



THE NIGERIAN ACADEMY OF SCIENCE

THE NEED AND NICHE FOR  
WEST / CENTRAL AFRICAN ACADEMIES IN  
NATIONAL AND REGIONAL  
**DEVELOPMENT**

WORKSHOP REPORT



THE NIGERIAN ACADEMY OF SCIENCE

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## BACKGROUND/ OVERVIEW

In its attempt to achieve the desired goal of stimulating the establishment and general development of national academies in Africa, the Nigeria Academy of Science (NAS) in collaboration with the Network of African Science Academies (NASAC) organized a two-day awareness workshop. The theme of the workshop was "The need and niche for West/Central African Academies in National and Regional Development".

The objectives of the workshop are as follows: -

- i. To create awareness on the role of national academies & NASAC in national and regional development;
- ii. To share information on creating and sustaining academies; and
- iii. To discuss various models and best practices for academies.

The workshop included presentations by leading national and regional experts, with key representatives of the Nigerian Academy of Science and other academies in the sub-region in attendance.

The key areas covered by presentations and discussions at the workshop, and considered in this report are: -

- i. Evolution of the academies
- ii. Identity & role of science academies
- iii. Considerations in starting an Academy
- iv. The science-policy gap
- v. How academies can influence policy making.
- vi. Making the impact of the academies felt

Country presentations were also made by participants from Sierra-Leone, Liberia, Equatorial Guinea and Gambia. They presented papers on the situation in their countries in relation to the formation and sustenance of academies in those countries.

At the end of the workshop, a concluding break-up session was organized during which the workshop discussed:

- (a) The first steps to starting a national science academy.
- (b) How important it is to start with government charter.
- (c) What can be done quickly with the little resources.

DAY -1 ( 28<sup>TH</sup> SEPTEMBER, 2010)

## OPENING REMARKS

In his opening remarks, the Vice-President of the Nigeria Academy of Science, Professor Joseph Okogun FAS, extended greetings on behalf of the President and welcomed participant to the important workshop.

He pointed out that the Nigerian Academy of Science hosted this workshop purposely to remind participants of the need to acquire knowledge that will have impact on the lives of humanity. He also stressed the need for the academies, in the west and central African sub-region, to see themselves as part of the developmental visions of their respective countries. He further urged them to organize themselves and relate with organs of government, research institutes, and the private sector in formulating policies that will uplift the lives of the humanity.

In his brief welcome address, The Acting Executive Secretary of the Nigeria Science Academy, Dr. M.O. Odubanjo, warmly welcomed participants and prayed for their active and pleasant participation throughout the workshop period.

## SESSION 1 EVOLUTION OF SCIENCE ACADEMIES

*Professor Ephariam Okon FAS*

The national academy of Germany, the Leopoldina, is widely regarded as the oldest continuously existing academy in the world, having been established on January 1, 1652 in the Roman Empire. It was named after the Emperor Leopold I. The German government later designated it as the National Academy of Germany.

The Royal Society in London was also established in the seventeenth century, it was founded on November 28, 1660 with its full title as "The Royal Society of London for the improvement of Natural Knowledge". It was granted a formal charter on the 23rd of April 1663 with the King of England designed as its founder.

The development and growth of the world system of science academies has been facilitated by the most prominent of these organizations; the Inter Academy Panel (IAP) and the Inter Academy Council Foundation (IAC).

The contributions of a number of other global science academies to the development and growth of international science are worthy of note. The academies, which promote

regional/specialized science interest, as implied by their names, include:

- The Academy of Science of the Developing World. (TWAS) Formally known as the Third World Academy of Science;
- Latin American Academy of Science; and
- The Caribbean Academy of Sciences.

Research and development (R & D) activities are acknowledged as integral aspects of any process for the production of new systems, for the upgrading or improvement of existing ones, or for achieving optimization with regards to their performance. Again, scientific and technological research and development activities play a critical role with regards to the sustainability of industrial efforts. These and other considerations help to explain the emergence and general acceptability of national academies of science.

