Revolutionizing Nigeria's Palm Sap Beverage Industry

A Proposal for Commercialization of Intermediate Bulk Processing Technology for Raw Material Supply to Bottling Factories

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Executive Summary

The Nigerian Institute for Oil Palm Research (NIFOR) proposes to implement an innovative industrial bulk processing and packaging system for Raphia Palm sap to revolutionize Nigeria's underutilized palm industry. This initiative addresses the critical challenge of inconsistent quality and uncontrolled fermentation during transport that has stunted the growth of the sector despite abundant raw materials. By establishing three strategically located processing facilities in Delta, Bayelsa, and Edo States, NIFOR would implement its patented hot-fill technology that enables the preservation of Raphia Palm sap for over two years, eliminating daily harvesting requirements and significantly reducing postharvest losses.

Our proprietary processing methodology would deliver 100% organic, non-alcoholic Raphia Palm sap that maintains its quality and organoleptic properties, catering to diverse consumer segments including religious leaders, Halal product enthusiasts, and nursing mothers. The total addressable market exceeds 1.2 million 25-liter jerry cans annually (approximately 30 million liters), with two primary segments: retail beverage packaging factories consuming over 5 million liters annually and traditional wedding ceremonies representing about 1 million jerry cans per year. These segments are currently underserved due to quality inconsistencies that our solution directly addresses.

The operation would employ a team of skilled middle-level personnel, primarily tertiary institution graduates, who would oversee tappers at designated locations. Each of our three processing facilities would utilize less than 1% of the available Raphia Palm trees in their respective locations, indicating significant expansion potential. The production capacity across all three locations would reach 1,125,000 liters annually, extracted from approximately 1,125 Raphia Palm trees (about 400 trees per location), generating an annual gross profit of ₦180 million.

Our competitive advantage stems from NIFOR's position as the pioneering beneficiary of advanced processing technology in the palm industry value chain. The project would be led by a robust management team headed by Dr. Isona Leonard Gold as Executive Director and CEO, with Dr. (Mrs) Benedicta Imoisi, a Food Chemist with over 15 years of experience, overseeing the NIFOR Integrated Enterprise. The team is supported by Professor Mark Ukhun and Professor John Igene, renowned experts in industrial food processing and packaging.

This initiative aims not only to solve existing industry challenges but also to showcase NIFOR's intermediate processing technology to potential investors, catalyzing medium-scale

development throughout the sector. By implementing this technology, we would create sustainable employment, improve livelihoods in freshwater swamp communities, enhance peace and security, and bolster federal infrastructure, ultimately positioning Nigeria as a leader in palm value chain research and production.

This Project involves the production of 45,000 jerry cans of 25L Raphia Palm sap by three stations. These jerry cans of Raphia Sap will be supplied to the bottling section of NIFOR at the main station.

The financial analysis shows that a total NGN90million is required per site. About N48.3million is required for fixed assets while NGN24million is required for working capital to produce about 15,000 jerry cans of 25L annually.

Each pasteurization station will employ 10 tappers and 3 factory hands. The factory hands will each earn three hundred thousand monthly while the Tappers will each earn more than four hundred thousand naira monthly. The Managers will earn about NGN600,000 monthly.

The project will breakeven by the second year with a cash excess of N107million in the three stations.

The Project was profitable from the first year of operation and the profit margin can be increased by maintaining different prices for bottling factories and direct consumers in wedding ceremonies. The monthly profit before depreciation, interest and tax flunctuated between NGN5million and N11million per site.

The project demonstrates very strong sustainability parameters and will be a veritable instrument of job creation, poverty alleviation, wealth creation and improvement in livelihood.

Introduction

The Raphia Palm plays a vital economic and ecological role in Nigeria's wetlands, particularly within the Niger Delta. Its various uses—from food and beverage production, construction materials, fibers, to potential biofuel sources—make it an essential resource for local communities. Currently, much of the harvesting occurs from wild groves, which covers an estimated 2.9 million hectares nationwide, including 900,000 hectares in the Niger Delta, supporting approximately 2.6 billion trees and an immense sap yield of around 2.6 trillion liters.

However, reliance on wild populations poses sustainability challenges, especially given environmental vulnerabilities like oil pollution in coastal regions. To address this, NIFOR has developed cultivation technologies and selected planting materials to establish Raphia plantations, aiming to ensure sustainable harvesting, boost economic stability, and reduce pressure on wild groves.

