cards and entry tickets or on take-away packs or paper bags for shopping)?
22. Will I be able to weekly update my own website and reply daily to inquiries– and should I therefore invest into an own website? Should I allow for customer comments and testimonials?
23. Or should I rather use social media and have my own Facebook and Twitter accounts? Can I spend time every day to communicate with fans and followers on their social network pages?

24. Should I have a QR code on my label leading to a short and funny film on youtube?
25. Shall I provide a telephone hotline on my label and will I be able to staff it continuously?
26. Shall I give a guarantee on my label accepting liability for any substandard products?
27. Could I have a free-degustation stand in supermarkets and at large events?
28. Is the person selling my product to the consumer well-trained to convey the messages I want to be conveyed?
29. Should I offer any additional services such as: Pre-sales advice, rental services for events, funerals and weddings; or lending of branded display fridges to shops and restaurants?
30. Which event can I sponsor which my product relates well to and gives me a good visibility?

Positioning

Positioning is not part of the 4 Ps, but it is another important aspect of marketing: How do I differentiate from my competitors? Is my product the cheapest, the coolest, the most prestigious, the tastiest? To answer this, you need to get as much information about your competitors as possible. You can do this by:

- Discussing with retailers the amount of sales of different brands and any seasonality in demand. Which products are becoming popular and which are losing favour? Does the retailer put on any special displays for some suppliers? What do they think about the idea for a new product?
- Looking at advertising and retail displays of competing producers and obtaining copies of their price lists.
- Visiting trade fairs and talking to other producers and their customers.

You will want to use this information to be 'one step ahead' of your competitors. You may wish to make a new product that is more demanded than those of the competitors. Or you may want to offer better incentives to your retailers to sell your product (higher profit margin for the retailers and better services to them).

You may like to use a **SWOT** table when analysing your position towards competitors. A SWOT table is used when brainstorming **Strengths, Weaknesses, Opportunities** and **Threats**.

| | |
|----------------|-------------|
| STRENGTHS: | WEAKNESSES: |
| OPPORTUNITIES: | THREATS: |

Your business and marketing plans should contain SWOT analyses. This indicates that you have a good awareness of your business and its market position in relation to your key competitors. Strengths and weaknesses are internal characteristics of your business; opportunities and threats are external factors. Strengths and weaknesses are those of your own company while opportunities and threats also apply to your competitors.

Competitive Analysis

You may also like to include a more structured analysis in your business and marketing plans. First mark your competitors on the suggested characteristics below (1 = very poor, 5 = very good). Then rate your own business in relation to the others and decide where you need to improve.

| Factors | Yourself | Competitor A | Competitor B | Competitor C | Competitor D |
|---------------------|----------|-----------------|-----------------|-----------------|-----------------|
| Products | | | | | |
| Taste | | | | | |
| Quality | | | | | |
| Packaging | | | | | |
| Label | | | | | |
| Certification | | | | | |
| Image | | | | | |
| Prominence of brand | | | | | |
| Sales location | | | | | |
| Price | | | | | |
| Retailer margin | | | | | |
| Credit policy | | | | | |
| Display fridges | | | | | |
| Advertising | | | | | |
| Online presence | | | | | |
| Customer service | | | | | |
| Reliable supply | | | | | |
| Ease of delivery | | | | | |

Market Share:

Finally, you should have an idea how large the entire market is. You need to give a rough quantification: Number of crates or number of tons per year. And you need to define – once you position yourself with regards to your competitors – what share of the market you have now and what share you aim at.

The Sales Plan

The Marketing Strategy lays the ground for selling your product. However, it does not help to get your sales force organised. Based on the Marketing Strategy therefore you need to develop a Sales Plan:

1. Decide whether you will work with an **employed sales force or independent distributors**. The more successful small and medium enterprises usually work with own well trained and well equipped sales staff, while the successful larger enterprises often collaborate with self-employed distributors. The problem of small enterprises working with distributors is usually an imbalanced power relation: Small enterprises depend more on distributors (distributing also other goods) than vice versa, and a reliable distribution cannot be guaranteed. In addition, communication between the processor and the retailers and caterers, which is crucial especially in the beginning, becomes difficult and feedback cannot easily be obtained.
2. You start with setting **sales targets** which are a basis for the pay of your sales force and the conditions you give to your distributors as well as customers (retailers, caterers) in terms of price rebates and credit policy. Conclude written contracts with your distributors and customers.
3. You then have to define and make available a **sales budget** for i) sales and distribution and ii) promotion. Promotional activities have already been defined in the Marketing Strategy.
4. The sales force as well as distributors must then undergo **training** to be able to provide pre-sales advice and “transport” the values of your brand.
5. According to your Marketing Strategy, make staff and funds available for **promotional activities** such as Customer Services, website updates, communication with followers on social media, degustation, relationship-building with existing and potential customers as well as visiting of networking events.
6. Write down all feedback you get from consumers, retailers and caterers. If feedback is not coming, actively ask retailers and caterers and install a hotline. Analyse feedback regularly and decide whether your marketing strategy needs to change.

MODULE 7: RECORD-KEEPING

There are three sets of basic records that should be kept by the owner of a small fruit and vegetable processing unit: Financial, production and sales records.

This Module reviews the record-keeping needs mentioned in the previous six chapters. For each record-keeping need, the reader is asked to devise himself/herself the forms needed to record the necessary financial, production and sales figures – and to run a test of the developed forms. Experience shows that record forms only become convenient after they have been changed and improved several times.

The value of record keeping

Keeping records is an investment of time and money and the benefits must outweigh the costs. The owner or manager must understand why the information is collected and what it can be used for. Similarly, the time and effort spent in keeping records must be related to the scale and profitability of the business. Some examples of the value and costs of keeping records are shown below:

Value of record keeping:

- Detailed knowledge about the operation of the business and identification of trends in finances, production and sales
- Regular reviews of the technical health and the competitiveness of a company
- Control over finances and keeping track of money owed to the business
- Identification of individual costs to allow for reduction of costs or changes to a product or process to optimise profits and product quality
- Evidence of income and costs for tax authorities
- Factual basis for product pricing or salary levels
- Knowledge and avoidance of wastage and theft

Costs of record keeping:

- Time spent for training staff, taking records and analysing them
- Information in writing is potentially available for competitors or authorities

The value of record keeping outweighs the costs in a professional business. The accuracy of information is essential and this means that staff who are required to collect information (Production manager, QA manager, Supervisors) should know its value and why it is being collected. In order to use record-keeping for the detection of leakages and theft, the entrepreneur should put in place a system of checks to ensure that one person is not responsible for all record keeping. For example the person keeping records of purchases should be different from the person who records the use of materials or levels of stocks.

Records should be entered into Excel for easier analysis (calculating totals and averages). Again, there is no single correct way to keep and analyse records and individual company owners should devise systems that suit their way of working.

Keeping of financial records

See Module 2. The following financial records are needed for every professional business:

- List of assets (buildings, machines, equipment, stocks of raw material, packaging material and final product, open claims) is compiled at least annually for the annual balance-sheet. All inventory need to be given a monetary value.
- List of liabilities (invoices to be paid and loans to be repaid)
- Machinery list with year of purchase, purchase price, total assumed working life (years), calculated annual reserve for depreciation
- List of all staff as well as number of hours worked each day and the amount of pay each month (gross salary, SSNIT contributions, income tax deducted, salary paid to employee)
- Records of all money-in and all money-out (“Cash Book”)
- Money-out should be categorised into different groups of variable costs and fixed costs (this could be done in a separate “Expenditure Book”)
- Receipts should be kept for all expenses: They are numbered and in date order in a separate file; small receipt slips should be glued on A4 paper
- Record your net cash flow at the end of each month
- Calculate your actual gross income: Income minus variable costs
- Calculate your net profit by further subtracting the depreciation of machinery and buildings, the costs of employed staff, rental payments, financing costs as well as taxes and fees

For small enterprises in Ghana, an app has been developed that helps entrepreneurs to record the finance and do simple monthly summaries: ***TrackApp***. Just enter “TrackApp” and “Numida Tech” into Google to get to Google Play for a free download.

Keeping of production records

See Modules 4 and 5. The following production records are needed in every professional food production business:

Receipt of raw material

Product receipt records are taken for all incoming raw material and packaging material. All parameters are checked at the time of receipt of raw materials from a supplier.

