



Science and Technology and Health Innovation Systems in Africa

Report of the 2005 ATPS Annual Conference and
Workshop held on November 28 - December 04, 2005

**MOMBASA
KENYA**

A report of the 2005 Annual Conference and Workshop of the African Technology Policy Studies Network held at Sun n Sand, Mombasa, Kenya, from November 28 to December 4, 2005.

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ABOUT THE AFRICAN TECHNOLOGY POLICY STUDIES NETWORK

The African Technology Policy Studies Network (ATPS) is a multi-disciplinary network of researchers, policy makers, actors in the private sector and other end users interested in generating, promoting and strengthening innovative science and technology policies in Africa. With a regional secretariat in Nairobi, the network operates through national chapters in 23 countries, with an expansion plan to cover the entire sub-Saharan Africa.

One of the objectives of the network is to disseminate research results to policy makers, legislators, the organized private sector, civil society, mass media and farmers' groups through publications, dialogue and advocacy. Among its range of publications are the Working Paper Series (WPS), Research Paper Series (RPS), Special Paper Series (SPS), Technopolicy Briefs and Workshop Reports.

ATPS is supported by a growing number of donors including the International Development Research Centre (IDRC), the Carnegie Corporation of New York, the Rockefeller Foundation, the World Bank, the OPEC Fund, Ford Foundation, Coca-Cola Eastern Africa, the African Development Bank, *infoDev* and the Royal Dutch Government.

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List of abbreviations

AIKS	African Indigenous Knowledge Systems
ARIPO	African Regional Intellectual Property Organization
ATPS	African Technology Policy Studies Network
AU	African Union
CIPIH	Commission on Intellectual Property Rights, Innovation and Public Health
COSTECH	Commission for Science and Technology
HIV/AIDS	Human Immuno-deficiency Virus/Acquired Immune Deficiency Syndrome
ICT	Information and Communication Technology
IPRs	Intellectual Property Rights
ITK	Indigenous Technological Knowledge
MDGs	Millenium Development Goals
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organization
NIS	National Systems of Innovation
SEAPRI	Southern Environmental and Agricultural Policy Research Institute
SSA	Sub-Saharan Africa
TB	Tuberculosis
TRIPS	Trade Related Aspects of Intellectual Property Rights
UN	United Nations
UNU/INTECH	United Nations University Institute for New Technology
WHO	World Health Organization
WTO	World Trade Organization

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1.0 ORGANIZATION OF CONFERENCE AND WORKSHOP

VENUE, DATE OF CONFERENCE AND WORKSHOP

The 2005 Annual Conference and Workshop of an autonomous African Technology Policy Studies Network (ATPS) was held at the Sun n Sand Beach Hotel, Mombasa, Kenya from 28 November - 4 December, 2005.

SUPPORT FOR THE CONFERENCE AND WORKSHOP

The 2005 Conference and Workshop was organized by ATPS in collaboration with the New Partnership for Africa's Development (NEPAD).

THEME OF CONFERENCE AND WORKSHOP

The theme of 2005 ATPS Conference and Workshop was "Science & Technology, and Health Innovation Systems in Africa."

OBJECTIVES OF THE CONFERENCE AND WORKSHOP

The conference and workshop had the following key objectives:

1. To demonstrate to policy makers the relevance of National Systems of Innovation (NIS) approach to health systems in Africa and how the approach can be employed to attain both the national and international health goals.
2. To provide a forum for African health professionals, practitioners, policymakers, government officials and other stakeholders to interact and share knowledge on the situation, approaches, challenges and opportunities facing the health sector in Africa.
3. To identify the knowledge gaps in the health systems and how the research capability building strategies proposed in both the NEPAD health strategy and the ATPS health technology programmes can be better aligned to address those gaps.
4. To provide the opportunity for all the actors and stakeholders to deliberate on the numerous regional and international initiatives and negotiate and prioritize their activities and action plans so as to effectively and efficiently use the expertise and available resources for maximum impact.
5. To examine how knowledge institutions can be better linked to the health providers and ensure that the relevant science and technology knowledge generated from these institutions is harnessed and used by the health care systems.
6. To examine how information and communication technologies (ICTs) and other technologies can be used to improve health care delivery in Africa.

Conference Themes

In an attempt to successfully achieve the above objectives, the conference focused on the following themes:

- a. National Systems of Innovation and its Applications to Health Systems in Africa.
- b. Health Science, Innovation and Technology Policy Research Priorities for Africa.
- c. Brain Drain, Training and Institutional Capacity Building Needs.
- d. National, Regional and International Programmes and Initiatives: Harmonization, Linkages and Collaboration.
- e. Cultural Norms, Empowerment and Behavioural Change in the Fight against HIV/AIDS and other Communicable Diseases.

EXPECTED OUTCOMES

The conference attempted to generate African perspectives on the use of health innovation systems to attain both national and international health goals. In particular, it was expected that:

- Participants would become familiar with the concepts of national systems of innovation and their application to healthcare systems in Africa.
- Knowledge gaps, training and capacity building and research needs would be identified and prioritized.
- Modalities and strategies for complementing other national, regional and international initiatives and programmes would be identified.
- Empowerment and behavioural change strategies would be considered and agreed upon within the African context.
- Both ATPS and NEPAD programmes on health would be better harmonized and targeted to the needs of healthcare systems in Africa.
- Conference proceedings detailing the presentations and the recommendations made would be produced.
- A communiqué and a negotiated plan of action targeting attainment of the MDGs and other national, regional and international goals would be signed and dispatched.

2.0 BACKGROUND TO THE CONFERENCE AND WORKSHOP

The five-day 2005 Annual Conference and Workshop was held to deliberate on how African countries can tap the existing science and technology potential as well as build the necessary skills, competence and expertise to address the ever-increasing disease burden and other related health challenges on the continent.

