

First Annual International Conference of the

African Science Academy Development Initiative

*Improving Public Policy to Achieve the Millennium
Development Goals in Africa: Harnessing Science and
Technology Capacity*

November 7-8, 2005
Nairobi, Kenya

CONFERENCE REPORT

By
Prof. Isaac. O. Nyambok

Hosted by
The Kenya National Academy of Sciences
The African Academy of Sciences
US National Academies

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Acknowledgements

The conference was an inaugural event of the African Science Academy Development Initiative mounted by the U.S. National Academies through funding from Bill and Melinda Gates Foundation. It is an aspect of the partnership between the African Science Academies and U.S. National Academies for improving public policy to achieve the Millennium Development Goals (MDGs) in Africa. It was organized by the Kenya National Academy of Sciences, Africa Academy of Sciences and the U.S National Academies. The conference was attended by 161 eminent scientists and policymakers.

The Government of the Republic of Kenya provided significant logistical support while the University of Nairobi made provisions for the facilitation of communication. Kenya Airports Authority and East African Portland Cement provided great assistance to the conference. Conference facilities and hospitality were provided by the Hotel Intercontinental, Nairobi.

The Organizing Committee is fully appreciative of the support and assistance that it received from the aforementioned organizations. The participants played a key role in making the conference rigorous and successful. The commitment and contribution of the facilitators and speakers were outstanding and are equally appreciated and acknowledged.

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African Science Academy Development Initiative

*Improving Public Policy to Achieve the Millennium
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PROGRAM

Hosted by
The Kenya National Academy of Sciences
The African Academy of Sciences
US National Academies

Sunday, November 6, 2005

4.30PM – 6.00PM **Registration**

6.00PM – 7.30PM Welcome Reception

Harnessing Science and Technology for Public Policy

“Welcome” by the Organizing Committee

Monday, November 7, 2005: Public Launch & Presentation Sessions

8.00AM – 9.00AM Registration

Meeting Objective: To bring together scientists and national policymakers to explore the potential role of African science academies in informing national-level and regional-level government decision-makers on matter related to human health, quality of life and development. The Millennium Development Goals are timely and potentially useful focal point around which to consider the contribution of science academies, given that African governments may draw upon scientific resources in fulfilling their countries' commitments to the Goals.

9.00AM – 9.15AM **Day 1 Facilitator: Prof. Isaac Nyambok**, Chairman, Organizing Committee, Kenya

15 min Orientation

Orientation of the Meeting:

Prof. Isaac O. Nyambok, Chairman, Organizing Committee, Kenya

Dr Enriqueta Bond, Chair of the Board on African Science Academy Development, USA

9.15AM – 10.45AM **SESSION I: INFORMING PUBLIC POLICY TO ACHIEVE THE MILLENNIUM DEVELOPMENT GOALS IN AFRICA: A ROLE FOR AFRICAN SCIENCE ACADEMIES**

Session Objectives: To provide background information on the Millennium Development Goals, and explore these Goals as a vehicle through which African Science academies could provide input to government policymakers.

Moderator: Prof. Wieland Gevers, Executive Director, Academy of Science of South Africa.

Speakers

12 min presentations

1. **Role of Science Academies in Development: Perspectives from the MDG Science, Technology and Innovation Task Force:**
Prof. Lee Yee Cheong, President, Academy of Sciences of Malaysia, Kuala Lumpur and Coordinator, UN Millennium Project Task Force Report on Science, Technology and Innovation.
2. **Role of Science Academies in Development: Perspectives from African Academy Experience:** **Prof. Shem O. Wandiga**, Director, Centre for Science and Technology Innovations, Kenya
3. **Millennium Development Goals for Health: Rising to the Challenges:** **Prof. Miriam Were**, Chairperson, African Medical and Research Foundation and National AIDS Control Council, Kenya.

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4. **Science Academy Potential to Advise National Governments:**
Dr Michael Clegg, Foreign Secretary, The National Academy of Sciences, Washington, DC
 5. **Perspective from NEPAD: Science in Regional Decision-Making:** **Hon. Dr. Yaye Kene Gassama Dia**, Minister for Scientific Research, Senegal
- Discussion Session (30 Minutes)*

10.45AM – 11.15AM TEA / COFFEE BREAK

11.15AM – 12.15PM OPENING SESSION

10 min presentation

Welcome Remarks

- **Prof. Mohamed Hassan**, President, African Academy of Sciences and Executive Director, Third World Academy of Sciences
- **Prof. Joseph O Malo**, Chairman, Kenya National Academy of Sciences

10 min presentation

- **Introduction: Hon. Prof. George Saitoti** Minister for Education, Science and Technology, Government of Kenya

11.35AM – 12.15PM Opening Address: H. E. President Mwai Kibaki, President of the Republic of Kenya

- **Address on Rational Policymaking for Development and Good Governance: H. E. President Olusegun Obasanjo**, President, Federal Republic of Nigeria and President of the African Union

12.30PM – 2.00PM LUNCH BREAK

12.30PM – 1.00PM Press Conferences

12.30PM – 2.00PM **African Academies and Policymakers Meet Over Lunch – Invitation Only** (Bandini Room)

2.00PM – 3.30PM SESSION II: LOCAL SOLUTIONS FOR GLOBAL CHALLENGES: USING SCIENCE AND EVIDENCE TO IMPROVE DECISION MAKING IN AFRICA

Session Objectives: To discuss challenges involved in identifying and communicating evidence-based research to policymakers

Moderator: Prof. Patrick Rubaihayo, Professor of Crop Science, Makerere University, Uganda

Panel Presenters:

15 min presentations

1. **Prof. Anthony Mbewu**, Executive Director for Research, Medical Research Council, South Africa
2. **Dr Narciso Matos**, Chair, International Development, Carnegie Corporation, USA
3. **Dr Ruth Levine**, Director of Programs and Senior Fellow, Center for Global Development, USA.
4. **Prof. David P S Wasawo**, former Chairman, University of Nairobi Council, Kenya.

Discussion Session (30 minutes)

3.30PM – 4.00PM	TEA/COFFEE BREAK
4.00PM – 5.30PM	SESSION III: POLICYMAKERS ROUNDTABLE DISCUSSION: HOW CAN SCIENCE ACADEMIES SERVE NATIONAL INTERESTS

Session Objectives: For ministerial, legislative and local government policymakers to discuss how academies of science could serve their decision-making needs.

Moderators:

1. **Amb. Bethwel Kiplagat**, Chairman, Somali Reconciliation Conference, Inter-Governmental Authority on Development (IGAD)
2. **Prof. Jo Ivey Boufford**, Former Deputy Assistant and Acting Secretary, US Department of Health and Human Services

Lead Discussants

1. **Dr James Hughes**, former Director, National Centre for Infectious Diseases, Centers for Disease Control and Prevention, US Department of Health and Human Services.
2. **Dr David Satcher**, former U.S. Surgeon General; US Department of Health and Human Services.

Roundtable Discussion

Uganda

- **Prof. Zerubabel M. Nyiira**, Executive Secretary, Uganda National Council for Science and Technology, Uganda
- **Hon Patrick Amuriat**, Chairman, Standing Committee for Science and Technology, Uganda
- **Prof. Emanuel Kaijuka**, Ministry of Health, Uganda.

Cameroon

- **Prof. Angwafo III, Fru Fobzushi**, Permanent Secretary, Ministry of Public Health, Cameroon.

Nigeria

- **Hon. Prof. Eyitayo Lambo**, Minister for Health, Nigeria
- **Hon. Prof. Jubril Aminu**, Senator of the Federal Republic of Nigeria
- **Otunba Gbenga Daniel**, Governor of Ogun State, Nigeria

Kenya

- **Hon. Prof. Peter Anyany' Nyong'o**, Minister for Planning and National Development, Kenya

Senegal

- **Hon. Moustapha Sourang**, Minister for Education, Senegal
- **Hon. Dr. Yaye Kene Gassam-Dia**, Minister for Scientific Research, Senegal

Ghana

- **Hon. Ms Christine Churcher**, Minister for Science and Environment, Ghana

5.30PM

5 min remarks

Closing and Adjournment by Day 1 Facilitator: **Prof. Isaac O. Nyambok**, Chairman, Organizing Committee.

