



BUILDING A SUSTAINABLE & INCLUSIVE
HORTICULTURE SECTOR

SAMPLE BUSINESS PLAN FOR XXXX WATERMELON JUICE, KANO, NIGERIA



EXECUTIVE SUMMARY

XXXX Table Water Limited (TWL), a company owned by reputable promoters, the company was established since 2004 and has since been producing table water and cultivation of arable crops, LTWL has resolved to establish a 2,000 litres per hour watermelon juice processing facility that is not only modern but also efficient. This is based on the need to take advantage of the huge population demanding for fresh fruit juices, out grower farmers cultivating watermelon without proper storage upon harvest and the high wastage due to this lack of storage facility and other features that have occasioned the huge supply gap in Nigeria's fruit juice market.

Watermelon the major raw material for this project, is available in abundance in many states including Kano and Jigawa, where the company will engage with, and start buying fresh fruits from almost 300 farmers whose contact telephone numbers were collected during the feasibility study for this project. This will be achieved through a formal off-taker agreement between the farmers and the firm. XXXX also has a long-term intention of cultivating watermelon on part of its 200-hectare land, in order to take direct control of its own raw material supplies. The projected yield from this activity would be from 100 - 150 tons per annum and the effect on farmers will be minimal.

The Nigerian market has several fruit juice producers with differing capacities and thriving under varying conditions. However, the Nigerian market has a opportunities for any discerning investor who emphasizes good quality. As a strategy for ensuring success, XXXX will employ all the appropriate strategies - get the right equipment, hire the right personnel, get high quality raw materials and use best practices in juice making. The company will also emphasize proper maintenance of assets, ensure that have requisite skills, while being diligent with regard to quality control, waste management, regulatory controls, cost management and revenue drive.

Funding will be sourced through a term loan of N78million from a borrower-friendly institution such as the Bank of Industry, directors' loan in the sum of N15million and internally-generated cash from sales of products.

Sales will commence with about N112million in the first full year of operations and rise modestly to about N135million by year 3. The Net Present Value of N85,777,890.00, Internal Rate of Returns of 21% and other indicators show that the project is commercially and financially viable.

All the risks bordering on finance, supplies, technical efficiency, power supply, market and construction have been carefully considered and appropriately mitigated.

Based on the foregoing, this proposal for the establishment of a watermelon juice processing facility by XXXX Table Water Limited is strongly recommended for funding.

2. INTRODUCING XXX TABLE WATER LIMITED

2.1. Company Background and Management

XXXX Table Water Limited, hitherto known as XXXX was incorporated on..... to carry-on the business of distilling, purifying, packaging and merchandizing of table water, juices and other non-intoxicating drinks.

XXXX Table Water Limited has been producing table water, which has commanded market acceptability through its hygiene and quality; the company has also been involved in cultivation of arable crops.

2.2. Ownership and Strategic Management

XXXX Table Water Limited has the following shareholders:

Name	Designation
	Director
	Director
	Director
	Director
	Director
	Director

Strategic Drivers of the Business: Other members of the team include managers leading various units of the organization.

2.3. Assessment of Current Business Operations

XXXX Table Water Limited (LTWL) produces table water, either in sachet or pet bottle. LTWL also engages in crop production; it has a land in XXXX LGA of Kano State.

All previous activities related to the watermelon enterprise were based on modifications to the bottling facility for table water; the company's promoters, having become convinced about market acceptability of its products, have now resolved to establish a watermelon juice processing facility that is not only modern but also efficient.

3. CONTEXTUAL FRAMEWORK OF THIS BUSINESS PLAN

3.1. Opportunities for Fruit Juice Production in Nigeria

The total annual demand for fruit juice in Nigeria is about 550million litres, with supply at less than 25%¹; sales have been boosted by better education on nutrition and the risks associated with diabetes, obesity and hypertension, which led more consumers to favor fruit/vegetable juice over carbonated drinks otherwise known as “minerals”.

The fruit juice industry is seasonal, whereby demand is all-year round, with peak purchases occurring during festivities. In 2002, government banned the importation of fruit juice in consumer packs into Nigeria. Even if traders wanted to import, the current scarcity of foreign exchange would not permit.

The popular juice makers in Nigeria are as follows:

1. CHI LIMITED - Conglomerate (Agriculture, Pharmaceuticals, Aquaculture, Poultry, Fruit Drinks)
2. C-WAY FOOD & BEVERAGES NIGERIA CO. LTD - Manufacturing of Fruit Drink
3. DANICO FOODS LTD - Manufacturing of Fruit Juice and Drinks
4. DANSA FOODS LTD - Food Processing, Production and Marketing
5. FRUTTA JUICE & SERVICE NIGERIA LTD - Manufacturer of Natural Fruit Juice and Fruit Drink
6. FUMMAN AGRICULTURAL INDUSTRIES LTD - Processing, Marketing & Sales of Fruits and Juices
7. JAMIL (NIG.) LTD - Dairy Production, Production of Fruit Drinks
8. KAADAN NIGERIA LTD - Production & Packaging of Fruit Juice
9. LINO LABORATORIES LTD - Production of Fruit Drinks, Bottled Water and Canned Juice
10. NATURELLE EXTRACTS LTD - Manufacturing/Production of Table Water, Carbonated Soft Drinks, Fruit Juice in TetraPaks, Food Processing, Production and Marketing
11. NIGERIAN ASSOCIATED BEST FOODS LTD - Food Processing, Production of Beverages, Manufacturing of Fruit Juice and Ice-Cream
12. NIGERIAN BOTTLING COMPANY PLC - Production and Bottling of Non-Alcoholic Beverages
13. PANAFY GROUP - Outdoor Advertising, Production of Bottled Water and Fruit Drinks, Bakery
14. PROMISE FOODS & BEVERAGES LTD - Processing & Production of Fruit Drinks
15. QUALI FOOD NIG. LTD - Manufacturers of Mineral & Fruit Drinks

