

DEVELOPMENT OF CONCEPT NOTE



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OUTLINE



- Why a concept note?
- Developing one page concept note
- Example of a concept note

DEFINITION OF CONCEPT NOTE



- A concept note is a **summary** of a proposal containing a **brief description** of the idea of the project, the objectives to be pursued, the output/outcome/impact , summary of cost and the contact organization.
- **Concept notes are prepared for:**
 - some financing programs
 - some funding agencies require a concept note before the submission of a full proposal.
 - donors without a formal call for proposals.

Purpose of Concept Note



- **The purpose of a concept paper:**
- **For the funding agency:** is to help applicants develop more competitive proposals and to save time by eliminating proposals that are not likely to be funded.
- **For the applicant:** is to capture the interest of the funding agency and demonstrate that the idea being proposed is worthy of further consideration.

Therefore, the first sentences of a concept paper are very important. You want the funding agency representatives or board members to continue reading

What Should Be the Size of a Concept Note



- This actually depends upon the donor requesting the Concept Note. Many donors do not have a format for a concept note as they have for a full proposal
- However, we need to remember that it is the shortest possible text for our project idea.
- So the shorter the better. Most donor agencies request a minimum of one page to a maximum of three pages.

Developing a Concept Note



- **Title:** it should be snappy, informative, and distinctive. Let it **grab your reader's attention**

e.g. Lock the Rat Box: Humane, Hands-Free Rodent Control

(This title has two parts with the first one being short and catching the readers' attention and the second one providing more information.)

- **Background:** include your problem and its analysis, together with the following two guiding questions:
 - *Why it is crucial to address the problem identified?*
 - *What has already been done to solve the problem*

Developing a Concept Note Contd.



- Concept papers are meant to persuade sponsors, convincing them to fund or adopt your idea. This means it's critical to “hook” them right at the beginning.
- For instance, you could start off your paper with an attention-grabbing statistics related to your project:
“Every year, 10.5 million pounds of food go to waste due to one common pest: rats.”
- Rats are a nuisance, and also a serious vector of diseases such as rabies and the bubonic plague. Municipalities across the world spend millions of dollars a year combating these issues.”

(Include references to verify any data you cite)

Developing a Concept Note Contd.



- **Explain why you are approaching this sponsor.** After getting your reader's attention, the introduction to your concept paper should then describe how your goals and the sponsor's mission mesh. This tells the sponsor that you've done your homework and are serious about approaching them.
e. g. “The Savco Foundation has long been committed to funding projects that foster healthy communities. We have developed Lock the Rat Box as an easy, cost-effective means to lower illness rates and sanitation costs in municipalities, and are seeking your support for the project.”

Developing a Concept Note Contd.



- **Share the basics of your method.** Even if readers are convinced you have identified an issue that matters, they'll still want to know that you have an idea of how to solve or investigate it. Spend some time in your concept paper describing the methods you will use
- **Emphasize what makes your methods unique.** Remember that sponsors may be looking at numerous requests for funding. To ensure that yours is successful, you have to explain what sets your project apart. Ask yourself the question: "What is my project doing that no one has done or tried before?"

Developing a Concept Note Contd.



- **Include a timeline.** Your concept note should not be completely open-ended. Part of your paper should explain the projected timeline for implementing your project.
- For example: “February 2018: sign a lease for a workshop space. Late February 2018: purchase materials for Lock the Rat Box prototype. March 2018: conduct preliminary tests of the prototype.”

Developing a Concept Note Contd



- **Give concrete examples of how you will assess your project** - assessment tools could include things like surveys to gauge customer satisfaction, community involvement, or other metrics. Any form of assessing your project outcomes will do.
- **Provide a preliminary budget.** Sponsors will be interested to see a general overview of how much your project is expected to cost.

Developing a Concept Note Contd



- **Include contact info.** Make sure the sponsor knows how to reach you by mail, email, and phone.
- **Proofread your final draft.** An otherwise strong concept paper riddled with errors, typos, or formatting mistakes will reflect poorly on your project. Show the sponsors that you are careful, thoughtful, and appreciative by polishing your final draft before submitting.

Sample of One Page Concept Note



- **Lock the Rat Box: Humane, Hands-Free Rodent Control**
- Every year, 10.5 million pounds of food go to waste due to one common pest: rats. Rats are a nuisance, and also a serious vector of diseases such as rabies and the bubonic plague. Municipalities across the United States spend upwards of twenty million dollars a year combating these issues (1)
- The Savco Foundation has long been committed to funding projects that foster healthy communities. We have developed “Lock the Rat Box” as an easy, cost-effective means to lower illness rates and sanitation costs in municipalities, and are seeking your support for the project.”
- The project would involve building a prototype device to humanely trap rats, carry out advertisement programs to educate communities about rat problem, send out investigators to study the extent of the issues in various communities and make recommendations about removal of current rats and prevention of future rats. While previous governmental services have explained rat infestations via poster, radio, and television campaigns, they have not taken advantage of social media as a means of connecting with community members. Our project fills that gap.”

Sample of One Page Concept Note Contd.

