Accreditation Report of the Research and Development Agencies of the Federal Ministry of Science and Technology

2011

FEDERAL MINISTRY OF SCIENCE AND TECHNOLOGY

THE NIGERIAN ACADEMY OF SCIENCE

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Acronyms

DG	Director General
FAS	Fellow Academy of Science
FMOH	Federal Ministry of Health
FMST	Federal Ministry of Science and Technology
GDP	Gross Domestic Product
HSE	Health Safety and Environment
ICT	Information and communication Technology
IGR	Internally Generated Revenue
IPR	Intellectual Property Rights
NAS	Nigerian Academy of Science
NEEDS	National Economic Empowerment and Development Strategy
NCST	Nigerian Council for Science and Technology
NIMR	Nigerian Institute of Medical Research
NIPRD	Nigerian Institute of Pharmaceutical Research and Development
NUC	National Universities Commission
R&D	Research and Development
SME	Small and Medium Enterprise
STI	Science, Technology and Innovation
WIPO	World Intellectual Property Organization

Foreword

It is with great pleasure that I present this report of the accreditation visits to the parastatals (research and development agencies) of the Federal Ministry of Science and Technology. The Nigerian Academy of Science (NAS) is the peak independent scientific body in the country consisting of few distinguished scientists elected annually (as Fellows). The NAS partners with government, in advisory capacity, providing credible, excellent, and unbiased assessments in science, technology, and innovation (STI) matters of national interest. The report is an objective analysis of the strengths and weaknesses of these agencies.

When the FMST commissioned the Academy to carry out this assignment of accrediting its parastatals, we gladly accepted and now present the report of that assignment. We have simply tried to take an objective look at these agencies and, on the strength of the knowledge and experience of our Fellows (and the evidence available), give our opinion of these institutions in terms of what is and, to some extent, what should be.

We thank the Federal Ministry of Science and Technology for the opportunity to provide this service. In particular, our appreciation goes to the immediate past and current Ministers of Science and Technology, Professors Mohammed Kaoje FAS and Ita Okon Bassey Ewa. We must not forget to mention the very supportive Permanent Secretary of the same Ministry, Dr Dere Awosika. We also thank Professor Peter Okebukola OFR and the National Universities Commission (NUC) for the provision of a draft format/instrument for the accreditation. The tedious work of proposal writing, instrument design and follow-up was done by myself, Professor Temitayo Shokunbi FAS, Professor Soga Sofola FAS, and Dr. Doyin Odubanjo. Lastly, our gratitude goes to the Directors-General/Chief Executives of the agencies visited for being so welcoming and open in the spirit of transparency and national transformation.

Though it is the first assignment of this scale that the government has charged the Academy with, we look forward to putting our expertise to serve our nation again and again in similar capacities in the near future. Long live the Federal Republic of Nigeria.

Professor Oye Ibidapo-Obe FAS, OFR

President, The Nigerian Academy of Science

Executive Summary

The Nigerian government has stated the strategic goal of ensuring rapid development of the country thereby ensuring that Nigeria becomes one of the biggest economies in the near future. In recent times, this goal is as expressed in the Vision 20:2020 well as the Transformation Agenda. However, it is a known fact that the growth of national economies depend largely on the ability, of the public and private sectors, to deploy science, technology and innovation to the wellbeing of the citizens.

For this reason, the Federal Ministry of Science and Technology commissioned the Nigerian Academy of Science to evaluate (accredit) the agencies under the Ministry and determine how capable they are of driving the nation's economy through science, technology and innovation.

Consequently, the Academy constituted accreditation teams made of Fellows of the Academy and senior scientists for the exercise. To do this effectively and uniformly, an accreditation tool (with accompanying guidelines) was produced and used for the exercise.

The exercise demanded that the teams examined relevant documents at the agencies, such as the enabling laws, minutes of meetings, published research papers, accounting records etc. Selected staff of the agencies were also interviewed. This enabled the teams to ascertain past and present activities of the institutions as well as management functioning.

The agencies were visited in the months of August and September 2011. Subsequently, the teams finalized their reports and sent the same to the Academy secretariat to facilitate the writing of this final report.

The agencies were graded thus: 'A' = full accreditation, but the exercise should be repeated in 5 years; 'B' = interim accreditation for 2 years and 'C' = interim accreditation for only one year. It is the opinion of the Academy that agencies that receive interim accreditation require prompt attention to address some of the challenges militating against their performance and should then be re-assessed within 1 to 2 years, as the case may be. Also, fully accredited agencies should be revisited within 5 years to ensure that their performance is maintained and improved upon.

In all, 19 agencies were visited and the results of the accreditation are as shown in the table below:

	PARASTATAL/AGENCY	**SCORE/ GRADE**	**ACCREDITTAIO N STATUS**
1	College of Chemical and Leather Technology (CHELTECH)	C = 51.5%	Interim for 1 year
2	Energy Commission of Nigeria (ECN)	A = 70%	Full
3	Federal Institute for Industrial Research, Oshodi (FIIRO)	A = 89.5%	Full
4	National Agency for Science and Engineering Infrastructure (NASENI)	A = 75%	Full
5	National Airspace Research and Development Agency (NASRDA)	B = 63.5%	Interim for 2 years
6	National Biotechnology Development Agency (NABDA)	C = 57.5%	Interim for 1 year
7	National Board for Technology Incubation (NBTI)	C = 50%	Interim for 1 year
8	National Building and Road Research Institute (NABRRI)	A = 72%	Full
9	National Centre for Technology Management (NACETEM)	A = 71.75%	Full

10	National Information Technology Development Agency (NITDA)[1]	Not done	Not applicable
11	National Office for Technology Acquisition and Promotion (NOTAP)	A = 70%	Full
12	National Research Institute for Chemical Technology (NARICT)	C = 59%	Interim for 1 year
13	Nigeria Communication Satellite Limited (NIGCOMSAT)	A = 76%	Full
15	Nigerian Institute for Trypanosomiasis Research (NITR)	B = 69.5%	Interim for 2 years
14	Nigerian Institute of Science Laboratory (NISLT)	C = 51.5%	Interim for 1 year
16	Nigerian Natural Medicine Development Agency (NNMDA)	B = 62.5%	Interim for 2 years
17	Project Development Agency (PRODA)	A = 71.5%	Full
18	Raw Materials Research and Development Council (RMRDC)	A = 93%	Full
19	Sheda Science and Technology Complex (SHETSCO)	B = 62.25%	Interim for 2 years

Arising from this comprehensive assessment, the Academy hereby makes the following informed recommendations to optimize the functioning of these key agencies of government:

1. There is need to ensure that every agency has an appropriate enabling Act backing its existence. As may be necessary, some of the Acts may need reviewing. The lack of an up-to-date enabling Act puts the agency's survival at risk.

2. There is a need to, using the enabling Act of the agencies as a guide, define clearly the role of each agency to avoid unhealthy competition.

3. For proper corporate guidance and accountability, the governing boards of the agencies should be carefully constituted while ensuring that the Chairman has relevant knowledge, expertise and experience.

4. These key institutions should be adequately budgeted for and the funds should be released on time. Also, to boost their funding status, agencies that generate revenue should be allowed to keep a significant proportion of it and this should be used for research and institutional development.

5. Agencies with related mandates should be encouraged to synergize their efforts. Indeed, there is need for greater cooperation and collaboration among the institutions. One way to do this is have an annual national science and technology forum to bring together all agencies of government to discuss potential opportunities for national development using STI. The Academy can be commissioned to host this, as a neutral and respected institution, and should have government at the highest level in attendance. Another option is to merge some agencies with similar mandates.

6. A mechanism should be sought to enable the patenting of the products of research at the agencies. Similarly, pathways for commercialization of these products should be sought particularly by formal collaborations with the private sector.

[1] The NAS team was not allowed to proceed with the accreditation. On arrival they were informed that the agency had been moved to the new Ministry of Telecommunications and so could not carry out the accreditation exercise.

7. Institute formal collaborations between universities and the agencies as this would be mutually beneficial to both.

8. The accreditation exercise should be repeated regularly. As with universities, it will help ensure accountability and guidance while making sure that institutions that are challenged are quickly identified and solutions found for remedying the situation.

Project Conception and Implementation

Introduction

Investing in science and technology for national development

Science, technology, and innovation (STI) have been accepted as critical tools in developing competitiveness at national level through knowledge generation. Knowledge constitutes the most fundamental resource in emerging and modern economies, by which the process of economic wealth creation is accelerated. Most rapidly developing countries now devote an increasing proportion of their resources to science and technology and to the concomitant research and development (R and D) in an effort to attain a competitive edge, and or to catch up with other countries that are more advanced. There is a very strong link between the STI performance of countries and their economic growth. The rapid growth recorded recently in the East Asian region is largely attributable to growth in Science and Technology activities within the region.

Many countries commit as high as about 2% of their Gross Domestic Product (GDP) to science and technology. For many countries south of the Sahara, including Nigeria, the level of development corresponds to the level of commitment to STI. Nigeria commits only about 0.1 per cent of its GDP to science and technology and this is far below what is needed to stimulate STI in the country – A proposal which has been accepted by Mr President, Dr Goodluck Jonathan GCFR, is to commit 1% of Nigeria's GDP to STI.

Increasing and sustaining the investment in research and technology is crucial to Nigeria's success as the 'giant of Africa'. These should target an array of key science and innovation programs. Robust investment in research and development is a critical building block of the innovation economy.

The Nigerian Situation

The government of Nigeria previously did not have a sustained focus on the development and application of technology for transforming its national economy; and the education curriculum was not designed to deliver a leadership base in science and technology. The bond between science and technology, and the society is still very weak and there are obvious gaps between activities of the scientific communities and the overall development aspirations of the society.

Due to increasing awareness of the importance of science and technology for national transformation and societal empowerment, the Nigerian government has recently stepped up efforts in science, technology and innovation. The Federal Ministry of Science and Technology is charged with the responsibility of ensuring the actualization of this mandate. It does this through providing policy advice to government on STI. As part of this mandate, the Ministry coordinates and promotes research and development (R&D) activities through the promotion of the following:

- Biotechnology
- Information and Communication Technology (lCT)
- Space Science and Technology
- Engineering Materials Development
- Diversification of Nation's Energy Mix
- Knowledge-Based SME Development
- Promotion of partnerships and cooperation across public-private and domestic-foreign divides

In pursuit of the above, the government has initiated policies and established agencies to carry out activities in support of various science and technology based programmes.

Some of the steps to advance investment in science and development that should be adopted are:

1. Improved political will and commitment as well as revision of government policy on funding and allocation of resources to science and technology.
2. Information systems should be strengthened to enable sharing of information among researchers, investors and the general public – local and international.
3. A longer-term national STI strategy should be designed to drive a knowledge-based economy.
4. There should be increased investment in the right infrastructure for supporting STI.
5. There is need to identify scientific and technological areas of comparative advantages and exploit such advantages.
6. Science and technology experts should be members of the national economic advisory team.
7. Critical STI statistical data is needed for decision making.
8. There is need to establish a framework to support a strong STI workforce, scientific literacy and programmes of the professional S&T bodies.

Some of the critical challenges facing the actualization of the STI initiatives include non-commercialization of successful research results, non-demand driven R&D activities, as well as lack of linkages between the research institutes and the private sector. Others include duplication of functions among research institutions, lack of sustainable mechanism for funding R&D activities, competition from foreign imports and low technological transfer mechanism.

The birth of the Federal Ministry of Science and Technology (FMST) began as far back as 1966 with the promulgation of the first Science and Technology Policy. A review of the extent of implementation of first policy led to the establishment of the Nigerian Council for Science and Technology (NCST). This was later to become the Federal Ministry of Science and Technology (FMST) in 1985. Since its creation, the FMST (and its agencies) has ensured that it contributed positively to the national economic development plans as exemplified by significant progress in science and technology such as in biotechnology, space research, and energy development among others. The FMST has the overall national mandate to launch Nigeria into the new technological era.

The mission of the FMST is to promote planned and guided Research and Development (R&D) in all areas of Science and Technology with particular emphasis on areas where the country has clearly defined comparative advantages in human as well as material resources. The vision of the ministry is to make Nigeria, an acknowledged member of the fast developing scientific and technologically progressive nations of the world and to be the Africa's Leader in scientific and technological development

In order to achieve this, agencies were created and or brought under the FMST. It is worthy to note that some of the agencies now under the Ministry had previously existed as independent entities established since the pre-independence era. Major agencies of the Ministry include:

- Energy Commission of Nigeria (ECN), Abuja FCT (www.ecn.gov.ng)
- Federal College of Chemical and Leather Technology (CHELTEC), Zaria, Kaduna State (www.cheltec.gov.ng)
- Federal Institute of Industrial Research (FIIRO), Oshodi, Lagos State. (www.fiiro.gov.ng)

- National Agency for Science and Engineering Infrastructure (NASENI), Abuja, FCT (www.naseni.gov.ng)
- National Biotechnology Development Agency (NABDA), Abuja FCT (www.nabda.gov.ng)
- National Board for Technology Incubation (NBTI), Abuja FCT (www.nbti.gov.ng)
- National Centre for Technology Management (NACETEM), Ife Osun State(www.nacetem.gov.ng)
- National Information Technology Development Agency (NITDA), Abuja FCT (www.nitda.gov.ng)
- National Office for Technology Acquisition and Promotion (NOTAP), Abuja FCT (www.notap.gov.ng)
- National Research Institute for Chemical Technology, (NARICT), Zaria Kaduna State (www.narict.gov.ng)
- National Space Research and Development Agency (NASRDA), Abuja FCT (www.nasrda.gov.ng)
- Nigerian Building and Road Research Institute (NBRRI), Abuja (www.nbrri.gov.ng)
- Nigerian Communication Satellite Ltd, (NIGCOMSAT) Abuja, FCT (www.nigcomsat.net)
- Nigerian Institute for Trypanosomiasis and Onchocerciasis Research, (NITOR), Kaduna (www.nitr.gov.ng)
- Nigerian Institute of Science Laboratory Technology (NISLT), Ibadan Oyo State(www.nislt.gov.ng)
- Nigerian Natural Medicine Development Agency (NNMDA), Lagos (www.nnmda.gov.ng)
- Projects Development Institute (PRODA), Enugu (www.proda.gov.ng)
- Raw Materials Research and Development Council (RMRDC), Abuja FCT (www.rmrdc.gov.ng)
- Sheda Science and Technology Complex (SHESTCO), Abuja FCT (www.shestco.gov.ng)

These agencies have been charged with the responsibility of ensuring the accomplishment of the mission and vision of the FMST which ultimately will translate to national advancement in science and technology. The fulfilment of this responsibility varied across the agencies. The pertinent question now is to what extent is each agency fulfilling its role?

In a bid to provide answers to the this question, the Federal Ministry of Science and Technology commissioned the Academy to visit and assess the performance of the agencies under the Ministry with the aim of determining their ability to fulfil the dictates of their mandate and to make recommendations about how the agencies can be used to drive national goals.

Methodology

Objectives of the project

The main objectives of the accreditation exercise were:

i. Determine how well the institutes, parastatals and agencies have met the objectives for their being set up.
ii. Provide an account of the challenges faced by these institutions and make recommendations on how to reposition them for future performance.
iii. Promote the culture of quality assurance in the nation's research institutes and parastatals.

Methodology

An accreditation tool was developed (adapted from that used by the National Universities Commission (NUC) for the accreditation of universities) and fine-tuned by the project coordinators- Professors O. Ibidapo- Obe FAS, O Sofola FAS, and T. Shokunbi FAS, as well as Dr Oladoyin Odubanjo (Executive Secretary, NAS). This was followed by two meetings to review the tool.