The cultivation shift can help mitigate land fragility and social tensions, offering economic opportunities through controlled agribusiness in otherwise fragile wetlands. With each tree capable of producing around 1000 liters of sap, scalable plantation efforts could significantly enhance resource management and community livelihoods while conserving the natural environment.

Raphia Palm sap is packaged as a 100% organic non-alcoholic beverage by the Nigerian Institute for Oil Palm Research (NIFOR). Many Nigerians have tried to replicate the technology but they encounter problems with quality deterioration due to fermentation. The equivalent of NIFOR products are those sold by Tappers along the highways. Two hours after tapping, the product is soured and organoleptically unacceptable. The fermented products are distilled to recover the illicit gin because it is a mixture alcohols of different chain length some of which are harmful to the body.

NIFOR has developed solution to the Raphia Sap raw materials problem through a pasteurization technology that can be used to stabilize the Sap for more than 2 years before procurement by the bottling companies. The pasteurized sap will retain its original non-alcoholic quality and without colour change.

This proposal is to achieve commercialization of this technology to energize effective natural resource transformation in these ecosystems.

Opportunity

Problem Worth Solving

The primary challenge facing the Raphia Palm sap industry is the inconsistent quality of raw materials between the harvesting site and the packaging facility. During transport, the sap undergoes uncontrolled fermentation, negatively impacting its organoleptic properties and resulting in a mixture of desirable and undesirable alcohols, often referred to as illicit gin. Consequently, beverage factories are compelled to package inferior quality palm sap that has lost its sensory appeal.

Furthermore, beverage factories typically collect products from the grove only once daily, in the morning. This practice leads to significant postharvest losses, as the afternoon sap collection is often wasted. These challenges have deterred many entrepreneurs from entering the industry, resulting in stunted sector growth and perpetuating poverty among Nigerians in the ecosystem, despite the abundance of raw materials in Nigeria's wetlands.

To address these issues, we propose an intermediate technology solution: pre-packaging the sap in bulk containers, such as 25-liter jerry cans, within the Raphia Palm grove. Our pilot studies at the Nigerian Institute for Oil Palm Research (NIFOR) have demonstrated that sap packaged in this manner can maintain its quality for over two years. This innovation allows beverage producers to purchase and store raw materials in advance, eliminating the need for daily harvesting trips that often result in degraded products.

This solution, which is currently unique in the industry, addresses several critical problems:

- Reduction of postharvest losses
- Introduction of technology for bulk preservation and value addition
- Mitigation of illicit and potentially harmful product production
- Enhancement of overall product quality and consistency

By implementing this innovative approach, we aim to revolutionize the Raphia Palm sap industry, improving product quality, reducing waste, and creating new opportunities for sustainable growth and economic development in Nigeria's agricultural sector.

Our Solution

The Nigerian Institute for Oil Palm Research (NIFOR) has developed a patented hot-fill technology for bulk processing and preservation of non-alcoholic Raphia Sap beverage. This innovative solution caters to a diverse consumer base, including religious leaders, Halal product enthusiasts, infants, and nursing mothers seeking increased breast milk production.

Our process is managed by skilled middle-level personnel, primarily graduates from tertiary institutions. We provide state-of-the-art equipment to these managers, who oversee operations within designated tapper locations. The operational structure is designed for efficiency, with one manager overseeing approximately ten tappers.

The compensation structure is as follows:

- Tappers: ₦400,000 per month
- Managers: ₦600,000 per month

Our equipment facilitates the pasteurization of Raphia Palm sap, which is then discharged into 25-liter containers and sealed using an induction sealer. The packaged palm sap is stored until transfer to retail packaging facilities. Managers have the autonomy to sell when market prices are favorable, optimizing revenue potential.

Production capacity is substantial:

- One tapper can produce over 12 jerry cans (25L each) daily from morning and evening collections
- Ten tappers can produce approximately 3,000 liters or 120 jerry cans (25L each) daily

This operation has the potential to productively engage more than 15 Nigerians per site and 45 people in three sites while sustaining retail beverage facilities that depend on these raw materials. NIFOR serves as the primary off-taker of the products, leveraging its scalable factory to bottle non-alcoholic palm sap for the Nigerian market.

Production within NIFOR's facility ensures sustainability and serves as an incentive for prospective investors. Our aim is to attract increased investment in the sector, thereby invigorating the economy of freshwater swamp communities in Nigeria. This initiative is designed to create wealth, improve livelihoods sustainably, enhance peace and security, and bolster federal infrastructure.