Tuesday, November 8, 2005: Public Presentation Sessions

8.30AM

5 min Welcome Remarks

Day 2 Facilitator: Prof. Gideon B A Okelo, Secretary General and Acting Executive Director, African Academy of Sciences

5 min Introduction

Introduction of the Day's Agenda: Prof. Nimrod Bwibo, Chairman, Maseno University Council, Kenya

8.40AM – 10.00PM

SESSION IV: REDUCING CHILD MORTALITY AND DISEASE (MDG 4) AND IMPROVING MATERNAL HEALTH (MDG 5)

Session Objectives: To illustrate how science academies can assist policymakers in resolving controversies and in providing comprehensive answers to questions about specific programmatic or educational interventions related to improving child and maternal health. To describe how interventions and policy-making processes related to maternal and child health can be better clarified, prioritized, or improved through dialogues promotion or deliberation carried out by science academies.

Moderator: Prof. Dominic W. Makawiti, Treasurer, Kenya National Academy of Sciences and Dean, Faculty of Medicine, University of Nairobi, Kenya

Panel Presenters:

15 min presentations

1. **Prof. Alex Ezeh**, Executive Director, African Population and Health Research Center, Kenya
2. **Prof. Barthelemy Kuate Defo**, Director, PRONUSTIC Research Laboratory, University of Montreal, Canada
3. **Prof. Ruth Nduati**, Professor of Pediatrics and Child Health, University of Nairobi, Kenya
4. **Dr. Tomris Turmen**, Representative of the Director General, World Health Organisation, Geneva, Switzerland

Discussion Session (30 minutes)

10.00AM – 10.30AM

TEA/COFFEE BREAK

10.30AM – 12.00PM

SESSION V: ERADICATING EXTREME POVERTY AND HUNGER (MDG 1)

Session Objectives: To illustrate how science academies can assist policymakers in resolving controversies and in providing comprehensive answers to questions about specific programmatic or educational interventions related to eradicating poverty and hunger. To describe how interventions and policy-making processes related to poverty and hunger eradication can be better clarified, prioritized, or improved through dialogue promotion or deliberation carried out by science academies.

Moderator: Prof. Nimrod Bwibo, Chairman, Maseno University Council, Kenya

Panel Presenters:*15 min presentations*

1. **Dr Moses Banda**, Chief Economic Advisor, Zambia
2. **Dr Speciosa Wandira Kazibwe**, former Vice President of the Republic of Uganda.
3. **Dr Isatou Semega-Janneh Jallow**, Director, National Nutrition Agency, The Gambia
4. **Prof. Isaac O Nyambok**, Coordinator, Science and Technology Park, University of Nairobi; United Nations Sasakawa Laureate for Disaster Reduction, Kenya.

*Discussion Session (30 minutes)***12.30PM – 2.00PM LUNCH BREAK**

12.30PM – 2.00PM **African Academies and Policymakers Meet Over Lunch – Invitation Only**
(Bandini Room)

2.00PM – 2.10PM **How Science and Medical Communities Can Help Governments Achieve the Millennium Development Goals: Dr Jeffrey D. Sachs**, Director, The Earth Institute; Director, UN Millennium Project; and Special Advisor to United National Secretary-General Kofi Annan on the Millennium Development Goals.

2.15PM – 3.40PM SESSION VI: IMPROVING DISEASE PREVENTION: TECHNOLOGICAL, PUBLIC HEALTH EDUCATION, AND DECISION MAKING TOOLS (MDG 6)

Session Objectives: To illustrate how science academies can assist policymakers in resolving controversies and in providing comprehensive answers to questions about specific programmatic or educational interventions related to preventing diseases. To describe how interventions and policymaking processes related to disease prevention be better clarified, prioritized or improved through dialogue promotion or deliberation carried out by science academies.

Moderator: Dr. Richard Muga, Director, National Council for Population and Development, Kenya

Speakers and Presentations:*10 min presentations***Delivering the Right Interventions Well: Packaging, Policy, and Health Systems Priorities.**

1. **Prof. Anne Mills**, Professor of Health Economics and Policy, London School of Hygiene and Tropical Medicine, UK.

Importance of Public Health Education: The Polio Example

2. **Prof. Alhaji Umaru Shehu**, Professor Emeritus, Community Medicine, University of Maiduguri Teaching Hospital, Nigeria.

HIV Prevention

3. **Prof. Malcolm Barry Kistnasamy**, Program Manager for HIV/AIDS, Department of Community Health, Nelson Mandela School of Medicine, South Africa.

4. **Dr James M'Imunya Machoki**, Project Manager, UNITID/ FHI PEPFAR Project, University of Nairobi, Kenya

Control of Tropical Diseases

5. **Prof. Benson B A Estambale**, Director, University of Nairobi Institute for Tropical and Infectious Diseases (UNITID) Kenya

Virtual Education and Communication

6. **Prof. Jacques Bonjawo**, Chairman, Board of the African Virtual University, Nairobi, Kenya

Discussion Session (30 minutes)

3.40PM – 4.00PM

TEA/COFFEE BREAK

4.00PM – 5.30PM

SESSION VII: ROUNDTABLE DISCUSSION OF AFRICAN ACADEMY REPRESENTATIVES: THE WAY FORWARD

Session Objectives: To share perspectives on the opportunities and challenges that lie ahead for African science academy leaders.

Moderator: Dr. Cheikh Mbacke, Senior Advisor, The Rockefeller Foundation

50 mins

Concluding Remarks by African Science Academies

40 mins

Discussion

5 min Closing Session

Closing and Adjournment by Day 2 Facilitator;

Prof. Gideon B. A. Okelo, Secretary General and Acting Executive Director of the African Academy of Sciences

5.30PM – 6.30PM

ADJOURN TO FAREWELL RECEPTION

Closing Remarks;

- **Prof. Joseph O Malo**, Chairman, Kenya National Academy of Sciences
- **Prof. Mohamed Hassan**, President, African Academy of Sciences
- **Dr David R. Challoner**, Member, Board on African Science Academy Development and Foreign Secretary, Institute of Medicine, US National Academies

Introduction

The Annual International Conference series are promoted and facilitated by the U.S. National Academies as a component of the African Science Academy Development Initiative (ASADI). The initiative, started by U.S. National Academies is a ten-year programme which is intended to assist African science academies in capacity building. The capacity building involves activities geared towards strengthening infrastructure, experience and human resources of the individual African academies. The academies are expected to develop and sustain relationships with their respective governments and nations such that they will be regarded as trusted sources of excellent evidence-based policy advice.

The First Annual International Conference was held in Nairobi, Kenya hosted by the Kenya National Academy of Sciences, African Academy of Science and U.S National Academies with the theme: *Improving Public Policy to Achieve the Millennium Development Goals (MDGs) in Africa: Harnessing Science and Technology Capacity.*

The goal of the conference was to bring together outstanding scientists and prominent policymakers, mainly from Africa, to deliberate on how science academies can work together with their governments to effectively contribute to government policies on matters related to human health, quality of life and associated development issues. While it was recognized that policymakers at national levels work to implement their respective countries commitments to the achievements of the Millennium Development Goals, the development of national strategies involving active participation of the scientific community to inform and mobilize policy decisions in collaboration with science academies is necessary and timely.

The conference attracted approximately 161 participants including government ministers. The highlights of the deliberations of the conference are summarized in this report.

OPENING SESSION AND CONFERENCE ORIENTATION

Welcome Remarks

Presenters: Prof. Mohamed Hassan and Prof. Raphael M Munavu

Prof. Hassan, who is President of African Academy of Sciences (AAS) extended a warm welcome to the guests and participants. He said AAS was pleased to be a co-convenor of the conference and promised that more of such conferences were to come under the same project. He welcomed new national academies in Tanzania, Zambia, Sudan and Zimbabwe, and called on all African academies to change their membership demographics, as they were “too old, too male and too familiar with each other”. He challenged them to actively recruit young people from different fields of study to join their ranks as a means of revitalizing the academies. He also challenged the academies to improve their capacities to disseminate information and to network amongst themselves and called on the rich countries to help the poor ones to build their science and technology capacities.

