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202

# FEASIBILITY PLAN AND INVESTMENT DECISION

## GST 203: SIMPLIFIED STUDY PACK,

Temitope  
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## PAST & PRACTICE QUESTIONS

BY:

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## **BUSINESS CONCEPT**

Business Concept is the act of engaging oneself in the production of goods and services to generate profit.  
Business Concept bridge between idea and a business plan. It focuses ones thinking so that the entrepreneur can identify the specifics of his or her proposed ventures.

Preparing a written concept statement (business plan) also enables the business owner or founder to describe the nature of the business (details of the business) to suppliers, customers, lenders and resource team members.

### **WHAT BUSINESS CONCEPT REQUIRES WHEN CONVERTING AN IDEA**

1. Thinking about how product and service will be sold and who will buy it.
2. It requires knowing the benefit of your product or service.
3. How it is differentiated from similar ones.
4. The method of delivery.

### **TYPES OF BUSINESS**

- (a). Private Owned.                      (b). Not-for-profit Owned.                      (c). State Owned.

### **FEASIBILITY STUDY**

Feasibility study is a document which shows the research analysis, survey about a particular business idea.

#### **CRITICAL STEPS IN PREPARING FEASIBILITY STUDY**

It involves four (4) major steps, namely;

1. Examine the Market.
2. The first step is critical analysis of the market.
3. Review Technical Requirement.
4. Exploration of Business Model.
5. Look for Escape Roots.

#### **ELEMENTS OF FEASIBILITY STUDY**

1. The Project Scope.
2. The Current Analysis
3. The Requirement you Need (e.g plant, machinery, e.t.c)
4. The Approach
5. The Evaluation
6. The Review

#### **ADVANTAGES OF FEASIBILITY STUDY**

- (1) Understanding Demand.                      (2) Accessing Resources. (3) Marketing Feasibility.  
(4) Making a Timeline.                      (5) Possibility of Making Profit or Loss.

### **STEPS FOR MAKING INVESTMENT DECISION**

We have five (5) steps for making good investment decision.

1. Choose a purely data driven investment process.
2. Establish procedure
3. Focus on the process or procedure
4. Focus on what goes wrong.



5. Eat your own cooking.

**NB:** The singular factor for any investment decision is the ability to **BEAR RISK**.

### **FACTOR INFLUENCING INVESTMENT DECISION MAKING**

Demographic variables and risk tolerance are the major factor that influence individual or firm investment pattern.

### **REASONS FOR SMALL BUSINESS FAILURE**

- (1) Lack of Managerial skill. (2) Wrong Business Decision.
- (3) Harsh Government Fiscal or Economic Policy.
- (4) Change in Technology (i.e inability to adhere to level of changes in technology).
- (5) Weak Management Professionalism. (6) Fierce Competition (i.e unfriendly competition).
- (7) Wrong Business Location. (8) Bad Debts. (9) Internal Fraudulent Activities.
- (10) Lack of Knowledge and Experience in the Chosen Field. (11) Insufficient Fund or Capital.

### **BASIC CONCEPTS AND CHARACTERISTICS OF ENTREPRENEURSHIP**

**Interest and Vision:** The first factor for entrepreneurial success is interest. Since entrepreneurship pays off according to performance rather than time spent on a particular effort, an entrepreneur must work in an area that interests her. Otherwise, she will not be able to maintain a high level of work ethic, and she will most likely fail. This interest must also translate into vision for the company growth. Even if the day-the-day activities of business are interesting to an entrepreneur, this is not enough for success unless she can turn this interest into vision of growth and expansion. This interest must be strong enough that she can communicate it to investors and employees.

**Skill:** All of the interest and vision cannot make up for a total lack of applicable skill. As the head of company, whether he has employees or not, an entrepreneur must be able to wear many hats and do so effectively. For instance, if he wants to start a business that creates mobile games, he should have specialized knowledge in mobile technology, the gaming industry, game design, mobile app marketing or programming.

**Investment:** An entrepreneur must invest in her company. This investment may be something less tangible such as the time she spends or the skills or reputation she brings with her, but it also tends to involve significant investment of assets with a clear value, whether they cash, real estate or intellectual property.

**Organization and Delegation:** While many new business starts as a one-man show, successful entrepreneurship is characterized by quick and stable growth. This means hiring other people to do specialized jobs. For this reason, entrepreneurship requires extensive organisation and delegation of tasks. It is important for entrepreneurs to pay close attention to hire the right people for the right jobs and let them do their jobs with minimal interference from management, everything that goes on their companies, but if they want their companies to succeed, they must learn.

**Risk and Rewards:** Entrepreneurship requires risk. The measurement of this risk equates to the amount of time and money you invest into your business. However, this risk also tends to relate directly to the reward involved. An entrepreneur who invests in a franchise pays for someone else business plan and receives respectable income, while an entrepreneur who undertakes groundbreaking innovations risks everything on a assumption that something revolutionary will work in the market. If such a revolutionary is wrong, she can lose everything. However, if she is right, she can suddenly become extremely wealthy.



## THINGS TO KNOW BEFORE STARTING A BUSINESS

When describing a business idea (concept), entrepreneur must answer the following questions;

1. What is my product or service?
2. What does my product or service do?
3. How is it different or better than other product?
4. Who will buy my product or service?
5. Why will they buy the product or service?
6. How will it be sold or promoted?
7. Who are my competitors?

### INDUSTRIAL ANALYSIS

This is the study of specific market for which a company currently sells its product or plan to enter in the nearest future.

NB: The process of industry analysis entails studying the **scope of competition, possible government institution, sales trends, socio-economic variables, customers' satisfaction and ease of entry in the market.** Much of this information can be obtained through various forms of **marketing research.**

### PROCESS OF INDUSTRY ANALYSIS

#### 1. SWOT ANALYSIS, (Strength, Weakness, Opportunities and Threats)

This is a marketing tool that fully examines the advantages and disadvantages which a company may have compared with its competitors or by being a part of the industry.

**Strength** may include strong brand name and easy access to natural resources.

**Weakness** of a company may be a lack of capital and limited access to key distribution channels.

**Opportunities** of a company can arise when the organization sees great opportunity in new technology or an easing of government regulations in the industry.