Target Market

Market Size & Segments

The market for bulk processed Raphia Palm sap in Nigeria represents a substantial opportunity with clearly defined segments. Based on our market analysis, the total addressable market for bulk packaged Raphia Palm sap exceeds 1.2 million 25-liter jerry cans annually, equivalent to approximately 30 million liters per year. This significant market size is supported by the abundance of raw materials available in Nigeria's wetlands and the established cultural importance of palm sap products throughout various regions of the country.

The market can be segmented into two primary categories with distinct characteristics and consumption patterns:

- **Retail Beverage Packaging Factories:** This segment represents the largest portion of our target market, with factories consuming more than 5 million liters of Raphia Palm sap annually, equivalent to approximately 200,000 units of 25L jerry cans. These factories, located both near and far from Raphia Palm groves, currently face challenges with raw material quality and consistency that our solution directly addresses.
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- **Traditional Wedding Ceremonies:** Palm wine is a mandatory beverage component in traditional ceremonies across several Nigerian regions, including the South West, South East, South-South, and parts of North Central. With more than 2 million weddings annually in Nigeria, and approximately 50% occurring in regions where palm wine is culturally significant, this segment represents a market of about 1 million jerry cans per annum. We will reach this segment through retail stores and supermarkets both domestically and internationally.

The geographical distribution of our market is concentrated in the southern and central regions of Nigeria, areas that traditionally consume palm wine products. Our innovative bulk preservation technology extends the product's shelf life significantly, enabling us to overcome traditional geographic limitations and expand distribution networks to previously underserved areas. The solution's ability to maintain quality for over two years opens opportunities for export markets and specialty retail channels both within Nigeria and overseas.

With the current inefficiencies in the market resulting in significant postharvest losses and quality issues, our addressable market share potential is substantial. By solving the quality inconsistency problems that have deterred entrepreneurs from entering this sector, we not only capture existing demand but also help expand the overall market size through improved product availability and reliability. The scalable nature of our production model allows for strategic market penetration and growth as we establish our brand and distribution channels.

Competition

Current Alternatives

The Raphia Palm sap industry in Nigeria currently lacks intermediary processing facilities for bulk collection preservation, and retail bottling by the beverage companies. This gap presents a significant opportunity for market entry and expansion. At present, the sector primarily consists of individual tappers selling directly to consumers by the highways and roadsides, alongside two companies struggling with production due to raw material sourcing challenges.

Our market research and interactions with existing factories indicate that addressing the raw material supply chain would unlock substantial growth potential in the sector and enhance overall production activities. The current low level of industry activity is evident in the scarcity of Raphia Palm sap products on supermarket shelves and in export containers. Locally, a 65cl bottle of Raphia Palm sap retails for approximately ₦2,000, while on pub shelves in Italy, it commands a price of €10 (approximately ₦17,690).

Notably, current producers are exploiting less than 0.1% of the available raw material from Nigeria's vast Raphia groves in the wetlands. This underutilization also explains the lack of commercial Raphia Palm cultivation in Nigeria. Our proposed technological intervention aims to transform the sector's landscape significantly.

Raphia Palm sap is a 100% organic, non-alcoholic product. Apart from the Nigerian Institute for Oil Palm Research (NIFOR), no other producers currently compete in the premium quality category. Other product variants in the market often suffer from uncontrolled fermentation and contain added table sugar, compromising their natural qualities. At present, there are no direct market alternatives to our proposed high-quality, naturally processed Raphia Palm sap or our innovative processing methodology.

Our Advantages

The Nigerian Institute for Oil Palm Research (NIFOR) stands as the pioneering beneficiary of advanced processing technology in the palm and Shea industry value chain. While other enterprises are struggling to maintain their foothold, NIFOR is gaining significant traction due to its access to state-of-the-art operational technologies. NIFOR's competitive edge in the industry stems from its commitment to scientific innovation and development.

Although these cutting-edge technologies are intended for widespread adoption, Nigerian investors typically prefer to see proven systems before committing capital to research outputs. This proposal, upon approval, aims to empower NIFOR to showcase its intermediate processing technology, thereby catalyzing medium-scale development in the sector.