The conference and workshop on the theme *Science and Technology and Health Innovation Systems in Africa* brought together about 80 professionals representing various stakeholders from some 23 countries in Africa. The conference was organized around the key themes identified in the NEPAD health strategy, the ATPS programme on 'Strengthening Health Technology Policies in Africa', the themes of the WHO Commission on Intellectual Property Rights, Innovation and Public Health (CIPRH) as well as other regional and international initiatives meant to benefit Africa. It benefited from key presentations commissioned from African professionals as well as resource persons from various fields of expertise from outside Africa. The diversity of stakeholders brought to bear the different experiences and approaches that should result in richer and more inclusive policy choices, stronger and more focused programmes and a negotiated plan of action.

The conference and workshop was a timely response to reviews that show that most African countries are unlikely to meet the health-related Millennium Development Goals (MDGs) and other international development targets. They generally lag behind and the health inequality gap between the developing countries and the developed world are likely to continue widening. The inequality gap in public health between the developed and developing world has been associated, to a large extent, with the scientific and technological capacities (Wagstaff, 2002). Mugabe (2005) has emphasized that the extent to which these countries minimize the inequality gap and achieve the health-related MDGs namely, halt and reverse the spread of HIV/AIDS, reduce maternal mortality ratio by three quarters and reduce under-five mortality by two thirds by 2015 will depend largely on whether and how they invest in science and technological innovation. This emphasis has been supported by the major international policy documents such as the report of Task Force 10 (Science, Technology and Innovation) of the UN Millennium Project and the Johannesburg Plan of Implementation adopted during the World Summit on Sustainable Development in 2003. Most of the studies have pointed out the weak health systems in Africa as the chief impediment to the attainment of the health targets. There have also been recommendations to build critical masses of the necessary skills and expertise, improve health technology policies, strengthen research institutions and create agencies that generate product innovations in Africa. These should be done within a broad framework of the National Systems of Innovation (NIS) that recognizes the role of all the actors in the system and involves such actors in defining and implementing prioritized programmes in the health sector.

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3.0 CONFERENCE AND WORKSHOP OPENING CEREMONY

3.1 WELCOME REMARKS BY NATIONAL COORDINATOR, ATPS KENYA

Mr. Alex Gacuhi, National Co-ordinator, ATPS-Kenyan Chapter, welcomed participants to the country. He called for an African perspective to the deliberations at the conference and workshop, arguing that would be the sure way to attaining health goals in an innovation system framework. The conference and workshop sought to deliberate on how African countries can tap the existing science and technology potential and build skills, competencies and expertise to address the increasing burdens relating to health on the continent. Mr. Gacuhi expressed optimism that the conference and workshop would be a major success.

3.2 WELCOME REMARKS BY THE EXECUTIVE DIRECTOR, ATPS

At the opening of the conference and workshop, Dr. Osita Ogbu, Executive Director, ATPS, observed that the gathering was timely because it would focus the continent's energies towards achieving the Millennium Development Goals. He pointed out that research had shown that the problems embedded in inequality in Africa would continue to relegate the continent to underdevelopment. The inequality gap in public health between the development and the developing world, he said, was a reflection of the technological gap between the North and the South. How well developing countries put in place mechanisms that stem the mortality rate, reduce the prevalence of HIV/AIDS and deal with other health problems would depend on the degree to which they invest in science and technological innovation. He called for the creation of masses of expertise and centres of excellence to improve technology policies, strengthen health institutions and thus support innovations on the continent.

Dr. Ogbu said the conference and workshop had brought together some 80 professionals from 23 African countries to discuss the theme "Science and Technology and Health Innovation Systems in Africa". ATPS had gone into collaboration with NEPAD in order to strengthen health technology policies in Africa.

3.3 WELCOME REMARKS BY THE CHAIR OF THE ATPS BOARD

In her opening and welcoming remarks, the chairperson of ATPS Board, Prof Norah Olemba, thanked the conference and workshop organizers, saying the forum had brought together a diversity of stakeholders, skills and expertise.

She lamented that the enormous cost of health care, lack of effective drugs, lack of access to affordable drugs, drug resistance and the slow pace of behavioral change still confined the majority Africans to the "sad reality" of early and preventable deaths. Even though the range of diseases afflicting African

citizens is very wide, Malaria, HIV/AIDS, Tuberculosis and other communicable diseases top the list of killer diseases on the continent, weighing down Africa's economic recovery efforts.

Given the current status of health on the continent, Prof Olembo said, many countries in Africa are unlikely to attain the targets set under the United Nations Millennium Development Goals. The health-related MDG targets require all nations to attain a 75 percent reduction in maternal mortality ratios, 66 percent reduction in infant mortality rates, halt and begin to reverse the spread of HIV/AIDS and provide universal access to reproductive health by 2015. Most African countries are far off target and are unlikely to work out miracles within the remaining 10 years. She said many reasons had been advanced to explain the predicament, among them weak and disjointed health care systems as well as lack of proper coordination between the numerous efforts and initiatives in Africa.

She challenged ATPS and NEPAD, which enjoy a regional mandate to address the problem. She expressed satisfaction with the ATPS-NEPAD partnership, saying the collaboration would be continued beyond the conference.

Prof Olembo observed that the key pillars of innovation are networking, learning and collaboration between the different actors and affirmed that the ATPS health programme would follow an innovation systems approach. "This is quite befitting since weak linkages and disjointed efforts have been identified as key impediments to effective health care delivery in Africa," she noted.

She said the conference would come up with well researched needs for the continent. It would show areas requiring priority in capacity building and thus lead to a common approach in addressing problems.

She noted also that there was disharmony between African values, customs, knowledge systems and the Intellectual Property Regimes (IPRs) on the one hand, and recent technological advances, especially in biotechnology, on the other hand that had created both opportunities and threats to African biodiversity and more particularly medicinal and therapeutic plants. These, among other issues, would be dealt with at the conference and workshop, she said, and expressed optimism that a position paper would emerge for presentation to the World Health Organization.