Substitute products may represent a **potential threat**

#### 2. FOCUS GROUPS AND SURVEYS (PRIMARY RESEARCH)

The process of industry analysis can also entail conducting primary research through focus groups and survey. A company that uses focus groups before introducing a new product can learn a lot about a customer's buying habits on; what they buy, where they buy it or why they choose certain competitive brands. Companies can further quantify that information through phone or internet surveys.

#### 3. SECONDARY RESEARCH

Marketing research manager use information or data acquired from the buyer to know the market potential. They also use the information to know the market sales when compared with the previous year.

#### 4. ATU STUDIES (AWARENESS TRIAL AND USAGE)

This study can be used to measure a company product or brand and advertising awareness compared to other competitors.

A higher brand and advertising awareness indicates that consumer is more familiar with a certain brand over others and therefore better recognized than others.



ATU studies also helps to compare a product quality, value, price, service and other important variables against their competitors.

## 5. CUSTOMER PROFILES

This process of industrial analysis includes analyzing customer profiles to determine key buying groups among companies. This information can be attained by adding demographic information such as gender, age income and household size at the end of the survey.

Cross-tabulations on demographic and usage questions can help determine the typical customer profile for all competitors. Companies can further segment this data to distinguish between heavy and light users.

Customer profiles can be used to help target advertising.

## MARKET ANALYSIS

Market analysis examines the market demand in relation to prices and product offerings, using consumer demographics and buying habits to identify trends.

**Note:** Market analysis and industry analysis are both used by investors and corporate managers in the projection of corporate financial performance. A market analyst also tracks how prices of products rise and fall according to demand and follow production volume, a factor that can limit profit margins. The market analyst's job is to project potential problems, such as creating a product that no one wants to buy, and redirect company efforts toward products that will do better in the market place.

Leading industry uses market analysis in planning the details of product lines that have a better chance of success because they are more directly satisfy market demands.

## DIFFERENCES BETWEEN MARKET ANALYSIS AND INDUSTRY ANALYSIS

- An industry is made up of a top tier of a company that produces and sells products and services to target customers. While Market is made up of individual consumer.
- Industry Analysis attempts to interpret the overall relevance of a particular industry to the needs of its market. Hence, industry analysis examine the internal forces in the industry such as manufacturing technology, materials sourcing and capacity to supply the demands of wholesale and retail distribution. While Market Analysis examine the market demand in relation to price and product offering to the consumers using consumer demographic and buying habit to identify trend.

## FINANCIAL ANALYSIS (CASH FLOW)

**Cash Flow;** It is the anticipation of cash as it flows into and out of the company.

The cash flow statement is a business document which blends the balance sheet and income statement together in order to display how the cash has come in and gone out in a business.

**Note:** To have a full picture of the business financial performance; the income statement, the balance sheet and the cash flow statement must be carefully examined.

**NB:** The income statement shows the sales and profitability of a business for a specific period of time. Balance sheet gives a picture of the overall financial conditions at a point in time.

## IMPORTANCE OF CASH FLOW (FINANCIAL ANALYSIS)

1. It is a tool or instrument that assists in financial decision making.
2. Company transactions records are kept on daily basis.



3. It determines whether a company has a durable competitive advantage.
4. It is a means of self examination.
5. The information contained in a cash flow statement gives a clear indication of liquidity.

### HOW TO READ CASH FLOWS

The cash flow statement is divided into segments in order to outline a cash flow. Therefore, the three (3) major activities of a company are;

- (1) Operating Activities. (2) Financing Activities. (3) Investing Activities.

**Note:** The matrices and ratio based on information contained in the cash flow statement can give you a clear indication of liquidity and it is calculated by subtracting capital expenditure from net cash flow from operations.

### HOW TO MAINTAIN POSITIVE CASH FLOW

- (1). Collecting Receivables (2). Tightening Credit Requirements. (3). Adjusting Product Price.  
 (4). Taking Out Short-Term Loans. (5). Increasing your Sales. (6). Managing your Expenses.  
 (7). Having Enough Cash Reserve. (8). Cash Flow Projections.

### BASIC RECORD KEEPING SYSTEM

- (1). Record keeping with your computer. (2). Paper-Based.

EXAMPLSE OF PAPER BASED TOOL: Hanging Folders, File Folders and According Folders.

### REASONS FOR FINANCIAL RECORD KEEPING

1. For Business Success: Complete and accurate financial record keeping is crucial for business success.
2. Good record provides financial data (information) that helps to operate efficiently, thus increasing profitability.
3. Accurate and complete records enable to account, identify all business assets, liabilities, income and expenditure. That information, when compared to appropriate industry averages, helps point both the strength and weakness of your business operation.
4. Good records are essential for preparation of financial statement and cash flow projection, which helps to maintain good relationship with banks.
5. Good records are critical during tax period. Poor record could cause you to pay or over pay your tax
6. Also good record is essential during audit period.

### QUESTIONS TO CONSIDERED BEFORE ASSESSING RECORD KEEPING

- Here are some of the questions that might be considered in assessing your record keeping;
- How much income are you generating now and expected income to generate in the future?
- How much cash is tied up in accounts receivable and for how long?
- How much do you owe for merchandise, rent, utilities, equipment?
- What are your expenses?
- How much cash do you have at hand, how much cash is tied up, what is your actual working capital?
- What is your gross and/or net profit?
- How do all the financial data compare with those of your competitors, industry?
-



## PRODUCT ANALYSIS

A product analysis is a document which contains a proper and thorough outline of the merits and drawbacks of a particular product up for review. Such an analysis is conducted by a company, external agency, investors or any individual or group with a vested interest in the performance of the product. It may be carried out before or after the release of the product and must be framed accordingly.

### PRODUCT ANALYSIS TEMPLATE

Before starting a new business, a business man conduct an analysis about product, competitor that are used sale out in the market and the format which is used to prepare it is called product analysis template.

### EIGHT (8) SIMPLE STEPS FOR NEW PRODUCT DEVELOPMENT

1. Idea Generation.
2. Idea Screening.
3. Concept Development and Testing.
4. Business Analysis.
5. Product Development.
6. Test Marketing.
7. Commercialization.
8. Launch.

### SOURCES OF START-UP CAPITAL

To get enough start-up capital is essential for a business. Lack of sufficient capital in the beginning of a business is akin to start a journey with empty pocket and to reach the destination is made impossible.