Prof. Munavu represented the chairman of the Kenya National Academy of Sciences, Prof. Joseph O Malo, and read the speech on his behalf. Prof. Malo welcomed all participants to the conference and expressed how delighted the Kenya National Academy of Sciences was in co-organizing the conference with the African Academy of Sciences and US National Academies. He emphasized the point that the conference came at a time when most of the developing countries were addressing a lot of issues pertinent to their national development, stressing that the theme of the conference ‘Harnessing Science and Technology Capacity to Achieve the Millennium Development Goals’ could not have been more appropriate and timely.

He stressed his belief that since this was the first annual conference of ASADI, its activities including the Conference Report should be published and wisely distributed. He also reported that KNAS was at an advanced state of organizing a National Workshop on Science and Technology Capacity in the Framework of the MDGs, as a contribution to the Scientific Revival Day of Africa. He further added that KNAS strongly subscribed to the conviction that the MDGs were only achievable through enhancement of science and technology capacity as well as deliberate application and utilization of science and technology in national development.

Opening Address

Presenter: Prof. Karega Mutahi

Kenya’s Permanent Secretary to the Ministry of Education, Science and Technology, Prof. Mutahi, read the opening speech on behalf of the minister Prof. George Saitoti. He welcomed the participants to the country and wished them a joyful stay. He emphasized the need for increased budgetary support for science and technology development in Africa. He said his ministry had started allocating funds for scientific research and urged the local scientists to apply for the funds. He challenged scientists in developing countries to bridge the gap between research and implementation if the countries were to benefit from their human capital.

Conference Orientation

Presenters: Prof Isaac O. Nyambok and Dr Enriqueta Bond

The chairman of the organizing committee, Prof. Nyambok started by welcoming the participants, who were drawn from all over the world, to the two-day high-level conference and to Kenya. He invited them to sample the country's legendary safari sites and cultural melting pots at their free time. He thanked the National Academies of the United States of America for their support, and called for closer co-operation between them and the African Academies. He highlighted the background, themes and objectives of the meeting. He said that the main objective of the meeting was to bring together scientists and national policymakers to explore the potential role of African science academies in informing national and regional government decision makers on matters related to human health, quality of life and development. He emphasized the importance of the Millennium Development Goals (MDGs) to the development of Africa and urged that they be used as focal points around which science academies could make significant contribution to help African governments to realize their goals.

He amplified that although the conference had a bias towards human health, the African academies could still capture other related specific issues such as water, energy, agriculture, biodiversity and sustainable development. He stressed that the MDGs form highly interdependent objectives that can only be achieved through integrated strategies.

Dr Bond of USA, who is the Chair of the Board on African Science Academy Development (ASAD) also started by welcoming the distinguished participants to the vital conference. She paid glowing tribute to the Kenya National Academy of Sciences and the African Academies for organizing an excellent conference. She said that the US National Academies was totally committed to helping their African counterparts to achieve their objectives through capacity building, sharing of resources and experiences. She introduced the members of this board that were present and invited the participants to engage them in fruitful discussions. She thanked the Bill and Melinda Gates Foundation for the ten-year financial support for the project, saying that it had opened a new chapter in the book of philanthropy not only in the US, but also internationally, especially in health. She conveyed the Foundation's apologies for not attending the Conference. She also announced that the next conference would be held in October 2006, in Cameroon followed by another one in Dakar, Senegal the following year. She said that her belief in the project had been re-energized by the enthusiastic support and participation by distinguished scientists, top policy makers, development experts and a battery of local and international journalists.

SESSION I:	INFORMING PUBLIC POLICY TO ACHIEVE THE MDGs IN AFRICA: A ROLE FOR AFRICAN SCIENCE ACADEMIES
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Prof. Gevers Wieland, who is the Executive Director of the Academy of Science of South Africa, efficiently moderated the session whose objectives were to provide background information on the MDGs and explore the goals as a vehicle through which African science academies could provide input to key government policy makers. He said the session was to set the stage and tempo for the conference. He outlined two guiding principles for the session, including;

- (i) that currently the MDGs are the single most important global agenda and
- (ii) that effective mobilization of science and technology skills and capacities in Africa is fundamental to achieving the goals.

If so, he then concluded that the African academies must rise up and take up the challenge of mainstreaming evidence-based decision making on the continent.

Presentations

Role of Science Academies in Development: Perspectives from the MDGs Science, Technology and Innovation Task Force

Presenter: Prof. Lee Yee Cheong

Prof. Cheong was most suited to start the presentations in this session, being the President of Academy of Sciences of Malaysia and Coordinator of the United Nations Millennium Project Task Force Report on Science, Technology and Innovation. He outlined the MDGs and called on the participants to roll up their sleeves and start networking for the success of the Goals in developing countries. He challenged the participants to come up with concrete action plans on how to build science, technology and innovation capacities in the least developed countries to jump-start their economies. He called on the scientists to get involved in development policy formulation process instead of leaving it to economists whom he blamed for world poverty. He gave the example of Malaysia whose economy had improved due to more involvement of scientists in policy making and implementation.

Role of Science Academies in Development: Perspectives from African Academy Experience.

Presenter: Prof. Shem O Wandiga

Prof. Wandiga, the Director of the Center for Science and Technology Innovations, gave a knowing account of the characteristics of a typical African academy of science. He said an Act of Parliament mostly established academies and their members are predominantly old, male university professors. This, he said, had made them very conservative and very slow to change. He described them as thinly staffed, with most of them having two to five members of staff, some of whom only worked when there was a crisis. Most of them had weak financial base as they largely depended on meager government support and funded projects are far-between. He challenged the academies to improve on their fundraising abilities if they hoped to play an expanded role of advising governments on science and technology. He urged them to seek more funding from the private sector through contract research. He identified some of the qualities which a successful academy leader should have as financial and investment expertise, project proposal writing skills, financial negotiation skills, and

inclusion into the policy making and implementation process. However, he said the scientists must make themselves trustworthy and dependable to earn the confidence of the political class. They should come up with practical solutions to problems rather than just talking about them. He said several opportunities beckoned at the doorsteps of today's scientist, including modern biotechnology and space technologies, which needed to be harnessed for the benefit of posterity.

He challenged the academies to open their door to young researcher to become members so that they could inject youthful enthusiasm and vibrancy into the sleepy academies.

Millennium Development Goals for Health: rising to the Challenges.

Presenter: Prof. Miriam Were

The Chairperson of the African Medical and Research Foundation (AMREF) and National AIDS Control Council, Kenya, Prof Were, started her presentation by wondering why African governments committed such little budgets to their health sectors yet they were so key to poverty reduction and national development. She praised the MDGs for viewing health as a universal human right and giving clear context within which to address health issues. She painted a gloomy picture of the status of human health in Africa, saying it was not the will of God that 1 out of 16 women in Africa were at risk of deaths when giving birth compared to 1 in 400 in the European Union; that an African child would die every 30 seconds due to malaria and that 90 percent of AIDS orphans be in Africa. "Africa's right to good health is a right denied," she lamented, adding, "African governments must wake up and do something" about the worsening health situation on the continent. To succeed, she said, the continent must be confident that the obstacles can be overcome. She blamed long periods of slavery and colonization for Africa's underdevelopment. She called on donor-countries to draw up a recovery roadmap for Africa along the lines of the Marshall Plan that pulled Europe out of the ruins and ashes of the First and Second World Wars. She concurred that corruption was a hindrance to development in Africa but apportioned blame equally to colonialism, donors, multinational corporations and governments. "There is always a partnership in corruption," she declared. She called on African Scientists to lead the fight against crises of confidence among Africans that was holding down development.

She called for a paradigm shift in development agenda and programming, saying that Africa was largely a communal continent therefore any development agenda that was going to bring about positive change must take this into account. She gave the example of AMREF that got a global award for basing its work on communal structures across the continent. Prof. Were challenged the conference to come up with recommendations on how the continent could use science and available evidence to move forward.