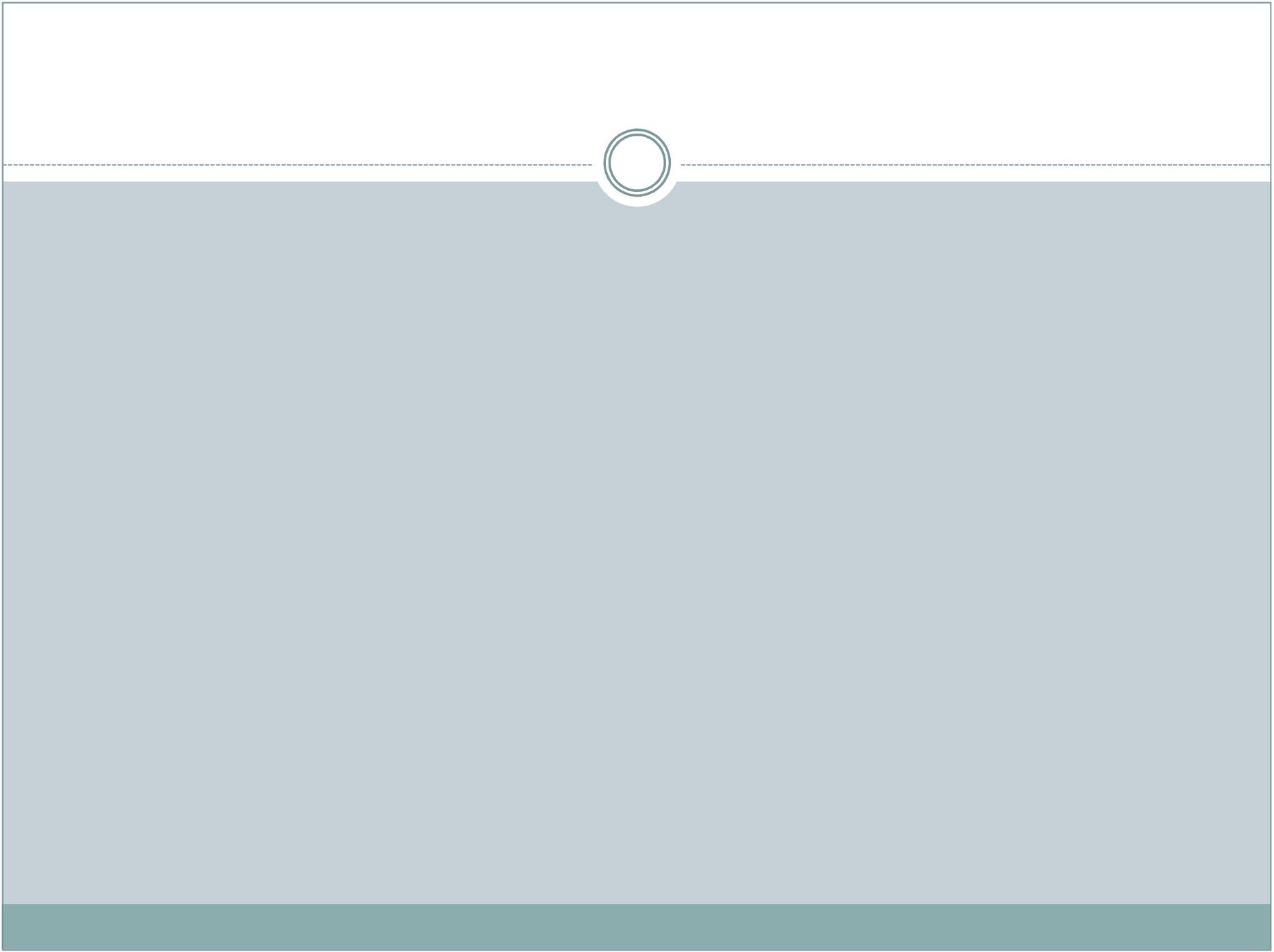


- We plan to execute project as follows; the February 2018: sign a lease for a workshop space. Late February 2018: purchase materials for Lock the Rat Box prototype. March 2018: conduct preliminary tests of the prototype.” From the survey of customer satisfaction and number of prototypes sold, we shall measure the success of the product.
- For the cost of Personnel, including any assistants, Equipment and supplies, Travel, Consultants, Space (rent), we are requesting for a sum of Five Million Naira (N5,000,000)
- Results of the project would evolve an improved method of eliminating rats in an ethical manner with the implication of elimination of diseases for which rats serve as vectors. This would lead to an improved well being of citizens making them to be more productive and have longer life expectancy.
- We shall be grateful to be invited for submission of the full Proposal.
- **ABX Consultancy Group (Non Profit Organization)**
- Plot 475, Ajimode Layout
- Ogbese Area, Ado – Ekiti, Nigeria
- Contact Person – Mr Alade A Peter
- Phone - +2348056743
- Email – abx@gmail.com

Tips on Concept Note



- You can briefly describe the alignment to the funder's priorities
- Be sharper in your language - avoid generalities and jargon
- Don't spend too much time on the HOW
You are not expected to have all the answers at concept stage
- Be succinct but signal areas that you will describe further in the full proposal stage



Writing a Grant Winning Proposal



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What is a grant?

- Funds disbursed by one party (Grant Makers) to a recipient (non-profit entity, educational institution, business, individual).
- Most grants are made to fund a specific project and require compliance and reporting.

What is grant writing?

- Refers to the practice of completing formal and/or informal application processes by one party to another party.
- Such application processes are often referred to as either grant "proposals" or "submissions".

Why do we have to write grant proposals

- ❖ Conducting research is a **costly activity**.
- ❖ Researchers have the **ideas** and the **capacity to solve problems**, but often **lack adequate funds** with which to implement them
- ❖ Generally, governments are expected to fund research through universities and other research institutions, but the governments of many developing countries have too many other priorities and too few resources to fund research adequately.
- ❖ **Consequently, Researchers have to look for funds, from funding bodies to finance their research**

**FUNDING
BODIES**

(HAVE FINANCIAL
RESOURCES)



RESEARCHERS

(HAVE IDEAS
& CAPACITY TO SOLVE
PROBLEMS)

IS IT ALL ABOUT MONEY?



BEYOND MAKING MONEY.....