When calculating the capital you need, plan that everything will take twice as long and cost twice as much as you expect. If you do not raise enough capital initially to cushion your company and sales are slow or emergencies occur, it will be nearly impossible to raise more money just to keep the business going. Add at least 50 percent to the initial capital for the start-up capital after developing business budget that can sustain the business.

**Note:** It is virtually impossible to have too much money. **Roger Downie** stressed that, " start-up capital should at a minimum cover all plant, equipment, and leasehold costs-plus at least six months worth of projected operating costs, including the owner salary". Having little or no capital is a primary reason why business fails.

### QUESTIONS TO ASK WHEN RAISING BUSINESS CAPITAL

- (1) How much capital do I need?
- (2) How do I raise the capital?
- (3) What is the value of my company?
- (4) Who might be interested in investing in my company?
- (5) What are my legal responsibilities to potential investors?

**NOTE:** Generally, a Valuation Considers Four (4) Questions;

1. How much is the company worth today?
2. How much could it be worth in the future?
3. How long will it take to create the future value?
4. What is the likelihood of achieving success?

### SOURCES OF RAISING START-UP CAPITAL

- (1) Bootstrapping (Personal Savings)
- (2) Friends and Families.
- (3) Private Lenders.
- (4) Crowd Funding
- (6) Angels and Seed Investors
- (7) Credit Cards



## **BOOTSTRAPPING**

This is self-funding. It is when an entrepreneur invests his own personal money into his business.

### **ADVANTAGES OF BOOTSTRAPPING**

1. It makes you focus on the business.
2. It makes you to have control over the business.
3. It allows you to have better opportunity on what type of skills needed to boost the business.
4. Choosing your management team carefully is possible
5. No need for approval before spending.
6. There is a sense of commitment.

### **HOW TO MAKE BOOTSTRAPPING EFFECTIVE**

- (1) Build your business on budget. (2) Save time and plan as much as possible.
- (3) Be financially discipline. (4) Lowering the hiring cost. (5) Learn from others (sales and implementation).
- (6) Ensure valuable products with good team.

### **THE MANAGEMENT TEAM**

Management Team are the group of individuals that operates at the higher levels of an organization saddled with the day-to-day responsibility, managing other individuals and maintaining responsibility for key business functions. They are collection of the top leaders that works together to make the company successful which are responsible to the chief executive officer (CEO) of the company.

Note: The management teams are to put together the business strategy and ensuring the business objectives are met. Their role is not just to achieve their own goals, but to make sure that the goals of their colleagues are achieved as well.

### **PURPOSE OF MANAGEMENT TEAM**

1. Each member has two hats (i.e. that of a member of the management team, and a leader of their team or business).
2. Members support and challenge one another.
3. The CEO uses the help of the management team to get things done so that they do not end up trying to do everything themselves.
4. The team works continuously on the company strategy, preparing proposals for the board of directors.

### **THE THREE (3) FUNCTIONS OF MANAGEMENT TEAM**

1. Create an environment for success.
2. Nip problems in the bud, or prevent them entirely.
3. Exploit big opportunities.

### **FACTORS TO CONSIDER BEFORE SELECTING CANDIDATE FOR MANAGEMENT TEAM**

1. Does the person possess the expected skills?
2. Does the person have the passion for the business?
3. Does the person demonstrate the required strength in the business?



## PRACTICALS

### SNAIL REARING/FARMING

Snail farming can be very profitable in Ghana, Kenya, Cameroon, South Africa and Nigeria. Yet, it is one of the most neglected animal rearing business in these countries.

Snail farming provides one of the finest opportunities to make money within a short period of time. But why are Africans not yet fully engaged in this money making animal rearing? The reason is ignorance.

In Australia and USA, snail farming is big business, providing opportunities to many farmers.

In UK, snails can be seen in many supermarkets and stores. Meaning it is a lucrative business over there. Just like in many other aspects of farming in these countries, Africans are yet to discover great money making potential in snail rearing business and that is why we suffer in hunger and poverty. We neglect where the money is and keep pursuing it where it is not, going from one city to the other looking for one petty China made goods after another to trade on.

Note: Making profit annually in snail rearing is possible if you do it well and get it right.

#### What is Snail?

Snail belongs to the class of Molluscan, Gastropod. It is popularly known in Nigeria as **Eju, Igbin**, e.t.c.

### THREE (3) TYPES OF SNAIL

#### 1. ACHATINA FULICA (i.e. The East African Snail)

The Achatina fulica - The East African land snail, or giant African land snail, scientific name; Achatina fulica.

##### Features

- This is a species of large, air-breathing land snail.
- Is a terrestrial pulmonate gastropod mollusk in the family of Achatinidae.
- It is the smallest in size among all the desirable species for rearing in Africa.
- It has a narrow, conical shell which is twice long as it is wide and contains 7 to 9 whorls when fully grown
- The shell is generally reddish-brown in colour with weak yellowish vertical markings but colouration varies with environment conditions and diet. Hence, a light coffee colour is common.
- Adults of the species may exceed 20cm in shell length but generally average about 5 to 10cm.
- The average weight of the snail is approximately 32 grams.

#### 2. ACHATINA ACHATINA (Giant Ghana Snail)

Achatina achatina, common name is the giant Ghana snail, also known as the Giant Tiger Land Snail.

##### Features:

- It is a species of very large, air-breathing land snail, a terrestrial pulmonate gastropod mollusk in the family Achatinidae.
- Giant African land snails are hermaphrodites, (meaning they possess both the female and male reproductive organs).
- Similar to the other species in the genus, Achatina achatina's shell can attain a length of 200 mm and a maximum diameter of 100 mm.
- They may possess between 7-8 whorls and the shell is often broadly ovate.
- The body of the animal is silver-brown in colour although albino morphs may exist.

**NB:** Two snails are still needed for breeding, but they are very prolific breeders.



### 3. ARCHACHATINA MARGINATA (Giant West African Snail)

Archachatina Marginata common name is Giant West African Snail.

#### Features:

- It is a species of air-breathing tropical land snail.
- It is a terrestrial pulmonate gastropod mollusk in the family Achatinidae.
- It can grow up to 20cm long.
- It can live up to 10 years.

**NOTE:** Among these three (3) species, **Achatina Achatina is the most desirable for farmers because:**

1. It grows so big to become the biggest snail species in the world. (2) High yield capacity.

**NB:** Achatina Achatina has its origin from Nigeria, get to Liberia from Nigeria and then Ghana. (i.e from Nigeria to Liberia to Ghana).