Science Academy Potential to Advise National Governments

Presenter: Dr Michael Clegg

Dr Clegg, the Foreign Secretary of the National Academy of Sciences, Washington DC, argued passionately on why the voice of science is crucial to addressing global challenges such as the MDGs. He said scientific process is the most truthful, independent and trustworthy source of evidence-backed knowledge needed to tackle the challenges of the 21st century. He urged the academies to be at the forefront in terms of offering advice on how to

meet the MDGs. “Problems are global, but solutions are local. So, think globally but act locally,” he said. To be more effective, he said, African academies should work closely with the government but maintain their independence. However, he said, it was imperative for them to maintain their independence from the government by resisting any attempt to control them. He gave the example of US National Academies that does a lot of work research for the state but retained the right of ownership of the findings that they released simultaneously to the government and to the public through the press. He urged the local academies to create and strengthen their communication departments so that they could facilitate close liaison between the academies and the media. He showed examples of press cuttings from major US media coverage of The National Academies’ research, including the one on stem cell. For instance, he said, African governments were still groping in the dark and agonizing on whether to adopt transgenic crops or not and called on local academies to consider advising such governments on the way forward. Outbreak of diseases and occurrence of natural disasters are other areas where the academies could take the lead in informing their governments, he said.

Plenary Discussion

Emerging Issues:

- That the MDGs present the best opportunity to uplift poor regions of the world.
- That African governments are more willing to take up scientific advice to enable them utilize resources well than before and therefore, scientists should seize the opportunity to offer credible advice.
- That the African academies are unique resources that can make a difference in changing the face of the continent development wise and the challenge is for them to become part of the solution, not the problem.

SESSION II:	LOCAL SOLUTIONS FOR GLOBAL CHALLENGES: USING SCIENCE AND EVIDENCE TO IMPROVE DECISION MAKING IN AFRICA
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Prof. Patrick Rubaihayo, the distinguished professor of Crop Science, at the Makerere University, Kampala, Uganda, thanked the organizers for giving him the opportunity to moderate the key session whose objective, he said, was to discuss challenges involved in identifying and communicating evidence-based research to policymakers.

The Role of Universities in Using Science Based Evidence in Addressing Local Challenges

Presenters: Dr Narciso Matos, Dr Ruth Levine, Prof. David P S Wasawo

The Chairman of the International Development, Carnegie Corporation of USA, Dr Matos, started by reflecting on the roles of universities in development, what they required to meet the challenges facing them and the role of development partners in the whole process. He said the universities in Africa could still play the role of advisor to their governments and the private sector despite the numerous challenges facing them. They called on them to create an enabling environment to produce competent human resources that could play the role of advisors. He said the universities must wake up to the fact that they have to deserve recognition to be consulted. It is not a given that they will always play this role. There is an uphill battle for them to win the confidence of policymakers. He said the assumption that the role of universities was clearly understood by the authorities in Africa was misplaced. The universities and other institutions of higher learning must clearly define and articulate their roles and agenda in development, especially the MDGs to society. It was through this, he said, that they would be allowed to take center stage in policy-making tables. He also challenged the policy makers to be supportive of the universities that they erroneously view as irrelevant money drainers. He said that mindset of the 1980s must change, with the government learning to accept and work with local knowledge resources. “Why do African governments always think that local saints could not perform miracles?” he posed, adding it was necessary to trust and use local talents. To be more respected than they are today, he suggested that local universities should strive to become centers of excellence on specific epistemological fields such as democracy and governance, medicine, communication, among others. He decried the fact that most masters and doctorate students were being trained overseas and called for more opportunities in local universities than was currently available. He said that this could be done through regional collaboration among universities and starting of long-term projects that would build capacities and confer PhDs and masters degrees.

Dr Levine, who is the Director of Programs and Senior Fellow at the Center for Global Development, started by extolling the virtues of biomedical science in the fight against diseases. She lamented that the gains made against infectious disease were being reversed by the re-emergence of new infectious diseases like HIV/AIDS. She noted that AIDS had reduced life expectancy in developing countries from 62 years to 47 years. She called for greater promotion of science in poor countries to help solve some of the health problems. She said science had been used elsewhere in Poland and Chile to generate evidence on which to base decisions. She said before the fall of the Berlin wall, Poland had the highest rate of tobacco smokers. This led to tobacco epidemic in the countries in early 1990s. The scientific community in Poland launched the anti-tobacco movement and studies were done that

strengthened the case against tobacco. The evidence was so overwhelming the government had to ban tobacco smoking in public places and sale to children. And in Chile the scientific community had to present to the government scientific evidence to show that use of vaccine against diseases was more cost effective than treatment for it to allocate funds for vaccine development.

Prof. Wasawo, a former chairman of University of Nairobi Council, said the MDGs would not be met in Africa if science and technology were not given priority. “Science and Technology has been the prime mover of development for the last 400 years.” He challenged the academies and the universities to provide advise on science and technology to their governments by living up to their objectives and implementing them. “They have the capacity to produce knowledge for the achievement of the MDGs,” he said referring to the Academies of science. He blamed Africa’s underdevelopment on the begging culture and development policies that were not based on scientific evidence. He said the academies and policy makers should work together just as colonialists collaborated with their scientists to establish scientific institutions and respected their views. He called on African governments and regional bodies like AU to respect views of scientists for the sake of the continent’s development. He said lack of funds had ruined many African centers of excellence yet no nation had ever developed without relying on itself. “Our psychological and behavioral milieu must change if we are to catch up,” said Prof. Wasawo. There should be local funding for local centers of excellence as foreign funding always tend to skew research to suit the interests of the foreign masters. He challenged the academies to find their niches that could lead to beneficial relationships.

Plenary Discussion

Emerging Issues

- That there should be an assurance that NEPAD centers of excellence would be sustained through regular and timely funding both by donors and the AU member states.
- That poor records by African governments in terms of funding their own research institutions should be stemmed if the continent was to meet the MDGs.
- That like the Tanzania’s first President Dr Julius Nyerere once said there is a devil aboard Africa and we need someone else to exorcise it so that the continent could be freed of corruption, inferiority complex and bad governance.
- That at a meeting in Dakar, Senegal, most African governments expressed willingness to raise financial support to their science and technology institutions.
- That African academies should actively seek contract research with UN bodies, such as UNEP which is based in Africa.
- That African Academies should encourage young researchers to become their members.
- That NEPAD centers of excellence like Biosciences Eastern and Central Africa (BCA) should work closely with national research centers on MDGs.

SESSION III

POLICYMAKERS ROUNDTABLE DISCUSSION: HOW CAN SCIENCE ACADEMIES SERVE NATIONAL INTERESTS?

Prof. Jo Ivey Boufford, a former deputy assistant and acting secretary at the US Department of health and Human Services and Dr Specioza Kazibwe, former Vice President of Uganda, moderated this session. They introduced presenters and welcomed participants to the session whose objective was to allow ministers, legislators and policymakers to discuss how academies of science could serve their decision-making needs.

Lead Discussants: Dr James Hughes and Dr David Satcher

Dr Hughes, former director, National Center for Infectious Diseases, Center for Disease Control and Prevention and US Department of Health and Human Services, spoke on the role of US National Academies in the service of national interests. He gave a brief history of the CDC, saying that it started in 1946 to conduct research on communicable diseases with a view to controlling them. He said that the work of the body contributed a lot to reduction of infectious diseases in the 1960s. However, he noted that things changed with the emergence of new communicable diseases due to complacency and stressed that CDC had teamed up with Kenya's Ministry of Health on various research projects throughout the country.

Dr Satcher said that academies have the ability to assemble leading scientists to contribute valuable policy initiatives, and thus impact positively on health issues in any given country. The academies should be looked to for specialized advice but they should also make themselves dependable and worthy of that service. Dr Satcher, a former US Surgeon General at the US Department of Health and Human Services, advised the academies to build their capacities to enable them to provide critical scientific and evidence-based services to the government and private sector. The academies should also prepare themselves to communicate better the reports which they produce. To do this they need to improve their communication skills because, "the academies work is not finished until the findings are adopted and implemented."