By demonstrating the efficacy and reliability of these innovations, NIFOR seeks to:

- Instill confidence in potential investors and industry stakeholders
- Accelerate the adoption of advanced palm processing techniques
- Solidify Nigeria's position as a leader in palm value chain research and production
- Foster sustainable growth in the Raphia palm industry

Execution

Marketing & Sales

Marketing Plan

The Nigerian Institute for Oil Palm Research (NIFOR) will implement a comprehensive marketing strategy to engage our target customers in the industrial and commercial food processing sectors. Our multi-faceted approach includes:

- Developing a distinctive logo and professional branding to position NIFOR as the premier provider of high-quality Raphia palm sap products
- Investing in targeted digital advertising campaigns on industry-specific websites and social media platforms frequented by food manufacturers and distributors
- Participating in and sponsoring exhibits at major agricultural trade shows and conferences to generate qualified leads and showcase our product line
- Distributing periodic email newsletters to our expanding contact database, highlighting new product offerings, industry trends, and client success stories
- Implementing search engine optimization (SEO) strategies to enhance our online visibility for Raphia palm sap and related processing services

NIFOR will primarily utilize a direct sales model, targeting commercial food processors and manufacturers. We will offer tiered, volume-based pricing to incentivize larger orders while maintaining flexibility with smaller minimum order quantities to accommodate diverse customer needs. Our products will be available for purchase through our e-commerce enabled website and at select agricultural trade shows and industry events.

This multi-channel approach ensures maximum market penetration and allows us to build strong, long-term relationships with our clientele. By combining digital marketing strategies with traditional face-to-face interactions, we aim to establish NIOPR as the go-to source for premium Raphia palm sap products in the food processing industry.

Sales Plan

Our sales team will focus on building and nurturing long-term relationships with large-scale food and beverage manufacturers across Nigeria. We will implement a multi-faceted approach combining targeted outreach, in-person visits, and interactive product demonstrations to educate potential customers on the unique benefits and superior quality of our Raphia palm sap. This strategy will highlight our product's versatility, consistent supply, and how it can enhance our clients' end products.

To incentivize performance and drive results, our sales representatives will operate on a competitive commission structure, with additional performance bonuses tied to meeting

and exceeding quarterly sales targets. We will strategically establish designated sales territories to ensure comprehensive and efficient market coverage, allowing our team to develop deep local market knowledge and foster strong regional connections.

To maintain a robust sales pipeline, our team will actively participate in key industry trade shows and exhibitions, showcasing our products and networking with potential clients. We will also join relevant professional associations in the food and beverage sector, positioning ourselves as industry experts and thought leaders. Regular follow-ups with past customers will be a priority, focusing on securing repeat business and leveraging satisfied clients for valuable referrals and testimonials.

Our sales strategy will be supported by a comprehensive customer relationship management (CRM) system, enabling us to track interactions, monitor sales cycles, and identify opportunities for upselling or cross-selling. We will also implement a structured sales training program to ensure our team is well-equipped with product knowledge, negotiation skills, and industry insights, allowing them to effectively communicate the value proposition of our Raphia palm sap to potential clients.

Operations

Locations & Facilities

The Nigerian Institute for Oil Palm Research (NIFOR) operates from a 1,600-hectare plantation and research facility located on KM 7, Benin-Akure Road in Benin City, Edo State. The Institute maintains substations and experimental stations strategically positioned across the South-West, South-East, South-South, and North Central regions of Nigeria.

To optimize production and distribution, NIFOR is establishing state-of-the-art processing facilities at three key locations:

- NIFOR Raphia Research Station, Otegbo, Delta State
- NIFOR Raphia Research Station, Unuebum, Bayelsa State
- Raphia wild grove, Mile 18, Edo State

These satellite facilities will be equipped with cutting-edge technology for large-scale bulk processing and packaging, ensuring the Institute can meet the high market demand for Raphia palm sap. The processed bulk products will be transferred to NIFOR's central bottling

factory at the main site in Benin City, where bottling operations have been successfully conducted for over four decades.

This centralized location offers a significant advantage, allowing for efficient collection and processing of Raphia palm sap from nearby Raphia groves. By leveraging its extensive experience and strategically positioned facilities, NIFOR is well-positioned to maintain its leadership in palm product research, development, and production across Nigeria.

Technology

The applicable technology for our industrial bulk processing and packaging of Raphia Palm Sap utilizes a hot-fill process that includes the following components:

1. Pasteurization equipment comprising:
    - Gas heating system
    - Double-walled vessel heated with thermic fluid
    - Variable-speed stirrer
    - Lagged section
    - Additional specialized components
2. Induction sealing machine
3. Packaging containers (jerry cans)

The pasteurization process begins by charging the pasteurizers with palm sap and heating it to high pasteurization temperatures. The hot liquid is then filled into jerry cans, and an aluminum foil seal is applied using the induction sealing machine. The integrity of the process is ensured by the vacuum system created inside the jerry can, allowing the Raphia Palm sap to maintain its quality for over two years.