Chi Nigeria Limited remained the overall leader in the Nigerian fruit/vegetable juice market in 2012 with a volume share of 45%. Coca-Cola was the second leading player with a share of 35% while others including GlaxoSmithKline Nigeria Plc, Dansa Foods, C-Way Food & Beverages Co

¹ BusinessDay (2014): Nigeria: Growing Commercial Usage Reduces Fruit Wastage By Half; accessed on-line August 18, 2016 at <http://www.freshplaza.com/article/125594/Nigeria-Growing-commercial-usage-reduces-fruit-wastage-by-half>

Nig Limited, Frutta Juice & Services Limited and Fumman Foods Industries Nigeria Limited and many small producers share the rest.²

There is constant interchange of trade in all items including fruit juices, between Kano and Kaduna states, where consumers love packaged fruit juices, whether in pet bottle or tetrapak and they buy mostly from supermarkets and other notable shops. There is also a likeness for watermelon juice, without being specific about flavors. Major sales outlets are shopping malls, supermarkets, open markets, kiosks, eateries, major road junctions, schools and pharmacies

15.2. Watermelon

This crop, botanically known as *Citrullus lanatus* var. *lanatus*, is a tropical fruit that has so many benefits covering palatability, nutritive value, disease prevention, energy-boosting and enhancement of overall body well-being. Watermelon is cultivated in many states in northern Nigeria including Kano and Jigawa states, where many LGAs have farmers that cultivate the crop in abundance.

² Euromonitor (2013): Fruit/Vegetable Juice in Nigeria; published July 2013 and accessed online at <http://www.euromonitor.com/fruit-vegetable-juice-in-nigeria/report> on February 10, 2014.

4. MARKET FEATURES AND XXX'S STRATEGIES

4.1. Demand-Supply Dynamics and the Firm's Strategies

As at 2013, the annual amount spent on importation of fruit juice into Nigeria was \$1 billion, and yet the country is the second largest producer of citrus in the world after China¹. This situation is no longer sustainable and has therefore boosted the opportunity for increased local production of fruit juices in the country.

In recognition of the above potentials, XXXX Table Water Limited is acquiring a processing and packaging facility with a capacity of 2,000 litres per hour (4,000 pet bottles of 500ml) from China to undertake production using modern and efficient methods as follows:

- **Receiving the Raw Fruits:** matured watermelons are supplied directly to the factory, where grading is carried out and the fruits are weighed.
- **Two-Stage Washing:** first, to clean the fruit surface with self-rotation and thereafter, with bubble of water generated by air blower from blow line pipe. The process is known as 'self-rotation', because it takes place on a receiving conveyor with a fixed food grade brush, which removes all the impurities from the surface of the water melon. The air blower is connected under the water trough and with the aid of air injected under pressure water-bubbling facilitates the effective cleaning of the water melon prior to sorting.
- **Sorting:** to ensure that only clean and non-defective fruits are allowed to be conveyed onto the elevator for crushing.
- **Extraction:** watermelon fruits will be passed through a multifunctional seed separator where the seed will be separated from the rind (covering). The resulting juice will be sieved through a finisher mesh of 0.6mm diameter, to remove any particles from broken seeds and also to remove fibre, to get a clear drink. This process is known as refining.
- **Blending:** in this stage, the extracted juice is blended according to the recipe desired and passed-on for heat treatment through de-aeration and homogenization.
- **Heat Treatment:** the blended juice undergoes homogenizing and sterilization at 90 oc - 95oc to eliminate all the bacteria and give a shelf life of nine months.
- **Filling Operation:** the filling operation is done with a monoblock, with a rinsing station filling and capping. The machine operates on an output of the specific number of bottles

3 Adesina, A (2013): Nigeria Spends \$1bn Importing Fruit Juice Annually; a disclosure by Honorable Minister of Agriculture & Rural Development at a meeting with Coca-Cola executives on March 26, 2013 in Abuja; accessed on-line at <http://tribune.com.ng/news2013/index.php/en/news/item/8267-nigeria-spends-1-bn-importing-fruit-juice-annually-adesina> February 10, 2014.

per hour, in this case, 4,000 bottles. After filling, the bottles are capped, cooled, dried and passed to the coding machine.

- **Coding:** ink jet coding machine is used to apply the batch details, production and 'best before' dates.
- **Labeling:** the label sleeve applicator is used with poly vinyl chloride (PVC) labels, where the output could be as high as 100 bottles per minute.
- **Bulking:** the finished product will be shrink-wrapped in accordance with market trends, usually 4 x 3 matrix or 2 x 3 matrix. The finished product is then stacked and forwarded to the warehouse.