The conference would present an African perspective to the issues, Prof Olembo declared.

3.4 KEYNOTE ADDRESS BY PROF GOTLIEB LOBE MONEKOSSO

Gottlieb Lobe Monekosso: *Africa's Persisting Health Crisis: What Can We Do?*

The keynote address was delivered by Professor Gottlieb Lobe Monekosso the founding President of NGOs Global Health Dialogue and a former Minister of Public Health in Cameroon. Professor Monekosso acknowledged that Africa faced a formidable health crisis and called on the conference participants, stakeholders and well wishers to join efforts and act decisively in ending the crisis.

The first step, he proposed, would be "thinking together", which means defining health, health care and health development, unpacking the concept of the goal of health, selecting inputs for health, identifying the obstacles to better health before taking action.

Determinants of the health crisis in Africa should also be identified. These include, among others, human behavior, environmental hazards, a rapid population growth, sick health services and poverty. They also include illiteracy, HIV/AIDS, malnutrition, health emergencies and socio-political disturbances.

Obstacles to improved health care would be removed by creating structures for dialogue, mobilizing local response to health problems, improving the welfare of health care providers and using national experts on health problems. The obstacles would also be removed, Prof Monekosso said, by instituting health insurance against income deficiencies, ensuring food security and overcoming dietary deficiencies, overcoming HIV/AIDS, combating ignorance, and mitigating emergencies.



Prof Monekosso said the strategy to a strong health system would entail identifying key actors, achieving consensus on policies, defining a country's priorities, building health development networks and mobilizing local partners for health. It also would entail strengthening districts, involving tertiary institutions of learning, establishing effective health information systems and building capacity through joint health and development initiatives.

Success, the key speaker said, would depend on joint effort at all levels of health administration in each country in Africa. It would also depend on co-operation with other at the global level. Those to contribute to the effort would be individuals, groups, associations, business enterprises, local authorities and community-based organizations among others.

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4.0 CONFERENCE PLENARY PRESENTATIONS

4.1 INSTITUTIONS AND HEALTH INNOVATION SYSTEMS

4.1.1 BANJI OYELARAN-OYEYINKA

Systems of Innovation and Development: Institutions for Competence Building

In this paper, Professor Banji Oyelaran-Oyeyinka of the United Nations University-Institute of Technology (UNU/INTECH) in Maastricht, the Netherlands, examined systems of innovation and discussed ways in which institutions shape systems of innovation. He defined innovation as knowledge that is acquired through learning, research or experience when it is applied to the production of goods or services. A system of innovation, on the other hand, consists of a network of economic agents working with institutions and policies to influence innovative behaviour and experience.

Prof Oyeyinka said a system of innovation framework places innovation and learning processes at the centre of focus and adopts a holistic and interdisciplinary perspective. It also takes a historical and evolutionary perspective and emphasizes independence. He brought out the importance of institutions in the development of a system of innovation framework, paying attention to their management, access to and use of information, resolution of conflicts and systems of promotion.

The presenter said institutions shape systems of innovation by engaging in research and development, by building competence among staff, through information exchange and through regulation.

He identified four features of biotechnology that demand institutional change, saying the discipline is rooted in science, and is characterized by a strong interdisciplinary content. Sources of biotech knowledge, he pointed out, are industries, laboratories, universities and public research institutions. He also noted that institutions that are expected to deal with uncertainties, resolve conflicts and provide incentives could also be barriers to innovation. Such institutions could constitute systemic barriers to the process of innovation, particularly through laws, habits and practices that may have lingered on for historical reasons.

Professor Oyeyinka also showed institutions could hinder innovation by failing to create an infrastructure that could meaningfully lead to establishment of partnerships and also by failing to put regulatory mechanisms in place to test for, say, efficacy of rigidities that undermine collaboration among institutions, lack of interest in drug development and lack of support from the government. He pointed out that collaboration in innovation had been limited by the inability among scientists to move their work beyond individual organizations, the absence of formal institutions to foster collaboration and poor incentives for scientists.

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4.1.2 LYNN K. MYTELKA

Health Innovation Systems: A Comparative Perspective

Professor Lynn K. Mytelka, a former director of the United Nations University/Institute of Technology at Maastricht, the Netherlands, delivered the paper. She pointed out that the need for developing countries to participate fully in the global economy was critical to peace and progress in the world.

This, she said, called for people in these countries to gain access to knowledge and the capabilities for innovation, especially biotechnology because of its impacts on health care. The new wave of technologies, she pointed out, is anchored in the sciences, involve a combination of distinct scientific roots, is patent-intensive and systems embedded-characteristics that have put barriers to developing countries in acquisition of their gains.

She discussed the risks of further exclusion of developing countries, particularly in the health sector, noting the high cost of drugs and medical services as well as market-driven products and services. She therefore called for new thinking, for a system that allows innovation rather than mere production. She defined innovation as application of knowledge in the creation of new or modified goods and services, processes and ways of organizing production.

Prof Mytelka called for an innovation system approach to health issues, arguing that it is interactive and its processes are embedded in an institutional context.

4.2 INTELLECTUAL PROPERTY RIGHTS AND HEALTH SYSTEMS

4.2.1 AGGREY AMBALI

Africa's Science and Technology Consolidated Plan of Action

A plan of action by the African Union (AU) and NEPAD titled "Africa's Science and Technology Consolidated Plan of Action" was presented by Professor Aggrey Ambali the Nepad Biosciences Initiative Coordinator detailing its background, the process, principles and overall objectives. It also examined the research and development programs, governance and implementation mechanisms as well as the budget and resource mobilization strategy.

The plan recognizes that the continent's economic growth and human development fortunes lie in production and use of science and technology. There is also the search for Africa's economic transformation as new technological opportunities arise. The plan also recognizes that barriers to Africa's scientific and technological development include lack of commitment, policies and priorities.