**NB:** Both Achatina Achatina and Archachatina Marginata are easy to find in Nigeria.

#### Advantage of Achatina Achatina

- It is very good for commercialization because of its profitability. This is because of the volume of eggs it lays at once

**Note:** Each Achatina Achatina lays 300 to 500 eggs at a time in clutches and three (3) times a year.

### HOW TO SETUP SNAIL FARM IN A SMALL SCALE LEVEL

#### Things to consider are;

1. **Snail Farming Environment:** Snails are easily dehydrated, and wind increase the rate of moisture loose in snail which in turn, leads to the dryness of the animal.  
To prevent snails from losing water so quickly, your snaileries (snail house) must be located in environment that is protected from wind.  
Note: A low plain, downhill site surrounded with enough trees is perfect for snail farming. Plantains and bananas plant can be planted around your snail farm to prevent the impact of wind.
2. **Type of Soil for Snail Farming:** Not all soils are suitable for snail rearing because they need some component and chemical substances to survive. The shell of the snail is mainly calcium and it derives most of them from the soil, lay eggs on the soil and drink water out of the soil.

#### Therefore, the suitable soil for snail farming must contain these elements;

- The soil must not be waterlogged.
- The soil must not too dry.
- The soil must not be acidic but must be well balanced.

**NOTE:** The most desirable soil for snail is **SANDY-LOAMY SOIL with Low Water Holding Capacity**.

**NOTE:** Clayey Soil must be avoided.

3. **Getting the Snails for Farming:** To start up a snail farm, it is advisable to get snails directly from the **FOREST** instead of **BUYING from the market** after they have been exposed to sunlight and have dehydrated and stress which can reduce their fertility capacity.

Note: Snails drink a lot of water.



**Snail farmer could pick the snail from the bush with a very simple technique;**

(a). Clear a little portion of land during rainy season and sprinkle spicy fruits like pineapple, pawpaw, plantain banana, e.t.c at about 5:00 PM (evening). Go back there about 7PM or 8PM, you will pick up snails suitable for rearing. Repeat the procedure until you get enough quantity.

(b). Pick up the snail eggs littered in the market place where it is sold and through a technique, check the fertility of the eggs, because some of them must have lost fertility due to the exposure of sunlight.

The eggs are later put in container containing wet sand and covered with cocoyam leaf.

Between 21 to 28 days, the eggs would have hatched into baby snails.

You start feeding them and gradually you raise a snail farm.

**4. The Snail House (Snailry):** The snail house is also called snailry. It can be a patch of fence-protected ground, sheltered from the wind or a covered box if you are breeding in small scale.

From larger population of snails, you can dig a trench or make a concrete pen with soil deep of about 10 inches, and cover it with screen or wire all around to prevent the snails from escaping.

**Note:** Remember that snails can reproduce fast and become pests when their breeding is uncontrolled.

**Snail love dark and cold places** but make sure the humidity does not drop to the level of harm to the snail.

You can use fresh leaves and cloth that is regularly wet to regulate the temperature.

Also, the wire is useful in keeping away rats and snakes or other predators from eating the snails in your snail farm. But aside from these bigger predators, you should be wary about smaller ones like ants and termites. Your construction must have these predators in mind.

**5. Snail Foods and Feeding:** Snails especially *Achatina* mainly **feeds on green leaves and fruits** though they can utilize other ranges of foods. Feed your snails with leaves, fruits, or even formula from the feed store. Aside from food to grow tissues, snails need **calcium** to grow shells.

**Leaves:** Such as Cocoyam leaves, PawPaw's Leaves, Okra Leaves, Cassava Leaves, Eggplant Leaves, Cabbage and Lettuce Leaves.

**Fruits:** Such as Mango, Eggplant, Pawpaw, Banana, Tomatoes, Oil Palm Fruits, Pears and Cucumber.

**NB:** Once they start growing, separate the big ones from the small ones. It takes more than a year for the *Achatina* type to grow to harvest size. Others mature in two years.

**Harvesting:** It is economically wise to harvest matured snails and not to harvest them at once but to keep few for breeding.

**Note:** To know if your snails are already matured enough, check the brim of the shell. If it is matured enough the brim should be thicker and harder than other parts of the shell.

## PROCESSING OF LOCUST BEAN

Processing of locust bean fruits to food condiment involves different unit operations after harvest. Such operation includes;

- Depodding.
- Removal of the yellowish pulp to produce locust bean seed.
- Dehulling (Washing).
- Recooking.
- Fermentation.



## ECONOMIC IMPORTANCE OF LOCUST BEAN

- (1) It is a good source of nutrients.
- (2) It is highly acceptable by the consumers with a good price.
- (3) It serves as employment opportunity.

## PROCESSING STEPS

1. **Depodding** of the locust bean fruits are mostly done by hand by the processors, though it has been concluded that threshing machine used for cowpea could be used for removing the locust bean seeds coated with yellowish pulp from the pod.

2. The seeds of the locust bean are embedded in a yellowish pulpy material and seeds needed to be separated from this yellowish pulpy material before it can be further processed into fermented locust bean (Akande et al. 2269).

The separations are either done by drying the pulp or done by washing it in water to **remove the yellowish pulp from the seeds**.

3. **Cleaning of the locust bean seeds** which have to do with removal of any foreign materials prior to further processing. It is still done manually by use of wind to winnow it or washing in water.

4. **Cooking of locust bean seeds:** The bean is encased in a hard, tough and relatively thick coat that has semi permeable characteristics. Easy movement of water through the coat is restricted.

The adhesive strength that binds the coat to the seed is relatively high (Aniyi, 2004). Hence, cooking is necessary to soften the firmly attached seed coat for easy dehulling.

Cooking is done in a locally made aluminum cast-iron pot using fire wood as source of heat. This unit operation takes 24 hours, which can be estimated to 50% of time used in processing of locust bean fruits to food condiment.

5. **Dehulling** occurs when firmly attached seeds coats which has been softened during cooking is removed for fermentation process. This unit operation is traditionally carried out either by action of abrasion of the cooked locust bean seeds and sea sand using hand or feet, or using of mortar and pestle to dehull.

Most processors, who produce fermented locust bean in large-scale are still using these traditional methods of dehulling, although locust bean dehulling machine has been developed to easy the dehulling process. (Audu et al., 2004). However, it is yet to be adopted by the processors.