- ❑ Grantsmanship is more than just looking for additional funding.
- ❑ A Grant is not a Donation
- ❑ A Donor gives you money with no expectation of receiving anything back
- ❑ A Grant however must be formally applied for and it passes through strict and competitive selection process and the Grant Makers expect a Report and accountability of Funds released
- ❑ It is more about building relationships.



What is the purpose of a grant proposal

- Essentially is a marketing tool to accomplish objective(s).
- It is a sales document that is honest, factual and responsive.
- It is written description of work to be performed that helps convince funding agencies to fund and support project.

What to look out for in calls for research-grant proposals

- ❑ Look out for how well the advertisements ‘match’ your work and check whether or not there are any restrictive criteria or a specific application form e.g.

Example 1

The Wellcome Trust invites applications for its new investigator awards in medical history and humanities. These support world-class researchers who are **no more than five years from appointment to their first academic position** but can already show that they have the ability **to innovate and drive advances in their field of study**. Research in medical history and humanities should address the important questions at the interface of science, medicine and the wider humanities including the social sciences and the arts. Research questions must be historically grounded, but interaction with the wider medical humanities is encouraged

What to look out for in calls for research-grant proposals Contd.

- ❑ Applicants must be based in the UK, Republic of Ireland or a low- or middle-income country, and should have an established academic post at an eligible higher education or research institution.
- ❑ Funding is worth up to £200,000 over a maximum of five years to cover research expenses; travel, subsistence and funding for collaborative activities; capacity-building and public engagement initiatives, and research leave; and research, symposia and dissemination activities. The award does not include salary costs

What to look out for in calls for research-grant proposals Contd.

Example 2

The Harold Hyam Wingate Foundation invites applications for its developing countries grants. These grants give support to organisations working in developing countries for projects in the foundation's priority fields such as music and the arts.

However, the foundation especially welcomes applications to address the particular problems of water supply. The foundation is willing to consider projects that may not qualify for public funding or attract other major funding bodies. Only charitable organisations are eligible.

Example 3

The National Research Fund was established pursuant to the Tertiary Education Trust Fund Act 2011 for the resuscitation of research activities in Nigeria's Public Tertiary Institutions, which section 20 of the Act defines as Public "Universities, Polytechnics and Colleges of Education." It is also aimed at addressing the critical needs of the Nations developmental aspirations through targeted research.

ELIGIBILITY: Lecturers in any of our Public Tertiary Institutions in Nigeria are eligible. Multi-Disciplinary and Interdisciplinary researches, comprising Researchers from various disciplines, are most highly encouraged. The Lead Researcher will head the research team and will be referred to as the Principal Researcher / Investigator (PI). The PI will be personally responsible and held accountable for the conduct of the research. An added requirement is that the PI must be institution-based, with the PI's institution regarded as the Co-ordinating Institution.

GOAL OF GRANT WRITING

- The most important goal is to make the reader easily understand and comprehend ideas of the applicant.

Basic Questions to be Addressed by a Grant Proposal

- **What is the problem to be investigated?**
- **Why is the problem socially and scientifically important to be worth studying?**
- **What objectives will be achieved through the research?**
- **How will the research process be carried out?**
- **What types of results are expected from the research?**
- **Who are the potential beneficiaries of these results?**

GETTING DOWN TO WORK

➤ **Make time to write**

No successful research-grant proposal can be written in a day. Make sure you have plenty of time to gather your thoughts, collate all the information you need, and to write a clear and well-thought-out proposal. If you have never completed a funding application before, try to set aside about fourteen days over a period of about a month to pull all the necessary information together

➤ **Make a checklist of requirements**

➤ **Think about who is going to read your research-grant proposal.**

Usually, a team of specialists reads all the proposals, and relays their opinions to a selection committee. The specialists' recommendations help the committee to reach a decision

GETTING DOWN TO WORK CONTD

Play to your strengths

The reputation of your institution, as well as the qualifications and reputations of the individual researchers in your team, are really important. Make sure you obtain CVs from all members of your team, and are fully aware of their competencies and achievements so that you can summarize and highlight these if required to do so

Speak their language

All funders have certain aims and values that reflect what they see as important, and indicate how they wish to make an impact on the world. Try to show how your work incorporates their own aims and values

Basic structure of a proposal

Title → Executive summary/abstract → Literature Review →
Problem/Need Statement → Aims and Objectives → Research
design and Methodology → Specific activities/workplan →
Expected Significance → Evaluation plan → Dissemination
plan → Future plans → Collaborators and team members →
Budget and Justification → References/Appendices.

TITLE

A good title should paint a quick picture of the key idea(s) of the project.

Red Haired Musician and their Preference for Musical Style

Music Style Preference of Red Haired Musicians

The Systematic development of a Local Initiative to Create a Learning Center For Community Education

A Local Learning Center for Community Education

Development of Novel Renewable Biobased Polymer Composite from *Adenopus breviflorus* seed Oil and Agricultural Wastes.

Executive Summary

It is important that this is written in an exciting way. The opening lines must capture the reader's imagination as this will be the first thing they read.

A well prepared **EXECUTIVE SUMMARY** enables the reader to:

- identify the basic content of a proposal quickly and accurately,
- determine the relevance of the proposal to their interests, and thus
- decide whether or not they need to read the proposal in its entirety.

Executive Summary (contd.)

- The summary must be short and concise.
- It should convince reviewers and potential sponsors that the project is relevant to their particular concerns, the needs of the country and above all, that it is well thought out.
- Though short, it must cover all essential points of the full proposal like the problem statement, objectives, methodology and how the expected results can contribute significantly to the solution of an urgent problem or to addressing an important unmet need.