The presenter elaborated on the following :

1. Reasons for establishing science academies.
2. Characteristics of national science academies.

An overview of the Nigerian Science Academy was also presented, under which he stated the aims and objectives of NAS, recent developments, activities, project areas, and financial issues.

## IDENTITY AND ROLE OF SCIENCE ACADEMIES

*Ms Jackie Olang*

Defining what is meant by an academy, she referred to an academy as an assembly or fellowship of scientists dedicated to the development of scientific knowledge within the society; they also champion social development through science and technology.

She further described the identity of an academy as: -

- ✓ One that serves as a public voice for the promotion of scientific excellence and science-based development.
- ✓ Demonstration of strong scientific commitments that enable citizens to address critical societal issues. On the other hand, the roles of the academies were highlighted as:
  - Advisers to society
  - Advisers to policy makers
  - Manage research in all universities, research institutes etc
  - The academy is to provide objective advice to government and policy makers on science, and the relationship between science and society.

## DISCUSSION

Among the questions raised after this presentation are: -

- i. How does NASAC get funds?
- ii. What is the criterion for determining the number of fellows?
- iii. Is there a linkage between NASAC and the Nigeria Academy of Science?
- iv. Is there any academy(ies) in countries like Zambia, Guinea, and so on?

In her reaction, Ms. Jackie Olang said NASAC gets funds from grants, donations, gifts, requests, trust funds, and prizes. These are from national or international entities, public or private institutions, or from individual and or fees from members. The criterion for determining the number of fellows depends on the constitution of the academy; Prof. Okon added that, in most cases, the number does not exceed 100 fellows, which is a borrowed idea from the French.

Ms Olang responded saying there are linkages between the two institutions (NASAC and NAS). She also said that there were no academies in Zambia and Guinea.

## SESSION 2

## CREATION AND STRENGTHENING OF ACADEMIES

*Professor S.K Danso*

### GHANA ACADEMIES OF ARTS AND SCIENCE – LESSONS LEARNED.

According to the presenter, the Ghana Academy of Arts and Sciences (GAAS) was founded by Dr. Kwame Nkrumah in 1959 by a parliamentary act. GAAS launched a seven-year development plan under President Kwame Nkrumah. However, the founding father was to be later delisted from the fellowship of GAAS.

The academy has the following objectives.

- ✓ Promote the study, extension, and dissemination of arts and sciences
- ✓ Establish and maintain proper standards in all endeavours of the arts and sciences.

He pointed out that the GAAS started with a numeric strengthen of 20 foundation members, selected by a small working group established to consider the possible number of fellows. Today, the academy has a rigorous election process, with about 90 living fellows in both the sciences and arts.

### GOVERNANCE

The two main bodies responsible for conducting and overseeing the affairs of the academy are:

- ✓ The Executive
- ✓ The Administration (Secretariat)

Ghana Academy of Arts and Sciences was merged with the National Research Council (NRC) in 1963. The academy was responsible for the creation and management of research and research institutes in Ghana. It also managed the affairs of the National Research Council of Ghana.

Under subsequent governments, from 1962 to 2010, the Ghana Academy of Arts and Sciences was fully established.

In fulfilling its mandate, GAAS organizes many activities including the following: -

- ✓ Ephraim Amu Memorial Lecture
- ✓ Asante Oke Memorial Lecture

#### GENERAL OVERVIEW

Currently, the Ghana Academy of Arts and Sciences has 15 staff and 90 fellows.

The Academy has the following sources of funds: -

- ✓ Government subvention - International donors
- ✓ Local donors - Contractors
- ✓ Collaborative activities - Endowments

## CONSIDERATIONS IN STARTING AN ACADEMY –NAS

*Professor Awele Maduemezia FAS*

In his presentation, Professor Maduemezia pointed out that, foremost Nigerians scientists who were recognized nationally and internationally for their academic excellence in various fields of science, engineering, and medicine, came together under the umbrella of Science Association of Nigeria to form the Nigerian Academy of Science (NAS).

