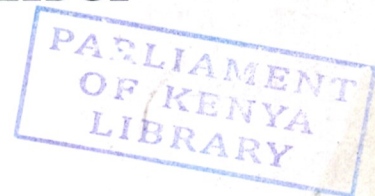


## **KENYA NATIONAL ACADEMY OF SCIENCES**

**FOR THE ADVANCEMENT  
OF FRONTIERS OF KNOWLEDGE**



## **ANNUAL REPORT 2005/2006**

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## ANNUAL REPORT 2005/2006

### 1. INTRODUCTION

- The Kenya National Academy of Sciences is an established and recognized institution with the necessary legal and Government support, enjoying a strategic position as an umbrella body for all professional organizations which embrace Science and Technology including Social Sciences and Humanities in the country. It has linkages with National institutions of higher learning, research institutions, international scientific bodies and other Academies with similar objectives. The Academy is in a strategic position to utilize the opportunities available in achieving its objectives to contribute to the National Agenda on Development.

### 2. ADMINISTRATION

- The Kenya National Academy of Sciences derives its mandate from the members who assemble at the Annual General Meeting (AGM) to review its past activities and plan for the year. At the AGM, activities, reports and audited accounts are presented for scrutiny and approval. The Governing Council is the supreme body under which the Executive Committee works to ensure the implementation of all its activities approved at the Annual General Meeting.

### 3. SPECIAL GENERAL MEETING.

- At the Special General Meeting held on April 28<sup>th</sup> 2005 at the University of Nairobi, a total of 44 new members were inducted to the Academy. The Executive Committee has further processed and approved applications of 31 new individuals which are pending approval of the Governing Council.
- Membership recruitment is an ongoing process whereby applications received are evaluated by the nominating teams before they are presented to the Governing Council for approval.

### 4. ACTIVITIES

- The Academy objectives are realized through a wide range of activities including the following:-

## **A. PUBLICATIONS**

### **i. Kenya Journal of Sciences.**

- The Academy publishes high level research papers in the Kenya Journal of Sciences, twice a year, in three series covering the scope of the Specialist Committees. This year, the Academy has published the following Journals:

Series A: - Physical and Chemical Sciences, Vol. 11 No. 2, 2006

Series B: - Biological Sciences, Vol. 13 No. 1, 2006

- It is regrettable that no journal in series C was published this year due to a lack of ready peer reviewed articles. All Members/Fellows have been encouraged to forward their research articles for publication since funds are now available.

### **ii. Promotion of Science and Technology (POST) Magazine.**

- Through the magazine "Promotion of Science and Technology" (POST), the Academy promotes Sciences and Technology among young people, particularly high school students by helping in the inculcation of scientific attitudes.
- The Academy obtains best papers presented at the National Students Science Congress, which is held annually and publishes then in POST magazine. This year, the Academy published Vol. XII No. 1, 2006 of the POST magazine.
- Copies of both KJS and POST were sent to all members and all University Libraries in Kenya.

### **iii. Public Lecture Series**

- The Academy organizes public lectures by its Fellows and Members. Besides reviewing and analyzing development in the sciences, the public lectures address related policy and operational implications and make appropriate recommendations. Distinguished scholars are invited to participate and proceedings are published. This year the Academy was able to finally publish the Book on "*Environment and Development, Biodiversity*" which contains Research papers which were presented at the 1997/1998 Academy Public Lecture Series.

**iv. Publication of Conference/Workshop Proceedings.**

**a. National Workshop on Science and Technology Parks for Sustainable Industrial Growth, 30<sup>th</sup> June 2004.**

- The main objective of the workshop was to establish the right foundation for the development of Science and Technology Parks for Sustainable Relationship between Universities, Research Institutions, Government and Industries in the implementation and commercialization of Research and Development (R&D) and the incubation of results as well as launching new knowledge-based enterprises.
- This workshop was the Academy's initial effort towards the celebration of the Scientific Revival Day of Africa (June 30<sup>th</sup>). This day was initiated by the African Union (AU) formally the organization of the African Unity in support of enhancing Science and Technology capacity and popularization of Science and Technology. The Academy decided to link some of its activities with this effort and consequently started celebrating the Scientific Revival Day of Africa every year. The workshop was co-hosted and funded by KNAS, African Technology Policy Studies (ATPS), African Academy of Sciences (AAS) and the International Service for the Acquisition of Agri-Biotech Applications (ISAAA).
- The proceedings of the workshop and all the papers presented have been published and distributed to all Fellows/Members and workshop participants.