Once processed, the jerry cans are stored until ready for transfer to our bottling factory in Benin City or other designated locations. This technology also enables us to produce pasteurized Raphia Palm sap for wedding ceremonies in Nigeria and overseas markets, catering to consumers who prefer serving the sap from larger containers rather than individual bottles.

The Nigerian Institute for Oil Palm Research's implementation of this advanced hot-fill process ensures consistent quality, extended shelf life, and versatility in product offerings, positioning us as a leader in the Raphia Palm sap industry.

Equipment & Tools

Our industrial bulk processing and packaging operation for Raphia Palm Sap requires a comprehensive suite of high-quality equipment and tools to ensure efficient production and maintain product integrity. The following list outlines our essential machinery and supplies:

- Pasteurizers (1000L capacity): Ensure product safety and extend shelf life
- Induction sealer: Provides tamper-evident, hermetic sealing for packaging
- Power Generator (10KVA): Guarantees uninterrupted power supply for continuous operations
- Jerry cans (3000 pcs): For bulk storage and transportation of processed palm sap
- Gas cylinders (2x50kg): Fuel source for heating and processing equipment
- Water pump (1HP): Facilitates efficient water circulation and transfer
- Heating accessories: Maintain optimal temperatures throughout the production process
- Temporary shed building: Provides protected workspace for processing activities
- Water storage tank (2,500L): Ensures adequate water supply for cleaning and processing
- Cooling trough: Rapidly reduces product temperature for quality preservation
- Tricycle: Enables local transportation of raw materials and finished products
- Aluminum foils (5000pcs): Used for packaging and preserving processed palm sap
- Tapping knives: Specialized tools for extracting sap from Raphia palm trees

This comprehensive equipment list enables us to maintain a streamlined, hygienic, and efficient production process from harvesting to packaging. By investing in quality tools and machinery, we ensure consistent product quality, maximize output, and adhere to industry standards for food safety and packaging integrity.

Milestones & Metrics

Milestone	Due Date	Who's Responsible	Details
Approval of funds	Completed	NASENI	Approval of funds to implement the proposal
Commissioning of the project	September 24, 2025	NIFOR	Project commissioning and commencement of bulk production
Procurement of equipment and Construction of bush factory	November 15, 2025	NIFOR	Procurement of the needed equipment for the project

Key Metrics

- Annual Raphia Palm sap production capacity across three locations: 1,125,000 liters. This volume will be extracted from 1,125 Raphia Palm trees, approximately 400 trees per location. Each location contains over 500,000 wild Raphia Palm trees.
- Capacity utilization: Less than 1% of the total grove capacity is currently being utilized, indicating significant potential for expansion.
- Customer acquisition: The Nigerian Institute for Oil Palm Research (NIFOR) bottling plant will serve as the primary off-taker for the produced sap.
- Gross profit margin: ₦4,000 per jerry can, resulting in an annual gross profit of ₦180,000,000 for 45,000 jerry cans. Each location is projected to generate a gross profit of ₦60 million.
- Minimum cash reserve: A cash balance of ₦10,000,000 will be maintained to ensure operational liquidity.

Company

Overview

The Nigerian Institute for Oil Palm Research (NIFOR) is a federally-owned entity established by the Government of Nigeria. Its subsidiary, NIFOR Integrated Enterprises Limited, is a government-owned company. Founded in 1939, the Institute ensures continuity through a structured succession plan, with new Executive Directors seamlessly assuming leadership roles as their predecessors exit the system.

NIFOR boasts a workforce of over 1,400 highly skilled professionals, encompassing a diverse range of expertise crucial to the oil palm industry. These areas of specialization include:

- Plant Breeding
- Agronomy
- Soil Science
- Meteorology
- Industrial Statistics
- Accounting and Administration
- Agricultural Extension
- Agricultural Economics
- Plant Pathology
- Entomology
- Engineering
- Process Development

This comprehensive array of in-house expertise positions NIFOR as a leader in Palms and Shea tree research and development, ensuring its ability to address the multifaceted challenges of the industry and drive innovation in the sector.