The plan demonstrates a desire for the continent to harness science and technology for purposes of transformation. Further it demonstrates a desire to contribute to the global pool of science and innovations.

The principles governing implementation of the plan include having Africa set its own development agenda, going into partnership with various stakeholders on the continent and building on previous progress. The pillars of the plan are knowledge, skills, mobilization and sound polices.

The pillars also include institutions and regional diversity.

The plan's overall objectives include improving infrastructure for research and development, building and using Africa's scientists and engineers, turning ideas and knowledge into products and services and improving quality of policies for science and innovation. They also include increasing African demand for science and technology.

The plan's research and development flagship programs include biodiversity, biotechnology and indigenous knowledge in the first plan cluster.

The second cluster has energy, water and desertification while the third has material sciences, manufacturing, laser technologies and post-harvest technologies. The fourth cluster has ICTs and space science and the fifth mathematical sciences.

The programs for policies include African science, technology and innovation (ASTI) indicators, Regional science and technology cooperation, public understanding of science and technology, common biotechnology strategy and policy, science and technology policy capacity and establishing technology parks.

The budget for the plan for the period 2006 to 2010 is US\$ 158 – 200 million to be sourced from African governments, the private sector and international partners.

4.2.2 LINDA OPATI

Intellectual Property Rights and Health Innovation Systems in Africa

The paper was delivered by Ms Linda Opati, Legal and Policy Officer with the Southern Environmental and Agricultural Policy Research Institute (SEAPRI). She identified industrial property in the intellectual property rights regime as patents, trade marks, industrial designs and geographical indications and artistic and literary property rights as comprising copyright and neighbouring rights. Intellectual property rights matter because they provide incentives to creative endeavour and afford official recognition to the innovator. They also create repositories of vital information and facilitate the growth of domestic and international trade.

On the emergence of a global IPR regime and health developments in Africa she discussed the reconstitution of World Intellectual Property Organization (WIPO) as a UN agency in 1974. It had become a forum for negotiation of international treaties and also helped in offering training to developing countries on intellectual property rights. Among the WIPO administered treaties, she said, are on IP protection. These define internationally agreed standards of protection in each country. There also are global protection systems that ensure one international registration is effective in all states that are signatory to a particular treaty.

In addition, there are classification treaties that create systems that organize information on an invention for easy retrieval.

In 1995 the World Trade Organization (WTO) was established by the Uruguay Round Negotiations. Its functions are to administer WTO trade agreements, to act as a forum for trade negotiations, to handle disputes, monitor trade policies and give technical assistance and training to developing countries. Trade Related Aspects of Intellectual Property Rights (TRIPS) had become an annex to the WTO agreement, and had become effective for most developing countries in January 2005. The least developed countries are exempted from the agreement until 2016. It also sets the global minimum intellectual property standards for all WTO members. The speaker pointed out that TRIPS is aimed at promoting public policy objectives by fostering innovation through transfer and dissemination of knowledge and by allowing members to adopt measures that protect human health and nutrition.

She further discussed the African Regional Intellectual Property Organization (ARIPO) and its functions. Its mandate includes receiving and processing patent applications on behalf of members, promoting and evolving a common view and approach and assisting in acquisition and development of technology relating to industrial property matters.

The presenter also examined how IPRs were hindering health innovation systems through pricing, scope of intellectual property rights, adverse effects on future innovations, technology transfer, patents

and copyright. However IPRs also contributed to innovation by conferring rights and giving details of invention.

The presenter, in conclusion, recommended that national patent legislation should limit the scope of patentable subject matter, give strict standards for patentability, facilitate competition and offer adequate safeguards to ensure patent rights are not exploited inappropriately.

4.3 BRAIN DRAIN IN THE HEALTH SECTOR

4.3.1 DIVINE IKENWILLO

Brain Drain: Painting a Picture for Africa

The paper was delivered by Divine Ikenwillo, a research fellow at the Health of Economics Research Unit, University of Aberdeen. He traced the origin of term “brain drain” to the 1960s when many British scientists and intellectuals immigrated to the United States for better working conditions and said migration is a process that responds to various stimuli, with people tending to move from areas of low wages and high unemployment to low unemployment and high wages. Migration is caused by labour-market conditions as well as non-economic conditions such as political instability and religious strife. It will also result from globalization, communication and visa requirements. The paper showed that the brain drain results in poor economic growth for the affected country, loss of human resources loss of returns to investment in different sectors, loss of taxes, and in increasing dependence on foreigners and expatriates. It leads to under-provision in health services, among others, and to the widening of the gap in science and technology between Africa and the West. It will also lead to higher earnings and to skills acquisition for those who emigrate.

To address the problem of the brain drain, the speaker said African countries must improve their economies, governance and social conditions. They must also institute multilateral agreements to manage migration and establish better links with those in the Diaspora. They should also give adequate incentives to scientists and professionals.

4.4 NATIONAL AND REGIONAL INITIATIVES

4.4.1 PADMASHREE GEHL SAMPATH

Health Innovation Systems and IPR Issues for Africa

This paper was delivered by Prof Banji Oyeyinka on behalf of Dr Padmashree Gehl Sampath. Dr Sampath is a biotechnology researcher with the United Nations University-Institute of Technology (UNU/INTECH) at Maastricht, Netherlands. The paper was based on her research project at the institute focusing on alternative incentives that can be used to bolster research and development in HIV/AIDS and malaria. The project compares health innovation systems in three African and two Asian countries. In her paper, Dr Sampath argued that the major concerns for health innovation in Africa included building local systems that focus on local health priorities and enhancing access to the drugs required to improve public health. The IPR dimensions in the building of local health innovation systems, he said, are the impact of incentives and the benefits that are likely to accrue.