Roundtable Panelists

Uganda

Hon. Brigadier Jim Muhwezi Katugugu, Uganda Minister for Health, said Uganda supports science-based approaches to policy and development. He called for harmonized health policies within African Union and NEPAD to guide Africa just like the EU does. He said universities, academies, private sector and government should work together for delivery of better health services and promised that his ministry will continue to involve highly qualified, professional members of the academy in multi-sectoral approach to policy design, implementation, monitoring and evaluation. He said that his country was preparing a cabinet paper to ask for 1% of the national budget to be allocated to science and technology.

Dr Zerubabel M. Nyiira, challenged participants to translate the deliberations of the conference into technical information that they could use to develop strategies to influence public policy.

Hon. Patrick Amuriat said he was happy to speak in the forum, which recognized the importance of all the eight MDGs with a science element. He said the task before the scientists was very challenging and that how they played their roles would determine whether or not the continent achieved the Goals. “We will never meet the Goals unless we break with business as usual mentality,” he declared. Hon. Amuriat, an MP and chairman of the Standing Committee for Science and Technology called on Uganda National Academy of Sciences to interact closely with parliamentarians so that they can influence legislation on science and technology. He called on the African academies to develop up-to-date inventories and profiles of their areas of expertise.

Prof. Emmanuel Kaijuka said Uganda was using its scientists on the fight against HIV and AIDS. Prof. Kaijuka of the Ministry of Health gave examples of researches done on HIV/AIDS in 1993, that helped in making decisions that reduced infection rates. He further said they were currently conducting research on the strength of the virus.

Cameroon

Prof. Angwafo III Fru Fobzushi, The Ministry of Health Permanent Secretary raised the following key points;

1. Since science is truth, it is important to hinge policy on it.
2. There should be confidence and trust between scientists and governments
3. Called for good governance of the academies
4. Financing of the academies needs to be streamlined and that governments need to budget and actually release the funds to the academies in good time.
5. The academies should compete for contract research from the government.
6. The academies should build capacities in specific areas so that they could become centers of excellence.

Nigeria

Prof. Alhaji Umaru Shehu: He represented the Nigerian Minister for Health, Hon. Prof. Eytayo Lambo. He decried the poor status of health sector in Nigeria. He said the academies were however working with the government authorities to improve the situation.

Kenya

Prof. Peter Anyang' Nyong'o, Kenya's Minister for Planning and National Development, summarized his presentation into nine key points;

1. That scientists and researchers should regard themselves as entrepreneurs and innovators.
2. That universities should regard themselves as business incubators.
3. African academies of sciences should be regarded as fountains of good ideas which could be relied upon to assist in science-based policymaking.
4. That his ministry was working closely with Jomo Kenyatta University of Science and Technology to mainstream science and technology in policymaking.
5. That his ministry had established NEPAD steering committee that also handled matters of science and technology.
6. That his ministry continued to involve universities in major needs assessment research aimed at supporting national planning.

7. That the NEPAD peer review on Kenya was done using science-oriented technocrats.
8. That Central Bureau of Statistics, KIPPRA and other research-based government bodies gathered crucial data for development planning.
9. That he had challenged some national institutions to start marine and aviation courses as a way of championing science and technology.

Plenary Discussion

Emerging Issues;

- It was agreed that the media and communications experts should be actively involved in future meetings, and all other activities of the academies.
- That US National Academies were frequently contracted by the US government to conduct research on its behalf because of trust they had built.
- That the African academies should lobby their governments to create strong ministries of science and technology and that the ministries are given adequate funding.
- That more centers of excellence than currently existing should be created in Africa to help stem brain drain.

SESSION IV:	REDUCING CHILD MORTALITY (MDG 4) AND IMPROVING MATERNAL HEALTH (MDG 5)
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Introductory Remarks:

Presenter: Prof. Nimrod Bwibo, Prof. Dominic W. Makawiti

Prof. Bwibo set the ball rolling by giving some basic statistics about the magnitude of health problems on the continent. He said Africa had more people of age 1-5 years than any other age group. He said pneumonia, diarrhea, HIV/AIDS, intestinal worms, skin diseases, tuberculosis, and accidents among others caused 70% of deaths in children less than five years. 50% of children do not celebrate their fifth birthday. He challenged scientists, especially medics to help their governments in achieving MDG 4 that calls for reduction of infant mortality rate by two thirds by 2015. He said there was need to educate the mother, avail affordable and accessible health facilities in the rural areas. Some of the strategies that needed to be put in place include ORS, PHC, safe delivery, BF, nutrition and child spacing. He said these were also vital in achieving MDG 5 that calls for improvement of maternal health.

Prof. Makawiti, Treasurer of the Kenya National Academy of Sciences and Dean, Faculty of Medicine, University of Nairobi, moderated the session whose objectives were to illustrate how science academies can assist policymakers in resolving controversies and providing comprehensive answers to questions about specific programmatic or educational interventions related to improving child and maternal health, and to describe how interventions and policymaking processes related to maternal and child health can be better clarified, prioritized, or improved through dialogue promotion or deliberations carried out by science academies.

Panel Session

Presenters: Prof. Alex Ezech, Prof. Barthelemy Kuate Defo, Prof. S. B O. Ojwang and Prof. Ruth Nduati

Prof. Ezech spoke on the role of science academies in meeting the MDG challenge on child health in Africa. He said Africa was still far from realizing the dream of reducing child mortality by two-thirds by 2015, and that there are no indicators that things are improving, with only 10 years to go. He highlighted the five major killers of children in Africa as malaria, measles, diarrhea, pneumonia and malnutrition. These account for 70-80% of the deaths in children. Prof. Ezech, who is the Executive Director of the African Population and Health Research Center, noted that contrary to expectations the deaths of children who are less than five years old had increased in many African countries since the MDGs were adopted. Those countries, he said were 60% off the mark. He blamed the little progress in achieving the MDGs on deteriorating health systems, poor access to safe drinking water, poor sanitation facilities, HIV/AIDS, corruption, lack of female education and growing poverty. He said the slums also presented a major challenge to health provision in Africa. They have the worst health scenarios than even the rural areas. He said child survival in Africa could be improved through;

- Use of mosquito treated nets
- Breast feeding
- Immunization
- Good sanitation
- ORT and
- IMCI

He argued that reduction of child mortality would only be realized if donors honored their commitments, governments got serious by increasing budgetary allocations and scientist devised context specific-interventions. He said the academies could also help by providing accurate research data on child health; making research findings more accessible and providing linkages among health information systems, healthcare systems and resource allocations.

Prof. Defo spoke on the challenges of adolescent health in Africa and windows of opportunity to address them. He listed the main health problems as alcohol, drugs, STIs, mental diseases, tobacco, malaria, TB, HIV/AIDS, accidental injuries, heart problems, cancer, teenage pregnancies and abortion, among others. He said these problems would continue to cause concerns in the future.

He argued that academies could help in bridging the gaps on gender difference, poor communication in families, involving of youths in health provision services and provision of compelling data on adolescent health.

Prof. Ojwang who spoke on reducing child mortality and improving maternal health, said child and maternal mortalities are still big challenges on the continent despite the MDGs. He attributed deaths of newborns to;

- Birth asphyxia
- Pre-maturity
- Low birth weight
- Infections
- Congenital abnormalities
- Acute surgical conditions

He called on the academies to investigate what is wrong in Africa and make recommendations to the governments on better management practices.

Prof. Ruth Nduati, a professor of Pediatrics and Child Health at the University of Nairobi highlighted the common causes of child mortality in Africa. They included pneumonia, diarrhea, malnutrition and malaria, among others. Speaking on HIV/AIDS care for children, a strategy for improving child survival, she said 90% of HIV infection of children was as a result of PMTCT. High prevalence of HIV infection in women directly affects the number of children affected. There was therefore need to link PMTCT with HIV treatment programs as a baby's survival depended on the mother's survival. Strategies for preventing children infection should also promote survival of mothers, she said. The prevention and care should hence be comprehensive to include infants, their mothers and their families. The academies should help the governments on providing the way forward. She identified needy areas for research that the academies could take-up immediately.