**b. First International Conference of the African Science Academy Development Initiative (ASADI) November 7-8<sup>th</sup>, 2005, Nairobi.**

- The conference was co-hosted by the Kenya National Academy of Science and the African Academy of Sciences through funding by the Bill and Melinda Gates Foundation through the U.S National Academies of Sciences (U.S NAS).
- The theme of the conference was *"Improving Public Policy to achieve the Millennium Development Goals in Africa: Harnessing Science and Technology Capacity"*. KNAS produced and published a report of the proceedings which has been distributed to all conference organizers, participants and other interested Stakeholders.

### **Forthcoming Publications**

- i. **Proceeding of the National Workshop on Science Technology Capacity in the Framework of Millennium Development Goals 8-9<sup>th</sup> December 2005.**
  - In 2005, in order to contribute towards the MDG's, the Academy organized a National Workshop in December 2005 with the theme "*Science and Technology Capacity in the Framework of Millennium Development Goals*". The objectives of the workshop were to popularize and sensitize stakeholders on the role of Science and Technology in achieving Millennium Development Goals, and to inform policy makers about the essence of Capacity Building in Science and Technology for wealth creation and sustainable development. The workshop was entirely financed by the Rockefeller Foundation. The Academy requested part of the grant to be used in the publication of the proceedings of the workshop
  - The publication is in press and is due to be released soon.
- ii. **National Symposium on Science, Technology, Innovation and Society: The African Perspective and Experiences: June 29<sup>th</sup>-30<sup>th</sup> 2006.**
  - The main objective of the symposium was to review the success of science and technology in improving the quality of life in society, and to plot a new dimension for the advancement of the society, through popularization of success stories in science and technology including public debates and participatory processes.
  - The symposium was in celebration of the Scientific Revival Day of Africa and covered the following topics: Basic and Applied Sciences, Interactive Communication Technology, Energy Sources, Life Sciences and Health, Development and Environmental Sciences, Science and Technology Policy in Kenya.
  - The proceedings of the workshop are now being prepared for publication.

### **B. MEETINGS**

- The Academy participates or collaborates in the organization of scientific meetings inside and outside Kenya. It also arranges visits for scientists from other countries in Kenya and vice versa in an effort to establish and maintain

associations and relations between Kenyan scientists and the international scientific community.

## **1. ADMINISTRATIVE MEETINGS**

### **i. Executive Committee Meetings**

- The KNAS Executive Committee has had an extremely busy period resulting from preparations for the ASADI I Conference, the Scientific Revival Day of Africa Celebrations and preparations towards the development of the KNAS Strategic Plan. The Executive Committee has met several times in preparation for the Governing Council meetings, Strategic Plan and Workshops.

### **ii. Regional Meetings.**

1. Academy of Science of South Africa (ASSAf) Double Symposium on Evidence Based Advice, 3<sup>rd</sup> March 2006, Pretoria, South Africa.
2. Visit of Academy Presidents to International Council for Science (ICSU) Regional Office for Africa (ROA) Consultative Forum, South Africa 3<sup>rd</sup>-5<sup>th</sup> March 2006.
3. 2<sup>nd</sup> Global meeting of the Inter-Academy Medical Panel (IAMP) and launch of Disease Control Priorities Project (DCPP), April 2<sup>nd</sup> - 6<sup>th</sup>, 2006 - Beijing, China.
4. Health Forum meeting, South Africa 10<sup>th</sup>-12<sup>th</sup> April 2006.
5. African Science Academy Development Initiative II (ASADI) planning meeting, Yaoundé, Cameroon 15<sup>th</sup> -17<sup>th</sup> May, 2006.
6. ICSU ROA Consultative Meeting, Nairobi 17<sup>th</sup>-18<sup>th</sup> July 2006.
7. Inter Academy Panel (IAP) -Water Programme - South Africa 16<sup>th</sup>-18<sup>th</sup> August 2006.
8. ICSU Consultative Meeting. South Africa 25<sup>th</sup>-27<sup>th</sup> September 2006.
9. African Union (AU) - Conference of African Scientists & Policymakers, 26<sup>th</sup>-28<sup>th</sup> October 2006, Alexandria, Egypt.