Giving the example of India where IPRs had triggered off innovations, the presenter said a combination of factors had led to a thriving local pharmaceutical sector. IPRs had also boosted pharmaceutical biotechnology. Trends, however, showed that IPRs alone are not sufficient incentives to foster innovation in health and they do not necessarily lead to faster introduction of medicinal products in developing countries. The paper also discussed the aligning of IPRs with local health needs and argued that the impact of intellectual property rights on developing countries will differ from one country to another depending on its level of development.

In addition several negative effects can be overcome if policy makers are more aware of how IPRs can be used as an innovation incentive. IP is only one aspect of innovation policy. For it to result in creation and diffusion of new technologies, other aspects of innovation policies must be present, such as competition policy, industrial policy, etc. These must act in tandem. Most African countries, he said, have an extension under the Doha Declaration until 2016 to implement the pharmaceutical patent provisions. They should utilize this to build local health innovation systems like several other successful developing countries have. To enable this, IP regimes must be created only after assessing needs and priorities at the local level.

Dr Sampath in her paper also said access to medicine is affected by several factors other than IPRs. Inefficient drug procurement and distribution can affect the availability of drugs much more than IPRs (experience in HIV/AIDS drugs points to this). Countries should therefore focus on enhancing drug delivery services, she proposed.

4.4.2 AMIR M. KARIM

Biosciences and the Future of Health in Africa: The Nepad North African Initiative

This paper was presented by Amir M. Karim of the Department of Biochemistry, Faculty of Science, Ain Shams University, Cairo, Egypt. Giving a rationale for the NEPAD project, the speaker said biotechnology was radically changing the field of medicine with the changes presenting opportunities for improving health care delivery. There are challenges too in bridging health inequity gaps. Biotechnology tends to be inclusive by its nature, and Africa could be missing a major opportunity if it were left behind.

The speaker demonstrated the inter-relationships in the information age between biotechnology, ICTs, genomics, informatics, life sciences and other areas of study. He further demonstrated the impacts of biotechnology on agriculture, medicine, industry and environment management.

The benefits of biotechnology, he pointed out, correlate with the development of capabilities to develop it further. He said in medical biotechnology molecular biology would shift healthcare from empirical interventions towards rational procedures that addressed specific molecular pathologies. Amir Karim argued that inclusion of biotechnology in a country's development strategy requires a mature technology base. This can only be achieved through investment in research.

For the project to succeed he said, extensive work was going on at universities and research institutions and many scientists were already in health-related areas. Egypt had developed a pharmaceutical industry that exports drugs and vaccines, he said. A number of modern genetic engineering and biotechnology research institutions had also been set up besides formulation of a national strategy for genetic engineering and biotechnology. There has also been emphasis to involve industry and the private sector in supporting innovating research that leads to product development.

4.4.3 DAWN SURRAT

National and Regional Initiatives: Do they Reach the Grassroots?

This paper was delivered by Dawn Surrat, a Capacity Building Officer, HIV/AIDS, VSO Kenya-Kauwi, Kauma and Madeki Health Partnership. The presenter examined the grassroots, who they are, and their role as well as what ought to be done to sustain their progress. The ATPS audience, she noted, includes legislatures, policy makers, the private sector, the mass media and civil society, science and technology institutions, and farmers.

The critical issues of technology in healthcare, she said, are transportation, referral systems, infrastructure, water and sanitation, infection control, environmental health, distance learning and basic diagnostic equipment. She identified the major disease burdens for the continent as malaria, tuberculosis, and HIV/

AIDS. Those most vulnerable are refugees, the disabled, the elderly, women, children and the youth. She interrogated NEPAD's health strategy foci and examined the key regional initiatives for the partnership's strategic coordination and regulation.

Drawing from her research in Kitui, Kenya, the presenter said Malaria had become a bigger burden to the local people and more deaths resulting in previous years. However, various initiatives had been undertaken to stem the increase of Malaria.

On Tuberculosis (TB), she said, the status of infection was unknown but trends indicated an increase in prevalence while on HIV/AIDS efforts were focused on reducing spread and improving quality of life of those infected. The Kitui lessons showed that collaboration is key to achieving the desired impact in the fight against the killer diseases.

4.5 INDIGENOUS KNOWLEDGE AND HEALTH SYSTEMS

4.5.1 H.O. KAYA

Promotion of Public Healthcare Using African Indigenous Knowledge Systems and Implications for APR: Experiences from Southern and Eastern Africa

The paper was presented by Dr H.O. Kaya, the Coordinator of the indigenous knowledge systems (IKS) Programme at the North West University, South Africa. He defined indigenous knowledge as innovations and practices of local communities, developed from experience, gained over time and adapted to local culture and environment. Literature is replete with examples of the use of African indigenous knowledge (AIKS) to mitigate diseases and lead to food security. Discussing the status of African indigenous knowledge, Dr Kaya said the system had been marginalized and neglected in policy formulation for many years due to the periphery position of Africa in the global economy. In spite of the marginalization, many Africans rely on AIKS for health services. In recent years however, there has been a dramatic increase in interest in the role of AIKS in sustainable development and public health.

Globalization has made it imperative that AIKS cannot be ignored as part of global body knowledge. Africans are now increasingly being seen as knowledge producers and NEPAD Southern African Biosciences Network has recognized AIKS as one of the flagships of science and technology because it is holistic and interfaces with all other science and technology flagships.

Africa indigenous knowledge had also been invaluable in efforts towards food security in southern and eastern Africa, especially in areas experiencing problems of malnutrition and in areas experiencing arid and semi-arid conditions. Local communities have, over the years, developed different food security strategies and mechanisms for surviving in these conditions. The strategies include technologies of food production, processing, preservation and storage, which have not received much attention from policy makers or extension workers. The potential of these technologies had tended to be underrated.