Volunteers from the Academy Fellowship were screened for avoidable bias before being constituted into visitation teams. Dates were set for the planned visits and these were sent to the supervising Ministry (FMST) for concurrence and onward circulation to the agencies concerned. Also sent were the accreditation tools and guidelines to enable the agencies prepare appropriately for the exercise. At the time of the exercise, there were 19 agencies under the FMST and all these were visited.

Prior to the visits, a planning/orientation meeting of the team leaders/team representatives was called to get teams prepared and also agree on the most suitable modalities for the exercise. This had to do with, defining the report submission format, modification of the accreditation tool to address salient/relevant issues with respect each institute's mandate, agreeing on the scoring/ grading of the agencies, travel logistics, funds disbursement to team members and the accreditation schedule.

The evaluation exercise was expected to be a comprehensive assessment of the parastatals to determine the institution's ability to contribute to the nation's development. Overall, this was to be an institutional accreditation to examine how each agency is positioned to operate optimally or not. The accreditation teams visited the agencies in August and September 2011.

The teams visited the agencies assigned to them to assess the state of affairs at the institutions. This was done through interviews with the Director-Generals, other senior staff and selected junior staff. They also examined documents in a bid to verify the activities of the agencies. Overall, the teams were well received at the agencies and were accorded full cooperation by the management of the institutions. The visits ended with the teams presenting a preliminary report (completed accreditation tool) to the Directors-General, who signed in acknowledgement of the visit.

Subsequently, the teams met to complete the accreditation tools comprehensively and to write a brief summary report both of which were then submitted to the NAS secretariat. The completed tools and reports from the teams were then collated to produce a final report for submission to the Ministry of Science and Technology.

Results

Summary of grades

The results of the accreditation exercise are shown in Tables 1and 2 and Figure 1. 19 agencies were commissioned to be accredited by the teams, however only 18 were accredited. They were prevented from carrying out the exercise at one of the agencies, NITDA, on account of the agency being moved to the newly created Federal Ministry of Information and Communications just before the team visited. Although Nigerian Communications Satellite Limited (NIGCOMSAT) was also moved to the same Ministry, the NAS accreditation team was allowed to carry out its assignment as planned.

The results show that 9 agencies were graded as A, 4 had grade B and 5 graded as C. Grade A means that the agencies had full accreditation status for five years, Grade B means that the said agencies had interim accreditation, and should be revisited after 2 years for reassessment, and Grade C means that the agencies had interim accreditation and should be revisited after 1 year.

Table 1: Summary of accreditation grades

	PARASTATAL/AGENCY	SCORE/ GRADE	ACCREDITTAIO N STATUS
1.	Energy Commission of Nigeria (ECN)	A = 70%	Full
2	Federal College of Chemical and Leather Technology (CHELTECH)	C = 51.5%	Interim for 1 year
3	Federal Institute for Industrial Research, Oshodi (FIIRO)	A = 89.5%	Full
4	National Agency for Science and Engineering Infrastructure (NASENI)	A = 75%	Full
5	National Airspace Research and Development Agency (NASRDA)	B = 63.5%	Interim for 2 years
6	National Biotechnology Development Agency (NABDA)	C = 57.5%	Interim for 1 year
7	National Board for Technology Incubation (NBTI)	C = 50%	Interim for 1 year
8	National Building and Road Research Institute (NABRRI)	A = 72%	Full
9	National Centre for Technology Management (NACETEM)	A = 71.75%	Full
10	National Information Technology Development Agency (NITDA)[2]	Not done	Not applicable
11	National Office for Technology Acquisition and Promotion (NOTAP)	A = 70%	Full
12	National Research Institute for Chemical Technology (NARICT)	C = 59%	Interim for 1 year
13	Nigeria Communication Satellite Limited (NIGCOMSAT)	A = 76%	Full
14	Nigerian Institute of Science Laboratory (NISLT)	C = 51.5%	Interim for 1 year
15	Nigerian Institute for Trypanosomiasis Research (NITR)	B = 69.5%	Interim for 2 years
16	Nigerian Natural Medicine Development Agency (NNMDA)	B = 62.5%	Interim for 2 years
17	Project Development Agency (PRODA)	A = 71.5%	Full
18	Raw Materials Research and Development Council (RMRDC)	A = 93%	Full
19	Sheda Science and Technology Complex (SHETSCO)	B = 62.25%	Interim for 2 years

[2] Team, on arrival, was prevented from carrying out the assignment on account of the agency being moved away from the FMST.

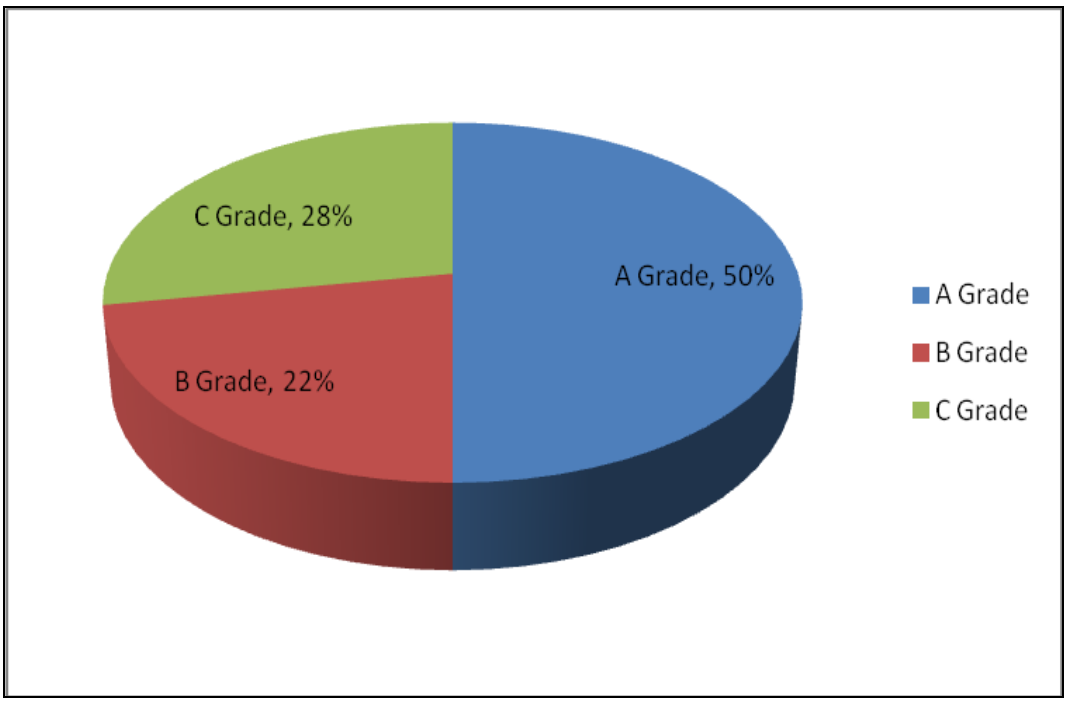

Figure 1: Percentages of accreditation grades of agencies

As additional information to guide decision making at all levels, the report generated from the agencies classified the agencies into core functions, as in the Table 2 below, of:

a) Active research focus.
b) Product development.
c) Regulation.
d) No/limited research.

Table 2 : Core functions of agencies

Active Research	**Product Development**	**Regulatory Role**	**No Research**
FIIRO	FIIRO	NBTI	NABDA
NACETEM	NITR	NISLT	CHELTECH
NINMDA	PRODA	NOTAP	NARICT
SHETSCO	RMRDC	NBRRI	
NASENI	NASRDA		
PRODA	NIGCOMSAT		
NITR	ECN		
ECN			

Brief Notes on Agencies

College of Chemical and Leather Technology (CHELTECH)

Now called the Nigeria Institute of Leather and Science Technology since 1988. The Institute has remained very relevant to the tanning industry of Nigeria with tremendous potential for creating economic opportunities and wealth in the nation.

Some of the findings of the NAS team include - The quality and output of research is very low. Seminars are rarely held. The Institute has no research policy or any documentation on research focus and procedures. It needs quality research and technical staff. The institute is not involved in product development. There are linkages with tanneries and universities in and outside the country. The agency has no functional Governing Board. An increased collaboration of the institute with NARICT can be considered for optimal efficiency.

Energy Commission of Nigeria (ECN)

The ECN provides quality public service, hosts seminars and training workshops through its energy research centres and external technical cooperation and collaboration. The Commission was established in 1988 with the statutory mandate for the strategic planning and coordination of national policies in the field of energy in all its ramifications. ECN aggressively pursues national energy initiatives and actions through the development of appropriate measures to provide real answers to our energy and development challenges. ECN carries out developmental programmes characterized by the construction, installation and commissioning of pilot projects for the utilization of renewable energy resources, as well as providing the desired environment for rural industrialization.

The visiting NAS team summarized its view of the ECN – ECN has the exclusive rights to prepare an appropriate energy master plan for the balanced and coordinated development of energy to encourage optimum energy mix in Nigeria. From the assessment of staff and facilities of ECN, there is evidence of production of the National Energy Policy, Master Plan, Demands and Supply Projection for proper planning. ECN has also established an environment of peaceful coexistence for high productivity.

Federal Institute of Industrial Research Oshodi (FIIRO)

This institute was established originally as Applied Technical Institute in 1956 following the observation by the World Bank economic vision team sent to Nigeria in 1953. The team noted that research activities in Nigeria were diffused, uncoordinated and without focus. The name was changed to FIIRO in 1958. It is the oldest research institute in Nigeria.

The Institute has an excellent track record of quality research and seminars. FIIRO is an institute that has to its credit numerous research products on the bench. The products include: alcohol and vinegar production, ordinary and detoxified cassava starch, gum and cassava starch-based adhesive, poultry feed from cassava, edible mushroom production, electroplating, fruit wine production, beniseed oil extraction, baking with wheat & non-wheat composite flours, plug refurbishing,

essential oils extraction, and fruit juice production. There should be vigorous efforts to pursue the commercialization of the research products. The research effort of the Institute has not yielded the deserved results because of the unfriendly and unresponsive immediate and national environment. RMRDC and FIIRO should work together on a more sustained basis.

The leadership of the Board of the Institute should have a scientist who is academically and professionally relevant. The Board of FIIRO should be reconstituted.

National Agency for Science and Engineering Infrastructure (NASENI)

There is a high output of cutting-edge research from the Agency. Research seminars are held regularly, however the research papers and proposal review process need to be strengthened. The research infrastructure is fairly adequate for the agency's mandate. It is the only purpose-built Agency (established in 1992) designed to conduct developmental work in the areas of manufacturing. It is capable of coordinating the proliferation of technologies developed including patents obtained. The agency is linked to several local and foreign institutions.

NASENI is a major infrastructural institution that supports advancement in research & development and has done excellently well in the provision of infrastructure and capacity building. Technologies so developed are in the areas of spares, components and systems engineering which are intended to be transferred to entrepreneurs for the production of goods and services. NASENI and PRODA may consider some collaboration or synergistic relationship.

National Airspace Research and Development Agency (NASRDA)

The Agency was established in 1999 with a goal to pursue the development and application of space science and technology for the socio-economic benefits of the nation. NASRDA is responsible for implementing the National Space Policy of Nigeria. The focal areas of National Space Programme headed by NASRDA include space sciences, remote sensing, satellite meteorology, communication and information technology as well as defence and security. Evidence of continuing research activity at the Agency is provided by the relatively ample number of research and development reports and monographs produced at the Agency, and by its successful launching of three satellites to date. The first Nigerian satellite called NigeriaSat-1 was launched in 2006 and NigeriaSat-2 and Nigeria Sat-X satellites were successfully launched in August, 2011

There is a wide variety of projects undertaken in collaboration with institutions and government agencies within the country, and other international bodies. Wider public awareness of the Agency's seminars, especially among universities and other research centres may yield increased benefits.

NASRDA and NIGCOMSAT may consider more collaboration and partnership for greater delivery of the mandates of both agencies. Certain important research installations, located in NIGCOMSAT, have become inaccessible to NASRDA due administrative bottle necks.

National Biotechnology Development Agency (NABDA)

The National Biotechnology Development Agency was carved from the Department of Agric and Natural Sciences and Technology in 2001, the same year the National Biotechnology Policy was promulgated into law by the federal government. NABDA was given the mandate to promote biotechnology activities that positively respond to national aspiration on food security, job/wealth creation, affordable healthcare delivery and sustainable environment. From the findings of the NAS team, the Agency has no evidence of research activities. The laboratories, workshops and equipment are not functional. There exist only a few publications which are substantially the work of some staff who conduct the research elsewhere.

There is no functional Governing Board; the apparent Board met only once in the last five years. An active collaboration between NABDA and SHESTCO may be considered to increase productivity.

National Board for Technology Incubation. (NBTI)

NBTI is not a research institute but rather plays a regulatory role. The agency was set up in 1995 to be the driver for the technological transformation and creation of economic opportunities in Nigeria. A realignment of the agency's efforts at prompting the establishment of laws for patents and protection of intellectual rights from bureaucratic abuse is essential. NBTI should have a functional public relations department that will work to bring to limelight the aims and objectives of the establishment. It may be more effective if collaboration is considered with NOTAP

Nigerian Building and Road Research Institute (NBRRI)

NBRRI was established in 1978 to conduct integrated applied research and development in the building and construction sectors of the economy. In the early years of the institute's existence, there were active research and development activities which lead to the development of hardware technology like brick making machines and Madortile package. Also, invaluable information was generated on subgrade soils to aid in cost-effective road route planning.

In recent times, the quality and output of research as well as the frequency of seminars from the agency have plummeted and is attributed to the lack of an enabling environment (chiefly poor funding). Despite this, there is good collaboration with researchers in similar institutions and universities.

The Institute's responsiveness to local, national and international development is in line with its mandate In order to still be in focus for achieving its purposes; the institute maintains links with academics and departments in universities in Nigeria for conduct of research work on subjects of mutual interest. Internal and external peer review processes are in place. The Institute is able to promote industrial production but lacks evidence of how deliverables were monitored. To boost its

research output, the Institute needs more research and technical personnel, and more workshops for promoting innovation. The Institute has some innovative products and these should be patented and continuously exhibited/commercialized for potential users to acquire.

National Centre for Technology Management (NACETEM)

The Centre was established in 1997 to develop and harmonize the human resources needed to promote, project and propagate technology management in Nigeria and Africa. It works to drive national development through capacity building, policy research and consultancy services in the areas of science, technology and innovation management. The Centre's mandate includes serving as a training centre for the development of high level manpower in the science, technology and innovation (STI) management to all tiers of government and the private sector and also conduct policy research, evaluation and review with a view to providing sound policy advice for dynamic technology-driven, knowledge-based development. A re-structuring of the Centre's mandate took place in 2005 to embrace other West African countries.

The Centre is quite prolific in publications arising from relevant and quality research and there is a functional research review committee. The Centre has a number of active and useful linkages with industries, universities and international organizations. The technical staff offer consultancy services in relevant fields. However, the Centre has no enabling act and consequently no Governing Board in place. It is also challenged by inadequate and sporadic funding.

National Information Technology Development Agency (NITDA)

The Agency was relocated to the Federal Ministry of Communication Technology by the time of the accreditation exercise. The NAS team only got to know about the relocation upon arrival at the Agency and was disallowed from carrying on with the exercise.

National Office for Technology Acquisition and Promotion (NOTAP)

The agency was established in 1983 for promotion of technology acquisition and transfer. Its activities include evaluation/registration of technology transfer agreements; promotion of intellectual property; technology advisory and support services; commercialization of R&D results; promoting research-industry linkage; production of a compendium of management information system and the publication of project profiles.