10. Workshop on Science/Mathematics Teacher Professional Development and Testing 13<sup>th</sup>-14<sup>th</sup> December 2006- Nairobi.
11. International Workshop on Science/Mathematics Teacher Professional Development and Testing Pretoria, South Africa, 23<sup>rd</sup> - 24<sup>th</sup> March 2006.

**iii. International Meetings**

1. IAP Science Education Evaluation Seminar, 19<sup>th</sup>-24<sup>th</sup> September 2005, Stockholm, Sweden.
2. The 28<sup>th</sup> General Assembly of ICSU in Shanghai and Suzhou, China, 17<sup>th</sup> - 21<sup>st</sup> October 2005.
3. Scope 2015 Policy Forum Brussels Movement, 5<sup>th</sup>- 8<sup>th</sup> November 2005, Brussels, Belgium.
4. Capacity Building for Africa Science Academies - Visit of representatives of NASAC Members to KNAW 28<sup>th</sup> Jan - 7<sup>th</sup> Feb 2006.
5. Ministerial Forum on "Frontier Environmentally Sound Technologies (FEST) for Africa's Sustainable Development: the Role of the Diaspora" Accra, Ghana, 27<sup>th</sup> - 29<sup>th</sup> April 2006.
6. The Academy of Sciences for the Developing World (TWAS)/Third World Network of Scientific Organizations (TWNSO) - Rio, Brazil 1<sup>st</sup>-7<sup>th</sup> Sept 2006.
7. Science, Technology and Society Forum (STS), Kyoto, Japan - 10<sup>th</sup>-12<sup>th</sup> Sept 2006.
8. Workshop on Inquiry-Based Science Education (IBSE) Project Evaluation, Santiago, Chile, September 25<sup>th</sup>-26<sup>th</sup>, 2006.
9. Network of African Science Academies (NASAC) Royal Society Visit - 7<sup>th</sup>-14<sup>th</sup> October 2006.
10. ICSU Dues Review 20<sup>th</sup>-22<sup>nd</sup> October 2006.
11. ASADI II, Cameroon 12<sup>th</sup>-16<sup>th</sup> November 2006.

12. IAP General Assembly Scientific Conference, Alexandria, Egypt 1<sup>st</sup>-6<sup>th</sup> Dec 2006.

13. IAP/NASAC Science /Mathematics Teacher Evaluation 13<sup>th</sup>-14<sup>th</sup> Dec 2006.

## **5. RESEARCH FUNDS**

- The Academy administers or helps in administering funds for purpose of Scientific Technological Research and suggests ways in which Scientific Projects in Kenya may be instituted carried out or revised. In collaborations with the private sector and other organizations with similar objectives, the Academy undertakes research projects which address themselves to topical and specific issues in an effort to generate practical solutions.
- Last financial year 2005/06, the Treasury factored into the Ministry of Education, Science and Technology a budget sum of Kshs. 65,000,000 for Research and Development (R &D).
- Members of the Academy were requested to submit Research proposals which could be forwarded to the Ministry for consideration.
- The Academy received 16 proposals totaling Kshs. 97,651,958.00 which were submitted to the Commission for Higher Education (CHE) Secretariat who were handling the research allocations. KNAS offered the expertise of its members in reviewing the proposals and allocations if need arose.
- A further Kshs. 75 Million has reportedly been awarded to the (CHE) for research this financial year 2006/07. Again KNAS has written to CHE enquiring on the mode of disbursement and the beneficiaries. You are requested to urgently submit research proposals for onward transmission to CHE.