They include;

- Breast milk transmission of HIV
- Late postnatal transmission of HIV
- How best to put children on ARVs

Plenary Discussion

Emerging Issues

- That 50% of children have access to ARVs and that this must be addressed to save their lives and save our future.
- A father's death was also very devastating to child survival and future success in life and more attention ought to be paid to it than was currently the case. It was agreed that fathers play important supportive role therefore should be involved in programs.
- The scientists said there was a lot of data on some of the issues raised but the governments were not using them. It was noted that governments should be made aware of the existence of such data so that they could use them.
- Researchers were advised to fight against the barriers that hindered implementation of their ideas instead of leaving them to chance after publishing their research papers.

SESSION V: ERADICATING EXTREME POVERTY AND HUNGER (MDG 1)

Prof. Nimrod Bwibo moderated the session whose stated objectives were to illustrate how academies can assist policymakers in resolving controversies and in providing comprehensive answers to questions about specific programmatic or educational interventions related to eradicating poverty and hunger and to describe how interventions and policy-making processes related to poverty and hunger eradication can be clarified, prioritized or improved through dialogue promotion or deliberation carried out by science academies.

Panel Presentation

Presenters: Prof. Moses Banda, Dr Specioza W. Kazibwa and Prof. Isaac O Nyambok

Dr Banda is the Chief Economic Advisor to the President of Zambia. He identified a few key issues that needed to be addressed to enable academies and policymakers to work together. They include;

- Academies should not only focus on long term programs that do not seem to provide solutions to current problems that are the preoccupation of policymakers. This means that academies should be more concerned with solving immediate problems for them to be more relevant to policymakers. He gave the example of a case where a governor in Zambia requested the breeders to come up with maize seed that could grow in acidic conditions.
- Policymakers should provide resources to the academies to conduct research on immediate problems. He said that was where the problem lied since policymakers wanted solutions but were unwilling to commit resources to programs that stretched for years.
- Scientists should strive to be at the center of power so that they could influence policies directly. He said that they could do this by some of them entering into politics so that they can present the needs and views of scientists at the highest levels of policymaking organ.

Taking the cue from Dr Banda, **Dr Kazibwa**, a former Vice President of Uganda, underscored the need to get enough scientists to the cabinet to get science and technology moving in Africa where two-thirds of the 900 million people live in small towns and villages, 200 million are undernourished, and 30 million children sleep on empty stomachs every night. She called for affirmative action in food security, saying that Africa had the potential to produce its own food and wondered why the governments had not made it their priority. She lamented about the primitive state of African agriculture as it was still;

- Rain fed
- Full of witchcraft
- Farms that look like botanical gardens
- Dominated by inappropriate crops
- Characterized by poor unfertilized soils
- Dominated by traditional farming methods
- Subsistence based
- Women and children dominated
- Subjected to poor seeds

She called for closer collaboration among farmers, governments, civil society, scientists and donors to revolutionize agriculture in Africa. She said scientists should be adequately paid so that they could conduct research to solve problems, not merely to survive.

She asked the scientists to stop despising politicians and start working closely with them for the sake of their people. She said African academies of science could play leading roles in challenging policies imposed by donors on public health versus population health; malaria, TB, HIV/AIDS and other chronic diseases; environment, production quality and health. Why should Africa be refused to use DDT to eradicate malaria whereas the same was used successfully in USA and Europe? Why should African governments be asked to sell water to their people, while Canada, Europe and Asia were not doing the same? These are some of the donor-driven policies the academies should be challenging, she said.

She decried the flight of scientists and doctors to developed countries and called for more to be trained and retained through centers of excellence and better remuneration. She argued that most of the top African brains that were driven out of the country because of political repression and economic deprivation were now willing to come back but were being held back by poor working conditions at home. She called on the policymakers to deliberately create pull factors by investing in infrastructure development, addressing retrogressive trade and investment policies and better pay for scientists. She concluded by beseeching scientists to get out of the labs and offices and start soiling their hands to make a difference.

Speaking on integrated natural disaster management, **Prof. Nyambok**, a United Nations Sasakawa Laureate of Disaster Reduction and Coordinator of the University of Nairobi's Science and Technology park, called for better preparedness and management of natural disasters like earthquakes, typhoon, floods, hurricane, drought, volcanic eruptions and locust infestation, saying they could easily reverse gains made in sustainable development and poverty reduction.

He took the participants through classification of major disasters, including hydro-meteorological, geological and biological disasters. He said Africa's frequent disasters were hydro-meteorological like drought and floods that were predictable, yet often devastated the continent whenever they occurred. He called for better management of water resources. Other frequent disasters in Africa he identified were biological ones like disease epidemics and pandemics like malaria and HIV/AIDS that had become major killers on the continent, and insect infestations. He wondered why Africa was unable to respond rapidly and effectively to such predictable disasters thereby leading to deaths, loss of property, loss of income, loss of livelihoods, destruction of infrastructure, degradation of the environment and escalation of secondary effects like epidemics, poverty and displacements. Better disaster management was fundamental to sustainable provision of health services, especially to the poor, disabled, women and children he argued, adding that natural disasters also contributed immensely to creation of armed conflicts.

He said good disaster management strategies include;

- Monitoring and evaluation
- Mitigation and preparedness
- Early warning systems
- Recovery and rehabilitation
- Risk analysis

As a matter of policy he said the world should;

- Put more stress on prevention and mitigation than response and relief.
- Strengthen global capacity on preparedness, mitigation and early warning system.
- Create a more empowered and endowed body for natural disaster management.
- Boost UN capacity for disaster management and that the UN International Strategy for Disaster Reduction was not adequate judging by what happened in USA and Pakistan.
- Strengthen cooperation in space technology to enhance early warning systems. Space technology should no longer be seen as secret military or espionage affairs.
- Make satellite data more affordable to developing countries.

Plenary Discussion

Emerging Issues

- Plastic waste should be strictly controlled as they were industrial-created environmental disasters that had led to more breeding grounds for mosquitoes, and emission of toxic gases into the environment through burning. It was noted that there were biodegradable bags that could be used instead of plastics. Like South Africa all countries should introduce tax to be levied on those who prefer to use plastics.
- Scientists should lobby economists for greater government budgetary support for science and technology since they were the ones who largely influenced policy on expenditure.
- African governments should appoint chief science advisors as was the case in Asian tiger countries whose economies had blossomed because of greater involvement of scientists in policy formulation and implementation.
- Although it was important for scientists to venture into politics, it was noted that most of them are needed in laboratories to create knowledge that could translate into wealth. It was observed that scientists too should be political in thinking in terms of asking how their research would help their countries. They were also challenged to study economics so as to understand the thinking of economists. They also need to understand the policies that were in place. An example was given of Uganda that had research fund but no institution had applied for it.
- That Africa should not tie their trade to developed countries, as they were only interested in their welfare. For instance, when Uganda said it would use DDT to fight mosquitoes, Europe threatened them with sanctions citing environmental reasons.
- That more students should be involved in future academy meetings as they represented the future.
- That academies need to recruit more qualified women members and involve them in such meetings for gender balance.
- That such academies should see themselves as the conscience of the nation as far as science was concerned.

TELECONFERENCE

How Science And Medical Communities Can Help Governments Achieve The Millennium Development Goals

Presenter: Dr Jeffery D. Sachs

In a teleconference address from USA, Special Advisor to UN Secretary General Kofi Annan on the MDGs, Dr. Sachs, thanked the organizers of the conference and the participants for agreeing to listen to him through such a presentation. He said that the role of science in Africa's development was paramount but was under utilized because there was too much time wasted on talking, but not implementation. He said time had come for implementation of MDGs in Africa, as they were time-bound. Dr Sachs, who is also the Director of the UN Millennium Project and the Earth Institute, said MDGs required science-based solutions and investments which were lacking in Africa. He said the continent needed scientific solutions to hunger, disease, illiteracy, lack of clean water and environmental degradation.