6. **Separation of locust bean cotyledon from its coat** proceeds dehulling operation. This operation involves the use of local sieve in flowing water or inside a bowl of water to remove the hull from the locust bean cotyledon. These methods are still commonly used by the processors then wash the dehulled locust bean further operation.

7. **Recooking of the dehulled seeds.** The essence of re-cooking the dehulled seeds is to hasten fermentation process, using locally made aluminum cast iron pot and fire wood as source of heat.

8. The production of fermented locust bean has remained a traditional family art practiced in homes with rudimentary utensils, such as calabash, clothes or leaves for covering to produce a strong smelling food condiment or flavoring agent, this method is seen to be unhygienic and needs attention. **Fermentation.**



### AT A GLANCE (IN BRIEF):

1. Locust bean pods removal (Depodding).
2. Removal of yellowish pulp.
3. Pre-dehulling; Cleaning and Drying.
4. Boiling of locust bean seeds.
5. Winnowing.
6. Dehulling.
7. Washing.
8. Recooking.
9. Fermentation.

Food condiment is made ready for the consumers.

### SOAP MAKING

There are two (2) system of soap making;

1. Cold System.
2. Hot System.

Note: The most commonly used system is COLD SYSTEM.

Like hot and cold process soap, there is a lye component and an oil component.

The lye component is a bit different. Sodium hydroxide is used to make hard bar soap while potassium hydroxide is used to make liquid soap. Potassium hydroxide is harder to find and comes in flakes, not beads. The flakes are easier to work with, but are still caustic, so gloves and protective eyewear must be used. You will also need a small amount of borax. The other ingredients include; water, coconut oil, olive oil, essential oils and colours. You can source all of these ingredients organically except the potassium hydroxide.

**Note:** Keep in mind that all of the potassium hydroxide is eliminated during the soap making process through reaction called saponification. It is no longer caustic at this point.

### EQUIPMENT NEEDED

- Like hot process soap making, you will need a slow cooker, a stick blender, quart jar (wide mouth jar), and plastic stirring spoons. Since this recipe is measured in ounces, you will also need a kitchen scale.
- Additional equipment includes a plastic potato masher and a large jar for the resting period.
- You may also need a thermometer and a ladle to move your soap. Additional water is needed for diluting the soap paste and mixing with the borax for neutralizing the soap.

### RECIPE FOR LIQUID SOAP

- 16.5 ounces olive oil (find unrefined organic olive oil here).
- 7 ounces coconut oil (find unrefined organic coconut oil here).
- 5.5 ounces potassium hydroxide (find it here).
- 16.5 ounces distilled or filtered water (find the best water filtration systems here).
- 40 ounces distilled or filtered water.
- 3 ounces borax (find it here).



- 6 ounces distilled or filtered water.
- Essential oils, optional (find 100% pure essential oils here).
- Colours (optional).

## LIQUID SOAP PROCESS

1. Weight your olive oil and coconut oil and place them into the slow cooker. (Turn on Low)
2. In the quart jar, weight your water. Slowly add the weighed potassium hydroxide, stirring gently as its added. Don't be surprised at any sounds or reactions you may hear. (Because Potassium hydroxide reacts slightly differently than sodium hydroxide in water).
3. When the potassium hydroxide is all mixed in and the solution appears clear, add your water/potassium hydroxide mixture to the oils. Don't worry about the temperature.
4. Carefully stir by hand for 5 minutes to be sure all the oils come into contact with all of the potassium hydroxide.
5. After 5 minutes, begin stirring with the stick blender. It could take up to 30 minutes to achieve "trace". (Note: in soap making, trace is normally when the mixture is thick like vanilla pudding, but with potassium hydroxide trace might look more likely applesauce).
6. The mixture might look like it's going to separate, but don't stop until you have trace.
7. Cook in the slow cooker for about 30 minutes with the lid on. Check after 30 minutes. If it is separated, stir it back.
8. Check every 30 minutes for 3-4 hours.

**NOTE:** During the 3-4 hour cooking stage, your soap mixture will go through several stages. They will look like this;

- Trace-thick pudding to applesauce.
  - Custard-like with small bubbles.
  - Watery mashed potatoes.
  - Taffy.
  - Chunky to creamy petroleum jelly.
  - Translucent petroleum jelly.
- Each stage could take 30 minutes or longer.*

## THE REST PERIOD

During the rest period, you can ladle your soap into a large jar. Use a gallon size glass jar. Secure the lid and leave it for a week or so. This will allow any solid particles to settle to the bottom.

When your soap is clear, pour it into smaller bottles, label and enjoy!

Be sure not to disturb the sediment on the bottom or you'll have to wait for it to settle again.

## LIQUID SOAP INGREDIENTS

- (1) Sulphuric acid. (2) Caustic soda. (3) Soda ash. (4) STP (Sodium Triphosphate).  
 (5) Booster (e.g SLS - Sodium Lauryn Sulphate). (6) Perfume. (7) Colour. (8) Testapol.

## QUANTITY NEEDED TO PRODUCE 10 LITRES

To produce 10 litre, the main determinant is Sulphuric Acid.



- 1 Litre of Sulphuric acid.
- 1/2 Kg of Soda ash.
- 4 Spoon of caustic acid.
- 1/8 STP.
- Small quantity of perfume
- Add SLS for effective boosting.

## BEE KEEPING

Beekeeping is an occupation of keeping and managing bees thereby harvesting the products, (honey, bee wax, propolis) etc for processing into various form for different uses, locally and for export.

In the olden days, bees live in hollow trees, rock crevices, a dark hidden space. They stored their food (pollen and honey) and also house the brood (i.e egg larva and pupae).

The modern technology through the research of some scientists, where the nature and behavior of bees were examined closely, it made beekeeping as profession easy. Anyone, old or young, can keep bees with profit. The labour involved in beekeeping is light.

Bees can be kept at any place where there is a sufficient bee pasture of shrubs fruit trees, orchards and cultivated crops.

Each hive, depending on its size yield 10-25kg honey combs (about 50kg bear bottles) annually. In richer vegetation, a hive may yield 25-50kg honey combs.