## **6. WEBSITE DEVELOPMENT**

- The Academy website <http://www.knascience.org> is already active. The website is hosted by 3Mice Interactive Media Ltd. They also provide e-mail services which has a maximum of thirty (30) accounts in the following format ([secretariat@knascience.org](mailto:secretariat@knascience.org)). Members of KNAS have been asked to present their profiles for posting on the site. Activities of KNAS and other relevant information e. g opportunities available in Research are already being posted



on the site. We urge you to frequently visit the website. Please send us your profile and passport size photo urgently for posting on the same.

#### **7. VISIT TO THE MINISTER OF SCIENCE AND TECHNOLOGY OCT. 3, 2006**

- The KNAS Executive Committee accompanied the U.S National Academy of Sciences for a visit to the Minister of Sciences and Technology on 3/10/6.
- The U.S NAS delegation comprised of Dr. Patrick Kelley who is the Director of the African Science Academy Development Initiative (ASADI) Board at the U.S NAS. He was accompanied by Dr. Katherine McClure who is a Project Officer at U.S NAS. With the Minister to meet the delegation, was the Permanent Secretary for Education, Prof. Crispus Kiamba and the Personal Assistant to the Minister, Mr. Chege.

#### **8. TWAS/IAP/NASAC INSTITUTIONAL SUPPORT GRANT**

- This grant is for Capacity Building for NASAC Members and is mainly for purchase of equipment.
- With this support, KNAS has been able to purchase 3 computers, 2 laptops and one printer.

#### **9. THE FUTURE**

- **KNAS Strategic Plan (2006-2011)**
  - Through funding from the U.S NAS, KNAS has been able to produce and develop a Strategic Plan for 2006-2011.
  - In the Strategic Plan, KNAS was able to re-examine its vision, mission and objectives and in the process restated its visions, mission and defined our core values.
  - We have now embarked on the implementation process of the Strategic Plan.
  - We are also planning to launch the Strategic Plan in the near future.
  - Copies of the Strategic Plan were sent to all members.

## **10. FINANCIAL STATEMENT**

KNAS principal source of income is Government Grants-in-Aid. The other sources of income are research Grants from other organizations and Institutions that support our research proposals. Also KNAS collects annual membership subscription fees and admission fees from its members and newly admitted members.

The Finance Committee based on programmes approved by the Governing Council prepares KNAS annual budgets and annual statements of income and expenditure. The committee also plan and execute ways and means of raising funds for the National Academy.

Prof. Joseph O. Malo  
Chairman,  
**Kenya National Academy of Sciences.**

**SPEECH BY HON. DR. NOAH WEKESA, MINISTER FOR SCIENCE AND TECHNOLOGY, DURING THE CELEBRATION OF AFRICA SCIENTIFIC REVIVAL DAY ON 29<sup>TH</sup> JUNE, 2007**

KENYA NATIONAL ASSEMBLY

29 AUG 2007

**Honorable Members of Parliament from the United Kingdom, Tanzania, Uganda and Kenya; distinguished guests, ladies and gentlemen.**

Let me enjoin my colleagues, and warmly welcome you all, firstly to Kenya and, secondly, to this important celebration of science revival day for Africa.

This year's celebration of the scientific revival day comes at an opportune moment in the development of African countries. It also comes at a time when most nations are reflecting on how to infuse Science, Technology and Innovation into their national strategies of reducing poverty, creating wealth and establishing sustainable and fulfilling human lives for their citizens, as well as using science and technology to enhance international competitiveness in an increasingly globalized world.

**Ladies and gentlemen,**

Nations that have conquered poverty recently have done so by adding value to their resources using the tools of science and technology and the skills of their scientists. The necessary and sufficient condition for balanced and accelerated development in Africa is to embrace the paradigm of science and technology as being the prime movers and pillars of development in this century. The African continent should, therefore, give science and technology high profile by exploiting the opportunities to learn from the experiences of countries that have prudently applied science and technology in their development strategies.