It does not carry out active research but is more involved in patent protection and regulation. The agency renders a number of technology-related services to industries, entrepreneurs, researchers, inventors and innovators. Much of the work of the agency is not well known to the Nigerian public. A more virile alliance of NOTAP and NBTI may be considered.

National Research Institute for Chemical Technology (NARICT)

The Institute was established in 1988 as a result of the expanded mandate of CHELTECH. Its primary mandate is research and development in chemical, leather, biochemical, solid minerals, engineering plastics and allied fields. Though it was established to promote research, the Institute's research output is low, and this is attributable to absence of high calibre researchers. Seminar presentations are sparse. The Institute has little or weak linkages with related industries. Members of the Governing Board lack the capacity to provide professional direction for the Institute and reviewed. A synergistic partnership of NARICT with CHELTECH should be considered.

Nigerian Communication Satellite (NIGCOMSAT)

Though it had also been moved to the new Ministry of Information and Communications Technology, the NAS team was allowed to carry out the accreditation of the company. Nigerian Communications Satellite (NIGCOMSAT) Limited was incorporated as a limited liability company in April 2006. NIGCOMSAT Limited is responsible for the operation and management of Nigerian communications satellites. The agency's vision is to be the leading communications satellite operator and service provider in Africa and the mission is to manage and exploit the commercial viability of the Nigerian Communications Satellite for the socio-economic benefit of the nation.

The company provides, deploys and implements solutions ranging from satellite communication, internet infrastructure, voice over internet protocol (VoIP) and wireless communications. NIGCOMSAT provides a wide array of products and services to end-users, while building and servicing networks and benchmarking international best practices in technology.

There is evidence of quality research at the company and particularly at its micro-electronics laboratory. Some products of the company in the area of satellite communication are-: C-Band C-band payload: 4-Transponders; Ku-Band Ku-band: 14-Transponders, Ka-Band-Ka-band payload: 8-Transponders and L-Band L-band payload: 2-Transponders. There is need to increase the research activities and facilities along with the number of technical staff on ground. The commercialization of the research innovations from the agency will make it more visible in the country. There is a functional Board. Better collaboration between NIGCOMSAT and NASRDA should be considered for greater efficiency of both agencies.

Nigerian Institute of Science Laboratory Technology (NISLT)

NISLT was established in 2003 with the mission of advancing science laboratory technology in Nigeria; maintaining high ethical standards in science laboratory technology practice and; managing efficiently and effectively science laboratories in the context of science, engineering, technology and innovation (SETI).

The Institute functions mainly as a regulatory body. There is a good model laboratory for training science laboratory technologists. There is a proposal for the Institute to undertake frontline research but this has not been actualized. The Institute should expand its collaboration to include other regulatory and standards-setting agencies in Nigeria.

There is an excellent management team in place which meets regularly. However, the Board is large and the revision of its composition may be considered so as to promote active participation.

Nigerian Institute for Trypanosomiasis Research (NITR)

This institute was established in 1947 and officially commissioned in 1951 as West African Institute of Trypanosomiasis Research (WATIR) to serve the needs of four West African British colonies namely Nigeria, Gold Coast (Ghana), Sierra Leone and The Gambia. The independence of these countries resulted in three countries withdrawing from the collaboration, leaving Nigeria to assume sole responsibility. The name was changed to Nigerian Institute of Trypanosomisais Research in 1964. The mandate of the institute is to undertake field and laboratory research on all aspects of African trypanosomiasis and onchocerciasis for the effective control of the diseases and thereby promote food security, rural development and advancement in human and animal health and productivity.

There is ongoing research at the Institute with accompanying publications. An upsurge in research was noticed within the period 2008-2011 due to increased collaboration with other local and international research-oriented organizations like the University of Edinburg and the International Livestock Research Institute. Increased staff training was also contributory. Basic research equipment and supplies are available.

Nationally, the institute collaborates with NIMR, NASRDA, NABDA, NLIST, and NNMDA. The institute should intensify collaboration and networking with tertiary institutions in Nigeria and Ministries with health-related mandates while out-stations should be made more functional. Patentable products like the Tsetse fly traps which are specific to the savannah and riparian fly species are available but need to be promoted and commercialized.

Lastly, the Institute was found to be grossly underfunded which poses a great challenge to its effective functioning.

Nigerian Natural Medicine Development Agency (NNMDA)

The Nigeria Natural Medicine Development Agency (NNMDA) was established in 1997 by a Ministerial Order. A draft bill to finalize the establishment of the Agency is awaiting Federal Executive Council consideration and subsequent onward transmission to the National Assembly for consideration. The Agency of the Federal Ministry of Science and Technology is responsible for the promotion and development of indigenous medicines.

The amount of public service, scheduled seminars and relevant research are good. Products developed include a herbal cough therapy, mosquito repellent (cream and coil), arthritis cream and herbal medicated soap, liquid and powdered herbal products for the management of tropical diseases. There is a well-laid out product-oriented development activity at the agency

Vibrant and virile linkages have been established with national and international organizations such as FIIRO, NASENI, RMRDC, NOTAP, NACETEM and NABDA. A more active engagement of agencies like NAFDAC, NIPRD and the FMOH may help the agency actualize much more of its mandate and vision. The Agency would probably be better off supervised by the Federal Ministry of Health. There is currently no Governing Board in place.

Project Development Agency (PRODA)

PRODA was established in 1971 by the defunct East Central State Government to harness the self-reliance effort made manifest during the Nigerian civil war; it was taken over by the Federal Government in 1977.

The quality of the research output from PRODA is high and, over the years, a large number of research and development initiatives have yielded some patents which are accessed by SMEs. namely electrical porcelain insulators, smokeless coal, and activated charcoal, pencil graphite, cassava processing equipment, and palm kernel processing equipment. PRODA's research and development initiatives are linked with indigenous needs. The Agency is an important centre for incubating, catalyzing, and adapting industrialization strategies through the provision of appropriate technology.

The agency is involved in active product development and enjoys good, mutually beneficial linkages with SMEs and community development agencies. There is an active Governing Board. PRODA and NASENI should collaborate more.

Raw Materials Research and Development Council. (RMRDC)

RMRDC was established in 1987, but commenced operation in 1988. The agency is vested with the mandate to promote the development and utilization of Nigeria's industrial raw materials. The Council does not carry out active research but all research is contracted out. Most the Council's work is based on consultancies and extension services. It was found to be effectively, and satisfactorily, fulfilling its mandate and functions.

To sustain its operations, it is recommended that 50% of its internally generated revenue be ploughed back into research and development at the Council. The Council should be more involved in patent promotion. Collaboration between FIIRO and RMRDC will be most beneficial for the advancement of research and development.

Sheda Science and Technology Complex (SHESTCO)

The agency was established in 1993 as a multidisciplinary research and development centre. The vision of the agency is in the provision of opportunities for the utilisation of modern technology to contribute towards the advancement of the Nigerian society. The agency acts as the vanguard of promoting information exchange between it and other institutions (local and international). It also contributes to the competitiveness of industries by promoting innovation.

The quality of research is very good and geared towards national needs in agriculture, industry and technology. Research seminars are regular. Research infrastructure and workshops are very good. The agencies innovations in solar cells, biotechnological plantlets breeding, and fabrication of industrial products from local sources are highly promoted. The research initiatives of the agency enable institutions as well as individual scientists to undertake a wide range of research and development activities. SHESTCO's activities enhance collaborative approaches to the solution of research and developmental problems. There is evidence of private sector consultancy.

The agency has three National Advanced Laboratories for biotechnology, chemistry and physics, equipped with state-of-the-art facilities. There is also a Nuclear Technology Centre, which houses a gamma irradiation plant. There is no governing/ management board in place. SHESTCO's cooperation with NABDA may be considered for optimal efficiency.

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APPENDIX 1: COMPILATION OF THE SUMMARY REPORTS OF THE AGENCIES AS SUBMITTED BY THE TEAMS

THE NIGERIAN ACADEMY OF SCIENCE

NAS-FMST ACCREDITIATION PROJECT

Accreditation Grade C

1. **Name of Research Institute/Agency**

NIGERIAN INSTITUTE OF LEATHER AND SCIENCE TECHNOLOGY
(FORMELY FEDERAL COLLEGE OF CHEMICAL AND LEATHER TECHNOLOGY)

2. **Executive Summary (5 Lines only)**

The Institute which has undergone transformation in name and mandate since its creation in 1964 has remained very relevant to the tanning industry of Nigeria with tremendous potential for creating economic opportunities and wealth in the nation.

3. **Results/Key findings**

i) Institutional vision, mission and strategic goals.

The Institute has vision and mission statements that are relevant to its operational context linked to well defined goals and objectives with some evidence of how these inform practice at various levels of the Institute.

ii) Institutional Governance and Administration

The quality of governance seems adequate but with room for improvement. The Institute has an organization chart with specified departments and units appropriate for its functions. There is no internal mechanism for monitoring and evaluating the implementation of stated policies. The Institute does not have management information system.

iii) Institutional Resources

The Institute has necessary infrastructure (Buildings and Space) to carry out its functions. Most of the production equipment are old but functional with seriously reduced efficiency. The Institute has inadequate research resources (equipment and human capacity/personnel) to seriously address the science/research component in its mandate and name.

iv) Quality of Public Service, Seminars and Research

The quality and output of research is very low. Seminars are rarely held. The Institute has no research policy or any documentation on research focus and procedures.

v) Institutional Efficiency and Effectiveness

The Institute can be more efficient and effective with less bureaucracy. Serious attention must be given to Staff Development and Training.

vi) Extension Services and Consultancies

The Institutes is linked with tanneries and Universities in and outside the country with great potential to reach out and do business with other stakeholders in the Nigerian Economy.

vii) Transparency, Financial Management and Stability

The level of funding is very poor. There is evidence of good financial management based on Auditor's reports and Management notes. However, the Institute must improve on the level of transparency with the staff on financial matters.

viii) Ethics and Disciplinary Method

The Institute's students and staff appear to be disciplined. Occasional mis-behaviours have been handled with maturity by the management. There are no discernable manifestations of any social vices in the Institute.

ix) Conditions needed to achieve developmental objectives of Government (Vision 20-2020, MDGs, NEEDS)

The Institute needs better quality research and technical staff as well as enhanced funding.

x) Health, Safety and Environment

The Institute's environment is reasonably tidy and clean. There is a clinic for staff and students with provision for emergency transfer should the need arise. There are few fire extinguishers. Laboratories and workshops should each have more than one door as escape routes in case of emergency.

4. RECOMMENDATION

The Institute has performed reasonably well within the resources available to it. With improved funding and human capacity, most of the observed institutional weaknesses could be addressed hence, the overall grade of C for the Institute.

Prof. I. F Adu FAS

Prof. R.A. Oderinde FAS

THE NIGERIAN ACDEMY OF SCIENCE

NAS- FMST ACCREDITATION REPORT

Accreditation Grade A

1. **Name of Institute:**

   ENERGY COMMISION OF NIGERIAN (ECN).

2. **Executive Summary.**

ECN has the exclusive rights to prepare as appropriate periodic Energy Master Plans for the balanced and coordinated development of energy to encourage optimum energy mix in Nigeria. From the assessment of staff and facilities of ECN, there is evidence of production of the National Energy policy, Master plan, Demands and supply projection for proper planning. ECN has also established a built environment of peaceful coexistence for high productivity.

3. Results/Key Findings

(i) Institutional Vision, Mission and Strategic Goals

The institutional vision, mission and strategic goals as set out by the ECN are well articulated and readily achievable with adequate funding to meet not only their mandate but also satisfy the developmental objectives of vision 20-2020, MDG's and needs of the country.

(ii) Institutional Governance and Administration

The cordial relationship that exists between the Board members, the DG, management and staff would provide a foundation for effective and efficient implementation of the vision, mission and strategic goals of the commission.

(iii) Institutional Resources

The resources available to ECN to meet her mandate include the six Energy Research Centres under her supervision and they should be provided with adequate funds for the purchase of quality infrastructures facilities and equipment.

(iv) Quality of Public Service, Seminars and Research

Through the energy research centres under the ECN, and external technical cooperation and collaboration, the ECN provides quality public service, seminar and research as evidenced in their submission and our confirmation of same.

(v) Institutional Efficiency and Effectiveness

Staff are disciplined and committed and moderate infrastructure and facilities required for efficient and effective operation and implementation of programme exist in ECN. However, adequate fund is needed to sustain this laudable feat of ECN.

vi. Extension of services and consultancies

ECN engages in a series of extension services which include demonstration of solar cells, solar driers and cookers, training and promotion programme for skill acquisition and series of workshops in collaboration with ECN's University Energy based Centres. Walk-through Energy audits in some industries were conducted to advice on improving energy efficiency.

vii. Transparency, Financial Management and Stability

The external auditor's report show-cased that the commission has kept proper books of accounts and the financial statements are in agreement with the books up to 2010 the period under review. Also the peaceful co-existence between staff and management is evidence of fair play which is commendable.

viii.Ethics and Disciplinary Method

This is achieved by example. The DG leads and all the staff follows. Resumption time is 8.00am and closure is equally timed.

ix. Conditions needed to achieve developmental objectives of Government (Vision 20-2020, MDG's, NEEDS).

The existing viable and sustainable technical collaboration and both national and international agencies, industries and institutions is adequate to meet the ECN mandate and consequently the Federal government vision 20-2020, MDG's and NEEDS.

x. Health, Safety and Environment

The ECN has well equipped first Aid boxes, fire extinguishers; they are inadequate and should be improved upon. The environment, even though well landscaped, but needs to be expanded. The DG needs to know that he has the overall responsibility for HSE matters in the system.

2. Recommendations

The Federal government should provide adequate funds to enable the commission meet her mandate. The team scored an overall grade of 140/200 which comes out as 70%, an A grade, which is full accreditation grade. We then recommended **FULL ACCREDITATION**.

5. General Comments (if any)

The ECN was evaluated using data from Universities based energy Centres she supervises. Staff offices are inadequate, more offices should be created, and more modern computers should be purchased. Recreation club as well as sports facilities should be made available.

We commend the President Nigerian Academy of Science and the Federal Ministry of Science and Technology for providing the platform for this useful exercise and for giving us the opportunity to serve.

Prof. A.M. Salau FAS

Prof. F. N Okeke FAS

NIGERIAN ACADEMY OF SCIENCE
NAS- FMST ACCREDITATION PROJECT

Accreditation Grade A

1. **Name of Research Institute/ Agency**

FEDERAL INSTITITUE OF INDUSTRIAL RESEARCH, OSHODI, (FIIRO), LAGOS

2. **Executive Summary (5 Lines only**)

FIIRO is an institute that has to its credit numerous research products on the bench.