Rural people in various parts of the two regions also use numerous ethno veterinary plants for treatment of diseases in livestock and in humans. For example, treatment with plants is used for the removal of the pork tapeworm (*Taenia Solium*). The presentation also discussed the interface between AIKS and western or modern knowledge systems. Owing to their commercial value and contribution to sustainable development, African indigenous knowledge systems are increasingly becoming an integral part of the global body of knowledge. This interactive flow has already resulted in mutually beneficial exchanges of knowledge that have enhanced the capacity of the formal research system to solve priority problems identified in local communities.

Thus multilateral and bilateral donor agencies are now recognizing the role of indigenous knowledge in sustainable development, including the promotion of public health care. Both knowledge systems will be found in agriculture, public health, political organizations, conflict transformation, culture, education, technology and lifestyle.

As a result of its affordability and easy access in most local communities, indigenous knowledge continues to provide the building blocks for the development and public health in most African countries, while seeking cooperation with modern Western knowledge for the mutual benefit of the two systems.

4.5.2 JACK GITHAE

Renaissance of Indigenous Knowledge and Technology: The Case of African Traditional Medicine.

This paper was delivered by Dr. Jack Githae of the School of Alternative Medicine and Technology (Samtech). He observed that Africa is the cradle of mankind and that the Africoid race is estimated to be more than 150,000 years old while the Europoid and Mongoloid races are estimated to be 40,000 and 6,000 years old, respectively. Man's survival, he pointed out, had depended on how effectively and how sustainably he had maintained health delivery systems. African traditional medicine, he said, is an aspect of African indigenous knowledge that embraces a variety of effective culture diagnostic and treatment systems that have enhanced the health of African people since time immemorial.

The presenter identified the major categories of traditional medicine as herbalism, traditional bone setting, traditional midwifery, traditional surgery, traditional psychiatry, traditional divination, faith healing and traditional psychic healing. African traditional medicine combines nutritional, catalytic and germicidal properties.

He pointed out the advantages of traditional medicine over modern medicine, among them being the holistic approach to treating an illness that addresses the psychological, physical and social needs of the patient. Traditional medicines are also generally affordable and easily accessible.

Dr Githae further gave a strategy for conservation of medicinal plants that entails mapping the resource base and location, streamlining land tenure and herbal resource ownership status. It also entails educating stakeholders on the value of the herbal resource and promoting sustainable herbal resource procurement and utilization processes. Ethical markets should also be established and commercial farming and production of medicinal plants be encouraged to ease the strain on "wildlife medicinals".

4.5.3 DANIEL NONI LANTUM

The Place of Policy in Applied Healthcare and Technology with Special Reference to African Traditional Medicine

This paper was delivered by Professor Daniel Noni Lantum who examined the genesis of the modern health system, the role of policy in public health, the dumb-bell and the paradox of policies. Policy is always intended as a guide to good governance, to allow a search into human possibilities. He further examined the role of the international community in restoration of traditional medicine and the recent advances made on the continent.

However, key challenges are posed by prevalence of Malaria, Tuberculosis and HIV/Aids, he pointed out, and called for an integrated approach to the problems. This would entail bringing new approaches on board and developing new disease management strategies.

Despite the obstacles and challenges, the presenter urged Africa to keep developing and to revive older civilizations. He further called for the development and exploitation of the African genius as well as the vast resumes that the continent is endowed with. African traditional medicine would only be improved through science and technology, he affirmed.



4.6 ICTS AND THE ECONOMICS OF HEALTH

4.6.1 NYAMBURA NDUNG’U

ICTs and Health Technology at the Grassroots Level

This paper was presented by Ms Nyambura Ndung’u, a researcher and ICT specialist with the African Network for Health Knowledge Management and Communication-AfriAfya Kenya. The paper sought to demonstrate that ICTs can be applied to programs at the grassroots. It traced the role of ICTs in e-health at the grassroots, showing its success in telemedicine and in distance education. ICTs had also been successfully applied in the management of information systems at the community and district levels in such places as Kwale in Kenya’s Coast Province. Among the ICTs used are audio programs and video shows, computers, diskettes, printed materials, mobile phones the internet and traditional communication technologies using drama, plays and songs. ICTs have also been used in agriculture, in community mobilization and in water management.

The presenter observed that among the impacts of the use of ICTs at the grassroots were increased community discussion of sensitive issues such as HIV/AIDS, increased community participation in health activities and management, improved performance in management of health facilities and emergence of requests for more health information. There are major challenges coming in use of ICTs at the grassroots, among them a poor infrastructure, maintaining a “two-way” communication, getting the right content from those at the grassroots, poverty, inequity gender and power imbalances.

Some of the key lessons in use of ICTs at the grassroots are making the technologies address practical problems, making them improve livelihoods, building strong partnerships, maintaining project sustainability and sharing the lessons with the beneficiaries. The presenter strongly argued that for ICTs to succeed at the grassroots, those introducing them must engage the locals, make them the driving force of the technologies and endure their socio-culture sensitivities. ICTs, she affirmed, must not only address practical problems; they must have clear and tangible benefits-because they are a means to an end.

4.6.2 AMIT THAKKER

The Private Sector and Health Innovation Systems in Africa

The paper was presented by Dr Amit Thakker, the Chairman and Chief Executive Officer of Avenue Healthcare and Chairman of the Kenya Hospital Owners Association who examined the private sector concerns and government and private sector roles in healthcare. He contended that the challenges faced by the private sector are a legal and regulatory framework, healthcare financing, escalating costs of healthcare, service quality, the structure of the industry, consumer expectations and human resource problems.

On the legal and regulation framework, he said, the government works as provider, trainer and regulator of healthcare and that the multiple roles of government render it inefficient. In addition, unstable policies lead to investment risks while inappropriate regulation leads to unfair competition, unethical practices, poor industry reputation, high costs of drugs and service, and confusion in the industry. Healthcare financing faces the challenges of inefficient use of resources, high out-of-pocket spending, poorly managed services and a lack of insurance for healthcare providers due to a large population of poor and informal sector workers. The speaker said the health service delivery system is characterized by the domination of government and charitable organizations. It had an untenable pricing system and a low capacity for change. Corruption is rife and adoption of ICTs is low.