Team

Management Team

The Management Team is led by Dr. Isona Leonard Gold, who serves as the Executive Director and Chief Executive Officer of the Institute. Dr. Gold is supported by a team of Departmental Directors with specialized functions, as well as advisers to the Executive Director. The internal Management Committee consists of 14 Directors, including an Institute

Secretary who heads the Administration department and an Assistant Director who oversees the Finance and Accounts Department.
The NIFOR Integrated Enterprise is headed by Dr. (Mrs) Benedicta Imoisi, a Food Chemist with over 15 years of experience in Research and Innovation and Agricultural Food Systems. Dr. Imoisi's expertise contributes significantly to the institute's mission of advancing all the value chains of NIFOR mandate crops.
This robust leadership structure ensures that the Nigerian Institute for Oil Palm Research (NIFOR) maintains its position as a leading authority in oil palm research, fostering innovation and sustainable practices in the industry.

Advisors
The Nigerian Institute for Oil Palm Research (NIFOR) is privileged to have the invaluable support of Professor Mark Ukhun and Professor John Igene, renowned experts in industrial food processing and packaging. Professor Igene brings over four decades of experience in senior leadership roles at some of Nigeria's most prominent agricultural processing companies. Currently, he serves as Professor Emeritus at the University of Benin, Benin City, further solidifying his status as a leading authority in the field.
Professor John Igene expressed his enthusiasm for his advisory role, stating, "I am honored to serve as an advisor to the Nigerian Institute for Oil Palm Research. This innovative operation is well-positioned to make a significant impact on the Nigerian palm oil industry. I look forward to leveraging my expertise to guide the team through the intricacies of large-scale processing and ensure adherence to the highest quality standards in the sector."

Financial Plan
Forecast
Key Assumptions

Revenue projections for our Raphia palm sap venture are based on comprehensive market research indicating a growing demand for natural, locally-sourced organic beverages, particularly among consumers aged 40 and above. Our unique product positioning aligns perfectly with this trend. We anticipate capturing 20% of the local Raphia palm sap market in the first year, with expectations to expand to 40% market share by year three.

Major capital expenditures include an investment of NGN150 million for three state-of-the-art processing facilities and packaging equipment in the initial year. Our primary operational expense will be the procurement of raw Raphia palm sap, estimated at NGN140 per liter. To accommodate increased production capacity, we plan to expand our workforce by hiring 10 additional processing staff members by the end of the first year of operations.

Based on our detailed cost analysis and projected sales volumes, we anticipate achieving a 66% profit margin on our Raphia palm sap products by the conclusion of the second year. This translates to an estimated annual net income of NGN135 million across our three locations as we continue to expand our market presence. These projections are grounded in conservative estimates and thorough market analysis, providing a solid foundation for our business growth strategy.

The *Profit & Loss* account shows a positive trend from the beginning of the business. The revenue profile shows a positive growth to achieving a total revenue of N405million in the first year. Net profit to Revenue ratio is about 26% and peaked at 28%. This scenario is guaranteed by the uptake of the products by the NIFOR bottling plant. A more efficient cost management especially in the cost of the Raphia Palm sap and heating gas will further strengthen the profit position. The Managers can negotiate the tappers price downwards and ensure the heating system is not burning beyond the needed pasteurization period.