According to him, the Nigerian Academy of Science was inaugurated on January 8, 1977. The inauguration was the culmination of five years of effort of the above mentioned concerned Nigerian scientists operating under the auspices of the Science Association of Nigeria (SAN).

The founding of the academy was also in consonance with the Udoji report in 1974 which recommended the establishment of national academies in the country. NAS is modelled largely after the Royal Society in London. The Nigerian Academy has two sections, namely Biological and Physical Sciences. The Nigeria academy began to operate with 41 founding fellows.

The academy has a constitution which empowered it to develop as a voluntary organization, independent of government control, but collaborating fully with government ministries and agencies to ensure the speedy growth and development of science and technology in Nigeria.

The Nigeria Academy of Science aims to promote the speedy growth, acquisition, dissemination, and utilization of scientific and technological knowledge to find lasting and positive solutions to major problems of the nation. This is achieved by: -

- ✓ Advising on problems of a scientific and or technological nature
- ✓ Establishing and maintaining the highest standards of scientific endeavours and achievements in Nigeria

Professor Maduemezia said an academy can be formed if a country has the required scholars in various scientific fields, who are distinguished by their academic excellence. He further pointed out that, for an academy to be established and be fully developed, it requires funds. The required funds may come from different sources, government, international organizations, private organizations, research institutes etc.

## NASAC AIMS AND OBJECTIVES

*Dr. Jasper Kirirka*

The Network of African Science Academies (NASAC) aims to bring together science academies on the African continent, with a view to providing an independent forum for the academies to offer authoritative and credible advice to policy makers in their respective nations.

NASAC insists that member academies be heard by decision makers. It also brings science academies together and facilitates the development and well being of the academies. The most prominent objectives of NASAC include;

- ✓ Facilitate the provision of advice on science-related issues
- ✓ Promote cooperation between the academies of the African continent
- ✓ Assist science communities in Africa to set up national independent academies
- ✓ Organize seminars, workshops, conferences, and symposia on relevant subjects of scientific importance
- ✓ Honour and reward scientific excellence
- ✓ Promote public awareness of the value of science and technology in nation building
- ✓ Empower curiosity, discovery, and innovation by stimulating interest in science and technology
- ✓ Promote and support research
- ✓ Improve the standard and quality of science education
- ✓ Dissemination and positive utilization of scientific knowledge
- ✓ Recognition and publication of high achievements in science and technology
- ✓ Provide new academies with strategies and plans on how to develop and grow academies

## GOVERNANCE OF SCIENCE ACADEMIES

*Professor Adeyinka Afolayan FAS*

Professor Afolayan traced the history of academies from the 17th century. He traced the history to the establishment of modern academies, including the founding of the Nigerian Academy of Science in 1977 and the Academy of Science of South Africa established by an act of parliament on February 13th, 2002.

According to him, the broad objective of any academy is to promote science using one of the following:

- ✓ Scientific knowledge & public awareness
- ✓ Formulation and utilization of sound policies
- ✓ Promotion of good international relations

He further talked on the governance of the Nigerian Academy of Science as guided by its statutes and bye laws which were in use right from the first meeting of the General Assembly in 1977. Organs of the academy are classified into three namely;

- ✓ General Assembly
- ✓ The Council
- ✓ The Statutory Committee

The General Assembly is a body of fellows who are the highest authority of the academy. The Council is the governing body of the academy; it is responsible for the management of all the affairs of the academy. There are 17 members of the Council, eight of whom are officers namely;

- ✓ The President
- ✓ The Vice-President
- ✓ The President-Elect
- ✓ Treasurer
- ✓ Two Academic Secretaries (Biological & Physical)
- ✓ Foreign Secretary
- ✓ Public Affairs Secretary, and
- ✓ Chairman of Publications Committee

The statutory committees are two; the Sectional Committees and the Executive Committee. Each of the three (3) organs has its own functions.