3. **Results/key findings**

i. Institutional vision, mission and strategic goals

The Institute, has worked in line with the set vision and mission, to achieve most of the strategic goals, but requires further efforts in ensuring public awareness of their research findings for public participation in the development of research findings. To actualize the vision, FIIRO should by the time of her 60th anniversary, that is, within the next five years, work with partners and other stakeholders, to translate the results of their findings into the concrete ventures for the industrialization and socio-economic development of Nigeria

ii. Institutional Governance and Administration

The quality of governance – at the Board, Management and Departmental levels –is high. There is frequent and cordial interaction among the different levels of governance. We suggest that the leadership position of the Board of the Institute should be occupied by an appropriately qualified scientist, in line with the commendable practice in some other Federal research institutes.

iii. Institutional Resources

The institutional resources and facilities are adequate. Regularity of electricity supply is achieved at a very high fuel cost. Several pieces of equipment are obsolete and need replacement or upgrading. New pieces of equipment are needed for enhanced performance.

iv. Quality of Public Service, Seminars and Research

The institute has an excellent track record of quality research and seminars. Two journals are published by the Institute with commendable regularity.

v. Institutional Efficiency and Effectiveness

This is a well run institution with a caring and involving 'hands on deck' leadership. The result is clearly shown by the enthusiasm, cooperation and friendliness of the staff. There was evidence of effective team work and collaboration.

vi. Extension services and consultancies

The significant research efforts of the Institute have not yielded the deserved results because of unfriendly and unresponsive national and immediate environment. Innovative methods have to be put in place to fully translate the huge bench research achievement into practical and concrete projects for the industrialization and socio economic gains of Nigeria.

vii. Transparency, Financial Management and Stability

Despite the poor funding and low level of internally generated funds, scrupulous financial checks and balances in place.

viii. **Ethics and Disciplinary method**

There is an active and functional SERVICOM unit with an effective disciplinary committee in place. The rate of absenteeism and lateness to work has been significantly reduced

ix. **Conditions needed to achieve developmental objectives of Government (Vision 20-2020, MDGs, NEEDS**)

- Improved (increased) funding for replacement of obsolete equipment, purchase of appropriate and new technologies
- A more focused and aggressive marketing of research findings by staff of the institute
- Improve the conditions of service of research staff

viii.Health, Safety and Environment

Health care facilities are excellent, with a well run and adequately staffed clinic in operation**.**

4. **Recommendations** ***(5 lines only)***

The Institute deserves improved and enhanced funding by the government, while it vigorously pursues the commercialization of research products. The leadership of the Board of the Institute should be a scientist who is academically and professionally relevant.

5. **General comments if any** ***(5 lines only)***

FIIRO is a gold mine of research products, waiting to be commercialized. Although it is a research Centre, it is operated under civil service rules, which tend to hamper effective performance of a research institute

Prof. O. Tomori FAS
Prof. O.L. Oke FAS

NIGERIAN ACADEMY OF SCIENCE

NAS-FMST ACCREDITATION PROJECT

Accredited Grade C

1. **Name of Research Institute/Agency:**
   NATIONAL BIOTECHNOLOGY DEVELOPMENT AGENCY (NABDA)

2. E**xecutive Summary:**

The Agency has no functional Governing Board; the present apparent Board met only once in the last five years. There is no action plan outlined on immediate, medium and long term bases. There is no library, no medical centre and no research activity at the headquarters. However, progress has been made over the last five years in the provision of some physical facilities and in staff development. The take off grant is yet to be released after ten years of existence.

3. Results/key findings:

i. **Institutional vision, mission and strategic goals:**

Vision and Mission are adequately stated; strategic goals are well thought out.

ii. **Institutional Governance and Administration:**

No functional Governing Board; the apparent Board met only once in the last five years. There is no Committee system in place.

iii. **Institutional Resources:**

There is no library in place subsequent to the destruction, by fire, of the former library. Laboratories, workshops and equipment are not functional at the Headquarters as they are still being put in place.

iv. **Quality of Public Service, Seminars and Research:**

No active research activities at the Headquarters which is supposed to be the hub. Published works by staff are relatively few in number with the research obviously carried out somewhere else.

v. **Institutional Efficiency and Effectiveness:**

There is an obvious high level of efficiency in the administration at the headquarters.

vi. **Extension services and consultancies:**

Going by some of the activities, linkage and consultancy relationships are high; although no fund is being generated internally by the Agency.

vii. **Transparency, Financial Management and Stability:**

Funding by the Federal Government is grossly inadequate. The take-off grant for the Agency is still to be released after 10 years.

viii. **Ethics and Disciplinary method:**

General ethos and staff discipline follow normal civil service regulations.

ix. **Conditions needed to achieve developmental objectives of Government (Vision 20-2020, MDGs, NEEDS):**

x. **Health, Safety and Environment:**

No medical centre, no safety drills. Fire extinguishers and first aid boxes are available. The immediate environment at the headquarters is neat, well kept and healthy. However, there are no recreational facilities.

4. Recommendations:

An interim accreditation is therefore recommended for one year.

5. **General comments if any:**

The Agency consists of the Headquarters in Abuja and seven Centres of Excellence including the National Centre for Genetic Resource and Biotechnology (NAGRA) at Moor Plantation Ibadan. The Team was unable to visit these external centres, the resource centres as well as the consultancy and extension units in different parts of the country.

Prof. A. Afolayan FAS

Prof. E. Ene-Obong FAS

NIGERIAN ACADEMY OF SCIENCE

NAS-FMST ACCREDITATION PROJECT

Accreditation Grade A

1. **Name of Research Institute/Agency**
   NATIONAL CENTRE FOR TECHNOLOGY MANAGEMENT (NACETEM)

2. **Executive Summary**
   The original mandate of the Centre was streamlined and re-structured in 2005, to cover activities in the West African sub-region, on effective management of Science, Technology and Innovation. It continues to act as a centre for building up expertise and in policy research in these areas.

3. **Results/Key Findings**

   (i) Institutional Vision, Mission and Strategic Goals

   These are clear and realistic vision and mission statements and achievable. The strategic goals are well articulated in alignment with development agenda at the local, national and international levels. The institutional goals stress entrepreneurship.

   (ii) Institutional Governance and Administration

   Currently, there is no Governing Board in place. We find that the institutional quality of governance and administration of the DG, Head of Administration and Chief Accountant, is excellent in terms of leadership and pursuance of the Centre's goals. The committee system is well established and is flourishing.

   (iii)Institutional Resources

   Research infrastructure and facilities such as IT, library, staff offices etc are quite adequate. Water and electricity supply (through generating sets some of the time) are regular. The environment is clean, the toilets and other conveniences are adequate. The Centre uses the medical facilities of Obafemi Awolowo University, where it is situated.

   (iv)Quality of Public Service, Seminars and Research

   The Centre is quite prolific in publications arising from relevant and quality research. Most of the publications are in international journals and some in form booklets. The highly functional Research Review Committee ensures the quality, regularity of research seminars and that best practices are employed.

   (v) Institutional efficiency and Effectiveness

   Responses to communications (mails, e-mails etc) within and from outside the Centre are very fast. Staff recruitment procedures are stringent. The Management ensures extensive staff development and capacity building. Staff disciplinary ad welfare processes are adequate.

   (vi)Extension services and consultancies

Majority of the Technical Staff are engaged in quality and relevant consultancies and give public lectures. The Centre has a large number of active and useful linkages with industries, Universities and International Organizations.

(vii) Transparency, Financial Management and Stability

Funding of the Centre is highly inadequate. Less than 30% of the approved Budget is released has been recent times. There is evidence of prudent financial management and transparency in all transactions. The centre is able to attract some internal funding. The Internally Generated Revenue (IGR) is less than 10% of the operating budget. External auditors and annual reports are regularly published.

(viii) Ethics and Disciplinary Method

The workers come to work promptly and regularly, from all the available records. The atmosphere in the Centre is quite serene and friendly. Religious/Cultural tolerance and harmony are evident. The level of discipline is high.

(ix) Conditions needed to achieve developmental objective of government (vision 20-2020, MDGS, NEEDS)

With adequate and sustained funding, the Centre will help to achieve the developmental objectives of Government.

(x) Health, Safety and Environment

There are fire extinguishers and first aid boxes in some of the offices. Fire and safety drills are occasionally held. There is an officer assigned to HSE matters.

4. Recommendations

The Board of the Centre should be re-constituted to make governance easier for the DG and others. Level of funding by Government should be increased so that the Centre can carryout its planned programmes.

5. General Comments

The Centre has performed very well in all aspects of its mandates, hence the 'A' grade.

Prof. D. A. Okorie FAS

Prof. O Ekundayo FAS

NIGERIA ACADEMY OF SCIENCE

NAS- FMST ACCREDITATION PROJECT

Accreditation Grade C

1. **Name of Research Institute/Agency:**
NATIONAL RESEARCH INSTITUTE FOR CHEMICAL TECHNOLOGY, (NARICT) BASAWA-ZARIA.

2. **Executive Summary:**

The mission and vision of the institute are clearly defined; their developmental agenda is global and well articulated. The institutional governance and professional direction are average the institute is resourceful in laboratories, equipment and in personnel; but these could not be complemented with library facilities in terms of currency of books and journals; the IT infrastructures are impressive, but there are limited successes recorded in research output which is attributable to lack of high calibre researchers that can pursue researches with required determination and vigour. Seminar presentations are quite low. Staff recruitment is in accordance to lay down policy guidelines; most of the recruited staff are research personnel, a junior staff disciplinary committee exists, but there is no existence of such committee for senior Staff. Excessive bureaucracy is a major problem of the institute policy formation and articulation. The institute linkages with other sister's industry are strategically deficient, the existing consultancies of the institute are fair but there can be improvement. Funding of the institute is poor; this has incapacitated them from functioning effectively and maximally. The institute auditor's reports are adequate, and the staffs are generally disciplined. The environment where the institute operates is healthy and the building infrastructures are provided with safety devices.

3 **Key Results and Findings**

(i) **Institutional Vision, Mission and Strategic Goals:**

Institutional vision, mission and strategic goals are clearly defined; responsiveness to local, national and international development is emphatically demonstrated. They are able to promote industrial production in key areas of economy, but their plan document lacked demonstrable evidence of how deliverables were monitored.

(ii) **Institutional Governance and Administration:**

In quality governance is average, members of governing board lacked capacity to provide professional direction for institute. The administrative operation is average but lack openness and collegiality with staff; this affected staff morale and thus committee system in the institute is becoming moribund.

(iii) **Institutional Resources:**

Institute is resourced in laboratories, equipment offices. Library facilities are inadequate in quantity and currency of books and journals. IT infrastructures cannot complement researches and information management. The environment is serene clean, well kept without water and electricity. A clinic and staff club with facilities exist.

(iv) Quality of Public Service, Seminar and Research:

Institute research output is low, while all equipment functions properly. The low level is attributable to absence of high calibre researchers with missionary desire and commitment. The can maximally utilize equipment in researches. The institute attributed World Bank support and are aligned with NOTAP on intellectual property right. Seminar presentations are low and there are no ethics code of conducts and regulation on plagiarisms.

(v) Institutional Efficiency and Effectiveness:

Staff recruitment conforms to existing guidelines majority of staff are researchers mostly in junior cadre. The staff welfare is in consonant with available resources. A staff disciplinary committee for junior cadre exist, but not for senior staff. Excessive bureaucracy affects internal and external system of operation. The institute is not on web.

(vi) Extension Services and Consultancies:

The institute linkages with sister industries are non-strategic. The external activities of the institute are fair and commendable but there are rooms for improvement. The institute has embarked on some consultancy services which can further be enhanced by improving the quality of their research personnel.

(vii) Transparency, Financial Management and Stability:

Level of funding of the institute has diminished geometrically thus incapacitating the institute activities. The management needs to run an open and transparent financial administration. The institute auditor's reports are adequate while the institute possesses high capacity for fund generation that must be exploited and sustained.

(viii) Ethic and Disciplinary Method:

The generality of staff in the institute display some ethics of hard work and appeared disciplined; in addition, there are no discernable manifestations of social vices.

(ix) **Conditions Needed to Achieve Developmental Objectives of Government**:

For objectives to be accomplished, the institute must be focused and sustain their vision and mission. Poor strategy relating to external relationship, recruitment, library resources, policy formulation and policy articulation must be improved on. The institute must be on the web for easy accessibility.

(x) Health, Safety and Environment:

The general layout and constructions of buildings in the institute are adequate, the buildings has sufficient escape routes/doors. Provisions are also made for fire extinguishers and first aid boxes which can be easily accessed in case of emergency.

4. Recommendations:

Mechanisms to monitor deliverables must exist, administration must be open, transparent and develop collegiality among staff for staff confidence and enhance dwindling morale. Library facilities and IT infrastructures must be upgraded; research ethics and code of conducts must be put in place. To curtail administrative ineptitude and laxity a senior staff disciplinary committee must be put in place. Funds that are channelled to the institute must be monitored for judicious use, blocking of leakages, and curtailing of financial recklessness.

5. General Comments and Conclusion:

Presently by statistical evaluation the institute could best be rated as slightly above average; however if the management can explore the recommendations as stated above, they should be able to conquered the present challenges militating against their development and move forward from the present stagnated position.

Prof. R.A. Oderinde FAS
Prof. I. Onyido FAS
Prof. I. F. Adu FAS

THE NIGERIAN ACADEMY OF SCIENCE

REPORT ON THE ACCREDITATION EXERCISE

Accreditation Grade A

1. Name of Research Institute/Agency

NATIONAL AGENCY FOR SCIENCE AND ENGINEERING INFRASTRUCTURE. (NASENI)

2. Executive Summary

The Agency was established in January 1992. It has a mandate to establish a system of Science and Engineering Infrastructural Development Facilities across the country. The Agency must be capable of organizing and providing delivery systems, training and provision of technical assistance for satellite industries to enable them produce goods locally and efficiently. The Agency and the associated institutes remain the major R&D infrastructures for the industrial development of the Nation.

3. Results and Key findings

(i) Institutional visions, mission and strategic goals.

The Agency's vision, mission and mandate cover all areas of engineering infrastructural development of the country. In implementing the mandate of the Agency, account is taken of the local, national and international development agenda of the Government and the Nation.

(ii) Institutional Governance and Administration

The President or his nominee chairs the Board of the Agency, while the Director-General chairs the Management Committee. The departments at the headquarters of the Agency are headed by Directors who are knowledgeable and have necessary qualifications and experience to man them. Similarly each institute is headed by a Director, who must hold a doctorate degree and be COREN registered with requisite experience in the area of the mandate of the Institute.

(iii) Institutional Resources

The Agency has grown over the years with adequate infrastructural facilities adequate to carry out its mandate. The headquarters has virtual manufacturing computer laboratory facilities, and a high power-computing laboratory, which are linked to the desktop modeler where plastic prototypes of components are made. They are also linked to the CNC Lathe machine at the engineering workshop for real life production, should there be a need for it. There is also an e-library stocked with design manuals, which the work of the Agency supports. The Agency has been designated as UNIDO e-book depository centre. The Archiving of laboratory reports and technical reports of finished projects and designs however needs to be improved. The ICT infrastructure is quite adequate and presently an IVPN is being installed with three broad band gateways.

(iv) Quality of Seminars and Research

There is high quality of research output from the Agency due to the fact that many of the staff are working towards higher degrees, in both local and foreign institutions, in areas relevant to the mandate of the Agency. Research seminars are held regularly, however research papers review process would need to be strengthened.

(v) Institutional Efficiency and Effectiveness

Mails are not unduly delayed by Management but we suggest that e-mail be used a lot more for correspondence for improved efficiency. Staff development is taken seriously and young trainees are trained at both local and foreign institutions with excellent results. Management takes discipline seriously and effectively.

(vi) Extension Services, Relationships with Internal and External Constituencies and Consultancy

Linkage with industries is weak and needs to be strengthened. However, the agency is linked to several local and foreign institutions and international organisations which must be used to enhance the output of the Agency on priority agenda of government. The Agency has trained some staff of SMEs and other industries.

(vii) Adequacy of Funding, Transparency, Funds Generation and Financial Management

Funding of the Agency is inadequate. Even though the act establishing the Agency states clearly how it should be funded, this is not being followed through appropriate appropriation. Funding from Government has remained between 10 – 20% of annual requests. It is suggested that Government should go back to what the act stipulates and put the Agency on priority funding formula of Government because of its strategic role. The little funding provided to the Agency is judiciously and transparently managed. Audited reports are produced annually and regularly.

(viii) Ethics

The Agency takes ethical behaviour seriously. An Ethical code/manual has been produced by NASENI for its entire staff. Discipline is not compromised in the establishment, as the ethical process laid down by the Public Services Regulation is religiously followed at the Agency at all level of its operation.