It is against this background that the African Heads of State and Government accorded high priority to matters of science and technology during their Addis Ababa Summit early this year. This was as a direct follow up of the Africa's Science and Technology Consolidated Plan of Action developed during 2005. The African Council of the Ministers of Science and Technology (AMCOST) has been mandated to spearhead the implementation of this Plan. I am pleased to note that Kenya will host the Third AMCOST Conference as well as take over the Chair of AMCOST later this year for the next two years.

**Ladies and Gentlemen,**

Kenya has recognized the importance of applying science and technology in the achievement of her declared development objectives. The approach taken by the Government was to re-establish the Ministry of Science and Technology, which has been mandated to entrench and strengthen scientific and technological culture in the country.

Upon its establishment, the Ministry proceeded to start the heavily collaborative and interactive process of the development of the National Science, Technology and Innovation Strategy. The process of the development of this new national policy has been a part of the much broader process of the development of the Kenya Vision 2030, a Vision that is expected to provide the overall and strategic long-term development direction for the entire country.

The Kenya Vision 2030 calls for Kenya by 2030 to be "*a globally competitive and prosperous nation with a high quality of life*". The Vision 2030 is anchored on three key pillars, an economic, a social and a political pillar. The economic pillar underpins the vision for prosperity – aspiring to an economic transformation journey aimed at achieving and maintaining a sustained economic growth rate of 10% per annum over the

next twenty five years. The social pillar seeks to create and build a just, cohesive society, with equitable social development, in a clean and secure environment. The political pillar in turn aims at realizing a democratic political system that nurtures issues-based politics, respects the rule of law, and protects all the rights and freedoms of every individual in our society.

Vision 2030 recognizes that the effective use of knowledge is becoming the most important factor for creating wealth and improving social welfare and for international competitiveness. Kenya must therefore strive towards becoming a knowledge economy, in where the creation, adoption, adaptation and use of knowledge become the focal point of rapid economic growth. Countries such as Korea, Malaysia, Finland, China and Chile illustrate the rapid progress that can be made over relatively short periods of time by pursuing coherent strategic approaches to building their country's capabilities to create, access, and use knowledge

Further, the Vision 2030 recognizes that, in the process of the emergence of the knowledge economy, there is growing importance of science-related and technology-related activities. Science, technology and innovation have therefore become central to the new economic sectors that have given momentum to the upward growth of knowledge-based economies as a whole over the past few decades.

In this regard, Kenya's Vision 2030 strategies are based on the realization that science, technology and innovation will be central in the socio-economic transformation of the country. In this connection, the new national Science and Technology strategy envisions *"a nation that harnesses science, technology and innovation to foster national prosperity and global competitiveness for wealth creation and to achieve a high quality of life for its people"*. The objective will be *"to ensure that science, technology and innovation are mainstreamed in all the sectors and processes of the economy"*.

## **Ladies and Gentlemen,**

We recognize the need to work closely with members of the scientific community in order to raise the profile of science and technology in our country. The Ministry therefore supports the work of the Kenya National Academy of Sciences as a key stakeholder in the scientific scene in this country. I am personally persuaded that the Academy, as the institution which mobilizes scientific skills and knowledge, is important springboard for popularizing science and for educating the public in understanding science, technology and innovation and their implications to development.

We therefore expect the Academy to, in turn, work closely with other Ministry's and other Government's organs that play major roles in the co-ordination and advancement of science and technology in the country. We expect the Academy to therefore establish broad based, inclusive and credible structures that especially encourage the youth to take up sciences.

As part of the implementation of both its Strategic Plan for the next five years and the new national Science, Technology and Innovation Policy, my Ministry is in the process of putting in place a number of strategies, initiatives and programmes to ensure a fast-tracked integration of science and technology into production processes in the country.

One major strategy will be to establish a rationalized and strengthened national innovation system as an optimum network of organizations and institutions that are directly involved in the creation, nurturing, diffusion and applying and commercialization of scientific and technological knowledge for sustainable development. We have proposed many other strategies, including a Programme of national Centres of Excellence, a programme of Mzalendo Science and Technology Parks, a National Awards Programme, a national programme

for the strengthening of science, engineering and technology skills, a TIVET programme, and so forth.