The academy has a comprehensive election procedure which is followed when electing and appointing new fellows into the academy.

## DISCUSSION

- ✓ It was suggested that the academies have to find a way of translating scientific write-ups into simple language
- ✓ The representative from Gambia further suggested that the academies need to do research which is market-oriented in laser technology etc. for commercialization to the industries and research institutes
- ✓ It was observed that there are problems in the political class of Africa regarding policy making
- ✓ It was suggested that the Nigerian Academy of Science should find a way of lobbying the National Assembly such that advice given would be enacted into law

## SESSION 3

### THE SCIENCE-POLICY GAP – THE NIGERIAN EXAMPLE

*Professor Joseph Okogun FAS*

In his presentation, Prof. Okogun started by ranking Nigeria as the 66th country among the 75 Countries in terms of science policy formulation and implementation. He rated Nigeria low in global competitiveness.

He used Vision 20:20:20 in which Nigeria wants to be one of the 20 largest economies of the world based on remarkable potentials. He stated that Nigeria, with a population of 150 million, the Nigeria vision 20:20:20 has an assumption underlying it - GDP of 3.5% in 2009 which will hopefully rise to 7% by 2015. He pointed out areas where there is a wide science-policy gap as;

- ✓ Leadership
- ✓ The need to strengthen the learning of STEM (Science, Technology, Engineering and Mathematics) subjects
- ✓ Allocation of higher percentage of national budget to education

In the sphere of science, technology, and innovation (STI), he pointed out the need to achieve 1000 MW of electricity per capita. Also, sound scientific knowledge is fundamental to addressing economic transformation. In addition, he attributed knowledge accumulation to information and communication technology (ICT). Professor Okogun said targeted research and development (R&D) was needed to fast-track economic development. However, reverse engineering provides a road map to circumvent road blocks to indigenous technology enhancement.

Professor Okogun highlighted some of the strategies and challenges that bridge the science-policy gap in Nigeria as follows;

- ✓ 1st strategy, STI Vision

- ✓ To build an STI system that will drive competitive knowledge economic
- ✓ 2nd Strategy, Engender STI Society
  - To improve the emolument of science and technology professionals
- ✓ 3rd Strategy, Enhanced S&T Scholarship
  - Pre-1980 policy of enhanced science and technology scholarships to students
- ✓ 4th Strategy, government's full commitment
  - Government's full commitment to the creation of a National Foundation for Science, Innovation, and Competitiveness
- ✓ Other strategies are;
  - To develop renewable energy resources
  - Space capabilities for socio-economic purpose
  - Optimizing the use of research facilities and humans
  - Enhanced information technology

## HOW ACADEMIES CAN INFLUENCE POLICY MAKING (THE UNAS EXPERIENCE)

*Mr. Franklin Muyonjo*

Uganda National Academy of Sciences (UNAS) was formed in the year 2000 and is service-oriented. It has membership from both physical and social sciences.

The academy was granted a presidential charter in 2009. It has the following characteristics:

- ✓ It serves as adviser to government on science and social sciences
- ✓ It is multi-disciplinary
- ✓ It is independent
- ✓ It is objective
- ✓ It is evidence based

### UNAS GOVERNANCE

The governing of the Uganda National Academy of Science is strictly by consensus. This means that decisions taken by the academy are reached by consensus among the members/fellows.

In 2005, the academy (UNAS) organized a panel study on the malaria in the country. Malaria is one of the biggest single health problems in Uganda is transmitted by mosquitoes. Prior to the time, the government of Uganda planned to spray DDT for the eradication of the mosquitoes. The study report of the academy ultimately influenced the government's plan.