**NB:** Ripe honey contains 18% water, 80% sugars (i.e glucose and fructose), vitamins and minerals.

*Honey has different colour, clearness, viscosity and taste are never the same depending on the season, the colony and the vegetation where it is raised.*

**NB:** Honey may be white or amber, sweet or bitter, fluid or granulated.

## DEFINITION OF KEY TERMS

- **APIARY:** A place with least one or more colonies.
- **HIVE:** An artificial shelter for the bees.
- **BEE COLONY:** This is a complete biological unit and normally consists of one queen, thousands of workers, a few drones and combs which may consist of honey, pollen, and brood.
- **COMB:** A hanging sheet of wax with cells on both sides.
- **BEE WAX:** The building materials for combs produced in special glands of young bees.
- **CAPPED BROOD:** Cells closed by a thin layer of wax and pollen under which mature larvae change into pupae.
- **CELLS:** The little hexagonal sections on both sides of the comb containing brood, pollen or honey.
- **DRONES:** The male bees which develop from unfertilized eggs.
- **PROPOLIS:** This means sealing materials collected by bees mainly out of plant gums. Also, it is used to make the entrances smaller for the protection of the colony. It is transported to the hive using the



legs.

- **ORIENTATION FLIGHT:** Flight made by the workers and queens to familiarize themselves with the land marks around the hives so that they do not get lost.
- **POLLEN:** The brightly coloured powder produced abundantly by flowers, fat, minerals, vitamins.

**Note:** Pollen is good for rearing brood and serves as diet for adult bees.

Bee keeping is not mostly common in keeping and which is also medicinal in nature. For Bee keeping to be done, the following is require;

**AN HIVE:** It can be constructed with wood. An hive is a place where you will keep the honey.

**Note:** Honey lives in Colony; this is the artificial place they live. And they are very sensitive. Honey can however be raised on tress and shady places.

**They love Nectar and Pollen grains provided from flowers.**

### HOW TO GET HONEY BEE

- Put the constructed hive outside at the back of your house in an open place very close to trees.
- Put nectars and pollen grains at the Hive in order to attract them.

### NOTE:

1. In Colony, there is only one Queen and others are called Workers.
2. The role of the Workers is to bring Nectars and Pollen-Grains.
3. Their excretes are the honey we use and is harvested at night and not during the day.

### MIGRATION

It means the process or act where Bee run away

### REASONS FOR MIGRATON

1. Because they hate colors like red and black.
2. Because they hate smoke.
3. When there is no food.

### ADVANTAGES OF BEE KEEPING

1. It requires little capital to start (depending on the size of the farm).
2. It does not take up valuable land or water body; it only occupes small portion of land.
3. There is no need for daily care since bees do not need daily attention which allows time to be flexible.
4. Basic beekeeping techniques are very easy to learn and master.
5. Equipment involved are made locally.
6. Veterinary attention is not required.
7. It will increase the internal generated revenue for the centre.
8. It is a profitable venture.

### SETTING AN APIARY

The place where hive are placed is paramount to the beekeeper. If the interest is to increase yield and profit margin, 30 - 40 can be place into the apiary for a start. Africans bees are defensive in nature, hence one must be



kept away from the public or place where they cannot sting anyone. Bees require food sources that are nectar and pollen therefore they must be able to find their food sources within their vicinity at least 2km while bees can fly many km to look for their food.

### **THE BEE COLONY**

Honey bees' live in a home wax comb. The wax comb will be built by them (workers). These six-sided wall cells are very strong on house they brood (immature bees) during development and provided strong space for honey and pollen.

### **THE DRONES**

The drones are larger and fatter than the queen or workers. Their body are not as long as the queens. He does not have legs fit to carry pollen and he is unable to produce wax. He has no stinger to defend himself.

### **THE WORKERS**

There are 5,000 to 75,000 worker bees in a colony. They built the entire house and field work. They go out to bring in water, pollen, nectar and propolis (bee glue), some build the wax comb, some nurse the young bees and control the temperature of the hive.

**NB: It takes 21 days for a worker to grow from egg into adult.**

The workers have the stinger which when it stings, the stingers (venom) remain behind and the bee dies.

1. The dearth season ..... April to June.
2. Build up season ..... June to August.
3. Nectar flow season ..... September to November
4. Honey flow season ..... November/December to February/March.

### **ORGANIZATION OF HONEY BEE COLONY**

**CASTES:** A colony of bee consists of a queen which is normally the only breeding female in the colony. Large number of female worker bees, typically is about 30,000 to 50,000 in number of males drone, ranging from thousands in a strong hive in spring, to very few during dearth or cold season.

**NOTE:** In a bee colony, there are male and female bees.

The male bee is called the drone while the female bee is called the worker.

A number of drone are reared and tolerated in a colony where their presence may be required. When there is little or no brood being raised in the colony, the drones may be destroyed, there are about 300 to 500 drones in colony.

The female bees are two kinds. **In each colony there is usually only one queen.**

The queen is the only fully developed female. She lays all the fertile eggs and she is called the "mother" of the bees. If she lays between 1500 to 300 eggs a day, she is a good queen. The other female bees in the colony are workers. They exist in large number up to several thousands. They may be between 60,000 and 80,000 workers in a colony's population. These workers are females whose ovaries do not develop but their body have been adapted to perform different works in maintaining the colony. **The eggs laid by workers is not fertile and have into drones. Thus, the worker bee is an imperfect female.**



## REQUIREMENTS OF BEES

1. Flower/food (nectar, fruits juice and pollen)
2. Very close to Water.
3. Not too close to your Home.

## FOOD OF HONEY

Nectar and juice provides carbohydrates needs of bees while pollen provides the protein parts of the diet. The queen of the bees is usually fed with pollen and nectar against the scarcity (dearth period).

Nectar is stored as honey. It is therefore important for the bee keeper to know how to only harvest the surplus honey above the bees requirement. If the beekeeper harvest all the honey from the colony leaving none for the bees to feed on, the bees will die of starvation or migrate from the colony. Bees also need water for drinking and cooling the hives.

When inviting wild swarm to colonize your hive, you need to feed them with sugar syrup in one to three days. There are many different types of bees, but we are all only concerned with bees that makes honey which are called honey bees. There are also different species (kinds) of honey bees around the world. The type of bee found in central and east Africa are called APIS MELLIFERA SCUTELLATA.