Typical material receipt records

| Date | Raw material | Supplier | Quantity | Batch No. | Results of inspection for*: | | |
|------|--------------|----------|----------|-----------|-----------------------------|---|---|
| | | | | | A | B | C |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

* Different tests are written in place of ABC according to the types of materials. Write in either 'Pass/Fail' or quality measurements/observations

All incoming raw materials should be batched and linked to the batches of finished products. This facilitates traceability. A batch of fruits would be fruits received from the same supplier from the same farm on a particular day. These fruits should have been harvested within the same period otherwise they should have different batches.

Production

- As explained in Module 4, prepare forms for accepting and signing-off products as they pass through the factory from one processing unit to the next (with Batch Number(s), signature for acceptance of quality, signature for acceptance of quantity)
- Link the Batch Number(s) of the input to the Batch Number(s) of the finished product.
- Calculate the ratios of input/output for each batch and ascribe reasons for either high or lower yield relative to the expected.
- Plot a graph on production performance into showing patterns and trends

Typical production records

| Fruit Batch Number (s) | Raw materials (Kg) | | | | Vol. of Final Product | Processing date, time | | Product Batch Number | % Yield | Ex-pected yield | Comment |
|------------------------|--------------------|-------|---------------|-------|-----------------------|-----------------------|-----|----------------------|---------|-----------------|---------|
| | Pine-apple | Mango | Passion Fruit | Total | | Start | End | | | | |
| | | | | | | | | | | | |

Weights of raw materials should be taken at the time of production; not what was recorded during the receipt of raw material from a supplier. Yield gives indication on the volume of juice obtained per quantity of raw material used. This is very important in fruit processing as it gives indication of profitability or not of the business. There should be acceptable variation from expected yield per tonnage of fruits used below which production is non-profitable. Reasons for lower yields need to be explained and confronted.

Product batching

A batch of juice is a production volume that is processed using the same batch of raw materials and have undergone processing at the same time with the same human resource. That means that if pasteurization is done using a kettle, then each kettle volume should constitute a batch in respective of the other conditions. Again, a shift could constitute a batch during continuous production (fully automated process). This is because the human beings working on the line have changed and this can affect product characteristics. It stands to reason that a production process that has a lot of manual steps could yield different batches of smaller quantities. Essentially, a batch means that the group has the same characteristics and subjected to same conditions at the same time. Each batch of food should be given a Batch Number which is recorded in the production and sales records. The batch numbers should be correlated with the product code numbers that are printed on labels or outer cartons. This allows the processor to trace any subsequent faults in a batch of product back to the process or to the raw materials.

Quality Assurance

Required records include:

- Equipment maintenance
- Cleaning, pest control and sanitisation schedules
- Quality status of raw materials
- In-process quality checks such as brix, pasteurizing time and temperatures, pulp content and microbiological tests (see example below)

Example of in-process quality checks

| Product: | | Batch Number: | |
|--------------------------|---------------|----------------------|------------------------------|
| Quality criteria | Target | Check | Deviation from target |
| Brix | | | |
| pH | | | |
| Pasteurizing temperature | | | |
| Pasteurizing time | | | |
| Solids content of juice | | | |

As mentioned before, QA records are generated to help business growth. These records should therefore be analysed periodically (weekly, monthly, annually) using simple statistical tools. Patterns and trends should be noted. Deviations are indications of warning that management needs to pay special attention to. Analysed data should be core of management meetings. QA data help shape management decisions on supplies, staff competence, equipment and technological suitability.

Remember that good practices require that we have standard procedures for all operations. This helps us the achieve consistency and continuity without linking success to personalities in the factory. All essential operations should have standard operating procedures (SOPs) or work instructions all how they are carried out. In a professional processing company, documentation is available for:

- All Standard operating procedures (SOPs)
- All Formulations used
- Certification procedures (FDA, HACCP, Organic) including Quality Management System (QMS) Manual, internal and external audit reports, HACCP Plan and Records generated by the HACCP system
- Employee training records

Keeping of sales records

The following sales records are needed for every professional business:

- Quantities of finished products (with Product Batch Numbers)
- Products dispatched for sale and customer (with Product Batch Numbers)
- Total sales income from Cash Book
- Open claims (unpaid invoices) and paid claims (receipts issued)
- Sales per distributor or point of sale per month
- Comparison of sales targets and actual sales per sales staff / distributor
- Feed-back from retailers and consumers (cf. 30 questions in Module 6)

APPENDIX

Staff Salary Calculations – What to Consider

- Minimum Daily Wage (GHS 7.0)
- Pay As You Earn (P.A.Y.E) – from 5% - 25%
- SSNIT Contributions – Employer pays 13.0%, Worker pays 5.5%

Table of Employee Income Tax calculation

Monthly

| Chargeable Income | Rate (%) | Tax (GHS) | Cumulative Chargeable Income (GHS) | Cumulative Tax (GHS) |
|-------------------|----------|-----------|------------------------------------|----------------------|
| First 132 | Nil | Nil | 132 | Nil |
| Next 66 | 5 | 3.30 | 196 | 3.30 |
| Next 92 | 10 | 9.20 | 290 | 12.5 |
| Next 2,350 | 17.5 | 411.25 | 2,640 | 423.75 |
| Exceeding 2,640 | 25% | | | |

Source: Ghana Revenue Authority

Yearly

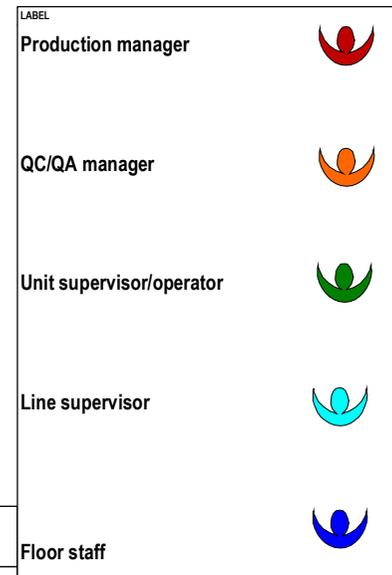
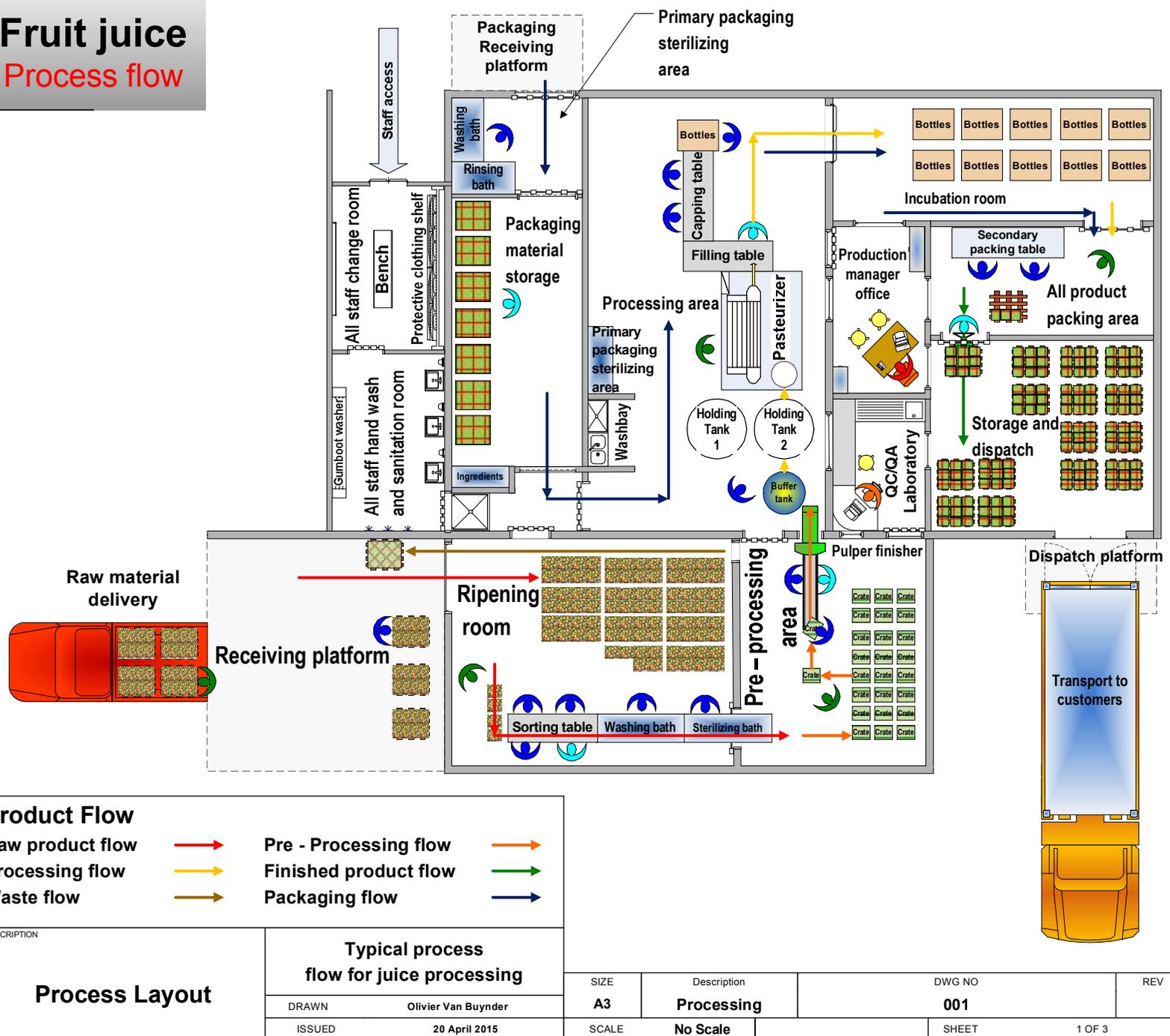
| Chargeable Income | Rate (%) | Tax (GHS) | Cumulative Chargeable Income (GHS) | Cumulative Tax (GHS) |
|-------------------|----------|-----------|------------------------------------|----------------------|
| First 1,584 | Nil | Nil | 1,584 | Nil |
| Next 792 | 5 | 39.6 | 2,376 | 39.6 |
| Next 1,104 | 10 | 110.40 | 3,480 | 150 |
| Next 28,200 | 17.5 | 4,935 | 31,680 | 5,085 |
| Exceeding 31,680 | 25% | | | |