These are quarantined till the laboratory confirms them satisfactory for human consumption. Sales distribution commence from the warehouse.

Highlights of the company's production strategy are as follows:

- (a) Acquisition of processing equipment that is reliable, user-friendly and has little negative impact on the environment
- (b) Ensuring that there is dependable arrangement for getting raw materials while cautiously considering backward integration
- (c) Accepting good quality raw materials in order to control the costs of acquisition and
- (d) Proactively noting trends in consumer tastes and preferences

4.2. Sourcing of Raw Materials

Watermelon fruits are abundant in many states of northern Nigeria. The company will link-up with farmers in Babura, Gwiwa, Gumel, Kazaure, Roni, Sule Tankarkar and Yankwashi LGAs in Jigawa State. XXXX will also relate with farmers in Bunkure, Danbatta, Dawakin Kudu, Dawakin Tofa, Gezawa, Kunchi, Makoda and Rano LGAs of Kano State.

In the short-term, the firm will contact almost 300 farmers whose contact telephone numbers were collected during the feasibility study for this project. XXXX will commence buying from the farmers on mutually-agreed terms and conditions.

As a long-term strategy, the company plans to carry-out backward integration by cultivating watermelon on its X-hectare land at Rimin Gado LGA of Kano State. This long-term strategy for sourcing of watermelon (about 100 - 150 tons per year) will enable the company take direct control of its own raw material supplies. It is noteworthy that because the 300 farmers would be a pool from which the company will purchase raw materials, the implementation of direct

production would not cause suffering to the farmers; rather, the benefits occasioned by the off-taker arrangement would have stimulated a higher standard of living for the farmers. In the long term, the farmers will not suffer unduly, because as they still sell to the big buyers from Abuja and other parts of Nigeria.

4.3. Competition and Trends

Nigeria has a high population (140,003,542 persons as at 2006) with Kano being the most populous among the 36 states. Relatedly, a country with a high and expanding population also has a huge potential market, especially for a consumable product such as fruit juice. The huge supply gap existing in the fruit juice industry, coupled with the increasingly difficult foreign exchange scenario and the ban on importation of packaged fruit juices present the right opportunity for virtually any producer to thrive; this explains why hundreds of cottage level producers of fruit juices, whose products are unbranded and unregistered, remain active in the market.

With the existing opportunity for selling fruit juices in the Nigerian market, any discerning investor, who produces good quality juices, will be able to do well in the Nigerian market. Therefore competition will not significantly restrict the fortunes of XXXX in this proposed watermelon juice processing and packaging venture.

4.4. Conveying Inventory

It is recommended that XXXX should do the following:

- (a) Organize farmers into groups such that fruits can be aggregated and transported, taking advantage of timeliness and economies of scale
- (b) Introduce farmers to improved agronomic practices, for increased yields
- (c) Be cautious in implementing the long-term plan of establishing a watermelon farm, in order to ensure that attention of the promoters is not divided

XXXX's two delivery vehicles, which are used in transporting table water, will be available to transport fruit juice; in addition, one more vehicle could be acquired when appropriate.

5. RECOMMENDATIONS ON PERSONNEL TRAINING

5.1. Manpower Requirements

For effective and efficient running of the business, the following staff members are required:

S/N	Position	Number
1.	Factory Manager	1
2.	Factory Personnel Manager	1
3.	Production Manager	1
4.	Quality Control Manager	1
5.	Production Supervisor	2
6.	Production Foreman	3
7.	Laboratory Technician	1
8.	Microbiologist	1
9.	Plant Engineer	1
10.	Electrical Engineer	1
11.	Boiler Technician	2
12.	Power Operator	2
13.	Mechanical Engineer	1
14.	Engineering Supervisor	1
15.	Factory Operators	5
16.	Factory Hands	10

It is important to note that the filling of vacancies would be done on a need-to-have basis, implying that, for reasons of prudence and effective cost control, not all the staff will report from the start. This strategy is meant to ensure that persons do not continue to receive salaries while they are not sufficiently engaged

5.2. Highlights of Selected Staff

1. Factory Manager

This staff will be coordinating the activities of the various units. In tandem with the rules decided by the board, he and the management team members, set production and sales targets and ensure sustained maintenance of machinery and equipment.

2. Production Manager

S/he will be responsible for organizing production activities that involve working in consonance with the requests of the marketing department for optimal production of fruit juices, managing the orchard staff and ensuring strict adherence to best practices along the processing line.

3. Sales Manager

The Sales Manager shall be responsible for marketing and sale of all the products of the company. S/He would be charged with organizing and executing sales promotions and other outreach activities geared towards marketing of fruit juices. S/He would also serve as the initial Public Relations Officer of the farm. The role will be undertaken by the Production Manager

4. Accountant

It is the responsibility of the accountant to keep records of financial transactions and general accounting activities of the farm. He is currently heading the administrative activities, including looking after the company's stores. He has a Diploma and has been doing this work as an accountant and administrator for over eight years; he is therefore familiar with the activities of XXX.