## CHARACTERISTIC OF HONEY BEES

The major characteristics of honey bees include the followings:

1. Swarming (population control)
2. Organization (queen, worker and drone caste)
3. Migration
4. Territorial Defense System
5. Thermoregulation-Farming
6. Division of Labour

## EFFICIENT USES OF RESOURCES

1. High sense of sanitation.
2. Causes of swarming.
3. Lack of space for the brood nest or for the queen to lay eggs.
4. Lack of storage room for honey.
5. Insufficient ventilation.
6. Very low temperature.

## SWARMING CONTROL MEASURES

1. Remove combs near the brood nest and replace with combs.
2. Add empty combs.
3. Provide adequate shed for hives.
4. Provide enough ventilation.



5. Make enough water available for the honey bees.
6. Always observed the brood chamber for new queen cell.
7. Requeen at least every two years.

### **MIGRATION**

When all the bees in a colony moves from one place to another, it is called migration.

#### **REASONS FOR MIGRATION**

The honey bees called APIS-LIFEA-ADANSON are likely to migrate for the following reasons;

1. Lack of food.
2. Predation or devouring enemy like lizard tod, bird, etc.
3. Management of the honey bees with other varieties.
4. Disturbance by human fire.

**NB:** All the bees in a colony may leave their nest suddenly or within a few day and carry honey along with them during departure.

### **MATING (IMPREGNATING THE QUEEN)**

Mating take place in flight and take its place five days after the queen image from the brood cell, The young queen may be mated by several drones on successful meeting flight.

Mating takes place only once in the queen life period and laid fertilized eggs.

The fertilized eggs become male (drones).

### **CONDITIONS THAT INFURIATE (ANNOYED) BEES TO REACT AGGRESSIVELY.**

1. Natural Odors such as perfume, alcohol, sweet.
2. Excessive disturbance and noise.
3. Black and red colors (bees like white and brown colors).

### **HIVE PPRODUCT**

- (1). Honey. (2). Bee wax. (3). Royal Jelly (Bees Milk). (4). Propolis (Bee Glue).  
 (5). Bee Venom or Apitosisin. (6). Bee Poling (Bee Bread). (7). Queen and Swarm Production.Improve Groping through Pollination.

### **USES OF HONEY (MEDICAL VALUE)**

1. As Food: a good source of protein, carbohydrates and mineral source.
2. It heals wound, boll and whitlow.
3. It clear coughs, heal diabetes.
4. It relief cold and catarrh.
5. For treating arthritis.
6. It clears soft throat.
7. It is used for treating burns.
8. For the preservation of foods such as meat, fish.
9. It improves eye sight.



10. It aid digestion of food and clears conception.
11. It services the heart and other internal organs.
12. It is used for therapy.

### USES OF BEE WAX

1. For soften leather and making polishes in shoe industries.
2. For waxing clothing materials in textile.
3. For candle making and crayon.
4. For making creams and soft in cosmetic industries.
5. For ointment and furniture polish.
6. In art, bee wax is used for muddling and batik.
7. It is used as temporary tooth filler in dentistry.
8. It is used in the production of wax foundation for bees.

### PEST AND DISEASES OF BEE

- (1). Lizard. (2). Bird. (3). Toad. (4). Tsetse flies. (5). Dragon flies.  
 (6). Wax moth. (7). Ant.

### STOCKING THE HIVES (MOVING BEES INTO A NEW HIVES)

1. Attracting a wild bee swarm into your hives. This can be done by putting balting materials such as palm wine, over ripe fruit, honey, lemon grasses in your new hives to attract bees.
2. Collection of wild bee swarm into your hives.
3. Buying from already establish apiary.
4. Collecting a wild nest with already built combs.

### FISH FARMING

Raising fish, also known as aquaculture, can be done on a small scale in backyard pond, part pools, or tanks. Needs for raising fish for your self-sufficient self-sufficient and survival food include the best fish breeds, equipment and care. Fish are relatively easy animals to farm. They need less space per animal than other kinds of livestock. Aquaculture can be done in more places. Fish and fish protein are in great demand worldwide and the need for more fish for more production is speedily growing.

Getting started with aquaculture require a good body of water. Your lake must contain plenty of weeds both in the water and around it. These plants will provide protection, food and shape for your fish. Also many insects, small fish and other critters that fish devour on must have vegetation for their life-cycle. Once the water, plants and foodstuff sources have been established, it is time to introduce your fish.

Raising fish could be in a farm pond, in tank and aquarium heaters. Typical fish grown by fish farm include salmon, catfish, tilapia, cod, carp, tout and food perch. The trout is the finest fish for a novice to start up with. It's among the strongest of the fish raised on a fish farm and the they have got an excellent market value. The next stage is to get some ova fish eggs need gentle handling and care if they are to prevail. Eyed ova are the easiest and more dependable way, especially for the first-timer. Many fish farmers start with ova that are already



fertilized. These can be bought quite readily and arrive when they are almost ready to hatch. Newborn fish are called "alevins" At first, these tiny fish don't need any food. They feed off of their yolk-sac and will begin to feed on real food in about six weeks, later feed on processed food meal at least four times daily. As they grow and become known as "fry" they require more varied, natural diet that includes insects, small fish and crustaceans in order to grow big and healthy. Processed food can add to a natural diet, but it's not alternative. After a few months, the fish will be ready to move into their new home. Some aquaculturists breed their fish to this point in rearing ponds away from the main pond and the fish will need to be moved. Others use hatching trays in the large pond and the fish are allowed to swim out when they are large enough. They should be thinned out as they grow. Remove the small and weak ones and put them in another area. Keeping the fish in the water with large fish might mean they will be eaten one another. With just a medium size pond, you could even begin your own hatchery, or sell fresh fish to shops and restaurants. Also keep in mind that variety in your pond is essential to a healthy fish to production. Be careful about what you introduce. Don't over-stock your pond with any one kind of fish for a healthy balance.

### **METHOD OF FISH REARING**

1. Intensive (Small Scale).
2. Extensive (Large Scale).
  - Extensive aquaculture is space dependent and utilizes large ponds.
  - Intensive aquaculture utilizes tanks and requires a great deal of management of produce a lot of produce in a small space.

Raising fish at home can follow either of these strategies, but will probably be lower production than commercial systems in order to reduce the amount of equipment and the amount of management that goes into it.

Hatching trays can be constructed of perforated zinc fairly easily. Make them 1 1/2 inches deep and the water ova will hatch out well in them. The size of hatching tray you will depend on the size of box you will suspend them in.