(ix) Health Safety and Environment

There is no evidence of sports, recreation or health facilities at the headquarters but we were informed that the agency uses the facilities of NISPRI next door for health care services but no specific sports facilities are available. However, some of the institutes have some of these facilities. Health, Safety and Environment (HSE) officer who, takes care of the HSE issues have been trained by the Agency. Fire extinguishers and other fire and safety aids are made available and mounted in some strategic places.

4. Recommendation

We have looked at the files and books of the Agency including the enabling law that set up the agency as a Public Institution. We also interacted with the Director-General and most of the Directors of the Institutes, available. We listened to a power point presentation by the Director-General, Professor Olusegun O. Adewoye FAS and some of the young Scientists, and Engineers that are undergoing training at the institute. We visited the exhibition mounted by the Agency showing the R&D activities of both the headquarters and the other institutes of the Agency. We held an open discussion with all members of the institute and listened to their comments.

We are of the opinion that NASENI is a major infrastructural institution of the Government that has the mandate to lead the R&D development of this nation in order to enhance the industrialization and marketing potential of value added to our resources, in the promotion of the agenda of Government in wealth creation and reverse engineering of imported machinery to aid industrial growth of this country.

For our accreditation visit, we have come to the conclusion that NASENI has done excellently well in the provision of infrastructures and capacity building, in several of its R&D programmes for the promotion of high level of commercialization of research results. The PV production complex is almost at the completion stage and ready for production. The high power computing facilities has provided opportunities for training of young engineering interns and staff in order to improve their skill and design capabilities.

One of the outcomes of this activity is the development of swift blade for wind energy for low wind energy conversion in low speed regime which would be the basis of adaptation for a wind turbine within the available low level wind speed in Nigeria that the imported wind mill would not be able to meet.

The Human capacity development of the Agency is excellent and would guarantee a steady production of high level manpower to meet the needs of this country in the niche area of NASENI mandate.

NASENI has been creative in attracting funding from grants, consultancy and extension services. It is through these funding activities that the Agency has been able to meet some of its goals and achievements. The funding from Government has been quite poor ranging from 10 – 20% of requested budget in the last few years.

It is important that NASENI must be put on the priority funding agenda of Government in order for it to be able to execute its mandate to meet the agenda of Government and also be able to put science, technology and engineering infrastructure and innovation to promote the economic agenda of Government and the nation.

For this purpose the stipulated funding formula as enshrined in the Act establishing NASENI should be implemented in order to allow NASENI to execute its activities at its full potential to meet the needs of the Nation.

From the forgoing assessment, report and with an overall score of 75%, and 'A'grade of excellent classification, we recommend full accreditation for 5 years.

Prof. G. B. Ogunmola FAS
Prof. R.I. Salawu FAS

THE NIGERIAN ACADEMY OF SCIENCE

NAS-FMST ACCREDITATION PROJECT

Accreditation Grade: B

1. Name of Research Institute/Agency
NATIONAL SPACE RESEARCH AND DEVELOPMENT AGENCY (NASRDA)

2. Executive Summary (5 Lines only)
Established in 1999, NASRDA has made steady progress and is beginning to make its presence felt. Its performance so far has been due largely to its engagement in international collaboration with partners who are active in the space business, along with a training programme which relies heavily on the recruitment of young Nigerians of outstanding intellectual ability and technical promise. NASRDA deserves every encouragement and assistance towards the achievement of its objectives.

3. Results/Key findings
i) Institutional vision, mission and strategic goals.
The Vision, Mission and Strategic goals of the Agency have been appropriately identified with regard to institutional responsiveness. For example, within the local scene, the Agency has commenced the process through the production of street maps. At the national level, satellite-generated maps have been produced for a number of geo-political zones. Internationally, NASRDA is beginning to receive favourable attention through the launching and use of its satellites. Its effort in this regard has been boosted by the recent launching of the two satellites whose operations to date have earned them international acclaim as "picture-perfect" space vehicles, as well as awards as Africa's foremost geophysical spatial information contributor. The need remains for sustained resource input and the tireless pursuit of research and scientific excellence in all its program developments.

ii) Institutional Governance and Administration
Quality of governance as far as can be ascertained is good and effectiveness is acceptable, especially in the light of the prevailing atmosphere for operations in the Agency. However, there is need for the institutionalization of an effective system of performance monitoring, evaluation, and reporting. For example, an organizational culture that encourages and provides a systematic vehicle for receiving anonymous feedback from staff and personnel can heighten the quality and effectiveness of governance.

iii) Institutional Resources
With regard to quality and quantity of research infrastructure and facilities, the Accreditation Panel was impressed by the effective satellite monitoring and tracking activities at the ground station in the Agency, by local personnel, both during the launching and afterwards. This contradicts the recent (ill-informed) conjectures, particularly in the local media. NASRDA has ample computing resources that need an agenda for its optimal utilization. There is however evidence of lethargic development of key infrastructural research facilities, as for example, the

suspension of work on the uncompleted planetarium, as well as important buildings and other facilities necessary for the full development and operations of the Centre for Satellite Technology Development which are critical to acquiring local capacity for the attainment of the NASRDA mission.

Finally, it has been observed that a certain important research installation, which is located in NIGCOMSAT, and has remained there since the establishment of that facility, when it operated as part of NASRDA, has since become inaccessible to NASRDA. With the recent transfer of NIGCOMSAT to the Ministry of Communications Technology, it is important that access of NASRDA to the research installation be restored to it as a matter of urgency.

Regularity of supply was observed to be only fair in respect of water but good for electricity. The Agency health centre appears functional and an advertisement has been recently placed for the requisite healthcare personnel. Additionally, there exists a provision for a mini-day care centre.

iv) Quality of Public Service, Seminars and Research

Evidence of continuing research activity is provided by the relatively ample number of research and development reports and monographs produced at the Agency, and by its successful launching of three satellites to date. The increasing tempo of these activities is highlighted by the recent launching of the two space vehicles, particularly Nigeria SAT-X, the work on which was undertaken by Nigerian Engineers under partnership with Surrey Satellite technology Limited (SSTL) in Guildford, UK. However, much work remains to be accomplished in the effort. For example, there is a need for intensive effort towards creative and domestic software development, research and design to achieve specific targets set in the Road Map to Nigeria's Space Mission. Pursuit of increased number of high quality research and development activities and publications characteristic of similar R & D organizations elsewhere is encouraged. Wider public awareness of its seminars, especially among universities and other research centers may yield increased benefits.

v) Institutional Efficiency and Effectiveness.

Institutional efficiency and effectiveness are areas of management which have received good attention in the Agency, particularly in the management offices, and with regard to staff mix, development and training, as well as website development. Thus, for example, the institution has a visible and reasonably rich though incomplete website which has received recent attention. Given the positive publicity of NASRDA activities triggered by the launch of NigeriaSAT-2 and NigeriaSAT-X, it is hoped that the website will be virile and current, as well as used as a vehicle for better dissemination of information to the public about its activities and plans.

vi) Extension Services and Consultancies

The Agency has made reasonable progress with regard to extension services, as well as in respect of relationships with internal and external constituencies. This is attested to by the wide

variety of projects undertaken in collaboration with Institutions and Government Agencies within the Country, and in respect to international collaboration involving international bodies and institutions. This capacity for collaboration needs to be encouraged, intensified and enhanced, however. Although some effort has been made with regard to consultancy engagements, much more could be achieved through, for example, the resourceful use of facilities in the Agency whose applications are in high demand by other organizations. Such facilities include, in particular, its high-speed advanced computing system which is currently underutilized. This, when creatively managed; could be an additional source of revenue for the Agency as well as enhanced public outreach.

vii) Transparency, Financial Management and Stability

From the financial reports on the Agency prepared by appropriate professional Organizations, such as those for the year ending 2009 – the only one made available to the Accreditation team – it appears the Agency is making adequate efforts towards transparency and good financial management. Although it is yet to develop a strong funds generation capability, it is grossly underfunded, with regard to the resources required to develop essential infrastructure (such as the uncompleted planetarium and the important buildings and other facilities necessary for the full operations of the Centre for Satellite Technology Development). It requires substantial injection of funding to enable it accomplish its plans and programmes.

viii) Ethics and Disciplinary Method

It appears that a good level of discipline is maintained in the Agency and that a procedure for its management is adequate.

ix) Conditions needed to achieve developmental objectives of Government (Vision 20-2020, MDGs, NEEDS)

NASRDA has the manpower with the appropriate level of technological capacity as well as an articulated agenda imbedded in its strategic plan to contribute towards the achievement of the developmental objectives of Government. It would, however require adequate and timely funding to develop and apply the necessary infrastructure. This concern needs the proper attention of government.

x) Health, Safety and Environment

Although certain facilities to promote health and safety within the environment of the Agency (such as a fire station, fire extinguishers, first- aid boxes, etc.) are in place, there is need to ensure the emergency and operational readiness of both these facilities and (through periodic alerts) all personnel at all times. Given the criticality of current and anticipated infrastructure and other high expense resources resident at the headquarters and its centres, it is important to develop and imbibe modern safety systems engineering principles now standard in similar facilities around the developed world. This need is intensified and made more apparent in the light of persistent security challenges in the Nigerian nation.

4. Recommendation

NASRDA has performed well, given the level of resources available to it. The recent successes of the Agency tend to inspire the prospects that, with the right level of support and a tireless pursuit of scientific excellence in all of its engagements, it is capable of contributing substantially to the national economy, as well as boosting the international image of the Country, as envisaged in its vision, mission and mandate. Increased support by Government is strongly recommended towards the achievement of its Road Map and associated plans. It must be stressed that the temptation to assume that this rate of progress and performance can be sustained without adequate funding and program enhancements must be vigorously resisted. Sustainability is a characteristic of technologically centered institutions such as NASRDA.

Prof. E. E. Okon FAS

Prof. A. O. Esogbue FAS

THE NIGERIAN ACADEMY OF SCIENCE

NAS-FMST ACCREDITATION PROJECT

Accreditation Grade A

1. **Name of Research Institute/Agency**
   NIGERIAN BUILDING AND ROAD RESEARCH INSTITUTE, NBRRI

2. **Executive Summary**
   The institute has remained very relevant to the Nigerian Building and Road Industry. The new leadership appeared forthright and very pro-active to problems in the industry.

   The panel witnessed an incident of a building collapse and how the press summoned the leadership of NBRRI to the site for on the spot intervention.

3. **Results/Key Findings**

   i) **Institutional Vision, Mission and Strategic Goals.**
   The institution has a clearly-defined vision and well-stated mission and strategic goals, all of which we found were relevant to how it has been responding to local, national and international development agenda.

   ii) **Institutional Governance and Administration**
   The Institute is governed by a collection of very experienced staff who are guided by its vision and mission. An effective committee system was in place and the leadership appeared dynamic.

   iii) **Institutional Resources**
   The Institute has the necessary infrastructure. At present all the laboratories are at Otta while the Abuja site serves as Offices for principal administrative staff and staff of extension services. There is a need for a workshop for promoting innovation in fabrication of machine tool parts. This would enhance the research potentials of the Institute. The Physics Laboratory need a new digital thermal conductivity equipment as the equipment they had was reported to be out of order for many years.

   Most of the equipment in the laboratories are old and analogue and should be replaced with digital models.

   The panel did not find any recreational facilities on ground in spite of the fact that Otta site has large empty spaces that can accommodate these facilities. There was also room for staff housing development. The new rented apartment in Abuja would contribute a lot to improving the working environment of the senior administrative, consultancy and extension services staff.

iv) Quality of public Service, Seminars and Research

The quality and output of research seminars were adequate. The frequency of seminars was also adequate. Internal and external peer review is in place. There was good collaboration with researchers in similar institutions and universities.

v) Institutional Efficiency and Effectiveness

The administrative offices in Abuja looked a little bit crammed up. However with the acquisition of new office building the problem would soon be solved.

vi) Extension Services and Consultancies

The Institute maintained links with academics and departments in universities in Nigeria and with them have conducted research work on subjects of mutual interest. There were also ongoing linkages for example with the Ghana Building and Road Research Institute.

vii) Transparency, Financial Management and Stability

Audit and Management Reports were examined by members of the panel. There appeared to be transparency and due process in the conduction of financial matters.

viii) Ethics and Disciplinary Stability

Staff appeared well disciplined and junior members exhibit good rapport, respect and cooperation with the senior members.

ix) Conditions Needed to Achieve Developmental Objectives of Government (Vision 20-2020, MDGs, NEEDS)

The Institute needs more research and technical personnel. This was amply emphasized by the low percentage of research staff with doctorate qualifications.

x) Health, Safety and Environment

There were not many facilities on the ground except for a few fire extinguishers.

4. Recommendation

The Nigerian Building and Road Research Institute, NBRRI is a parastatals of the Federal Government established in 1977. It appeared to be operating successfully and it has been fulfilling its mandate. It would do better and contribute more positively toward government vision 20: 2020 if there was an increase in its funding, especially for research, and it was encouraged to attract the services of higher calibre technical and research personnel.

Panel members were impressed by the many results of the institutes' innovative work. These should be patented and continuously exhibited for potential users to acquire. In the area of fabrication, the institute's capability would benefit immensely if a mechanical workshop was built.

Prof. T. A Akeju FAS

Prof. R.I. Salawu FAS

THE NIGERIAN ACADEMY OF SCIENCE

NAS- FMST ACCREDITATION PROJECT

Accreditation Grade C

1.) **Name of Research Institute/Agency**

NATIONAL BOARD FOR TECHNOLOGY INCUBATION (NBTI) ABUJA.

2.) **Executive Summary**

The NBTI which was established by an ACT in 1995 has struggled to keep to its mandate of being the bedrock of technological transformation in Nigeria. Generally scarcely known and understood, re-engineering of NBTI will make the Board more relevant with tremendous potential for creating economic opportunities and the prime mover in the technological transformation of Nigeria.

3.) **Results/ Key Findings**

i.) **Institutional vision, mission and strategic goals**

The Board of NBTI has vision and mission statements and as presented by the DG, NBTI, relevant but the panel would recommend the following;

a.) The vision and mission statements as they are now should be revised to more crisp and understandable messages avoiding attempts at repeating the contents of the vision/mission statements.
b.) The strategic goals should be redefined, succinctly documented and reflected in the strategic plans of the NBTI.
c.) The vision and mission statements should be displayed at strategic points in the Agency building- particularly at the entrance.
d.) The panel notes that different centers dotted over the country tend to have their own vision/ mission statements. It is our view that NBTI looks into this to prevent confusion that is bound to occur in the overall uniqueness of NBTI because of these differences.

ii.) **Institutional Governance and Administration.**

The panel is of the opinion that the quality of governance seems very friendly but recommends the following in order to re-engineer the NBTI- considering the fact that THE BOARD, THE MANAGEMENT; THE SENIOR STAFF are the principal players in the administration of NBTI.

a.) There should be scheduled monthly strategic meeting between the management and the senior staff.
b.) The panel recommends the committee system of governance especially where the committee members are ELECTED from the joint meeting of the management and senior staff.
c.) The panel recommends that there should be strategic quarterly meeting between the DG/management and the Heads of all the out station centres

d.) The panel is aware of the unique importance of NBTI to technological advancement of Nigeria and recommends immediate process to a re- engineered and functional NBTI.
NBTI should be expected to come up with short, medium and long term clearly defined goals and strategies. The NBTI should be transformed from '' NAFDAC of the 1990's to NAFDAC of the 21st century''.

e.) NBTI should be assisted to move, without delay to a new permanent site. This will enhance the administration and planning deleting all the collateral problems associated with being a tenant to a bigger organization.

f.) The panel notes that passage of the NBTI bill in the two houses, is very important and should be pursued vigorously. It is recommended that two other compelling issues not currently in the priority action plan of NBTI, should be taken up by the NBTI and crystallizes the national legal adoption through the two houses of legislature. These areas are
– Laws establishing patents in Nigeria and protection of patents.
–Laws protecting intellectual rights from bureaucratic abuse. Many researchers and initiators are unwilling to bring their proposals to Government because they are afraid that the contents will be stolen due to fraudulent bureaucracy in the agencies. There should be legal consequence for a civil servant who accepts the intellectual property of a citizen, fraudulently dismissing it as unnecessary, and passing it on—sometimes in a modified version to a third party-who then claims title to the invention/patent.

g.) Information storage and retrieving
The panel recommends a robust and effective programme at NBTI aimed at safely storing data and have a strategic plan for data storage/processing/retrieving over the coming years. A probable fire out break – be it accidental or planned arson, may wipe out all the data in the Agency. It is suggested that sensitive information should be stored at three sites- an outpost and DG's office to be included.

h.)Information technology office

The IT office/department has to undergo invigoration- in equipment, manpower, refocusing and re engineering. The success or failure of the Agency will be determined by the IT Department. All the centres must be linked to the HQ by IT. If commercial banks can do it, - why not NBTI. NBTI must have valid plans to deal with outdated, old and non functional equipment – including their safe disposal-to prevent heavy metals and toxic chemicals from contaminating the ground water.

h.) The NBTI should have a functional Public Relations Department that will work to bring to focus – the aims and objectives of the Government in setting up NBTI.

