Business plan

Statement of need

Nigeria is the largest producer of oil palm in Africa, yet the country underutilizes many of the crop's by-products. One such product is oil palm fruit mesocarp juice (Banga sauce), a culturally significant delicacy consumed widely in southern Nigeria. Currently, Banga sauce is mostly prepared at the household or small cottage level using traditional methods. This method is labour intensive, unhygienic and inconsistent leading to:

Short shelf life due to microbial spoilage and absence of standard preservation techniques.

High post-harvest losses because the fresh mesocarp juice deteriorate rapidly.

Limited commercialization as the product cannot meet packaging, safety and quality standards for large scale distribution or export.

Missed economic opportunity for farmers, processors and small scale entrepreneurs who could benefit from value addition.

Fortunately, other local food products such as tomato paste, fruit juice and dairy drinks have successfully transitioned into modern packaging systems, extending their reach into both domestic and international markets. Unfortunately, no sustainable, small scale technology exist for Banga sauce processing and packaging, creating gap between its cultural demand and commercial availability.

With Nigeria's push for economic diversification, food security and indigenous technology development, there is a pressing need to:

I. Develops small scale, affordable processing technology that can standardize production of Banga sauce.

II. Introduce flexible aluminium pouch packaging that enhances shelf stability, portability and consumer convenience.

III. Promote value addition to oil palm thereby reducing waste and maximizing economic returns from one of Nigeria's most important crops.

Addressing this gap the project will empower smallholder farmers, SMEs and women entrepreneurs to create jobs and position Nigeria to export a standardized and well packaged indigenous food product.

This need directly aligns with NASENI's mandate to deploy Science, Engineering and Local Innovation for Industrial and Socio Economic Advancement.

OGANISATIONAL INFORMATION OF NIGERIAN INSTITUTE FOR OIL PALM RESEARCH (NIFOR)

Nigerian Institute for Oil Palm Research (NIFOR) is a Federal Government Research Institute under the Federal Ministry of Agriculture and Rural Development. Established in 1939 as a special station of the Department of Agriculture, later upgraded in 1964 by an Act of Parliament, NIFOR is mandated to conduct research into the genetic improvement, production, processing, utilization and marketing of oil palm and other palms of economic importance, including date palm, coconut, raphia palms and shea.

VISION

To be a world class research institute providing cutting edge technologies and innovations for sustainable oil palm and other palms production, utilization and industrial development in Nigeria and beyond.

To generate and promote appropriate technologies, improved planting materials and processing innovations that enhance productivity, ensure value addition and contribute to national food security, industrialization and economic diversification.

CORE FUNCTIONS

a. To research into genetic improvement and breeding of oil palm, coconut, date palm, and shea.

b. To develop sustainable agronomic practices to improve yield and environmental sustainability.

c. To design and fabricate small- and medium-scale processing equipment for palm oil, palm kernel oil, palm wine, and related products.

d. Post-harvest research, product development, packaging, and value addition for palm-based products and shea.

e. Training, capacity building, and extension services for farmers, processors, and agro-industries.

f. Collaboration with national and international organizations on oil palm, shea and other palms R&D.

RESEARCH DIVISIONS

NIFOR operates through several specialized divisions, including:

A. Genetics and Plant Breeding Division

B. Crop Improvement Division

C. Agronomy/Soils and land Division

D. Crop Protection Division

E. Processing and Engineering Division

F. Biochemistry/End-use Research Division

G. Economics and Extension Division

FACILITIES AND RESOURCES

NIFOR's headquarters is located at Km7 Benin-Akure Road, Near Benin City, Edo State, with substations and outstations across Nigeria's oil palm belt. The Institute has:

1. Laboratories for Biochemistry, Soil Science, Plant Breeding, and Processing Technology.

2. Pilot plants for palm oil, kernel oil, coconut oil, Shea and other palm-based processing technologies.

3. A mechanical workshop for designing and fabricating equipment.

4. A central library and information services.

5. Well-trained multidisciplinary researchers and technical staff with expertise in Agriculture, Engineering, Chemistry, and Biotechnology.

EXPERIENCE AND RELEVANCE TO THE PROJECT

NIFOR has over 80 years of experience in developing technologies for palm oil production and processing. The Institute has successfully developed and disseminated high-yielding oil palm varieties, processing technologies, and value-added palm-based products. Its Processing and Engineering Division, in particular, has designed and fabricated innovative machinery for small- and medium-scale processors across Nigeria.

This strong institutional capacity positions NIFOR to lead the proposed project on Production and Packaging of Oil Palm Fruit Mesocarp Juice (Banga sauce) in Flexible Aluminium Pouches, ensuring its technical feasibility, industrial scalability, and socio-economic impact.