When in operation in the water, the trays are loaded with ova and suspended in the boxes. They have to be positioned so that a nice current of water can be moved through them. Before you put ova into these boxes, you should allow them to sit in the pond. This will ensure that nothing contaminates the area when the eggs are introduced.

Young fish and eggs need to be protected from the sun and predatory animals. That is why you will need to keep your rearing pond near shady trees. It is also quite important to have as much tall grass and weeds as possible growing around the banks.

Netting can be put over rearing pond to keep hungry birds out. But you will have to keep a look out over your brood because birds are smart. The rearing boxes need to already be resting in the pond for several weeks before the ova are ready. The edges of the boxes will be about six (6) inches above the water. The trays are hung inside the rearing boxes with the water level coming up to the top edge. This is where your ova will be called home until they hatch and are strong enough to swim out into the rearing box.

The ova will need to be carefully washed before they can be added to the hatching tray. The technique for cleaning the ova is quite simple. A large container is filled with water and ova, the water is drained off and clean water added. This process is repeated until the water runs clear.



After cleaning, the ova can be placed on the hatching trays. This can be done by tenderly ladling the ova, a few at a time, out of the cleaning container. Hold the ladle very close to the tray and empty the ova as gently as possible. Never pour the ova from a height; the impact will certainly kill them.

Ova will hatch at a far higher rate if they are distributed into a single layer. This is a very delicate procedure and requires a gentle touch. A feather is just the tool for the job. Gently running the feather over the ova will spread them out with minimal damage.

Despite taking all the necessary precautions, some of the ova will die. They can be easily identified by their white or opaque colour. Dead eggs must be removed from the hatching trays immediately. Leaving them in the tray can lead to fungus growth that can damage your entire stock.

A natural way to clear out dead ova is to introduce freshwater shrimp to your hatching trays. They will only feast on the dead ova and will not damage live ones. These mini aquaculture house keepers will clear out animals and plant debris in the water too.

Keeping a lid over the rearing boxes will also help to protect ova from fungus growth. Fungus loves light and a lid will cut off the light and keep growth to a minimum. A lid is also an excellent way to protect ova and young fish from predators.

In a short time, the first fish will begin to hatch. These young fish also known as ALEVIN, will have a large bag on their underside. This is the yolk sac. The fish will require no food to start with. They will feed off of their sac for the next month and a half or so.

Eventually, the do it yourself farmer will see that some of his alevins have begun to move away from the pack at the bottom of the hatching trays. They will start to swim up towards the current. Now is the time to start feeding them finely processed meal. Their yolk sacs are almost gone now and they are moving on to the next stage of their lives.

**NB:** Due to the overwhelming evidence of chemicals and impurities in foreign raised fish, raising fish at home is a safer alternative than buying fish from the commercial aquaculture and fish farm.

Farm ponds are an ideal place to raise fish for food.

Finger Lings means baby fish.

Ova mean fish egg, which can be bought.

### How To Get The Oval

It can be bought. You have to be very careful when buying the oval because it is very delicate, fragile and can break easily.

### USEFULNESS OF FISH

1. It serves as food.
2. It serves as source of income.
3. It serves as source of employment.

50BC - 400AD  
History of Philosophy - Dark ages

Why was it named Dark ages

- 1) What led to the birth of Christ
- 2) What led to the organised Christianity 21 Chr and the Trinity.



## PRACTICE AND PAST QUESTIONS

1. Define business?
2. What is business concept?
3. State eight (8) steps for new product development?
4. Define product analysis?
5. -----, ----- and ----- are the major types of snail?
6. State five (5) questions that an entrepreneur must answer before raising capital?
7. When does mating take place?
8. State eight (8) processing steps of locust bean production?
9. Mention six (6) sources of raising capital?
10. What is feasibility study?
11. Explain five (5) process of industry analysis?
12. Define the term 'management team' and mention three (3) functions of management team?
13. State two (2) differences between industry and market analysis?
14. List seven (7) ways on how to maintain positive cash flow for your business?
15. ----- and ----- are the two (2) strategies/methods of aquaculture?
16. Ova means -----
17. State four (4) steps involved in feasibility study?
18. List eight (8) reasons why business fail?
19. Define the following;  
Hive, Comb, Bee wax, Pollen, Drones, Cells, Apiary, Propolis and Apiary
20. Mention five (5) advantages of bootstrapping and List six (6) ways on how to make it effective?
21. What is market analysis?
22. Raising fish is also known as -----?
23. State the six (6) elements of good feasibility study?
24. Mention at least six (6) advantages of bee keeping?
25. List seven (7) pest and diseases of bees?
26. What are the four (4) purposes of having management team?
27. Depodding means -----?
28. ----- enables the founder to describe the nature of the suppliers, customers and lenders.
29. What is cash flow and cash flow statement?
30. State the seven (7) questions to be answer by an entrepreneur when describing business idea?
31. Mention five (5) reasons for keeping record?
32. ----- and ----- are the basic record keeping system?
33. Saponification means -----
34. ----- is used to make hard bar soap.
35. List seven (7) essential ingredients for soap production?
36. -----, ----- and ----- are the examples of paper based systems/tools.
37. State four (4) advantages of feasibility study?
38. Itemize five steps to making better investment decision and mention two factors that influence it?



39. ----- is the common type of snail used by farmers?
40. Mention eight (8) uses of honey (as medical value)?
41. Outline four (4) usefulness of fish?
42. List three (3) importance of locust bean?
43. What are the four (4) things that business concept requires when converting an idea to business?
44. What is the scientific name of Achatina Fulica?
45. List four (4) concept and characteristics of entrepreneurship?
46. What is the full meaning of SWOT and ATU
47. ----- must be examine to have a full picture of business financial performance?
48. Achatina Achatina is also known as -----.
49. -----, ----- and ----- are the major activities used to read or outline cash flows.
50. Mention three (3) factors to consider before selecting management team?
51. Industrial analysis information are obtained through -----.
52. ----- shows the overall financial conditions of a business
53. State four (4) questions to consider before business valuation?
54. -----, ----- and ----- are the types of business.
55. ----- shows the sales and profitability.
56. List five (5) reasons for financial records keeping?
57. Bee loves ----- and -----
58. Intensive and extensive methods of fish farming means ----- and ----- respectively.
59. ----- of the bee found in central and east Africa are -----
60. Mention three (3) conditions that infirmate bees to react aggressively.