Here it can be noted that by the intervention of UNAS, the government policy of spraying DDT to eradicate malaria was halted through the effort of UNAS.

## MAKING THE IMPACT FELT

*Professor Soga Sofola FAS*

In his presentation, Professor Sofola stated that the national academies of science must be at the forefront of impacting on the science culture of their countries. According to him, this will involve activities such as:

- ✓ Discussion / Workshops
- ✓ Public Lectures
- ✓ Dissemination of information on science through the media
- ✓ Recognizing excellence - Prizes
- ✓ Grants and Awards
- ✓ Reinforcing grass root science at basic education levels, and
- ✓ Relating with policy makers

There is a need to ensure that the public, as well as science practitioners, are kept well informed about current concepts. For instance, the Nigerian Academy of Science's Forum on Evidence-Based Health Policy has organized six workshops with the following themes:

- ✓ Blood Safety
- ✓ Reducing maternal and child mortality
- ✓ Strengthening health systems
- ✓ Primary health care and
- ✓ Non-communicable diseases

The Nigerian Academy of Science has also organised distinguished guest lectures by experts in their field e.g.

- ✓ On Science and Technology Development by the Director-General of NASENI
- ✓ On Atomic Energy by the Director-General the Nigerian Atomic Energy Commission etc.

He emphasized the importance of these initiatives as:

- ✓ Increased awareness of the importance of the academies
- ✓ Educated public

He suggested the need to start organising forums for practical demonstrations of scientifically important gadgets. This can be done by fellows or their affiliates or in collaboration with research agencies.

On the dissemination of scientific information through the media, he stressed the importance attached to ensuring awareness by the public of scientific discoveries and or breakthroughs. He discussed the partnership of NAS with the media through the award of



Science Journalism Prizes. He said the goal is to stimulate interest in science reporting and engender competition to drive up the quality of science reports.

#### DISCUSSION

Question: Who pays for the coverage of NASAC programmes on electronic media? And who provides the academy (NASAC) with funds?

Answer: Responding to this question, Ms. Olang said they started by giving the reporters transport allowances but later let them be aware of their role as stake holders, and things started to change.

Question: How does UNAS encourage students to study science subjects, bearing in mind the nature of the subjects and unavailability of laboratories and equipment?

Answer: Mr Muyonjo replied saying that science education is about to be compulsory for every student. Also concerning laboratories and equipment, schools that have can be made to share with those that do not have.

Question: How can UNAS address gender imbalance in the academy?

Answer: In the last two years UNAS inducted about 10 members but only two were women among them, so gender imbalance is a problem.

## SCIENCE POLICY SPHERE IN WEST AFRICA II

### (i) SIERRA – LEONE PRESENTATION

*Prof. Edward R. Rhodes*

Professor Rhodes outlined the involvement of contain agencies in science policy design in Sierra-Leone.

- ✓ Educational: Universities are involved in policy making e.g. implementation committee set up by the government of Sierra-Leone to restructure the educational system to the 6:3:3:4 system which is headed by a scientist
- ✓ Research and Development (R&D): policy research which will hopefully draw up policies that will guide establishment and institutions in Sierra – Leone
- ✓ University Research Policy Council: this was set up and consists of professors who will determine university research policies in Sierra – Leone. It is also their duty to approve funding for research.

In 2001, the cabinet approved the science and technology council with technical assistance from UNESCO. The goals of the council are;

1. To reduce poverty.
2. Application of research findings.
3. Promotion of science and technology.

### (ii) LIBERIA PRESENTATION

*Prof. S. Benson Barh.*

In his presentation, Professor Barh highlighted the state of science in Liberia, and pointed out clearly that the social sciences are given more emphasis, while the natural sciences seemed only a diversion.

In 1975, the first college of science was established. This is followed by the structuring of science in 2000, a programme sponsored by UNESCO.

Subsequently, seven (7) colleges and three (3) universities were opened in the year 2000. He categorically stated that the state of science in Liberia is very poor.