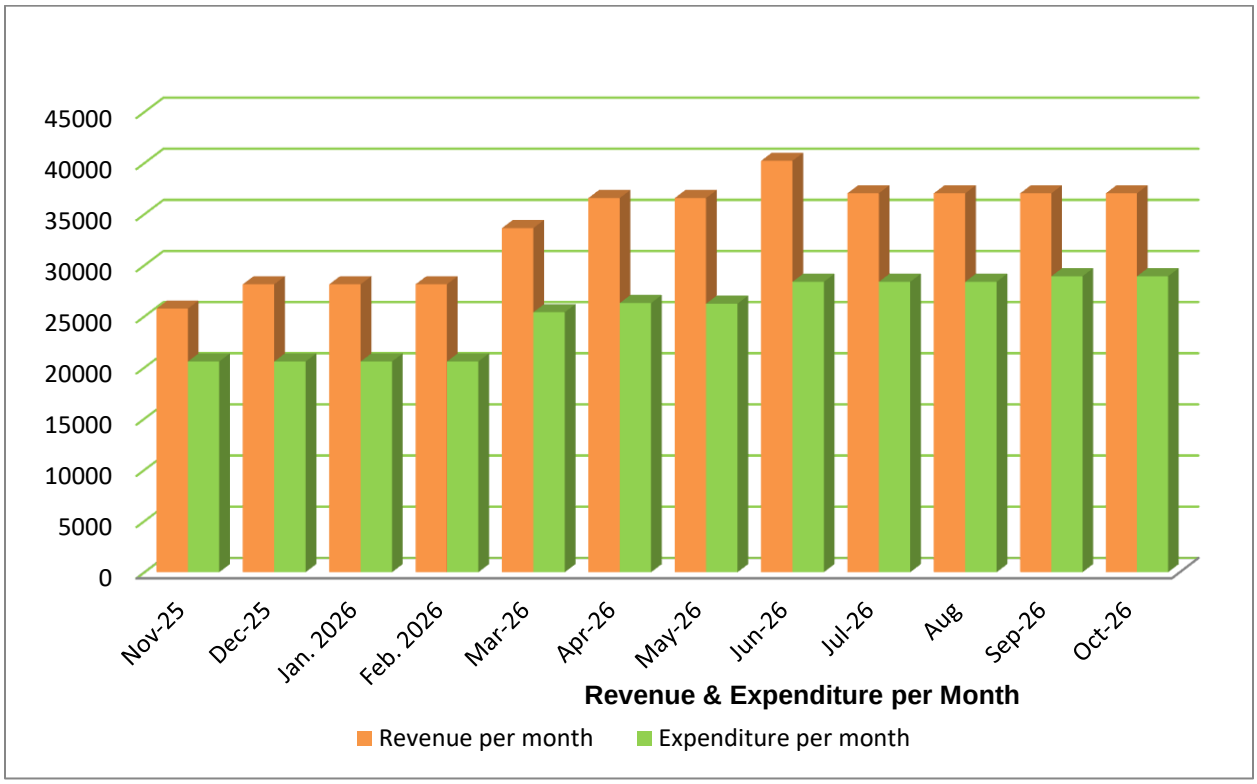
The *cashflow* was also positive from the second year of operation. If there is up to one year moratorium, this business can conveniently operate with a loan. The ratio of fixed assets to total investment is about 32.6% while the variable cost to total investment is about 67%. The investment cost can be further reduced from N420million to N160million by operating with one month of working capital since offtake of the products is guaranteed and payment is also assured. In that case, the fixed assets ratio will be 85% of total investment cost. In all of

the cases, the cumulative cashflow became positive in the second year of operation which shows the project is very profitable.

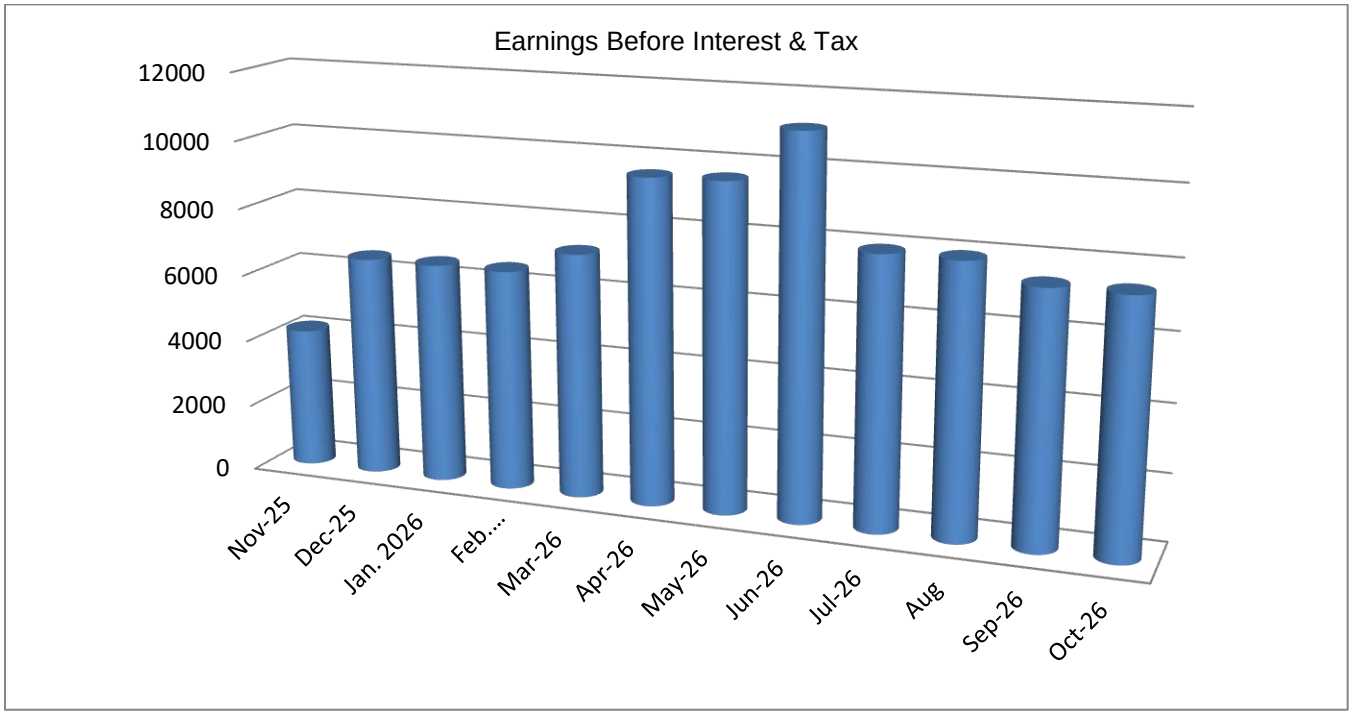
Funding requirements: Source and Application of Funds