Example of Executive Summary

Biobased structural composite materials for use in housing and auto infrastructure applications are new emerging materials that can play significant roles in the next generation of Nigerian housing and auto development and applications. Natural oils possessing a triglyceride structure with highly unsaturated fatty acid side chain are considered as one of the most important classes of renewable sources for the production of biodegradable polymers. Such oils are considered important due to their universal availability, inherent biodegradability, low price and environmental friendliness. However the major problems with these polymers in engineering applications are their low stiffness and strength when compared with metals. To offset these deficiencies, fibers and particles are always used to reinforce the polymers for preparation of composites. Popular high strength fibres are synthetic, including glass, aramid and carbon. Natural fibres however present many advantages over synthetic ones which make them more attractive as reinforcements in composite materials. Apart from being abundantly available and renewable, they are flexible and will not fracture when processed over sharp curvatures in machines. Efforts are ongoing to solve the research issue necessary to combine fibers from non-woody plants with resins and plastics made from plant materials into structural composite materials. In view of this, the present research effort is geared towards showing the feasibility of utilizing oil extracted from some indigenous Nigerian plants and seeds to prepare cationically polymerised oil based thermosets which in turn shall be used to fabricate fiber reinforced composites using fibers extracted from coconut pods and poultry feathers by compression molding. The morphology, structure, thermophysical and mechanical properties of the resulting composites would be investigated by scanning electron microscopy, proton and carbon 13 NMR spectroscopy, differential scanning calorimetry (DSC), thermogravimetry (TGA), dynamic mechanical analyses (DMA), and tensile-stress testing machine. Results of the research will trigger development of biobased chemicals and biomaterials from natural resources available in Nigeria. It will also lead to realisation of a new generation of biobased materials and composites allowing the production of better performing components for application in several industries (especially housing and auto industries) in the country. Local Nigerian farmers will also be able to gain profit from some of their agricultural wastes.

Problem/Need Statement

- **Give the background to the proposed research.**
- **Define the scientific and/or developmental problem that the proposal seeks to address, thus justifying the research.**

Example of Problem/Need Statement

Development of sustainable materials as alternative to petroleum based materials are being sought to decrease the dependence on fossil fuel, to reduce carbon emission and to generate more economic opportunity to the agricultural sector (1). The use of renewable resources as starting materials for the synthesis of new polymers has become the focus of considerable recent scientific researches (2). Natural oils possessing a triglyceride structure with highly unsaturated fatty acid side chain are considered as one of the most important classes of renewable sources for the production of biodegradable polymers (3). Recently considerable researches have been done on the development of bio-based polymers using natural oils or their derivatives as the main comonomer (4-8). Our group has studied severally the preparation of different oleochemicals, resins and coatings from natural oils (especially those of Nigerian origin) for possible industrial applications (8-17). The major problems with polymers in engineering applications are their low stiffness and strength when compared with metals (18). To offset these deficiencies, fibers and particles are always used to reinforce the polymers for preparation of composites (19). A fiber reinforced polymer composite typically consists of a mass of reinforcing fibers combined with a polymer matrix, which is used to combine with and bond to the reinforcing fibers, so that applied loading are supported by the latter and transmitted through the material from fiber to fiber. Such fiber reinforced polymer have the advantage of low weight, high specific strength and stiffness, environmental resistance and long life which has resulted in their wide use in the aerospace, sports, automotive, marine, military infrastructure and many other applications (17). Recently, the Nigerian government has been giving apt attention to the cultivation of coconut palm, as an economic tree, with the aim of providing job opportunities and increasing production of coconut and its derived products to the end user (37). Coir fibre is extracted from coconut husk has been found to be elastic, resistant to water and mechanical wear and therefore readily applicable in heat insulation and sound proofing. Modification of the coir surfaces by various methods have been reported to enhance their compatibility with different polymer matrixes, therefore increasing the application of the coir fibres as reinforcement for various polymeric matrixes (39, 40,). In the same vein The U.S. poultry industry generates many millions kilograms of feathers annually as a byproduct. The feather fibers, with helical structure at the molecular level, are light and tough enough to withstand both mechanical and thermal stress. Due to the inherent danger of flying, natural selectivity has produced feather material of a very high quality. With the hollow structure of the keratin fibers, a given volume of the fiber innately contains a significant volume of air, presenting low-density ($SG \approx 0.80$) and low-dielectric constant ($k \approx 1.7$) suitable for composite and electronic materials(41) The use of the avian feathers in composites as reinforcing fibers, after removal of the large quill, offers an environmentally benign solution for feather disposal and also presents to poultry producers a new route to reduce waste disposal costs and to gain a profit from feather waste.

Efforts are ongoing to solve the research issue necessary to combine fibers from non-woody plants with resins and plastics made from plant materials into structural composite materials. These developments are taking place at a critical time when political, economic and international conditions are aligned to provide the 'technological pull' to support this effort. In view of this our present research effort is geared towards showing the feasibility of utilizing oil extracted from some indigenous Nigerian plants and seeds to prepare cationically polymerised oil based thermosets which in turn shall be used to fabricate fiber reinforced composites using fibres extracted from coconut pods and poultry feathers by compression molding. The morphology, structure, thermophysical and mechanical properties of the resulting composites would be investigated by scanning electron microscopy, proton and carbon 13 NMR spectroscopy, differential scanning calorimetry (DSC), thermogravimetry (TGA), dynamic mechanical analyses (DMA), and tensile-stress testing machine. *Adenopus bevilorus* (ADB) (family *curcubitae*) is grown in the middle belt area of Nigeria. Like other members of the *curcubitae* family, it possesses climbing stems. At maturity it produces fruits containing a varying number of seeds. The oil content of these seeds is high, about 56% (19). The oil has also been reported to consist mainly on unsaturated fatty acids (85.1%) with linoleic acid predominating (9).