Policy: There is no policy on science and technology in Liberia, nor a policy to promote the development of science and technology in Liberia.

Recommendation: the presenter recommends the establishment of an academy in Liberia

and the formation of a policy design and implementation committee that will make science policies in Liberia.

### **(iii) EQUATORIAL GUINEA PRESENTATION**

***Dr Rigoberto Esono***

Dr Esono pointed out that Equatorial Guinea is a small country made up of Islands. The country has an institution called the National Institute for Forestry Development and Protection. Forestry is one of the major sources of income to the country because it provides timber for exportation and wildlife for tourism and meat export. The country has elephants, monkeys, and other wildlife that are abundant for tourism.

Equatorial Guinea has the National Council for Science and Technology Research. There is also the National University of Equatorial Guinea.

According to Mr Esono, Equatorial Guinea needs the following;

- ✓ Technical support
- ✓ Communication gap between their national institutes and the international ones need to be filled
- ✓ Financial support
- ✓ Collaborative offers in science and technology and other human endeavours.

### **(iv) GAMBIA PRESENTATION**

***Dr Momodou Jain***

Dr Jain explained that Gambia has the following institutions:

- ✓ Research institutions
- ✓ Ministry of Higher Education, Research, Science and Technology was created recently
- ✓ Gambia Technical Training Institute
- ✓ University of Gambia was established in 2000 after a trail of universities
- ✓ National Agricultural Research Institute

#### **NON – GOVERNMENTAL;**

- ✓ International Tryphonotolerance Centre.
- In the aspect of science and research policy effort, the following are happening/available:
- ✓ Preparation process for the development of a Science and Technology Ministry
  - ✓ A validated National Health Research Policy,
  - ✓ Preparation process for the development of Science and Technology Policy.

## **SESSION 4: SOURCES OF FUNDING FOR THE ACADEMIES**

***Ms. Jackie Olang***

According to the presenter, funding is required to sustain all operations of the academies. For example, the academies require money for;

- ✓ Furniture
- ✓ ICT equipment
- ✓ Secretariat personnel
- ✓ Operational expenses
- ✓ Organizing conferences / workshops

She enumerated a number of sources of funds to the academies. They are;

- ✓ Government support e.g. baseline or contracts
- ✓ Private sector e.g. contract on non-specific organs
- ✓ Interest from banks
- ✓ Philanthropists and well wishers
- ✓ International organizations
- ✓ Academy networks etc.

## **HOW NASAC CAN HELP**

***Ms. Jackie Olang***

The Network of African Science Academies (NASAC) can help the academies in various ways such as:-

- ✓ By providing simple messages to inform governments so as to enable the science voice being heard
- ✓ By contributing to science policy and being part of the solution through national research
- ✓ By seeking networking opportunities
- ✓ By facilitating interactions with policy and decision makers

Other Avenue are:

- ✓ Identify strategic partners
- ✓ Develop and share expertise on funding opportunities
- ✓ Support networking with policy decision makers

Ms Olang concluded by pointing out that there is a clear need for collective responsibilities and efforts in whatever we set forward to achieve.

## **DISCUSSION**

Comment: A comment was made on the usefulness of starting an academy with government charter, but knowing that it is not necessary for an academy to start with government charter. However, the advantage of private bill is that once achieved, it secures some income from inception.