Dr Thakker discussed consumer and societal expectations in the healthcare industry, and called on a change of government philosophy to allow healthcare services to be controlled by the market. The key concerns in healthcare, he said, include access, equity, cost efficiency and quality. The way forward,

therefore, would be to institute health sector reforms, reorganize healthcare financing, and promote competition and choice.

4.6.3 PIUS OWINO

Health Systems and Their Performance: The Case of Scaling up ART Treatment in Resource Limited Settings

The paper was delivered by Dr Pius Owino of the Policy Project who noted that research work was still in progress. The presenter also noted that for health systems to perform well there must be adequate governance capacity as well as the requisite skills, competencies and services to the system. Good health system performance also requires resources and incentives, a technical and organizational capacity and a degree of accountability to clients.

He pointed out that health performance is measured by efficiency, quality and sustainability. He demonstrated that a framework for diagnosing performance of health systems would have to take into cognizance the health reform agenda, reform levers, health systems and program outcomes and a monitoring and evaluation mechanism.

Dr Owino said in scaling up HIV/AIDS interventions in sub-Saharan Africa global efforts must be appreciated. It also must be realized that the ultimate objective is to enhance treatment, prevention and care and support for those infected and affected. He posed the question whether there was a preparedness on the continent for increased health funding and for free ARTs and whether health institutions could cope with the easing evolution.

The presenter concluded that strong systems are required to facilitate effective health service delivery and that in negotiating for increased health funding, the systems component should be accorded high priority.

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5.0 HEALTH SYSTEMS IN AFRICA: COUNTRY REPORTS

Detailed presentations on the status of health systems in African countries where ATPS has chapters were made at the conference and workshop. The presentations showed, among other things, the background to the health system in the individual country, the health policy environment, the actors in sector, the health sector linkages, the strengths and weaknesses of the systems, and the research action and priority areas.

The first group of presentations comprised Uganda, Benin, Nigeria, Mali and Cote'Ivoire and the session was chaired by Mr Chris Squire, the head of the Department of Mechanical Engineering at the University of Sierra Leone. The second group comprised Tanzania, Cameroon, Zambia, Senegal and Mozambique. This group was chaired by Prof Dejene Aredo, an Associate Professor of Economics at Addis Ababa University and National Co-ordinator of ATPS in Ethiopia. The third group of presentations included Ethiopia, Kenya, Malawi, Burkina Faso and Lesotho. The chair for the group was Prof Joseph Obua of the Faculty of Forestry and Nature Conservation of Makerere University and National Co-ordinator of ATPS in Uganda. The fourth group was made up of Zimbabwe, Ghana, Swaziland and Sierra Leone and was chaired by Dr Julius Mangisoni of the University of Malawi and National Co-ordinator of ATPS in Malawi.

6.0 CLOSURE OF CONFERENCE AND WORKSHOP

6.1 PANEL DISCUSSION

The conference and workshop hosts organized a panel discussion to bring into sharper focus the issues discussed. The panel discussed the strengthening of health systems in Africa, the measures that would be put in place to stem Africa's brain drain and the institutional capacity building needs for health care on the continent. Other issues included finding ways and means of making intellectual property rights more responsive to Africa's health needs, how the continent's traditional knowledge can be protected and how links can be forged between modern and traditional medicine. The team also discussed ways and means of harmonizing national and regional initiatives and making them more rooted. Also examined was the way African culture can be tapped to foster behavioral change in the fight against HIV/AIDS, and how policy developments could be speeded up to improve Africa's health systems. The panel also looked at the need for enhanced research in support of health systems and the role ATPS should play in spearheading improvement of the systems.

The moderator of the discussion was Prof Lynn Mytelka, an ATPS Board member. Others on the panel were Prof Gottlieb Monekosso, Founding President, NGOs Global Health Dialogue; Prof Rubin Pillay of the University of Western Cape, South Africa; Dr Clifford Mutero, SIMA Coordinator; Dr Benjamin Anyene, Medical Practitioner in Nigeria; and Ms Bitrina Diyamett, Senior Scientific Officer, COSTECH

6.2 CLOSURE OF CONFERENCE AND WORKSHOP

The official closing of the Conference and Workshop was performed by Mr Peter Ayonga, the Deputy Provincial Commissioner (PC) for the Coast region on behalf of the Provincial Commissioner, Mr. Cyrus Maina. In his prepared speech the PC said the theme of the conference fitted the government's objectives in the economic recovery strategy for wealth and employment creation for the period 2003 – 2007. In the strategy the Kenya government identifies affordability and accessibility of quality health care as key to attaining rapid socio-economic recovery and sustainable development. He also observed that the conference had addressed regional concerns and efforts by African countries to attain the United Nations Millennium Development Goals. He noted the efforts were welcome as they were geared towards achieving improved health for the people.

The Provincial Commissioner also observed that well-researched papers had been presented at the conference and that the level of debate was high indeed. The outcomes of the conference would be used in informing policy interventions on the continent. He further called on the conference organizers to ensure Africa reaped maximum profits from the resources invested in research in the health sector, noting that individualized research had failed in meeting Africa's problems. He also called for sector-wide consultations, saying they often led to well-targeted and to policy-relevant research. Mr. Maina

called on African governments not only to work out ways of training professionals but to also retain them. He called on ATPS and NEPAD to take a more central role in guiding the continent's development but warned that for success the two organizations must spread and anchor themselves firmly in the grassroot communities in Africa.

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APPENDIX 1: THE KEYNOTE ADDRESS

KEYNOTE SPEECH BY PROFESSOR GOTTLIEB MONEKOSSO- FOUNDING PRESIDENT- GLOBAL DIALOGUE, FORMER MINISTER OF PUBLIC HEALTH IN CAMEROON

It is my pleasure to be with you this morning. I realize many of you do not know me but people of the generation before yours knew me.