(iii)**Institutional Resources**

NBTI should be assisted to move to the permanent site as soon as possible. Provision of uninterrupted power and water supply is pivotal to the success of NBTI. NBTI needs more funds to address the issue of IT re-engineering.

(iv)**Quality of public service seminars and research**

Although NBTI is not a research institute; the panel is of the opinion that there should be more activity from NBTI-nationally on the principal mandate of the Board. NBTI needs to hold exhibition in different geo-political zones of the country on a yearly basis. The issue of data storage and retrieval have been addressed.

(v) **Institutional efficiency and effectiveness**

NBTI can do more than it is doing currently. Some of the ways have been suggested earlier. NBTI needs more competent staff- especially in the areas of information technology, legal and public relations departments. The panel will like to see some percentage of the annual budget devoted solely to staff development and continuous education of staff. Currently, publications from NBTI are very scanty and the panel is worried about the few publications coming from this Agency. Re-engineered NBTI should be able to undertake regular publications from the Agency

(vi) **Extension services and consultancies**

These are areas that should be tackled immediately. Currently, linkages to financial institutions and international organizations are not satisfactory. The inability of NBTI to achieve these has hampered its progress and impact.

For clarity, the panel recommends that NBTI should classify the linkages;

a.) Class a – virile, valid and verifiable linkages with POLYTECHNICS- at least to cover more than 50% of polytechnics in the country.
b.) Same as (a) for universities.
c.) Same for industries in Nigeria and ordinary unclassified individuals and associations
d.) Linkages with UNIDO, ECOWAS fund, African Union.
e.) Linkages with financial institutions like Bank of industry and Agriculture Banks.
f.) Linkages with Diaspora.
g.) Linkages with centres in India, Brazil, China etc.

(i) **Transparency, financial management and stability**

There is evidence of good financial management based on auditors' reports and management notes. In Nigeria, there is no establishment that gets the required funds. Funding of NBTI should be better and released on a planned protocol. It is unfortunate that the board is out of funds (for daily running of the NBTI) as we saw it.

(viii): **Ethics and Disciplinary Method**

These are properly addressed currently in the Agency and NBTI is gender compliant. The panel suggests that members of disciplinary committees should have tenure and are better elected at the senior staff/management meetings.

(ix) **Conditions needed to achieve developmental objectives of government (Vision 20-2020, MDG's, NEEDS**).

The NBTI needs immediate re-engineering and re-positioning. NBTI should be the driver for the technological transformation of Nigeria. NBTI needs better organization and strategic plan which will boost its activities.
Enhanced funding, employment of quality staff, planning and better equipment will help NBTI achieve the desired output.

(ix) Health, Safety and Environment

The areas of concern are listed and need to be addressed;

a.) The NBTI should come up with a valid and environmentally friendly programme for handling old and out dated equipment- especially old computers.
b.) NBTI should organize fire drills on bi-monthly basis – this is not done currently.
c.) NBTI should be 'clean – energy compliant' and one of the leaders in this country. One would like to see NBTI generate at least 10% of its electric power through one of the clean energy projects.

4.) **Recommendation**

The Institute has performed reasonably well within the resources available to it. With improved funding and human capacity, most of the observed institutional weaknesses could be addressed. Hence an overall accreditation grade C for the institute.

Prof. M.A.C Aghaji FAS

Prof. P. O. Okonkwo FAS

THE NIGERIAN ACADEMY OF SCIENCE
NAS- FMST ACCREDITATION FINAL REPORT

Accreditation Grade A

1. Name of Research Institute/Agency:

NIGERIAN COMMUNICATIONS SATELLITE LIMITED (NIGCOMSAT).

3. Executive Summary.

The facilities and staff of the Nigerian Communications Satellite (NIGCOMSAT) Ltd were evaluated through inspect of documents provided, direct interaction with and interview of selected management and staff. Facilities for tracking and managing NIGCOMSAT-1R, currently under construction are kept active. There are ample evidences of research and development of related satellite-based applications, many of which have commercial potentials. Supporting infrastructure is good. There is need to employ higher trained researchers to guide the younger recruits. Staff morale is high.

4. Results/Key Findings

(ii) Institutional Vision, Mission and Strategic Goals

From the NIGOMSAT's vision and mission statements, we still feel that there is need to focus the mission statement to include strategies for attaining the overall goals of the vision.

(iii) Institutional Governance and Administration

Governance and administrative structure in place appear efficient and open. The relationship between management and staff is cordial and proactive. The technical staffs are fully aware of their role as partners achieving the objectives and goals of the company.

(iv) Institutional Resources

The key equipment, NIGCOMSAT-R is being built in China. Launching is expected in December, 2011. The control rooms and ancillary laboratories are well equipped and functional. Electricity and water services were uninterrupted. There is need to increase the research facilities relative to the number of technical staff on ground. More experience researcher at MSc and PhD levels are needed to provide leadership.

(v) Quality of Public Service, Seminars and Research

There is need to formalize the public services, seminars and research aspects of the work of the institution. This would enhance transfer of knowledge to all and stimulate productivity.

(vi) Institutional Efficiency and Effectiveness

Morale is generally high among staff. Staffs are trained to be punctual at work. There is evidence of collaborative research and development work. There is, however, the need to have more experienced technocrats and researchers with higher degrees to guide and lead the large number of young graduates.

(vi) Extension of services and consultancies

The active development of IT applications with potentials to meet the needs of industries and the general populace shows that the company is on the right track. There is need, however, to protect novel developments through patents and copyrights.

(vii) Transparency, Financial Management and Stability

The accounts of the company have been audited for 2010. A letter from the ICPC also gave the company a clean bill of health for transparent and accurate management of internally generated funds.

(viii) **Ethics and Disciplinary Method**

NIGCOMSAT staff appears to be disciplined. Resumption time (8.00am) and closure are timed. Late comers are penalized. There is a standing disciplinary committee within the organization. Staffs are generally happy with the extant conditions of service.

(x) Conditions needed to achieve developmental objectives of Government (Vision 20-2020, MDG's, NEEDS).

NIGCOMSAT Ltd needs to enter into more intricate external relationships aimed at boosting the higher training of its staff. This should be more active role in the building and launching of NIGCOMSAT 2 and 3. The company needs adequate funding for equipment and higher training in order to attain the objectives of government.

(xi) Health, Safety and Environment

HSE matters need to be taken more seriously. There is need to develop an HSE policy, designate an HSE officer or focal point, conduct regular HSE meetings and emergency evacuation drills. Designate and clearly mark exits and the mustering point(s). The Managing Director needs to know that he has the overall responsibility for HSE matters in the system.

5. Recommendations

We awarded an overall grade of 142/200 which comes out as 71% A grade. We then recommended FULL ACCREDITATION.

6. General comments if any

We commend the Nigerian Academy of Science and the Federal Ministry of Science and Technology for providing the platform for this useful exercise.

Prof. S. O. Adegoke FAS

Prof. F.N. Okeke FAS

NIGERIAN ACADEMY OF SCIENCE

NAS- FMST ACCREDITATION PROJECT

Accreditation Grade: C

1. **Name of Research Institute/ Agency**:
   NIGERIAN INSTITUTE OF SCIENCE LABORATORY TECHNOLOGY (NISLT)
2. **Executive Summary** (5 **Lines only**)

3. **Results/key findings**

i. Institutional vision, mission and strategic goals

The mission and strategic goals of the organization appear rather diffusely multifaceted. The main mandate of the institute, registration and certification runs the risk of being undermined.

ii. Institutional Governance and Administration

There is an excellent management team in place, which meets regularly. The Board is large, cumbersome and not sufficiently representative of stakeholders. It includes too many members of the professional association required for mere representation. The large size is a hindrance to regular and effective meetings, due, among other things to the high cost of holding board meetings. It should be pruned and diversified.

iii. Institutional Resources

There is a limited infrastructure for research, although there is a good model laboratory for training science laboratory technologists. The library is rudimentary. There are excellent offices for staff. The IT infrastructure is fair. The Electricity and water supply is good. There is a well maintained football field. The environment is clean and aesthetically appealing.

iv. Quality of Public Service, Seminars and Research

There is a proposal to undertake frontline research but none has been undertaken. It is advised that operations research should be carried out to support the work of the institute as a standard-setting and regulatory body. Laboratory research should be left to the institutions that the Institute regulates.

v. Institutional Efficiency and Effectiveness

The administration runs smoothly, but the staff is top-heavy.

vi. Extension services and consultancies

The institute should expand collaboration to include other regulatory and standards-setting agencies in Nigeria.

vii. Transparency, Financial Management and Stability

While the funding appears inadequate, it could be more effectively utilized if the institute focuses on its main mandate.

viii. Ethics and Disciplinary method

While the funding appears inadequate, it could be more effectively utilized if the institute focuses on its main mandate.

ix. Conditions needed to achieve developmental objectives of Government (Vision 20-2020, MDGs, NEEDS)

There is a satisfactory level of discipline in the organization

x. Health, Safety and Environment

The organization demonstrates an understanding of health and safety measures in its working environment.

4. Recommendations (5 lines only)

5. General comments if any (5 lines only)

Prof. G.J.F. Esan FAS

Prof. M. T. Shokunbi FAS

REPORT OF ACCREDITATION TEAM TO NATIONAL INFORMATION TECHNOLOGY DEVELOPMENT AGENCY (NITDA), ABUJA

The team, comprising Prof. Adetokunbo Sofoluwe, Prof. H.O.D. Longe and Mr. Samuel Shofuyi got to the Corporate Headquarters of NITDA and requested to meet with the Director General of the Agency, Prof. Cleopas Angaya.

After following protocol, the team was ushered into the D.G's office, where the D.G informed the team that he was not given prior notice of the teams visit either by FMST or NAS. When showed a copy of the letter sent by NAS to NITDA, the DG said the letter never got to him. He further informed the team that NITDA itself has been excised from the Federal Ministry of Science and Technology (FMST) and moved to a new ministry "Federal Ministry of Communication Technology" effectively making the exercise inappropriate.

Nevertheless, the DG commended the initiative of the Nigerian Academy of Science, and suggested the effort should be extended to cover all the ministries.

It should be noted that, as the team leader, I had made several efforts to contact the DG, on arriving in Abuja for the assignment. After placing several unanswered calls to the DG, he sent a text message and still did not get any response. The DG, in his speech, acknowledged receiving the message.

Prof. A. Sofoluwe FAS

Prof. H O D. Longe

THE NIGERIAN ACADEMY OF SCIENCE

NAS- FMST ACCREDITATION PROJECT

Accreditation Grade: B

1. Name of Research Institute/ Agency

THE NIGERIAN INSTITUTE OF TRYPANOSOMIASIS (AND ONCHOCERCIASIS) RESEARCH, (NITR/NITOR) KADUNA

2. Executive Summary (5 lines)

The accreditation team inspected documents, physically assessed facilities, interacted with the Board, DG, other management staff, and interviewed randomly selected staff. Research activities were in line with the mandate and there was evidence of strong linkages with national and international organizations. Staff mix complied with approved guidelines. There was no evidence of optimal utilization of Results of research carried out in the Institute by both government and the industry. External Audit report reflects proper utilization of funds. The Institute is grossly underfunded.

3. Results/key findings

i. Institutional vision, mission and strategic goal

The institute's vision, mission and strategic goal are clearly stated and are consistent with the mandate of the institution which in turn is responsive to local and international development agenda (Appendix 1, 2, 3 & 4).

ii. Institutional Governance and Administration

There is a functional board which was currently meeting as at the time of the visit. The Institute has five departments with HODs, staff and designated office spaces. Governance is as indicated in the organogram and there are committees that operate for designated purposes. There is evidence that management and departmental meetings are held regularly.

iii. Institutional Resources

There is adequate laboratory space some of which is underutilized. Basic research equipment and supplies are available. Some modern tissue culture and molecular biology equipment have been acquired (yet to be installed). The environment of the institute is clean, not bushy and the walls not defaced with posters but the landscaping could be improved upon. Some parts (roofs and walls) of the offices require rehabilitation. ICT and internet facilities are available.

iv. Quality of Public Service, Seminars and Research

Active research is going on in the Institute with an upsurge in research output within the period 2008-2011. Laboratories for various aspects of the mandate are in place. Publications in diverse and reputable journals exist. The Institute has i) animal welfare committee, ii) Ethical committee, iii) Research proposal committee. Monthly departmental and institute seminars are held for the purpose of presenting /discussing research findings. Laboratory /research notes are archived in the departments**.** It is not clear how Research ethical considerations are handled.

v. Institutional Efficiency and Effectiveness

It takes about a day to attend to mails that are received daily. The institute recruits directly with approval from FMST, Federal Character Commission, and Ministry of Finance. The staff nominal roll, which has 288 senior and 244 junior staff, reflects a spread across the nation with 35 states represented in the senior staff cadre. About 50% of the junior staff are from the local area and overall, the staff distribution follows approved government guidelines. Staff training and development is promoted as some staffs were, at the time of the visit, away for further studies with support from the institute. There is a VSAT facility and a website. Three staff unions exist, namely- NASU, SSA and ASSURI and these unions address/handle staff welfare issues. Staff discipline is enforced by the HODs, and where necessary, the Management Committee or Board is involved. Disciplinary records are kept in the staff file in both the open and secret registry. Evidence of enforcement of discipline is reflected in minutes of Management meetings**.**

vi. Extension services and consultancies

There are industry linked activities and consultancies by both individuals and the institute. At present the institute has collaboration on 6 major projects for which there is funding support (ILRI-Nairobi, German Technical Cooperation Agency, German Research Foundation, BBSCR/ DFID, HAT/FIND for advocacy, WHO for Niger Delta Survey and ANNDI) for drug research. Nationally, the institute collaborates with NIMR, NASRDA, NABDA, NLIST, NNMDA. There is need for collaboration with Ministries with mandates related to NITOR mandate.

vii. Transparency, Financial Management and Stability

The Institute produces annual reports. External auditors reports (up to 2005) examined reflect transparency and accountability in funds management. A letter appraising external audit for the period 2007 – 2010 was seen. The institute is not adequately funded both for research and infrastructural development. Expectedly, with poor funding, internal funds generation capability is low. There is a general atmosphere of discipline and team spirit.

viii. Conditions needed to achieve developmental objectives of Government (Vision 20-2020, MDGs, NEEDS)

The Mandate of NITR is key to achievement of Vision 20-2020, MDGs and NEEDs because health is central to these initiatives. However, proper funding and capacity building will enhance the contribution of NITR to achievement of the objectives.

ix. Health, Safety and Environment

There are no fire extinguishers, sand buckets and safety manuals in the entire office complex. There has not been any form of HSE training for the staff e.g. basic first aid drills. There are no emergency assembly points. For an Institute with functional laboratories and workshops, it is mandatory that these be put in place urgently. An ambulance should be provided for the clinic.