Literature Review

(Gives an up-to-date summary of scientific knowledge in the field of the project)

Literature review:

- reflects on what has been done and the latest developments.
- identifies gaps and contradictions.
- avoids duplication.
- assists with the formulation of a research problem.
- supports the theory followed in the project.
- helps with identifying an appropriate methodology for the project.
- forms basis of comparison when interpreting the findings.
- provides a learning opportunity.

Example of Literature Review

Vegetable oils have been extensively used for the production of polymer composites incorporating organic or inorganic particles or fibers, both synthetic and natural, and sized from the macro- to the micro- to the nano-scale (20–22). In recent decades there has been a clear trend to increase the percentage of “green”-based raw materials in the formulations of commodities as well as specialty polymers/composites for high value-added applications. In this way, a literature search for vegetable oil composite materials shows that the number of articles has grown exponentially since the end of the nineties to the present where hundreds of articles are published every year. This increasing interest is not only academic but also industrial due to the emergence in the support of producing renewable-based materials that offer sustainability, reduced energy consumption, low cost and comparable performance to composites from non-biorenewable resources [23]. Commonly, thermosets and thermoplastics derived from plant oils exhibit long-chain polymer characteristics i.e. high elongation at break and relatively low stiffness (20). For this reason, with the exception of highly functionalized triglyceride derivatives, it is not common to have pure bioresins as part of a composite, but to blend a synthetic and a renewable resin together. Mixtures of vegetable oils (soybean oil, corn oil, linseed oil, isomerized/conjugated oils, etc.) with styrene and divinylbenzene have been radically or cationically polymerized in the presence of various fillers and fibers such as organic clays, glass, hemp, flax, jute or kenaf fibers, wood flour, sugarcane bagasse, spent germ, corn stover, wheat straw and regenerated cellulose (20,24). Greener polymerization methodologies such as olefin metathesis polymerization have also been applied to biocomposite production (25). The resulting biocomposites show significant improvements in the mechanical properties and thermal stabilities. One of the key features in composite preparation consists of getting enough compatibility between the hydrophilic surface of the filler/fiber and the hydrophobic nature of plant-based resin. In this way the surface treatment and functionalization of the reinforcing materials (26) and the use of more reactive and polar functionalized triglyceride derivatives are two of the common approaches used in addressing these shortcomings.

Example of Literature Review Contd.

Natural fibers present many advantages compared to synthetic fibers which make them attractive as reinforcements in composite materials. They come from abundant and renewable resources, which ensures a continuous fiber supply and a significant material cost saving to the plastics industry. Unlike brittle fibers, such as glass and carbon fibers, cellulose fibers are flexible and will not fracture when processed over sharp curvatures. Chemical modification of cellulose fibers is usually applied to correct for deficiencies like hydrophilic nature of the fibers. Modification may result in improved performance of the composites produced. This can be done through several approaches, including plasma activation and graft polymerization with vinyl monomers, which are very well described in the literature (27, 28). These, however, will increase the fiber cost. The influence of various processing aids/coupling agents in improving fiber dispersion as well as compatibility between the fiber and the matrix has been investigated. Stearic acid and mineral oil were used as additives and maleated ethylene as a coupling agent. The results showed that the addition of stearic acid during the compounding greatly improved the fiber dispersion in the polymer matrix compared to untreated. Coupling agents such as isocyanates and silanes modify the fiber-matrix interface by forming a bridge of chemical bonds between the two components.

Hemp sisal, cotton, flax are amongst commonest fibres that have been used in reinforcing polymers (29, 30, 31). However fibres like coir, oil palm, bamboo and banana have also proved to be very good and effective reinforcement in thermoset and thermoplastic matrices (32, 33, 34, 35). Coconut palm (*Cocos nucifera L.*) is an important and useful palm in the world. In Africa, the major coconut producing countries include; Tanzania, Cote d'ivoire, Kenya, Madagascar, Ghana and Mozambique (36). In Nigeria, more than 90% of the nation's coconut belt consists of the vast plantations along the West Africa coast, running from Cote d'ivoire through Ghana, Togo, and Benin to Lagos State (37). It spans about 200km of coastline in Lagos State alone. In addition, an estimated 36,000 hectares is presently under cultivation, mostly in Lagos and Rivers State. It has been estimated that about 1.2 million hectares of land is suitable for coconut cultivation in Nigeria (38).

Recently, the Nigerian government has been giving apt attention to the cultivation of coconut palm, as an economic tree, with the aim of providing job opportunities and increasing production of coconut and its derived products to the end user (37). Coir fibre is extracted from coconut husk has been found to be elastic, resistant to water and mechanical wear and therefore readily applicable in heat

Goal vs Objective

- **Goal**
 - a statement, usually general and abstract, of a **desired state** toward which a project or programme is directed
- **Objective**
 - a specific statement of **intended measurable change** to be accomplished by the project or programme
 - project activities linked directly to specific objectives

Objectives

- Compared to goals, objectives are:
 - *more specific*
 - *more easily quantifiable*
 - *more immediately attainable*

OBJECTIVES SHOULD BE SMART

- **S**imple/Specific
 - Clear about what, where, when and how the situation will change
- **M**easurable
 - Able to quantify the targets and benefits
- **A**chievable
 - Able to attain the objectives
- **R**ealistic
 - Able to obtain the level of change reflected in the objective
- **T**ime Bound
 - Stating the time period in which each can be accomplished

Examples of Goal and objectives

Goal – To show the feasibility of utilizing *Adenopus breviflorus* benth seed oil based resin to prepare a coconut shell fiber/avian feather fiber reinforced composite that have many applications industrially.