5.3. Training Requirement

In order to sharpen the skills of staff members and position them for the dynamics of the fruit juice industry in general, the following training programs shall be administered:

- (a) Practical Understanding of the Processing Facility: the processing line will be coupled, test-run and made operational by technicians to be sent by the equipment manufacturers. XXX technicians will understudy the entire coupling process and learn about operating procedures, hours of work, maintenance requirements & schedule, etc
- (b) Receipt and Handling of Raw Materials
- (c) Modern Fruit Processing: the production staff would be trained on the various steps of the processing activity
- (d) Quality Standards: Specific attention will be placed on the need for (and especially, how to obtain) wholesome products with high quality
- (e) Safety procedures in the work place
- (f) Packaging: this aspect of capacity building would focus on bottling, filling and batching
- (g) Waste Handling and Disposal: proper coaching will be given to the staff on how to handle and discard the unwanted product of juice production
- (h) Marketing: the basics of marketing and customer relationship management would be taught to the staff, bearing in mind the need to operate and deliver high results
- (i) Proper Accounting & Timely Reporting: this for accounting staff and it is necessary to enable promoters track financial performance effectively and on a timely basis.

6. QUALITY CONTROL & HANDLING OF WASTE

There will be an initial training on standards, while the Quality Control Manager would ensure that the minimum quality standards are adhered to. The same applies to hygiene require-requirements in a food processing environment.

The processing of fruits into juices is always accompanied by waste products, which are luckily, biodegradable; two forms of waste will be generated, namely solid and liquid waste. The former consists of peel, seeds and left-over of squeezed pulp while the liquid waste will be mainly cleaning water and waste water from processing operations. The solid waste can be managed by creating dumps on farmlands and covering up when filled to allow for decomposition, and subsequently used as organic manure. The liquid waste can be managed via a liquid-holding chamber made of concrete with an overflow system after natural breakdown, before releasing to a flow drainage or stream if available.

The consultants, being mindful of the need for XXXX to minimize the negative impact of waste disposal on the ecosystem, approached a big dairy farm in Kano, which has asked to be allowed to evacuate the waste products (at no cost to XXXX) and use same as cattle feed. This is a very convenient, innovative and cost-free option.

7. REGULATORY CONSIDERATIONS

The National Agency for Food & Drugs Administration and Control (NAFDAC) is Nigeria's regulatory agency for drugs and edible items; it statutorily requires that every packaged food item meant for public consumption must be certified fit for human consumption.

LTWL is already familiar with the minimum requirements of NAFDAC and the Standards Organization of Nigeria (SON). In addition, the company already met the requirements for the registration of its table water and with the approval of its juice products, all strata of consumers can be approached with confidence and sales can be consummated without fear of contravening any regulation.

8. ANALYSIS OF FINANCIAL & COMMERCIAL VIABILITY

In order to demonstrate the extent to which this business is financially and commercially viable, this section of the feasibility plan highlights the anticipated costs, operating expenses and revenues from the business, together with the underlying fundamentals for the projections. It also shows the sources of financing and what the projected cashflows portray.

8.1. Costs

Pre-operational costs: these include the cost of preparing the business plan, feasibility studies and other start-up activities. They have been specially provided for, and are not included in the

projections. Personnel costs will begin to be incurred on a need basis as workers resume duties.

CAPEX: the following are the bases for estimating the expenditure on acquisition of equipment:

- (a) The processing facility (including import duties and other charges) amount to N78 million. The cost of installation is considered part of capital expenditure
- (b) For purposes of accounting and to provide a prudent basis for depreciation of the existing table water line, the equipment's net book value of N5million as at July 31, 2016 has been adopted as cost
- (c) Total cost of remodeling the existing factory area for the necessary upgrade is put at N15million and recorded as improvement on land & buildings; this is added to current value of N150million for the factory premises
- (d) The distribution vehicles of the company have been fully depreciated but remain in a very serviceable condition.

Depreciation: This is computed on a straight-line basis using the following annual rates:

- 2% for improvements on land and buildings
- 10% for the new processing facility and
- 10% for the existing table water line

For the new watermelon processing facility, the depreciation rate applied implies a useful life of 10 years; this is very conservative, in view of the fact that such machinery typically last for up to 15 years.

The summary of forecast schedule of fixed assets for the first three years is presented below:

Capital Expenditure Forecast		2016	2017	2018
CAPEX Inputs		4 Qtr		
Water Melon Plant Purchase	78,000,000	78,000,000	-	-
Factory Major Renovation	15,000,000	15,000,000	-	-
Total CAPEX purchases		93,000,000	-	-

Disbursement for Capital expenditure Forecast		100%	100%	100%
CAPEX Inputs				
Water Melon Plant Purchase		78,000,000	0	
Factory Major Renovation		15,000,000	0	
Total Disbursement		93,000,000	-	-

Depreciation Inputs				
Factory Premises Renovation (depreciable life)	Years	50	50	50
Water Melon Plant (Depreciable life)	Years	10	10	10
Table Water Plant (Depreciable life)	Years	10	10	10

Depreciation & Amortization Forecast			2017	2018	2019
Depreciation Inputs					
Water Melon Plant		SLN	7,800,000	7,800,000	7,800,000
Table Water Plant	5,000,000	SLN	416,667	416,667	416,667
Factory Renovation		SLN	300,000	300,000	300,000
Total Depreciation			8,516,667	8,516,667	8,516,667