4. Recommendations (5 lines only)

a) Existing laboratories should be renovated and refurbished and more modern equipment for tissue-culture, molecular biology and biotechnology should be procured.

b) The mandate of the existing ethical committee should be expanded to take care of research ethics related to the use of human subjects and live animals.

c) Fire extinguishers and sand buckets should be put in place as a matter of urgency. Regular safety drills should be conducted for all staff in the Institute.

d) All physical facilities particularly the old office blocks should be renovated.

e) Adequate funding should be provided for research, conferences and training of research staff.

f) The Institute should intensify collaboration and networking with Tertiary Institutions in Nigeria and Ministries with health related mandates

g) Out stations in geopolitical zones should be made more functional with adequate staff and resources.

h) Planned activities to be covered in the Pan African Tse-Tse and Trypanosomiasis Eradication Campaign (PATTEC) are laudable and the Nigerian counterpart funding should be made available. This is necessary for achievement of the objective of PATTEC and for improving the visibility of Nigeria as the centre for this major project which covers all counties with Trypanosomiasis problem.

i) Steps should be taken to market results of research efforts in the Institute to the private sector for utilization as this will increase partnership and may increase private sector funding of research in the Institute.

j) It is desirable to have an Ambulance service for conveying staff to referral hospitals in cases of emergency.

5. General comments if any (5 lines only)

The team is grateful to the Nigerian Academy of Science for giving us the opportunity to serve in this important exercise. Management (led by the Director General) Board and staff of NITOR are commended for facilitating and participating in the exercise.

Prof. E.I. Braide FAS

Prof. T.U. Obi FAS

NIGERIAN ACADEMY OF SCIENCE

NAS- FMST ACCREDITATION PROJECT

Accreditation Grade: B

1. Name of Research Institute/ Agency

NIGERIA NATURAL MEDICINE DEVELOPMENT AGENCY (NNMDA)

2. Executive Summary

The Nigeria Natural Medicine Development Agency, NNMDA currently located in Lagos has been administered with a clear recognition of its mandate to research and develop Nigeria's natural medicine to yield usable products. The Agency has laid a very good foundation for this purpose through its on-going programmes of research and development and products.

3. Results/Key Findings

i. Institutional vision, mission and strategic goals

The Agency, in its present and projected operations, is responsive within its current resources to the vision and strategic goals of the Agency

ii. Institutional Governance and Administration

There is currently no Board to supervise the NNMDA but there is a Ministry-approved self-constituted Committee of experts from stakeholders which advises and guides operations of the Agency. The quality of governance by the Management and departments of the Agency is very good. The staff strength of NNMDA is 98.

iii. Institutional Resources

The institutional resources are relatively good and are still being developed at a pace controlled by forces partly outside the powers of the Agency's Administration; but the Administration's achievement in this regard is very good with respect to water and power supply, environmental cleanliness and Library.

iv. Quality of Public Service, Seminars and Research

The amounts of public service, scheduled seminars and relevant research are good. The mandate of the Agency does not require a preponderance of publications in high powered scientific journals as reflected in the journal spread of the Agency's many publications. We commend the unique reference works being published by the Agency on the abstracts and full texts of research publications on Nigerian medicinal plants by Nigerians and on the medicinal plants of 5 geopolitical zones of the Country.

v. Institutional Efficiency and Effectiveness

The turnaround time of mails in the offices of the DG and other management staff was short. The staff development and training programme of the Agency is excellent. 7 staffs are on PH.D.

Studies and a legal staff have been trained at WIPO, GENEVA as an IPR officer – a developmental expertise almost lacking in Nigeria.

vi. Extension services and consultancies

Vibrant and virile linkages have been established with national and international organizations and the immediate environment while the infrastructure needed for active industry linkage is being developed and needs injection of more resources – funds, space and technical manpower

vii. Transparency, Financial Management and Stability

The funding of the Agency, markedly decreased in 2008, is grossly inadequate and has grossly affected the well-laid out product-oriented development activities of the Agency. The Public Service guidelines on staff discipline have been adopted with minor modifications to suit the Agency in its environment. There was clear evidence of good financial management and a capability to generate funds

viii. Ethics and Disciplinary method

The Public Service guidelines on staff discipline have been adopted with minor modifications to suit the Agency in its environment

ix. Conditions needed to achieve developmental objectives of Government (Vision 20-2020, MDGs, NEEDS)

The product-oriented development activities of the Agency which are also related to Nigeria's vision 20- 2020, MDGS and NEEDS have been adversely affected by the decrease in funding and the inadequate premises in which the Agency operates.

x. Health, Safety and Environment

The environment was very well kept and neat. There were fire-fighting facilities deployed in the premises. The programme made for engagement in drills was described.

4. Recommendations (5 lines only)

i. The Agency should acquire more space to enable it provide adequate accommodation for its laboratories and production outfit
ii. More funds and technical manpower need to be injected into the research and development programmes of the Agency
iii. Appropriate measures should be taken to ensure continuity in the current products-oriented management of the Agency.

5. General comments if any (5 lines only*)*

Prof. G.J.F. Esan FAS

Prof. J. I. Okogun FAS

THE NIGERIAN ACADEMY OF SCIENCE

NAS-FMST ACCREDITATION PROJECT

Accreditation Grade – A

1. Name of Research Institute/Agency -
NATIONAL OFFICE FOR TECHNOLOGY ACQUISITION AND PROMOTION (NOTAP)

2. Executive Summary

NOTAP was set up for promoting Technology transfer and Acquisition. This mandate is being well executed and it is striving to ensure that all the required processes are complied with, with regard to intellectual property transfer in Nigerian industries especially foreign-owned companies.

3. Results/Key Findings

(i) **Institutional Vision, Mission and Strategic goals**.
Strategic goals are well pursued.

(ii) **Institutional Governance and Administration**

(a) There is no Governing Council in place; however structure for governance is adequate.
(b) Registration procedures are competently enforced.
(c) Many Agencies, including those of government are unaware of the functions of NOTAP and need to be sensitized.

(iii) **Institutional Resources**

- There is evidence of inadequate funding required to meet its objectives.
- Office accommodation/space is grossly inadequate, thereby hampering expansion of the organisation.
- There is no research infrastructure in place due to its mandate of overseeing patent registration etc.

(iv) **Quality of Public Service, Seminars and Research**
Public service is very good. However, since NOTAP was not established/ designed as a research institute, research activity is low. Seminars and reports are good and appropriate.

(v) **Institutional Efficiency and Effectiveness**.
Very effective. However, their function should be well propagated and with increased support by other agencies.

(vi) **Extension Services and Consultancies**
Quite good.

(vii) **Transparency, Financial Management and Stability**

Very transparent with good accounting operations

(viii) **Ethics and Disciplinary Method**

Good ethics are well maintained and discipline is good, as seen from the comportment of staff.

(ix) **Conditions needed to achieve developmental objectives of government (Vision 20-2020, MDG's NEEDS**)

There is need for increased government support for intellectual Property acquisition and transfer as well as enforcement of Laws on patents and intellectual property.

(x **Health, Safety and Environment**

Though adequate, there should be provision for health issues to be attended to locally, in addition to attendance at government clinics.

4. Recommendations

The Institute, NOTAP, is recommended for Full Accreditation. However, the inadequacies that were observed in this exercise, in particular, physical space and funding, should be properly and promptly addressed.

5. General Comments if any

We have placed item 4 in the report i.e. Quality of Seminars and Research as Not Relevant as it is not in the mandate of NOTAP. We therefore based our final score out of 150 to arrive at the percentage score.

Prof. O. A. Sofola FAS

Prof. O.O.Ekundayo FAS

NIGERIAN ACADEMY OF SCIENCE

NAS- FMST ACCREDITATION PROJECT

Accreditation Grade: A

1. Name of Research Institute/ Agency

PROJECTS DEVELOPMENT INSTITUTE (PRODA), ENUGU

2. Executive Summary

The Projects Development Institute was originally called Projects Development Agency (PRODA) by the defunct East Central State Government that established it in 1971 to harness the self-reliance efforts made manifest during the Nigerian civil war. It was taken over by the Federal Government in 1977 and remains till today an important centre for catalysing industrialisation through the provision of appropriate technology in line with Nigeria's Vision 20:2020.

3. Results/Key Findings

i. Institutional vision, mission and strategic goals

The vision and mission statements of PRODA are explicit and well documented in all the Institute's publications over the years and are in line with the official mandate given by the Federal Government to the Institute. The vision and strategic goals are in line with Government's objectives for achieving the Vision 20: 2020 goals. They also meet the demands of the labour market and entrepreneurship.

ii. Institutional Governance and Administration

Meetings of the Governing Board of PRODA, its committees, and the Institutes Management Committee are held regularly and the proceedings well documented in the relevant minutes. The indications are that committee systems are not only in place, but are also effectively in use. The administrative structure and reporting sequence adopted make for effective governance.

iii. Institutional Resources

The Institute has many laboratories and workshops with plenty of space for further expansion in its permanent site. Progress has been made recently in the acquisition of new IT infrastructure and there are lots of newly acquired equipment awaiting installation. There are adequate provisions for back-up power supply from generators in the event of electric power outages from the regular public source (PHCN).

iv. Quality of Public Service, Seminars and Research

The quality of the research output from PRODA is high and over the years, a large number of targeted R & D initiatives have yielded some patents and led to the fabrication of new equipment now in use in the agro-allied industry. Archiving of laboratory notes and research data in general would need to be improved upon. There is also the need for staff to be trained in the art of proposal writing so as to enhance their chances of attracting research grants from development agencies from within and outside the country.

v. Institutional Efficiency and Effectiveness

The processes in place for staff recruitment, welfare, and for the maintenance of discipline appear adequate. There is a programme for staff development, but it could be improved upon if more funds were made available to the Institute. The Institute's website could also be made more informative than the way it is now. Continuous updating of the web pages is necessary.

vi. Extension services and consultancies

Over the years the bulk of PRODA's R & D efforts have been linked with user requests and needs. The Institute therefore enjoys good, mutually beneficial linkages with SMEs and community development agencies. The attention of PHCN and agencies/companies in the electricity business needs to be drawn to the successful development of ceramic insulators for electric power transmission.

vii. Transparency, Financial Management and Stability

The level of funding appears to have improved significantly in the last 5 years and there are indications that the funds have been well utilized. However, the external auditors' reports are presently in arrears with the audit reports for the period 2005-2007 just being finalized for the Board's attention. Management of the Institute has been quite stable and crisis-free over the years; the current DG/CEO has been in office since 2005.

viii. Ethics and Disciplinary method

The PRODA staff appears well motivated and disciplined while the processes in place for maintaining discipline and for seeking redress by staff are adequate. The commonest request or complaint from staff seems to be centred on financing. Many unit heads said that funding was limiting their output and overall performance.

ix. Conditions needed to achieve developmental objectives of Government (Vision 20-2020, MDGs, NEEDS)

These conditions appear to be in place already in this Institute, but the allocation of more funds would enhance productivity. The success of the Institute's ongoing graphite and coal utilization programmes will also contribute a lot to the achievement of the objectives of Government (MDGs and NEEDS). It is necessary to commercialise many of the agro and agro-allied machines designed and produced in PRODA, just as SEDI (now commercialised and operating under NASENI), was born out of PRODA.

x. Health, Safety and Environment

The physical environment is fairly well maintained in all the three sites where the Institute currently operates from. It is important to hasten the pace at which the remaining machines and equipment at the Ekulu Workshops (near Onyeama Coal Mines) are re-located to PRODA's permanent site because of the serious erosion/landslide threat that the Ekulu/Iva Valley area faces.

4. Recommendations *(5 lines only)*

Through adequate funding, PRODA has the potential of contributing immensely to the industrialisation of Nigeria and maintaining its status as a centre of excellence for technology adaptation and incubation. The degree of success achieved by the Institute in awakening local capabilities in equipment manufacture is indicated by the vast numbers of self-employed

craftsmen surviving on the production and operation of equipment pioneered and disseminated by the Institute.

5. General comments if any *(5 lines only)*

Using the guidelines adopted for the accreditation exercise, a final score of 71.25% was returned for this Institute, giving a final Accreditation Grade of A. This final score was the average of the scores independently arrived at by the two Resource Persons. Generally Speaking, the vision, mission, institutional resources, and quality of research work going on in PRODA were found to be excellent.

Prof. K.M. Onuoha FAS

Prof. S. O Enibe

NIGERIAN ACADEMY OF SCIENCE

NAS- FMST ACCREDITATION PROJECT

Accreditation Grade: A

1. **Name of Research Institute/ Agency**:

   RAW MATERIALS RESEARCH AND DEVELOPMENT COUNCIL (RMRDC)

2. **Executive Summary (5 Lines only)**

RMRDC is effectively and satisfactorily fulfilling its mandate and functions. To sustain this, it is recommended that 50% of their IGR be ploughed back into R& D. Later, there would be need to seek other sources of revenue since the more they succeed in reducing importation of raw materials, the less likely their statutory source of income from duties on imports.

3. **Results/key findings**

i. **Institutional vision, mission and strategic goals**

The vision, mission and strategic goals are well displayed everywhere and these are accomplished by the Director-General supported by dedicated senior staff, led by nine (9) directors in charge of the main focal areas and two service departments of the organization.

ii. **Institutional Governance and Administration**

The Organizational structure facilitates delegation of responsibilities and sharing of tasks, while effective use of the committee system enables the organization to remain focused on its mandate, and maintain an outreach programme that effectively covers its strategic stakeholders, both nationally and internationally.

iii. **Institutional Resources**

RMRDC is a special institute of FMST, different from all the others in that the resources are derived from a statutory provision of 1 % of the import duties on raw materials. This is quite adequate meanwhile.

iv. **Quality of Public Service, Seminars and Research**

Although there are no laboratories, all their research projects are contracted out to universities. However, there are very good facilities like an ICT set-up; a modern library; and an exhibition centre. There are regular monthly seminars and research bulletins for their publications and proceedings which are of high quality

v. **Institutional Efficiency and Effectiveness**

The council operates from Abuja as its headquarters with coordination offices in each of 36 states. It is structured into 6 departments which covers all the areas of raw materials research that are effectively managed by Directors, namely: Agriculture, Industrial Chemicals, Industrial Plants, Planning and Information; Finance, Administration and Human Resources.

vi. Extension services and consultancies

Most of the work is based on extension services and consultancies. The institute makes a lot of money from their consultancy which unfortunately they are not allowed to use fir further R& D.

vii. Transparency, Financial Management and Stability

All vacancies are advertised in the dailies. There is an annual auditing exercise together with an annual report. A qualified accountant keeps good records of all the business of the council.

viii. Ethics and Disciplinary method

There is a disciplinary committee and a publication committee to ensure that all the ethics of the organization are well observed.

ix. **Conditions needed to achieve developmental objectives of Government (Vision 20-2020, MDGs, NEEDS**)

Continued successful operation of the organization is constrained greatly by the non discriminatory application of financial management guidelines that ignore the specialized nature of the operations of RMRDC. It is suggested that 50% of their IGR be ploughed back for R&D, and there would later be a need to increase the source of revenue since the more they succeed in reducing importation of raw materials, the less their resource.

x. Health, Safety and Environment

The environment is well maintained. There is adequate provision for safety and health including a well clinic with beds as well as nurses and doctors.

xi.* Recommendations (*5 lines only)

RMRDC is effectively and satisfactorily fulfilling its mandate and functions. In order to improve efficiency of its operations, we recommend that the organization be allowed to retain up to 50% of its IGR for further R& D. Because of the inevitable delay in receiving the due amount of its statutory allocation of 1% of the import dues of raw materials, the organizations should be allowed to operate its full annual budgetary allocation up to the first quarter of each succeeding year.

xii. **General comments if any (5 lines only***)*

Continued successful operation of the organization is hindered greatly by the requirement for the return of as much as 80% of IGR, and unspent funds immediately at the end of each financial year. This seriously hampers the smooth operation of the organization. Unlike NAFDAC and NEADA, RMRDC is not empowered to prosecute offenders and this is a drawback. RMRDC should be empowered.