He outlined priority areas that the continent needed to improve on in order to realize the MDGs. They include;

- **Agriculture:** Africa must produce more food to stamp out famine in Rwanda, Kenya, Ethiopia, Niger, Somalia, Mali, Burkina Faso, Zimbabwe, among others. Africa could triple food production if small holders could be modernized by using improved seed varieties, good water management practices, modern fertilizers and other inputs. The continent must escape from dependence on rain fed agriculture. It needs to embrace good soil management practices. These required scientific interventions. The CGIAR systems should lead the way. The donors should also do more to support African agriculture. Governments should play more pivotal role in providing conducive policy environment.
- **Health:** Africa is a health catastrophe. We must deal with malaria, HIV/AIDS, nutrition deficiencies, among others. These are remediable problems. We need to scale up money spent on health per person, as the USD40 per person was too little. We need to do more to reduce maternal and child mortalities.
- **Climate Change:** We must prioritize the understanding of climate change in Africa to limit impacts of natural disasters. The developed countries should compensate Africa for not damaging the environment.
- **Water Management:** We need better water management capabilities for irrigation, environment, industry and health. Good water development and utilization strategies are crucial to Africa's sustainable development. We need more studies to show the way and also we must implement those studies that had already been done.
- **Energy Science:** We need reliable sources of energy beyond biomass. There is significant geothermal potential on the continent, for instance, in the Rift Valley of Kenya that should be developed further.
- **Good Ecological Science:** Biodiversity on the continent is under stress due to logging, poor farming methods, rapid population growth, dumping of toxic waste and the like. We must reverse the trends, as these could lead to serious rise in diseases.

These are the six areas on which science should take a lead. We must not leave them to economists, and the Millennium Project would be thrilled to work with the academies on them. He called on East African countries to have high-powered science advisors in the six areas. The universities need to play an active role in problem solving. They should be actively involved in policy design and implementation.

He called on international foundations to emulate the Rockefeller Foundation and Ford Foundation that had given money to universities for the MDGs. He said the Millennium Villages that are meant to spearhead implementation of the MDGs would be interested in working closely with local universities on the Goals.

He said he was thrilled with the African Science Academy Development Initiative (ASADI) and would be honored to work closely with it on MDGs.

Plenary Discussion

Comments by Dr Jeffery Sachs on;

Use of mineral resources in Africa

Mineral resources in Africa have been misused. They have been a source of misery to many people instead of happiness. The proceeds of oil in oil-rich countries have been squandered. The diamonds and gold have been sources of conflict. We need transparency and accountability in management of these resources. The proceeds should be reinvested in building human capacities and the infrastructure. They should be used to provide education, medical care, food and shelter to the people. The governments should be accountable.

Use of GMO in Africa

Biotechnology is important and vital for African agriculture. The continent could not afford to be by-passed in this wonderful technology as it was by the first Green Revolution. For instance, the drought resistant maize being developed by Monsanto if transferred to Africa could help boost agricultural production on the continent. Fears of GMOs have led to irrational politicization of GMOs. The best way is to investigate risks scientifically and not base support or opposition to GMOs on heresy and rumors. There is need to train scientists in Africa to lead in biotech R&D. This is something MDGs could assist in. Agriculture is the main thing on the continent and better food availability would solve many health problems. Africa can have its environmentally sound green revolution through adoption of better technology.

Brain drain and how it can be stemmed in Africa

This is a major concern. To retain top brains on the continent, we should top-up salaries, equip laboratories, partner with overseas universities to start long-term programs on Africa in Africa to help keep local brains at home and attract others to return.

SESSION VI:	IMPROVING DISEASE PREVENTION: TECHNOLOGICAL, PUBLIC HEALTH EDUCATION AND DECISION MAKING TOOLS (MDG 6)
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Dr Richard Muga, the Director of National Council for Population and Development, Kenya, moderated the session whose stated objectives were to illustrate how academics can assist policymakers in resolving controversies and in providing comprehensive answers to questions about specific programmatic or educational interventions related to eradicating poverty and hunger, and to describe how interventions and policy-making processes related to poverty and hunger eradication can be clarified, prioritized, or improved through dialogue promotion or deliberation carried out by science academies.

Presentations

Delivering the Right Interventions Well: Packaging, Policy and Health Systems Priorities.

Presenter: Prof. Anne Mills

Prof. Mills, professor of Health Economics and Policy at London School of Hygiene and Tropical Medicine, said ‘the know-do gap’, that is lack of money, capacity and knowledge was to blame for poor delivery of health services in developing countries. The academies could help by bridging this gap through implementation research, said Mills. Packaging, good policies and focus of health systems, among others were crucial to good delivery of health interventions. She challenged the academies to conduct cost-benefit analysis of contracting out health provision services to the private sector in Africa to determine whether that was the way to go.

Importance of Public Health Education: The Polio Example.

Presenter: Prof. Emeritus Alhaji Umaru Shehu

Prof. Shehu of University of Maiduguri Teaching Hospital, Nigeria, gave an account of Nigeria’s protracted war against polio. He said religious leaders and politicians interrupted and prolonged polio immunization program because of politics and misinformation. The people, especially in the Muslim-dominated northern parts of the country, became reluctant to go for immunization after the politicians and religious leaders told them that the vaccines were unsafe, contaminated and were meant to cause sterility in women to reduce the Muslim population for political reasons. It took a lot of public education, using modern information, education and communication strategies, to convince the people that the vaccines were safe. In contrast the Christian south was very supportive and brought their children for immunization. However, the problem in the north negated all the gains that had been made not only in Nigeria but also in the entire West African region. It is believed that the Nigerian problem could be linked to polio outbreaks in Sudan, Botswana and Kenya in the later years. The outbreak in other countries led to a Pan African conference where a plan of action against polio was adopted, said Prof. Shehu.

HIV Prevention

Presenter: Prof. Barry Kistnasamy

Prof. Kistnasamy, the Program Manager for HIV/AIDS at the Department of Community Health, Nelson Mandela School of Medicine, South Africa, appealed to African governments and scientists to do everything possible to keep uninfected the 80% of the continent's 900 Million population who are not yet infected with HIV. He said HIV was a silent epidemic that could take up to 10 years without appearing, and that prevention is the best defense there is against it. This, he said could be achieved through vaccination (but there is no vaccine yet), behavior change and ABC (abstinence, be faithful and condom use). He said treatment through ARTs was also important but cautioned against prescription of drugs without evaluating them to ascertain their safety and efficacy. He challenged African academics to investigate nevirapin toxicity claims, which he said if proved could mean that women who were using it and their children could be at risk.

Control of Tropical Diseases

Presenter: Prof. Benson B. A. Estambale

He said Africa had many infectious diseases (parasitic, bacterial, viral and fungal) and non-infectious diseases (nutrition, anemia and congenital) due to many reasons including environment conducive to parasites, vectors, culture, socio-economic background and re-emergence of forgotten diseases. He said malaria places substantial strain on health services, as it accounts for 10% of disease burden and is the leading cause for morbidity and mortality. 30% of out-patients and 19% of in-patients are malaria cases. In Africa, he said malaria was the major cause of absenteeism in schools. He called on the academics to assist in highlighting the magnitude of malaria problem in Africa.

Some malaria management practices were highlighted and these include;

- Insect treated nets (ITN): The problem with this is that children are denied use of the nets
- Intermittent preventive treatment; The change to artemisin-based combination therapy is good, but its cost could be prohibitive.
- Media should be engaged to provide information and highlight outbreaks.
- Training and research.

He said 96% of children in rural areas in Kenya have bilharzias because of use of dirty water to bath, swim and drink. He called on the academics to spearhead research on these and other diseases.

Plenary Discussions

Emerging Issues

- That in Kilifi District of Kenya, majority of children suffer from bilharzias.
- That Nigeria should take responsibility for polio outbreak in other parts of Africa because they failed to implement standard practices on polio. Those who were responsible for suspension of the polio vaccinations should be charged with crime against humanity.
- That malaria control in Africa would require integrated approach that should begin with tackling the vector breeding grounds to treatment.