Objectives – To:

- develop a new polymer resin from *Adenopus breviflorus* oil and conjugated *Adenopus breviflorus* oil through cationic polymerization with either divinyl benzene (DVB) or a mixture of DVB and styrene
- develop a series of composites from the different polymers (prepared above) with different coconut pod and husk and keratin fibers (from avian feathers) loadings respectively using compression molding.
- study the structure and morphology of the initial polymer matrix and resulting composite using NMR and SEM respectively.
- study the thermophysical and mechanical properties of the initial polymer mixture and resulting composite using thermogravimetry, dynamic mechanical analyser and tensile stress machine respectively.

Research Design and Methodology - Give the full details of your research plan (if necessary, send an attachment with a diagram, picture, questionnaire, etc)

(1) Collection of samples

Plukenetia conophora, Albizia benth and Telfairia occidentalis seeds would be collected from nearby farms and bushes in Ado-Ekiti, Nigeria. The seeds would be milled on a C&N Junior laboratory mill size 5 (Christy and Norris Limited Engineers, Chemsford, England).

(2) Extraction and refining of Oil.

Oil would be extracted from the seeds using n-hexane in a Soxhlet apparatus and solvent removed on a rotavapour. The crude oils would be refined by agitating with 18m NaOH (1:30g/g) of alkali powder for 15min. the resultant mixture is then heated to 75 - 80C to break the soap stock and neutral oil separated by centrifugation.

(3) Self metathesis polymerization

(3a) Seed oil (0.5 g, 0.598mmol) is added into a 3mL conical vial with screw cap and septum. Different amount of catalysts, (i) [1,3 - bis - (2,4,6- trimethylphenyl)-2-imidazolidinylidene]dichloro(o-isopropoxyphenyl-methylene)ruthenium the second generation Hoveyda-Grubbs catalyst, (ii) benzylidene [1,3- bis (2,4,6-trimethylphenyl)-2-imidazolidinylidene]dichloro(tricyclohexylphosphine)ruthenium Grubbs II, (iii)[1,3-bis(2,4,6 trimethylphenyl)-2-imidazolidinylidene]dichloro-(3-phenyl-1H-inden-1-ylidene) (pyridyl)ruthenium(II) Umicore M31 and (iv)[1,3-bis(2,4,6-trimethylphenyl)-2-imidazolidinylidene]dichloro-[2-(1-methylacetoxyl)phenyl]methyleneruthenium(II) Umicore M51 are added separately. The reaction conditions (temperature and amount of catalysts) were varied and the different degree of polymerization of the oil is determined

(3b) Acyclic Triene Metathesis polymerization (ATMET)

A mixture of seed oil and a respective amount of chain stopper are added to a 3 mL conical vial. 1.5mol-% Hoveyda-Grubbs catalyst is then added. The reactions are magnetically stirred for 4hours at 90oC. After 4hours the reaction mixture is dissolved with 1mL THF and polymerization stopped by addition of 1mL ethyl vinyl ether. The reaction is left to stir for 30minutes at room temperature. Pure polymers are precipitated in cold methanol

and characterised by GPC, ESI, ¹H and ¹³C NMR

(3c) Glyceryl tri-(E)-11-methoxycarbonyl-undec-10-enoate Compound is prepared according to the general ATMET procedure with Oil(1.5g, 1.79mmols) and Methylacrylate (3g, 34.8mmols) catalysed by the second generation Hoveyda-Grubbs catalyst (16.8mg, 1.5mols/%, 0.026mMol) and isolated by column chromatography. Approximately 10mL diethyl ether is added to the reaction mixture which is filtered over basic aluminium oxide. The residue is again dissolved in 2 mL hexane and subjected to column chromatography (silica) and eluted with a mixture of hexane/diethyl ether (7:1). The fraction containing Glyceryl tri-(E)-11-methoxycarbonyl-undec-10-enoate are collected , the solvent evaporated and the residue dried in vacuo

(4) Characterization

(a) ^1H and ^{13}C NMR spectra would be recorded in CDCl_3 on a Bruker AVANCE DPX spectrometer operating at 300 (75.5) MHz. Chemical shift () are given in ppm relative to the internal standard tetramethylsilane (TMS, $\delta=0.00\text{ppm}$).

(b) Thin layer chromatography (TLC) would be performed on silical gel TLC-cards (layer thickness 0.20mm, Fluka). Compounds are visualised by permanganate. For column chromatography silica gel 60 (0.035-0.070 mm Fluka) would be used

(c) GC-MS (EI) chromatograms would be recorded using two instruments: A Varian 431 GC instrument with a capillary column FactorFourTM VF- 5ms (30 m \times 0.25 mm \times 0.25 μm) and a Varian 210 ion trap mass detector. Scans were performed from 40 to 650 m/z at rate of 1.0 scans \times s $^{-1}$. The oven temperature program was: initial temperature 95 $^\circ\text{C}$, hold for 1 min, ramp at 15 $^\circ\text{C}\times\text{min}^{-1}$ to 200 $^\circ\text{C}$, hold for 2 min, ramp at 15 $^\circ\text{C}\times\text{min}^{-1}$ to 300 $^\circ\text{C}$, hold for 5 min. The injector transfer line temperature was set to 250 $^\circ\text{C}$. Measurements were performed in the split-split mode (split ratio 50:1) using helium as carrier gas (flow rate 1.0 ml $\times\text{min}^{-1}$).