## **WHAT CAN BE DONE QUICKLY AND WITH LITTLE RESOURCES?**

- Countries should call for meetings/sensitization workshops on topics that will attract policy makers
- Identify the leading scientists in the country by the use of existing database
- Exposing areas of need for capacity building
- Send invitations to leading scientists and observers to attend NASAC activities as observers
- Build a database, within NASAC secretariat, of scientists in various countries
- Identify the nucleus of science drive in the process

# APPENDICES

Appendix 1: WORKSHOP PROGRAMME

WORKSHOP AGENDA

DAY I – Tuesday 28<sup>th</sup> September 2010

Session 1	The concept & evolution of academies	
09:00-09:10	Opening & welcome	Prof Joseph Okogun
09:10-09:30	Overview and introductions	Dr. Oladoyin Odubanjo
09:30-09:50	Evolution of academies	Prof. Ephraim Okon
09:50-10:10	The identify & role of science academies	Ms Jackies Olang
10:10-10:30	Discussion	
10:30-10:50	<i>Tea break</i>	
Session 2	Creation & Strengthening of academies	
10:50-11:10	GAAS-Lesson learnt	Prof. SK Danso
11:10-11:30	Considerations in starting an academy- The Nigerian Academy of Science	Prof. Awele Maduemezia
11:30-11:50	Discussion	
11:50-12:10	NASAC aims and objectives	Dr. Jasper Kirika
12:10-12:30	Governance of science academies	Prof. Adeyinka Afolayan
12:30-13:00	Discussion	
13:00-14:00	<i>Lunch</i>	
Session 3	Academies and evidence-based policymaking	
14:00-14:20	The science-policy gap	Prof. Joseph Okogun
14:20-14:40	How academies can influence policymaking -UNAS	Mr. Franklin Muyonjo
14:40-15:00	Discussion	
14:00-15:20	Making the impact felt	Prof. Soga Sofola
15:20-15:40	Tracking the results	Mr. Franklin Muyonjo
15:40-16:00	Discussion	
16:00-16:20	<i>Tea break</i>	

Session 4	Science & policy sphere in West Africa (Short presentations & discussion)	
16:20-16:30	Sierra-Leone	Country Rep
16:30-16:40	Liberia	Country participant
16:40-17:00	Discussion	
DAY II – Wednesday 29 <sup>th</sup> September 2010		
Session 5	Science & policy sphere in West Africa II (Short presentation & discussion)	
09:00-09:10	Central African Republic	Country participant
09:10-09:20	Equatorial Guinea	Country participant
09:20-09:30	Sao Tome & Principe	Country participant
09:30-09:50	Questions and discussion	
09:50-10:00	Cape Verde	Country participant
10:00-10:10	Guinea Bissau	Country participant
10:10-10:20	Gambia	Country participant
10:20-10:40	Questions and discussion	
10:40-11:00	<i>Tea break</i>	
Session 5	Networking and funding impact	
11:00-11:20	Sources of funding for academies	Ms Jackie Olang
11:20-11:40	Benefits of the academy- government relationship	Prof. Peter Onwualu
11:20-11:40	How academies can benefit from each other	Prof. David Okali
12:00-12:30	Discussion	
12:30-13:30	<i>Lunch</i>	
Session 6	Breakaway session	
13:30-14:30	Group 1-What are the first steps to starting a national science academy?	
	Group 2- How important is it to start with government charter?	
	Group 3-What can be done quickly and with little resources?	

14:30-15:00	<i>Tea break</i>	
Session 7 15:00-16:00	<b>The near future-nest steps (groups report back and discussion)</b>	
	Group 1-What are the first steps to starting a national science academy?	
	Group 2- How important is it to start with government charter?	
	Group 3-What can be done quickly and with little resources?	
16:00-16:15	How can NASAC help?	Ms Jackie Olang
16:15-16:20	Closing remarks	Prof. Joseph Okogun

## Appendix 2

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## ACRONYMS AND ABBREVIATIONS

NAS	–	Nigeria Academy of Science
NASAC	–	Network of Africa Science Academy
UNAS	–	Uganda National Academy of Science
GAAS	–	Ghana Academy of Arts and Social Science
SAN	–	Science Association of Nigeria
R & D	–	Research and Development
NAEC	–	National Atomic Energy Commission
NASENI	–	National Science and Engineering Institute
IAC	–	Inter Council Foundation
ST&I	–	Science Technology and Innovation
ICT	–	Information and Communication Technology