Accumulated Depreciation Forecast				
Fixed Assets Inputs				
Factory Premises Cost		150,000,000	150,000,000	150,000,000
Factory Renovation/Major-Cost		15,000,000	15,000,000	15,000,000
Factory Premises		165,000,000	165,000,000	165,000,000
Depreciation Beginning		0	300000	600000
Depreciation Addition for the Year		300,000	300,000	300,000
Accumulated depreciation		300,000	600,000	900,000
Factory Premises-Net		164,100,000	164,100,000	164,100,000
Water Melon Plant Cost		78,000,000	78,000,000	78,000,000
Table Water Plant-Cost		5,000,000	5,000,000	5,000,000
Total Plants		83,000,000	83,000,000	83,000,000
Depreciation Beginning		0	8,216,667	16,433,333
Depreciation Addition for the Year		8,216,667	8,216,667	8,216,667
Accumulated Depreciation		8,216,667	16,433,333	24,650,000
Plants -net		74,783,333	66,566,667	58,350,000
Distribution Van				
Distribution Van-Cost	8,000,000	8,000,000	8,000,000	8,000,000
Distribution Van -Gross		8,000,000	8,000,000	8,000,000
Accumulated Depreciation Fully		0	0	0

Distribution Van Net	8,000,000		
Fixed Asset Summary Forecast			
Factory Premises	165,000,000	165,000,000	165,000,000
Plants	83,000,000	83,000,000	83,000,000
Distribution Van	8,000,000	8,000,000	8,000,000
Gross Fixed Assets	256,000,000	256,000,000	256,000,000
Accumulated Depreciation			
Factory Building	300,000	600,000	900,000
Plants	8216667	16433333	24650000
Distribution Van	0	0	0
Accumulated Depreciation	8,516,667	17,033,333	25,550,000
Net Asset			
Factory Building	164,700,000	164,400,000	164,100,000
Plants	74,783,333	66,566,667	58,350,000
Distribution Van	8,000,000	8,000,000	8,000,000
Net Fixed Asset	247,483,333	238,966,667	230,450,000

8.2. Costs of Production

The production of watermelon is based on a conversion rate of 85% (i.e. 1 kg of fresh fruit yields 0.85 litres of fresh juice). This is taken as a fixed relationship all through the projection period.

Therefore, the figures in the table below are based on the following:

- At 85% rate of convertibility from fruit into juice, 1,412 tons of raw fruits are required to produce 1,200 litres of juice.
- The juice is containerized in 500 ml pet bottles, and given that each litre of juice requires two 500 ml pet bottles, the total number of bottles needed for 1,200 litres of juice will be $1,200 \times 2$ which gives 2,400 bottles.
- Each bottle will have its cap and label.
- Other consumables are used on a batch basis and recognized as hybrid variable cost. The fixed costs/semi variable costs on the inputs include, cleaning chemicals such as caustic soda, chlorine powder, coloring and industrial sucrose. The financial analysis has defined 1,000 litres as the base limit beyond which these inputs will change, keeping in tandem with quality control. With these metrics, one can determine exactly how many kilograms of these

inputs are required for any targeted production level. The proposed plant is automatic and would compute and measure these inputs as part of the production process. This is standard procedure built into machines to enable service providers minimize product risks and stay in compliance with regulation.

(e) Gross profit is the difference between total revenue and the cost of production.

(f) The selling price per bottle of 500 ml is N130 based on the market survey carried-out.

Direct Cost of Water Melon Production					
	Qty		Factor	Price Per Unit	Total
Finished Product					
Water Melon Juice @ 500ml	2400			130	312,000
Conversion rate					
Water Melon fruit	1	kg			
Water Melon Juice	0.85	litres			
Finished Juice	1	ltr			
Juice in Pet Bottles	0.5	ltr			
Variable Cost					
Water Melon production	1200	litres			
Water Melon Fruits	1412	Kg		35	49,412
500 ml Pet Bottle	2400	Each	2	25	30,000
28 mm Plastic cap	2400	Each	2	3	3,600
PVC Label	2400	Each	2	4	4,800
Cardboard carton x 20	120	Each	0.1	92	110,400
Total Variable Cost					198,212
Hybrid Variable Cost					
Standard Output	1,000	litres			
Cleaning chemical-Caustic soda	6	Kg	0.005	500	3,000
Chlorine Powder	1	Kg	0.001	500	600
Ponceau 4R colour 10% solution	0.12	Kg	0.0001	500	60
Sucrose	24	Kg	0.02	300	7,200
Total Hybrid Variable Cost					10,860
Total Direct Cost of Production					209,072
Cost per unit					87.11
Gross Profit					102,928

Cost of Production Sachet Water						
		Qty		Factor	Price	Total
					per Unit	
					N	N
Finished Product						
	Sachet water Bag	1,500			80	120,000
	Conversion rate					
	Sachet Bag	1	Bag			
	Contains Packaged Sachets	20	50 cl			
	Conversion rate for 1 Bag	1,000	litres			
Variable Cost						
	Required Sachet bags	1,500				
	Treated Water	1.500m	litres			
	Total Variable cost					-
Hybrid Variable Cost						
	Distribution	1.5	run	0.001	5000	7,500
	Diesel /Gas	1.5	run	0.001	2000	3,000
	Nylon	52.5	kg	0.035	1200	63,000
	Packing nylon	1.5	kg	0.001	4000	6,000
	Total Fixed Cost					79,500
	Total cost of Production					79,500
	Cost per Unit					53
	Gross Profit					40,500