(d) Polymer molecular weight would be determined using an SEC system LC-20A from Shimadzu equipped with an SIL-20A autosampler, PL gel 5 μm MIXED-D column (Polymer Laboratories, 300mm \times 7.5 mm, 100,500,103 and 104 \AA) and an RID-10A refractive index detector in THF (flow rate 1 mL . min $^{-1}$) at 50 $^\circ\text{C}$. All determinations of molar mass would be performed relative to linear poly(methyl methacrylate) standards (Polymer Standard Service, MP 102-981.000Da)

(e) Electrospray ionization mass spectra (ESI-MS) would be recorded on a Micromass Q-TOFmicro and high resolution mass spectra (HRMS) with electron impact ionization (EI) recorded on a GC-TOF.

(f) Differential scanning calorimetry (DSC) experiments would be carried out under a nitrogen atmosphere at a heating rate of 20 $^\circ\text{C}/\text{min}$ (see results and discussion part) with a DSC821e (Mettler Toledo) calorimeter up to a temperature of 150 $^\circ\text{C}$ using a sample mass in the range of 4-10 mg. The melting temperature, T_m , is recorded as the peak of the endotherm on the second heating scan unless annealing was used as a pre-treatment. The glass transition temperature, T_g , is recorded as the midpoint of the step change in the heat capacity.

(g) Thermogravimetric analysis (TGA) would be performed on a TGA/SDTA851e instrument (Mettler Toledo) at a heating rate of 10 $^\circ\text{C}/\text{min}^{-1}$ under nitrogen. The weights of the samples are about of 8 mg.

All products are identified by ^1H and ^{13}C NMR and by ESI-MS. ^1H NMR data of the crude product mixtures are used to calculate the degree of polymerization.

What are **Timelines**?

- Also Work Plans, they are charts, illustrations or descriptions of the logical and chronological sequence in which project activities will move within the time period designated for the activities

Gantt charts

- ✓ Timelines are often presented as Gantt Charts because of the ease with which they communicate four crucial elements in time management
 - Activity
 - Time planned for activity
 - Duration of planned activity
 - Sequence of planned activities

Importance of time-line

- Helps reviewers determine how thorough the investigator is in conceiving and implementing project-related activities.
- Lists major milestones of the project and when they are to be accomplished.
- Serves as road map in project implementation to track progress
- Means of accountability since it sets out who is responsible for which activity.

Gantt Chart in a project lasting 12 months

	MONTH											
ACTIVITY	1	2	3	4	5	6	7	8	9	10	11	12
Visitation to Research Locations	█	█										
Desk Work		█	█									
Field Work				█	█							
Collection of secondary data					█	█						
Monitoring and Supervision of Field Work					█	█						
Data Analysis							█	█	█			
Draft Report Writing								█	█	█		
Preparation and Submission of Final Report										█	█	█

Expected Significance of Research

State the expected outputs of the project e.g.

The project is expected to lead to production of renewable raw materials which are environment friendly, biodegradable, low cost and readily available for the fine chemicals and polymer industry. Utilisation of *Plukenetia conophora*, *Albizia benth* and *Telfairia occidentalis* oils is expected to be on the increase as a result of the outcome of this research. Hence the cultivation of *Plukenetia conophora*, *Albizia benth* and *Telfairia occidentalis* plants, the bearer of the seeds will automatically increase leading to more income to rural farmers who cultivate them.

State the relevance of the project in relation to local and regional environmental and socio-economic conditions e.g.

In Nigeria, vegetable oil-dependent industries rely mostly on imported oils like linseed and soybean oil which are very expensive. In this respect *Plukenetia conophora*, *Albizia benth* and *Telfairia occidentalis* oil, as agricultural byproduct abundantly available in the country, holds considerable promise as a source of unsaturated oil suitable for production of chemical feedstock for industries. The possible application of *Plukenetia conophora*, *Albizia benth* and *Telfairia occidentalis* seed oils as outlined in this research is expected to trigger an expansion of planted areas for the plants, the bearer of the seed yielding the oil. Such expansion will mean an increase in the income to the peasant farmers. Industries too will have cheaper raw materials to use thereby leading to cheaper consumer items in the country. And the environment friendliness and biodegradability of polymers produced from the biobased chemical feedstock implies a cleaner environment, less diseases and lower mortality rate.

What is a budget?

A budget is a financial translation or proposal of the activities illustrated in the Timeline but regrouped according to expected expenditure categories

- The idea is to translate the activities into financial equivalents
 - Decompose activities or re-aggregate into related expenditure clusters, proposed as sub-heads
 - Each sub-head should provide a group total
 - The sum of sub-heads and contingency is grant total

Budget (Contd)

- Cost projections.
- A window into how the project will be implemented and managed. Well planned budgets reflect carefully thought-out projects.
- Include only what funder is willing to support.
- Sponsors are sensitive to “academic tourism”..
- Make the budget realistic..
- Ensure that work plan correlate with budget.
- Are there other funding committed or requested.

DESCRIPTION OF ITEM	EXPECTED FROM		
	ETF	INSTITUTION*	OTHER
1.0. Personal Cost/Allowances			
1. Principal Researcher			
1. Team Members			
1. Technical Support			
1. Others			
Sub Total(not > 20% of budget)			
2.0. Equipment(List & Specify)			
2.1. CEAST 9000 Pendulum Impact tester	N6.355M		
2.2. Rotary Evaporator Pump	No.600M		
2.3. IKA 2760001 RW 28 Mechanical Stirrer	No.350M		
Sub Total(not > 25% of budget)	N7.305M		
3.0. Supplies/ Consumables			
3.1. Reagents	N1.795M		
3.2. Analysis and Characterisation in other laboratories (NMR, DMA, SEM, UTM, TGA, Hardness)	N7.0M		
Sub Total	N8.795M		