A total of one hundred and sixty million, four hundred and twenty thousand naira (NGN160,420,000) naira is required for the project offtake. About one hundred and thirty seven million or 85.4% is required as loan or grant while about twenty four million naira will be provided by the Institute as counterpart funding for the variable cost of operation.

NGN160.42million will be sourced through loans and grants such as the NASENI commercialization grant programe while the balance NGN24million will be sourced from internally generated revenue of the Institute. The money will be applied to procure pasteurizers, Induction sealer, Power generating sets, jerry cans, Gas cylinders, water storage tanks, cooling trough, heating accessories, tricycle. The loan will applied fully for the procurement of the capital assets.



Monthly Revenue and Expenditure



PROJECTED CASHFLOW STATEMENT

A	Revenue	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
1	Palm sap jerry cans per site	18810	18810	18810	20691	22760.1	25036.11	27539.72
2	Palm sap production in 3 sites	56430	56430	56430	62073	68280.3	75108.33	82619.16
3	Revenue per yr @N7500	405190.5	405190.5	405190.5	445709.6	490280.5	539308.6	593239.4
B	*Cost of Sales*							
1	Raphia Palm Sap@N3500/Jerry Can	197505	197505	197505	217255.5	238981.1	262879.2	289167.1
2	Aluminum foil @N50	2765.25	2765.25	2765.25	3041.775	3345.953	3680.548	4048.603
3	Gas (1200kg for the 3 sites/Mo.)	30355.25	30355.25	30355.25	33390.77	36729.85	40402.84	44443.12
4	Diesel (20L x25days)	10836	10836	10836	11919.6	13111.56	14422.72	15864.99
5	Water (N2,500/Week)	360	360	360	396	435.6	479.16	527.076
6	Subtotal B	241821.5	241821.5	241821.5	266003.6	292604	321864.4	354050.9
C	*Overhead*							
1	Salaries for 9 @N10,000 daily	27000	27000	27000	27000	29700	29700	29700
2	Salaries for the Managers @N600k	14400	14400	14400	14400	15840	15840	15840
	Subtotal D	41400	41400	41400	41400	45540	45540	45540
D	*Investments*							
1	Pasteurizers (3 units), 1000L	45000	0	0	0	0	0	0
2	Power generator set 10kva x3	15000	0	0	0	0	0	0
3	Jerry Cans	16875	0	0	0	0	0	0
4	Gas cylinder (2X50Kgx3)	1200	0	0	0	0	0	0
5	Heating accessories	900	0	0	0	0	0	0
6	Temporary building shed	16500	0	0	0	0	0	0
7	Water storage tanks	1680	0	0	0	0	0	0
8	Cooling troughs	750	0	0	0	0	0	0
9	Tricycle	9900	0	0	0	0	0	0

10	Induction sealer	1650	0	0	0	0	0	0
11	Subtotal	109455	0	0	0	0	0	0
	Miscellaneous (25%)	27363.75	0	0	0	0	0	0
	Subtotal D	136818.8	0	0	0	0	0	0
	Cashflow	-14849.7	121969	121969	138305.9	152136.5	171904.1	193648.6
	Cummulative cashflow	-14,849.7	107,119.3	229,088.3	367,394.2	519,530.6	691,434.8	885,083.3