8.3. Assumptions for Sales and Revenues

1. Daily production of watermelon juice is 2,400 bottles per day.
2. Production of watermelon juice starts from year 1 (i.e. no base year output)
3. The fruit juice is sold in 500ml pet bottles and the product is packaged in packs of 12 bottles each. Selling price is N130.00 per bottle.
4. Factory operation will be for an average of 21 days per month, giving a total annual engagement of about 252 days. This gives allowance for routine maintenance and general environmental management.
5. Experience curve is high at onset until operators and internal process begin to adjust to efficiency as such believed we can achieve a 2% growth over the base of 2,400 bottles for 252 days in the year and will grow over a 5 year period to industry growth levels of 11% (obtained

from survey of similar firms).

6. In regards to table water, 1,500 bags are produced per day and sold @ N80.00 per bag; the output is already on-going, so there are baseline figures.
7. The company's output shall be sold 10% - 15% on credit and 85% - 90% in cash. Credit sales shall be on 35 - 40 days to reliable customers.
8. The by-product is of little monetary value and will be evacuated by a dairy firm at no cost to XXXX, therefore neither cost nor revenue is recognized for this line item.
9. For extra prudence, no provision is made for profit on disposal of obsolete machinery and equipment. If and when the sale is made, the ensuing revenue would add to the company's income line.

Sales and Revenue				Base	2017	2018	2019
Unit Sales and Price Forecast							
	Unit Sales		N	Zero	78,624,000	83,734,560	91,061,334
	Water Melon Juice	2,400	500ml	Zero	604,800	644,112	700,472
	Price per Unit	130	N				
	Production days	252	days				
	Growth rate				0%	7%	9%
	Unit Sales		N		33,264,000.00	36,590,400.00	43,908,480.00
	Table water	1500	Bag	378,000	415,800.00	457,380.00	548,856.00
	Price per Unit	80	N				
	Production days	252	days				
	Growth rate				10%	10%	20%
	Total Sales				111,888,000	120,324,960	134,969,814
Sales Composition Forecast							
	Cash sales	89%			99,580,320	107,089,214	120,123,134
	Credit Sales	11%			12,307,680	13,235,746	14,846,680
	Total Sales				111,888,000	120,324,960	134,969,814
Cash Collection Forecast							
	Days Receivable Outstanding	36	days		36	36	36
	Days per year	252	days		252	252	252
	Collectable %	86%			86%	86%	86%
	Uncollectable %	14%			14%	14%	14%
	Cash Sales for the period				99,580,320	107,089,214	120,123,134

	Credit sales collected				10,549,440	13,103,165	14,616,546
	Total Collections				110,129,760	120,192,379	134,739,681
Account Receivable Forecast							
	Beginning AR				-	1,758,240	1,890,821
	Additions to AR				1,758,240	1,890,821	2,120,954
	Subtraction to AR				-	1,758,240	1,890,821
	Ending AR Balance				1,758,240	1,890,821	2,120,954

8.4. Forecast of the Income Statement

The following are underlying features of the projected income statement:

- (a) Annual turnover is derived from the total sales of watermelon and table water
- (b) Cost of sales represents the expense incurred in producing each of the two products of the company while operating expenses represent salaries and overheads
- (c) The major expenditure items are directly impacted upon by macroeconomic variables such as the general price level, fiscal policies, monetary policies aggregate demand, seasonality and level of income.
- (d) Depreciation expense is amortized after calculation on straight line basis
- (e) Finance costs are based on total debt of N93million consisting of N78million for acquiring the processing facility and N15million for remodeling of the structure housing the processing facility. The debt will be subject to the terms and conditions stated below:
 - Lender- Bank of Industry Limited
 - Loan tenor 7 years, consisting of one year moratorium on principal amount plus 6 years of repayment period
 - Interest rate - 9% per annum
 - Commitment and/or Management fees - 1% flat, payable annually
 - Account maintenance fee - N1.00 per mille
 - VAT on commission - 5%
- (f) Tax rate is 32% applied annually on profit before tax
- (g) Staff compensation package per head is based on current competitive industry rates
- (h) There is no provision for dividend pay-out due to the promoters' resolve to plough surplus earnings into the business. This has the desired positive impact of growing the shareholders' funds.

Using the foregoing bases of forecast, the three-year income statement is presented below:

Income statement forecast		Industry Average	2017	2018	2019
			N	N	N
Sales			111,888,000	120,324,960	134,969,814
Cost of Goods Sold			74,723,485	80,351,820	90,109,733
	Gross Profit		37,164,515	39,973,140	44,860,081
Operating expenses			16,226,400	16,648,248	17,380,491
Depreciation and Amortization			8,516,667	8,516,667	8,516,667
	Income from Operations		12,421,449	14,808,225	18,962,924
Finance Costs			9,309,765	9,322,745	8,210,206
	Taxable Income		3,111,684	5,485,481	10,752,718
Tax rate		32%			
Tax Expense			995,739	1,755,354	3,440,870
	Net Income		2,115,945	3,730,127	7,311,848
	Retained Earnings Beginning		-	2,115,945	5,846,072
	Net Income		2,115,945	3,730,127	7,311,848
	Retained Earnings Ending		2,115,945	5,846,072	13,157,920
Common Size					
Sales			100%	100%	100%
Cost of Goods Sold		59%	67%	67%	67%
	Gross Profit		33%	33%	33%
Operating expenses		26%	15%	14%	13%
Depreciation and Amortization		8%	8%	7%	6%
	Income from Operations		11%	12%	14%
Finance Costs		2%	8%	8%	6%
	Taxable Income		3%	5%	8%
Tax Expense			1%	1%	3%
	Net Income		2%	3%	5%