Source: Ghana Revenue Authority

OUR TIPS FOR SUCCESS

- Start a small business and make it grow. It is better to have two machines rather than one with the capacity of the two. If a machine breaks down the other can still produce.
- Don't underestimate working capital needed to buy crops during harvest to be able to sell all year.
- Profits belong to the business and not the owner. Do not take money for personal use out of the daily takings, have an allowance.
- Make sure that all products you produce are profitable. Cost your products whenever there are changes in raw materials or other areas of production.
- Keep records of all expenditure to reduce your tax bill. Book-keeping should be carried out every day. Get advice from an accountant familiar with tax legislation.
- All activities, including quality assurance, cleaning, record-keeping are a cost.
- Motivated workers will contribute to profits. Reprimand immediately and reward well performing employees with increased responsibilities.
- Think about who your consumers will be and select sales outlets that they will use. Remember it is the final consumer not the shopkeeper who decides whether to buy your product.
- Get to know your competitors. Who are they and how do you differentiate?
- Keep a close watch on sales and be in regular contact with your key customers.
- Calculate the amount that you can sell per month and only supply quantities that will sell within the shelf life.
- Use promotions to help retailers sell your products. They want to make a profit, too. Advertise using media that your customers will see and hear.
- Handle complaints promptly to maintain your reputation.
- Build a business image and keep it. Use the label to display the business logo and pay as much as you can afford for the label.
- Target different types of market to spread the risk.
- Consider having two brands: premium and budget if raw material quality is variable. Never offer top quality that is variable.
- Attend any training courses in order to improve your business.

Fruit juice Process flow



| | | | | | | |
|-------------|--|---------------------|-------|-------------------|------------|--------|
| DESCRIPTION | Typical process flow for juice processing | | SIZE | Description | DWG NO | REV |
| | DRAWN | Olivier Van Buynder | A3 | Processing | 001 | |
| | ISSUED | 20 April 2015 | SCALE | No Scale | SHEET | 1 OF 3 |

Process Layout