Prof. O. Oke FAS

Prof. D.U. U. Okali FAS

NIGERIAN ACADEMY OF SCIENCE

NAS- FMST ACCREDITATION PROJECT

Accreditation Grade: B

1. Name of Research Institute/ Agency

SHEDA SCIENCE AND TECHNOLOGY COMPLEX (SHESTCO)

2. Executive Summary

Sheda Science and Technology Complex, (SHESTCO) is an impressively conceived technology village established by Decree 95 of 1993. It has made good progress, under its constraints, to live up to expectation as a high research, technology and innovation complex. Clear progress has been made in the areas of material science (solar cells production), biotechnology, design and fabrication and industrial chemistry.

3. Results/Key Findings

i. Institutional vision, mission and strategic goals

SHESTCO was designed to be a platform for the scientific and technological overall development and sustenance of the Nigerian nation in the modern world. It has responded satisfactorily in its operations to the demand of its mandate.

ii. Institutional Governance and Administration:

The Honourable Minister directly supervises SHESTCO in the absence of a Board. The founding fathers of SHESTCO set up a committee of Associate Scientists which as a group has not been very much consulted. Nevertheless, SHESTCO administration has been good. The current funding level cannot productively run SHESTCO and support the usually costly Board meetings which in any case should have a budget line when it is created. Staff strength is 175.

iii. Institutional Resources

Research infrastructure and workshops are very good. There is need to release special funds to commission high tech equipment already supplied but not fully paid for because of erratic and unpredictable budget implementation. Water and power are costly but adequately available. 41 years collection of the world's leading chemistry journal, JACS was recently acquired through donation from Professor Nakanishi of Columbia University but transported by SHESTCO. Sporting facilities are available.

iv. Quality of Public Service, Seminars and Research

The quality of research is very good and geared towards national needs in agriculture, industry and technology. Research seminars are regular. SHESTCO should set up a Research Proposals and Publications Review Committee that would include ethics, IP, etc. on its agenda. Secure laboratory and workshop notes archives need to be created.

v. Institutional Efficiency and Effectiveness

SHESTCO has a web presence that needs filling in and expansion. Staff-mix in regard to gender ratio is satisfactory. Staff recruitment and discipline follow the Public Service guidelines. The CEO Office deals promptly with mails. Staff welfare is good and staff training is ongoing nationally and internationally.

vi. Extension services and consultancies

There is a growing awareness of SHESTCO services and capabilities in the private sector as evidence by a successful private sector consultancy visit during the accreditation exercise. States and farmers request for biotechnologically mass-produced plantlets for farms. A Cuban expert in biotechnology was on visit to train staff hands on during the accreditation exercise.

vii. Transparency, Financial Management and Stability

The funding is inadequate. The non-release of approved budget funds after sustaining budget-based and approved expenditure harms SHESTCO research and development plans especially when equipment supplies and commissioning are involved. SHESTCO capabilities if advertised, funded and patronized can generate more funds internally than currently is the case.

viii. Ethics and Disciplinary method

Staff discipline guidelines on of the Public Service is adopted for cases of indiscipline. There was no evidence of social vices among staff.

ix. Conditions needed to achieve developmental objectives of Government (Vision 20-2020, MDGs, NEEDS

SHESTCO is very conscious of its role in the achievement of Nigeria's vision 20- 2020, MDGS and NEEDS. It has in the past been drawing up budget proposals for these programmes. Its innovations in solar cells, biotechnological plantlets breeding, industrial products from *Moringa oleifera*, provision of training for hundreds of industrial training students, sabbaticals for university and other researchers and fabrications capabilities stand out.

x. Health, Safety and Environment

The environment and landscape were well kept – there were no posters outside the notice boards. Fire fighting and first aid facilities were available. Complex had arrangements for safety drills as reported.

iii. Recommendations (5 lines only)

SHESTCO needs be better funded to enable it expand its already clear contribution through products and innovation to the Vision 20-2020, MDGs AND NEEDS programmes and advance in its development as a technology village.

Special funds should be released to enable SHESTCO complete payment for, commission and deploy three partially acquired items including the solar panels required for the deployment of SHESTCO produced solar cells.

The Gamma irradiation Facility, originally part of SHESTCO and which was without persons and activities during the accreditation visit should be run to allow part usage by SHESTCO. The central workshop should continue to be part of SHESTCO.

iv. ***General comments if any (5 lines only)***

Prof. J.I. Okogun FAS

Prof. O. Ibidapo- Obe FAS

APPENDIX 2

THE NIGERIAN ACADEMY OF SCIENCE

FELLOWSHIP LIST

	Name	***Specialty***
1	ABUBAKAR, Iya (Prof)	Mathematics
2	ABUBAKAR, Mohammed Ka'oje (Prof)	Biochemistry
3	ACHOLONU, Alexander D.W. (Prof)	Parasitology & Microbiology
4	ADEGOKE, O. Sylvester (Prof)	Geology
5	ADEKOLA, Sulaiman A. (Prof)	Electrical & Electronics Engineering
6	ADELOYE, A (Prof)	Medicine
7	ADEWOLE, Isaac Folorunso (Prof.)	Obstetrics & Gynaecology
8	ADEWOYE, Olusegun O. (Prof)	Materials Science
9	ADIKWU, Michael U. (Prof)	Pharmacy & Pharmaceutics
10	ADU, Israel F. (Prof)	Animal Nutrition
11	AFOLAYAN, Adeyinka (Prof)	Enzymology & Protein Science
12	AGHAJI, Martin A.C. (Prof)	Thoracic & Cardiac Surgery & Medicine
13	AIRE, Tom A. (Prof)	Veterinary Medicine
14	AJAKAIYE, Deborah Enilo (Prof)	Physics
15	AKANJI, Abayomi O. (Prof)	Endocrinology & Metabolic Medicine
16	AKEJU, Timothy A.I. (Prof)	Civil Engineering
17	AKINKUGBE, Oladipo Olujimi (Prof)	Medicine
18	AKINRELE, I.A. (Dr)	Industrial Biotechnology
19	AKINSETE, Ibironke (Prof)	Medicine

20	ALO, Babatunde Ibitayo (Prof)	Chemistry
21	AMAZIGO, John Chukwuemeka (Prof)	Mathematics
22	AMINU, Jibril Muhammadu (Prof)	Medicine
23	ANIMALU, Alexander Obiefoka Enukaora (Prof)	Physics & Mathematics
24	ANOSIKE, Emmanuel O. (Prof)	Enzymology & Protein Chemistry
25	ANUSIEM, Alphonso C.I. (Prof)	Chemistry
26	ANYA, Anya O. (Prof)	Zoology
27	ATTAH, Edward 'B. (Prof)	Human Pathology
28	AWE, Olumuyiwa (Prof)	Physics
29	BABALOLA, Chinedum Peace (Prof)	Pharmacy & Pharmacokinetics
30	BAMIRO, Olufemi Adebisi (Prof)	Mechanical Engineering
31	BRAIDE, Ekanem Ikpi (Prof)	Parasitology & Epidemiology
32	BRIGGS, Nimi Dimkpa (Prof)	Medicine
33	BWALA, S.A. (Prof)	Medicine (Neurology)
34	CHIDUME, C.E. (Prof)	Mathematics
35	CHIJIOKE, Mark O. (Prof)	Electrical & Electronics Engineering
36	COKER, AO (Prof)	Parasitology & Microbiology
37	DADA, Olukayode (Prof)	Medicine
38	DAMACHI, Nicholas A. (Prof)	Industrial Engineering & Science Public Policy
39	EGBELU, Pius J. (Prof)	Engineering
40	EGBOKA, Boniface C.E. (Prof)	Hydrogeology
41	EGBUNIKE, Gabriel N. (Prof)	Animal Science
42	EKUNDAYO, O. (Prof)	Chemistry

43	EMOVON, Emmanuel U. (Prof)	Chemistry
44	ENAHORO, Henry E. (Prof)	Mechanical Engineering
45	ENE-OBONG, Efiom E. (Prof)	Plant Breeding & Crop Biotechnology
46	ENWONWU, Cyril Obiora (Prof)	Medicine
47	ESAN, George Joseph Folayan (Prof)	Medicine
48	ESOGBUE, Augustine O. (Prof)	Intelligent Systems & Control Engineering
49	ESSIEN, Etim Moses (Prof)	Haematology in Haemostasis
50	ETTE, A.I.I. (Prof)	Physics
51	EVWARAYE, Andrew O. (Prof)	Medicine
52	EZEILO, James Okoye C. (Prof)	Mathematics
53	EZE-UZOMAKA, Osondu John (Prof)	Civil Engineering
54	FALADE, Gabriel Koyode (Prof)	Petroleum Engineering
55	FALASE, A.O. (Prof)	Medicine & Cardiology
56	FALUSI, Adeyinka G. (Prof)	Haematology
57	FANIRAN, Joshua Ajadi (Prof)	Chemistry
58	GADZAMA, Njidda M. (Prof)	Zoology
59	GUMEL, Abba B. (Prof.)	Mathematics
60	IBIDAPO-OBE, Oyewusi (Prof)	Stochastic Control & Info. Systems Engineering
61	ILORI, Samuel Akindiji (Prof)	Mathematics
62	IMEVBORE, Anthony Malamo.A. (Prof)	Zoology
63	ISOUN, Turner T. (Prof)	Veterinary Medicine
64	IYAHEN, Sunday Osarumwense (Prof)	Mathematics
65	KOGBE, Cornelius Adedapo (Prof)	Geology

66	KUKU, Aderemi Oluyomi (Prof)	Mathematics
67	KUKU, Sonny Folorunso (Dr)	Endocrinology
68	LONGE, Oyebiodun Grace (Prof)	Nutritional Biochemistry
69	LUCAS, Adetokunbo	International Medicine
70	MADUEMEZIA, Awele (Prof)	Physics
71	MAKANJUOLA, Gabriel Ayodele (Prof)	Agricultural Engineering
72	MALAMO, Siyanbola (Prof)	Geology
73	MOHAMMED, Idris (Prof)	Medicine
74	MSHELIA, Elijah D. (Prof)	Theoretical Nuclear Physics
75	MUSTAFA, Salihu (Prof)	Civil & Water Resource Engineering
76	NGODDY, Patrick Obi (Prof)	Agricultural & Food Engineering
77	NNAJI, Bartholomew O. (Prof)	Industrial Engineering
78	NWAGWU, Mark (Prof)	Zoology
79	NWAORGU, Obioma (Prof)	Parasitology & Entomology
81	NWOKOLO, Chukwuedu (Prof)	Medicine
82	OBI, Timothy U. (Prof)	Veterinary Medicine
83	ODERINDE, Rotimi A. (Prof)	Industrial Chemistry
84	ODIGBOH, Emmanuel Uche (Prof)	Agricultural Engineering
85	ODUGBEMI, Tolu (Prof)	Parasitology & Microbiology
86	OGAN, Agu U. (Prof)	Biochemistry
87	OGUNLESI, Theophilus Oladipo (Prof)	Medicine
88	OGUNMOLA, Gabriel Babatunde (Prof)	Biophysical Chemistry Biotechnology
89	OKAFOR, Charles Okolo (Prof)	Chemistry
90	OKAFOR, Emmanuel C. (Prof)	Chemistry

91	OKAFOR, Nduka (Prof)	Microbiology
92	OKALI, David Uke Ukiwe (Prof)	Forest Biology, Environment & Conservation
93	OKE, Olusegun Ladimeji (Prof)	Nutritional Chemistry
94	OKEKE, C.E. (Prof)	Physics
95	OKEKE, Francisca Nneka (Prof)	Geomagnetism & Conospheric Physics
96	OKEKE, Pius N. (Prof)	Physics
97	OKIGBO, Bede Nwoye (Prof)	Agronomy
98	OKOGUN, Joseph Ibomein (Prof)	Organic & Natural Products Chemistry
99	OKON, Ephraim Efiong (Prof)	Engineering Science
100	OKONKWO, Paul O. (Prof)	Pharmacology
101	OKORIE, Domingo Amechi (Prof)	Chemistry
102	OKPAKO, David Tinakpoewan (Prof)	Pharmacology
103	OLANIYAN-TAYLOR, G. Oladunni (Prof)	Chemical Pathology
104	OLUMIDE, Yetunde Mercy (Prof)	Dermatology Medicine
105	OLUNLOYO, Vincent Olusegun S. (Prof)	Engineering
105	ONADEKO, Babatunde Owolabi (Prof)	Respiratory Medicine
106	ONUOHA, Kalu Mosto (Prof)	Pure & Applied Geophysics
107	ONWUALU, Peter Azikiwe (Prof)	Agricultural Power & Machinery
108	ONWULIRI, Celestine O.E. (Prof)	Zoology & Parasitology
109	ONWUMECHILI, Cyril Agodi (Prof)	Physics
110	ONYIDO, Ikenna (Prof)	Mechanistic & Bioorganic Chemistry
111	ORANGUN, Cornelius Oluwasade (Prof)	Civil & Structural Engineering
112	OSOTIMEHIN, Babatunde (Prof)	Medicine

113	OSUIDE, Gabriel Ediale (Prof)	Neuropharmacology
114	OSUNTOKUN, Olabepo (Prof)	Medicine
115	OYAWOYE, Mosobalaje Olaloye (Prof)	Geology
116	PETTERS, S.W. (Prof)	Geology
117	SALAKO, Lateef Akinola (Prof)	Medicine
118	SALAU, Akinola Muritala (Prof)	Solid State Physics & Devices
119	SALAWU, R.I. (Prof)	Electronics & Electrical Engineering
120	SAMBO, Abubakar S. (Prof)	Mechanical Engineering
121	SHEHU, Umaru (Prof)	Health Resources & Management
122	SHOKUNBI, M. Temitayo (Prof)	Developmental Neurosciences & Paediatric Neurosurgery
123	SOBOYEJO, Winston O. (Prof)	Materials Science
124	SODEINDE, O. (Prof)	Paediatrics
125	SOFOLA, Olusoga A. (Prof)	Parasitology
126	SOFOLUWE, Adetokunbo B. (Prof)	Computer Science
127	SOYANNWO, Olaitan A. (Prof)	Anaesthesia
128	SUSU, Alfred A. (Prof)	Chemical Engineering
129	TOMORI, Oyewale (Prof)	Virology
130	UME, Charles (Prof)	Mechanical Engineering
131	WAMBEBE, Charles O. (Prof)	Pharmacology
132	YAYOCK, Joseph Yusuf (Prof)	Agriculture
133	YOLOYE, Emmanuel Ayotunde (Prof)	Science Education
FOREIGN FELLOWS		
134	ALBERT, Bruce (Prof)	Biochemistry/Molecular Biology
135	ZAWAIL, Ahmed (Prof)	Chemistry