8.5. Sources of Financing

Being a major activity, implementing this watermelon juice project calls for much funding, which will come from the following sources:

- (a) Term loan of N78million from a borrower-friendly institution such as the Bank of Industry.

(b) Directors' loan in the sum of N15million target towards the remodeling of the processing area.

(c) Internally-generated cash from sales of products.

The loan from directors has been priced at the same rate as that offered by the Bank of Industry, to show the profitability of the business in real terms.

XXXX Debt Service		2017	2018	2019
	Interest Payment	8,370,000.00	8,370,000.00	7,257,461.41
	Principal	-	12,361,539.85	13,474,078.43
	1% Loan fees	930,000.00	930,000.00	930,000.00
	Estimated Bank charges			
	COT (1 per mille)	9,300.00	21,661.54	21,661.54
	VAT-5%	465	1,083.08	1,083.08
	Total Payment	9,309,765.00	21,661,539.85	21,661,539.85

8.7. Projected Cashflow

The following projection of the company's cashflow for four years is derived from the earlier projections on output, revenues and expenses:

Cash Flow Forecast		2017	2018	2019
Cash Flow Inputs				
	Beginning Cash Balance	-	9,343,105	7,603,680
Cash Receipts				
	Collection from Sales	110,129,760	120,192,379	134,739,681
	Total Cash Receipts Available before Financing	110,129,760	129,535,484	142,343,361
Cash Disbursements				
	Purchase disbursement	74,254,752	81,843,917	89,989,077
	Operating Expenses	16,226,400	16,648,248	17,380,491
	Tax Expenses	995,739	1,755,354	3,440,870
	Capital Expenditure	93,000,000	-	-
	Total Disbursement	184,476,890	100,247,519	110,810,437
	Minimum Cash Balance Desired (Loan Covenant)	0	0	0
	Total Cash Needed	184,476,890	100,247,519	110,810,437
	Cash Receipts Less Cash Needed before Financing	-74,347,130	29,287,965	31,532,924
Financing				

	Equity Investment	-	-	-
	Borrowing	93,000,000	-	-
	Repayments	-	-12,361,540	-13,474,078
	Interests	-9,309,765	-9,322,745	-8,210,206
	Total Cash Increase/ (Decrease from Financing)	83,690,235	-21,684,284	-21,684,284
Ending Cash Balance		9,343,105	7,603,680	9,848,639

Important points:

- It is conservatively taken that the opening cash balance is zero in year 1.
- Collections from sales would include those from both products.
- The purchase of capital equipment comes from borrowed sources while raw materials would be obtained using inflows from on-going sales.
- Purchase disbursements represent the portion of materials paid for in cash
- Operating expenses include salaries, sales distribution and promotion expenses.
- The ending cash positions represent the worst-case scenarios; once activities kick-off, the company would strictly time disbursements on a just-in-time basis, to achieve optimal liquidity and optimize resource utilization.

8.8. Indicators of Project Worthiness

The indices presented below, show that this project is economically feasible:

	Average	2017	2018	2019
Gross Margin	33%	33%	33%	33%
Pre-Tax Margins	9%	3%	5%	8%
Net-Margins	6%	2%	3%	5%
Return on Equity	5%	1%	2%	4%
Return on Asset	9%	5%	6%	7%
Return on Capital	9%	5%	6%	8%
Income/Employee	248,820	54,255	95,644	187,483
Revenue Per Employee	3,664,947	2,868,923	3,085,255	3,460,764
Receivable Turnover	56	0	66	67
Inventory Turnover	8	0	8	8
Asset Turnover	0.51	0	0.46	0.53
Times Interest Earned	5.99	1.33	1.59	2.31
Time Interest Earned(Cash Basis)	8.54	1.11	1.33	2.33
CFO to Debt	17.47	0.1	0.13	0.23
Debt/Equity Ratio	0.29	0.56	0.48	0.38

- Net Present Value is N85,777,890.00 implying that over the project cycle, there will still be positive inflows after all debts and other obligations have been paid off
- Internal Rate of Returns (IRR) is 21% and this is close to the weighted average cost of funds of 26%; this shows that the project is commercially and financially viable at 27%, in spite of all risks.