SESSION VII:	ROUNDTABLE DISCUSSION OF AFRICAN ACADEMIES REPRESENTATIVES: THE WAY FORWARD
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Dr Cheikh Mbacke, Senior Advisor, the Rockefeller Foundation, moderated the session whose objective was to share perspectives on the opportunities and challenges that lie ahead for African science academy leaders. The academies presented their cases as follows;

Cameroon

In the next 10 years, Cameroon Academy of Science would strive to;

- Improve communication skills so as to communicate better with all stakeholders.
- Incorporate and mainstream young scientists to give new impetus to research which will be easily adaptable to the local situation.
- Work closely with the Ministry of Science and Technology to improve its status in the eyes of the government.
- Create awareness on the importance of science and technology in national development.
- Create better working conditions for scientists so as to stop them from migrating abroad.
- Increase number of scientists in the academy.

Ghana

Prof. Evan Adayamensa represented Ghana National Academy of Sciences. Since its establishment in 1959 by the then President Kwame Nkrumah, the academy has been influencing government policy. In the next 10 years, he said, the Academy would strive to continue building its strength to make its success not dependent on the head, but the structures in place. They would also increase the membership and encourage young scientists to become members.

Kenya

Prof. Raphael Munavu represented the Kenya National Academy of Sciences. He said the academy had learned a lot from the Conference. In the next 10 years, he said the academy would;

- Develop a 10 year strategic plan
- Lobby policy makers for monetary support and involvement in policymaking process
- Recruit younger scientists
- Involve students in academy activities
- Strengthen the publishing division
- Strive to be involved in policy implementation
- Undertake joint projects with other academies
- Be decisive in articulating policy advice to the government
- Seek contract research from the private sector
- Improve communication department
- Build media capacity to be able to disseminate accurately research findings activities

Nigeria

Prof. Ogunmola said in the next 10 years the academy would

- Improve its status to win more government consultancies.
- Increase trust in the eyes of the government and the private sector

- Position itself as the center of excellence for environmental research
- Recruit various stakeholders to work with and then build their capacities to deliver
- Work closely with all the science-based ministries
- Give yearly report on the status of science and technology in the country.
- Engage the media by giving yearly account of the academy
- Increase membership of young scientists
- Work closely with other academies in disaster programs
- Continue working closely with the US academies on Artemisia-based malaria therapies, solar energy and water technologies.
- Continue with the program to bring back Nigerians from the Diaspora.

Senegal

The Senegal Academy was started in 1999 with a mission to provide advice to the government for the promotion of science and technology in the country. It works in the following key areas;

- Science and technology
- Scientific contributions and communication technology
- Information and communication technology
- Science policy

Its objectives include;

- Promotion of science and technology education
- Improvement of science and technology policy
- Capacity building

South Africa

The South African Academy of Sciences was established in 1996 at a ceremony presided over by the then President of South Africa, Nelson Mandela. Prof. Crew said, in the next 10 years, the Academy would;

- Be more active in its approach by mobilizing science for policy
- Become the trusted source for scientific advice
- Expand its current membership of 230 drawn from different disciplines
- Develop staff by taking them for training
- Develop framework for evidence-based research
- Strengthen its committee to evaluate poverty in South Africa
- Investigate second generation GMOs
- Work towards achievement of MDGs
- Review scientific publications of its members

Uganda

Dr Paul Mugambi who represented the Uganda National Academy of Sciences said the Conference had struck the right code on what academies should be doing to influence policy. In the next 10 years, he said the academy would;

- Mainstream the issues raised by Dr Sachs
- Work closely with the government on policy issues
- Develop capacity through staff recruitment and development

- Use of the office of the current Prime Minister, who is a member of the academy, to get a foothold in policy making and implementation
- Draw up a strategic plan
- Encourage inquiry-based science education
- Promote training in space science by reviewing university curriculum
- Engage in dialogue with AIDS researchers

Zambia

Dr Lewanika said, in the next 10 years, Zambia National Academy of Science would;

- Strive to create scientific culture in the country
- Get development policy to reflect the role of science
- Strengthen science training in universities
- Ensure that every child in the country had some basic knowledge of science
- Lobby for more public funding.

Zimbabwe

In the next 10 years, the Zimbabwe National Academy of Sciences would

- Increase its role in national economic development
- Provide advice on how science and technology could be tapped to catalyze development
- Prepare the country to deal with emerging geological, biological and hydro-meteorological disasters.
- Learn more from the well-established academies

African Academy of Sciences (AAS)

As outlined by Prof. G B A Okelo, in the next 10 years AAS would;

- Form more national academies. Currently there are only 13 out of 54 nations.
- Encourage all national academies to establish endowment fund and request their governments to contribute to the kitty
- Recruit younger scientists
- Initiate awards in science and technology
- Reach out to policymakers and give independent opinions on issues
- Intensify networking
- Champion course of good governance in the academies and AAS
- Make joint statements on important issues affecting the continent
- Organize roundtable meetings on various issues in different African countries
- Assist in the implementation of ASADI by various national academies
- Collaborate with US academies on various issues, including exchange programs and making joint statements
- Increase interaction with media
- Work closely with the continental bodies, like NEPAD, Africa Union etc.

He thanked the US National Academies and the Bill and Melinda Gates Foundation for supporting and financing the Initiative.

HIGHLIGHTS AND RECOMMENDATIONS

The main theme of the conference was Improving Public Policy to Achieve the Millennium Development Goals in Africa: Harnessing Science and Technology Capacity.

The following were some of the key points raised by presenters, discussants and participants during the conference deliberations.

- That science and technology are crucial and central to the achievement of Millennium Development Goals (MDGs) in Africa and therefore more attention and resources should be dedicated to capacity building by concerned governments and development partners.
- That African scientists should immediately roll up their sleeves and start soiling their hands by developing practical, science-based solutions to African problems if the continent is to realize the MDGs by the year 2015. The conference called for action-oriented approach.
- That African scientists must with immediate effect start involving themselves in national development policy formulation instead of leaving it to those whose policies are to blame for poverty and underdevelopment on the continent as they mainly focus on commodities and services not people.
- That African Academies and scientists must forge strong linkages with policy makers in order to influence policy formulation.
- That for policies to succeed, they should come from an all inclusive process whereby the public sector, private sector, the Academies and civil society all work together for their formulation.
- That Africans in general and African Scientists in particular should have confidence that they can make a difference in Africa if they put their acts together by tackling corruption, promoting transparency and accountability and above all investing in science and evidence based decision making. The conference was unanimous that Africa must invest heavily in science and technology to succeed in its quest for rapid and sustainable development.
- That Africa's economic planners, governments, civil society and development partners should recognize that the continent is still largely community based and use that insight and opportunity to design development interventions. The successes of AMREF and TICH that base their development agenda on the communal nature of Africa are instructive.
- That the wind of democratic political and social change blowing across Africa presents an excellent opportunity for African Academies, which are a unique resource to step in to make a difference by providing science-based solutions to Africa's development challenges.
- That African governments are today more willing to invest in science and technology than before and that more governments are working closely with their scientists to find solutions to health problems such as HIV/AIDS, tuberculosis, malaria and polio among others.
- That the Academies need to effect radical changes in their structure, membership, objectives and mission and vision so that they can provide credible expert advice expected from them. They must be dependable and trustworthy to win and keep policy makers recognition, confidence and support. "The scientists must make their

governments to believe that local saints can also perform miracles so that they do not have to import saints from abroad”.

- That the Academies would only be more effective if they became centers of excellence in specific fields.
- That African Academies should conduct implementation based research and use the findings as evidence upon which to build consensus for decision-making. Research leading to blanket ban of tobacco advertisement in Poland was given as a case in point.
- That no country has ever developed without relying on itself, therefore African Academies must aggressively challenge the debilitating psychological and behavioral milieu characterized by dependency rampant in Africa if the continent is to develop to its full potential.
- That to be more effective the Academies must regard themselves as entrepreneurial and business incubation centers, and the members, too, must view themselves as innovators, investors and entrepreneurs all rolled into one.
- That scientists and the Academies must adopt cutting-edge communication and marketing strategies to be able to disseminate their ideas, influence policies and have their ideas implemented.
- That African governments should streamline financing of local academies by including them in the national budgets and actually releasing the monies to them in good time to facilitate research and innovation.
- That African Academies should build constructive and beneficial strategic partnerships with the private sector by actively seeking contract research from the sector to sustain their funding and also contribute to national development.

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