4.0.Data Collection &Analysis		
4.1. Research Assistants		
4.2.Research Informants		
4.3. Collection Instruments		
4.4. Data Analysis		
4.5. Technical Assistants		
Sub Total		
5.0.Travels		
5.1.Collection of Samples	No.270M	
5.2.Local & International Conferences	N1.230M	
Sub Total	N1.5M	
6.0 Dissemination		
6.1.Exhibition at Farmers Congress of Nigeria	No.250M	
6.2. Exhibition at Manufacturers Association of Nigeria	No.335M	
Sub Total	No.585M	
7.0. Others/Miscellaneous (Specify)		
7.1. 8 Carver Tile molds-400 series stainless Steel frame	N3.0M	
7.2. Carver Bench Top Press	N4.315M	
7.3.Nicolet FTIR Accessories	N3.0M	
Sub Total of All Direct Costs	N28.500M	
8.1.Indirect Costs(5% of ETE		

Budget justification

Budgets need to be “justified” because some proposed expenditure may sound strange to a reviewer operating within different cultural circumstances

- Certain cultural mobilization costs like *Aromatic Schnapps*
- Photocopying costs in institutional grants, when it is presumed that the Department or Centre will always own a photocopying machine
- Some services could be *pro bono (gratis)*, or *quid pro quo*
 - Its not everything you must pay for, use your social capital
- Mention others

Success factors

Application complete (ALL sections completed)	✓
Adhere to the guidelines	✓
Project matches objectives of funder	✓
Applicant competency evident and track-record complete and relevant	✓
Scientific contribution and novelty of project explained	✓
Scope and focus of project clear	✓
Aims and objectives are specific and clearly laid out	✓
Supportive literature adequate	✓
Design and methodology appropriate and clearly described	✓
Clear and feasible work plan	✓
Problem clear and accurate, sufficient literature	✓

General tips

Learn from previous or others' experience

Note feedback from peers

Practise and apply quality

Allow enough time to complete the proposal (time schedule)

Write the proposal with the guidelines next to you

Have a check list of information and supporting documents required

Create a generic proposal with supportive documents that can be adapted

Be brief but complete

Standardization is essential

Use active rather than passive voice

Font size: > 10pt; Arial/Times Roman; don't mix fonts

If in doubt whether a term will be understood – define it

Final words

- Read the **Guidelines** and then read them again
- **Market** yourself and your project through your application
- **Take risks**
- **Persist**
- **Remember** – the reviewer has only this document to base his decision on!

“Know what you are applying for, who you are applying to, and how to align your request with the objectives of the agency/foundation (programme). You can have the best project but it won’t get funded if you don’t do the homework before applying.”

(Deena Epstein, George Gund Foundation).

Clear link between the methods and the objectives.

Give sufficient and essential information for the performing, replicating and interpreting of the study.

What are new, unique or innovative.

Ethical issues.

Details on distribution of envisaged **measurable outputs**:

- Journal articles
- Patents
- Student dissertations/theses
- Conference presentations
- Books
- Reports
- Newsletters
- Policy evaluation
- New software
- Exhibitions etc.

Associated costs should be included in budget.

Utilization/implementation

SUMMARY OF SEVEN STEPS TO WRITING A WINNING PROPOSAL

❖ State the problem:

It is important that this is written in an exciting way. The opening lines must capture the reader's imagination as this will be the first thing they read.

❖ State your objective:

Research-grant proposals often talk about an overall aim with many objectives. It is in this section that you list your proposed outputs. If one of your outputs is to publish your research, name the journals you plan to submit to otherwise it looks as if you haven't planned ahead.

❖ Clarify your methodology:

Generally, methodology is discipline specific.

For researches in the Humanities especially, it is important to briefly justify your choice of methodology in relation to appropriate theory, but don't get long-winded. Remember the reviewers are experts in your field so you need to inform them, not educate them

❖ Work plan:

Link this to your objective and demonstrate the feasibility of your project. Describe who will do what, when and with what resources. Use a simple Gantt Chart to show your schedule.

❖ Budget:

Create a budget by analyzing the individual tasks needed to complete each objective. Proposal budgets directly reflect the depth of project planning and speak to the credibility of the researchers. Separate your budget into clear line items such as salaries, operating costs, capital costs, and indirect costs.

❖ Consider your impact:

Outline what you expect the results of your research to be and state how you will measure whether or not they are achieved.

❖ Submit on time:

Criterion	Description	Weight
Track Record of Applicant	Past research outputs including student supervision, grants.	10
Research Proposal	Scientific contribution; originality and new knowledge; interdisciplinary or multidisciplinary aspects; match between objectives and problem; match between the research question and the proposed research methodology; alignment with programme and national objectives.	35
Human Capital Development	<ul style="list-style-type: none"> • Student involvement 	10
Project Management	<ul style="list-style-type: none"> ▪ Representation from designated/under-represented groups ▪ Project organisation - how project teams and human resources are composed; the roles, responsibilities and accountabilities of team members; the proposed research activities. ▪ Project scheduling - work breakdown of the project to ensure that specific outcomes are achieved; as well as the objectives and associated timeline in place to divide the scope of work into manageable activities. ▪ Project budgeting - effective planning and budgeting of resources. 	20
Collaboration	With other individuals and groups (do they add value); within a team (is it appropriate)	10
Expected Outputs	Professional development of the applicant; journal articles; conference presentations and proceedings; and books and patents. Successful applicants will be expected to deliver on all expected outputs or risk suspension of their funding.	10
Potential Impact	Potential to contribute to the strategic goals of the knowledge economy; plans for data storage, usage and dissemination.	5



THANK YOU FOR YOUR KIND ATTENTION