9. RISK ASSESSMENT

9.1. Finance-Related Risks

- (a) Inability to Secure Funding: should there be no customer-friendly financial institution willing to fund the establishment of this watermelon juice factory, then activities will most likely be stalled. In order to mitigate this risk, XXX would explore all options to get a well-articulated presentation to a customer-friendly financial institution such as the Bank of Industry or Bank of Agriculture
- (b) Delayed approval from interested financier: this would distort the company's timing of expected inflows. Efforts would be made to clearly understand the requirements of the bank and the application for funding will be tailored to suit same
- (c) For a typical manufacturing concern, credit sales (receivables) are its main risk assets, which if poorly handled, could push the company's finances to the level of illiquidity. In order to maintain a profile of high quality receivables, LTWL would carefully monitor credit sales and collect within short periods.
- (d) The risk of monetary losses exists where controls are either non-existent or ineffective. XXX would continue to ensure that finance-related duties are separated and that there are controls, accountability, transparency, clarity, timeliness and the general adoption of best practices in the handling of financial transactions. In separating duties, the three functions of initiating, authorizing and recording shall be assigned to different people. This extends to the handling of cash and reconciliation of balances.

4.2. Risks Facing the Company's Operations

- (i) Wavering Loyalty of Watermelon Suppliers: this is what leads to the phenomenon known as site-selling (the process whereby despite the existence of an off-taker arrangement or agreement between suppliers and a buyer, the former sell the product to other buyers at the slightest opportunity, such as better pricing).

Even if farmers can supply the processors and remain profitable, there are other sales outlets for fresh watermelon, so producers could resolve to sell to traders whenever the price is greater than the processor's price. Although farmers and processors typically enter into agreements that fix the

selling price at the start of the season, the reality in Nigeria, as in many low- and middle-income countries, is that such contracts are rarely enforceable where the plant is operational, especially when there is high demand from non-processors. The company's wide network of suppliers and out-grower linkage will be exploited to minimize the impact of this challenge.

(ii) Technical & Mechanical Efficiency: For production to be continuous and sustainable, machines must be not just available, but also sound and in serviceable condition. The soon-to-be acquired and installed machinery would be operated efficiently and in line with manufacturers' specifications, for uninterrupted production.

(iii) Challenge of Poor Power Supply: though there has recently been an improvement in public power supply in Nigeria, the utility still remains largely epileptic and it can significantly disrupt production activities. XXXX has already factored this risk into its table water business and therefore the company would continue to maintain its dependable back-up for the public electricity supply to forestall any down time in production, owing to electric power failure.

3.3. Market-Related Risks

These risks relate to poor sales due to competition and other factors. Overall, this category of risks will be mitigated through the following:

- (a) Efficiency in resource use: this is critical in minimizing production costs and profitable pricing for business sustainability
- (b) High quality of liquid contents: the company would surely emphasize high quality of the contents in terms of wholesomeness and other important qualities
- (c) Packaging of the juice in attractive, branded containers: from the market surveys carried-out in Kaduna and Kano states, in developing a likeness for a fruit juice product, many consumers are influenced to a large extent by the attractiveness of the container and label. This has been recognized by XXXX and accordingly, the company will ensure an attractive packaging
- (d) Focusing on the common sales channels already identified in the feasibility study
- (e) Sales promotions: consideration is being made for advertising the company's products over prime time slots in popular electronic media at regular intervals; this would boost the level of public awareness about XXXX's products
- (f) Sales at events hosted by educational institutions would be emphasized as these have been proven to be dependable outlets for many companies. There will also be branding selected eateries and restaurants
- (g) Grooming the sales unit of the company and setting targets for staff: in order to get the desired market presence, the marketing unit would be taken through an orientation program of market segmentation (to identify new outlets with high potentials).

7.4. Risks Associated with Construction Costs

Should unexpected developments occur during physical development of the processing centre, the negative impact could come in one or more of the following occurrences:

- Poor quality of output
- Reconstruction of an already concluded phase
- Cost overrun in terms of bank charges and costs of materials
- Completion delays and inability to hand over in good time
- Probable inability to start assembling the processing facility
- Inability to start production on schedule

The above challenges are unlikely to evolve, because the processing area is not a total reconstruction but remodeling. In addition, the project leadership will ensure that qualified and experienced professionals do the jobs, there will be strict adherence to specifications of the bill of quantities and lastly, activities will be strictly and continuously monitored.

10. CONCLUDING REMARKS

This watermelon juice processing project is being conceived by entrepreneurs who are on familiar terrain, having been in table water business for over a decade, in addition to acquiring previous experience in the production of fruit juices.

The proposed investment, for which a loan of N78million is required to enable the company acquire a processing facility from China, will enable XXX Table Water Limited explore the opportunities created by high population, high demand and the huge supply gap existing in Nigeria's fruit juice market.

Indices of sales and profitability point to a successful endeavor, in view of the plans that have been put in place for getting the right kind of capital equipment, ensuring that a dependable and uninterrupted program for the sourcing of raw materials, sticking to best practices in the juicing process, developing and expanding a dependable base of customers and driving sales through effective marketing strategies, among other measures to be adopted. Furthermore, Net Present Value is positive while the Internal Rate of Returns approximates the weighted average cost of funds of 21%, showing that the project is commercially and financially viable.

All the challenges within the operating environment, which may be obstacles to the progress of the project, have been duly recognized and have been analyzed as being possible to mitigate.

On the basis of the foregoing, this watermelon juice project of XXX Table Water Limited is strongly recommended for funding.

BUSINESS PLAN FOR XXXX WATERMELON JUICE, KANO, NIGERIA



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<https://ifdc.org/projects/hortinigeria>

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