All these will require enormous resources from all of us, the Government, the private sector, and our friends in the development community. In this connection, we are planning to establish a Science and Technology Foundation to spearhead the process of co-ordination and the raising of required resources to support our efforts. I am pleased to indicate that, the Government allocated an initial capital sum of KShs. 200 million for an Endowment Fund for Research and Innovation and we look forward to working with all of you to augment this facility.

### **Ladies and Gentlemen,**

Before I conclude my remarks, let me briefly turn to the theme of this Regional Workshop.

The choice of the theme for this year's celebration of Africa's scientific revival day took cognizance of the primacy of parliamentarians and scientists working together to establish a sustained development culture within Africa. The culture will be founded on the recognition of the importance of scientific and technological knowledge, and hence the need for Parliament to apportion realistic resources to establish local scientific capacity and infrastructure.

The first step in inculcating science and technology culture into our national ethos is the recognition by the Parliament that science, technology and innovation are critical, necessary and essential tools in policy formulation. Parliament is therefore obligated to establish a national science, technology and innovation system within which knowledge is generated and applied. But the responsibility of creating such a system extends beyond parliament, and must incorporate inputs from local scientists and academies.

The Ministry, especially through its Directorate of Research Development and the national Council for science and Technology has been working closely with the Kenyan parliamentarians in areas that have required new legislation. This is especially so in the recently developed national Biotechnology Policy and the Biosafety Bill that is about to be published by the Attorney General. In the on-going review of laws relating to education, training and research, both my Ministry and the Ministry of education are also engaging the relevant Kenya's Parliamentarians.

More however needs to be done and I am therefore pleased to note that the Kenya National Academy of Sciences has recognized the weak linkage between scientists and parliament, and is now spearheading activities to enhance the frameworks for scientists and parliamentarians to work together for national good.

We obviously can learn from the experience gained in the UK as well as in other countries on how parliament, the supreme national governing organ, is able to work with the national scientific community to capitalize on the use of science and technology in development. One major lesson is that the most rewarding policies are based on objective criteria and analysis of baseline and situational data. Our African countries are pro-actively moving towards knowledge-based economies. To do so the countries must be able to scout and analyze global developments in technology in order to choose those which are appropriate for domestication in our countries. Such approach can be informed and strengthened by using our scientific human-power to acquire sound and objective data for decision making.

I urge all participants in this workshop to learn from the experience of those with longer encounters with science and technology, and to think clearly on how the lessons learnt can be used to create local capacities in African countries. I would particularly like to urge the African delegations to assess the POST and Pairing Schemes in the UK and generate strategies



on how similar schemes can be introduced in African countries. We should keep in mind that different mechanisms may be applicable in different conditions for ensuring collaboration between parliamentarians as policy makers and scientist.

As I said earlier, the challenge for bridging the gap does not lie on parliamentarians alone. I am persuaded that our scientists have capacity to lead the way and therefore should be able to speak up on matters that touch on scientific issues by engaging the political leadership without fear. Science and technology matters are best handled by scientists who should not hesitate to lead from the front. Scientists should be able to make objective contributions to the solution of problems of food security, health, infrastructure and energy. I wish to assure the scientific community in Kenya that the Ministry remains receptive to suggestions and ideas on how to use science in tackling society problems.

I therefore thank the KNAS for participating in this collaborative initiative with the Royal Society. I request that this partnership be extended to include higher and practical levels of collaboration. My Ministry is aware that such collaborations will be for the benefit of the participating institutions, and we will support them. My ministry will also provide support and facilitation to enable the Academy and other scientific organizations develop capacity to participate in providing objective and unbiased advice to parliamentarians and to the government in general. I also request stakeholders in the East African Region to share and compare experiences openly among themselves, and also inform the members of the EALA.

**Finally, LADIES AND GENTLEMEN,**

I wish you productive discussions and hope that the final report and recommendations will be shared liberally and lead to strengthening of the development synergy between science and technology, and the political leadership. Thank you and God bless you.