I am not here because I was Minister of Public Health in Cameroon. I have spent 20 years of my life teaching medicine in Eastern and Western Africa including two years in Uganda and two years in Tanzania. I was privileged to teach at the University of East Africa when it was the only university being shared by the three East African countries.

As Regional Director for Africa, between 1985-1995, I have traveled to every African country in the continent. I was also privileged to serve in the military in the Americas where I was responsible for the Commonwealth and Caribbean countries.

It is over 10 years since I moved back home because I needed to find what was really going on back home after moving around the world for so long.

Having seen the objectives of ATPS, it is clear that ATPS has a lot to do with overcoming Africa's persistent health crisis. I remember a talk "overcoming Africa's persisting health crisis: What have our health systems left undone". We think we have tried everything but obviously there are things that have been left undone. What is the role of science and technology and innovation and what is the relationship between traditional and modern practices in the health innovation system? The topic is divided into five short paragraphs that are linked together.

Let us identify the determinants of the health crisis. What has been done? What can be done to remove the obstacles with a view to overcoming the crisis? And in doing so, can we accelerate certain actions to avert the crisis rather than just nibbling at it. Since we are pursuing the goal of achieving health for all our communities, this can be sub-divided into components that can be comprehended and resolved together. In this aspect, as in any business, our choices are determined or limited by the availability of resources, by the level of technology at our disposal and finally by our capacity to manage.

We may not have control over our resources because of our state of development or even our technologies but we should be aggressive here in managing what we have and to better run our healthcare systems. In other words, using available resources to portray technology to ensure quality care. If we are to improve ourselves, we must develop new ideas because the ideas we have been used to so far have not succeeded. Africa has a huge disease burden and we need to come to the rescue of our dilapidated health services.

We (the health sector) often classify our work into curative care, disease prevention and control & health promotion but we often do not see how those activities can be related to have broad health goals on one hand and to the health care institutions on the other hand. For example the message I would give at this point is if we could look at local hospitals based curative care which doctors and nurses do very well and relief or cure of disease what they are trying to do is to postpone the death of cells tissues and organ systems and in some case the need to replace the whole organ. There are then the public health centers that emphasize or look at what we do which is what matters more than the treatment.

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We now look at deterministic factors that are pro-fundamental behaviors. These are:

- Human behavior
- Environmental Hazards
- Rapid cooperation
- Health Behavior
- Seek Health services

We tend to focus on diseases and this is why many of our ministries can better be described as ministries of disease. Indeed, the health crisis is multiple. The money spent on behavior change is very important as it contributes significantly to resolving some of the health problems. Our health services suffer from non-satisfaction of patients and clients and migration of qualified health care professionals. Apart from these immediate direct determinants, there are other indirect determinants that are equally important like poverty which is under income deficiency. Illiteracy is also responsible for knowledge deficiency. Others include:

- Malnutrition, dietary deficiencies and HIV related syndromes
- Emergencies
- Natural Emergencies and sickness
- Socio-political disturbances

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We should take all of these issues in a holistic manner in line with ATPS strategy. We can have consensual Health policies if we take this into account with full community participation. These are basic determinants but on a day to day basis there are administrative bottle necks and bureaucratic constraints and so much that the procedures that were put in place in the colonial past to safeguard their resources have now become impediments. Again there is often an absence of explicit management sciences.

The operational management cycle is based on annual projects that ensure that partnership is maintained. There is a development cycle that lasts for three to six years and is expected to result in growth and it is extraordinary how many countries have stopped organizing such development programmes.

I was interested to hear earlier on how decision making is done, implementers are doing their own thing and there is no connection with the planners and in the circumstances, there is also no management science in the cycle such that those who did the planning, programming, budgeting are not connected with those who are doing the implementation especially with those who are expected to benefit.

When you are in a ministry as a manager or minister, most of the funds are committed to day to day casualty cases. Sometimes, more than 70% of the funds are for primary health care so that even if you wanted to use 30% for primary and secondary care since more than 70% of the demand is for primary care. The funds are also mainly in favor of the urban populations who have more access to tertiary health care.

The overall thought is that little or no money is available for Health promotion policies control and the consequence is that there is an increase in the number and severity of sick and injured persons resulting in high expenditure in health care costs especially in tertiary care.

The vicious cycle can only be reversed by well financed and better organized health promotion strategies systems and also by systems of health insurance which is a viable alternative because it makes it possible to sideline the expenditure of primary health care costs so that eventually health projects can be spent on health

OBSTACLES AND RESOLVING CRISIS

Identifying determinants and obstacles to their removal will help remove the crisis but this is easier said than done. Many strategy papers did not achieve their objectives and some were abandoned. It was in 1978, that the role of the community participation in health was recognized and people started by creating functional dialogue structures and health committees, management committees and development committees.

Unfortunately this was not taken seriously by governments and health professionals and many of them were funded by external donors that led to discouraging failures. It has been underscored however that it is through community participation that we can mobilize response to health problems. We can start on the difficult task of taking care of health care providers so that the majority health care providers can be retained in Africa's hospitals and health centers. This is the subject of urgent redress and is part of the agenda of this meeting as this contributes to brain drain. There is a tendency to utilize foreign consultants and experts to the detriment of national consultants and experts who can provide the necessary link to the intended beneficiaries.

It is nice to know that many UN Agencies, WHO and other bilateral agencies can now employ local experts in their own countries, Good as it may be, suspicious minds would see this as using them to achieve the objectives of their own agencies which ought to be the same as national objectives this would be the first step to stemming brain drain.

It is disappointing that many health programmes are launched for political reasons and therefore lack managerial competencies to see them through. There are many countries particularly francophone countries where the political life of the Health minister is the shortest in cabinet. When I was responsible for health in Africa, I had to beg the presidents to let the health ministers stay a bit longer in order to have some sort of continuity in order not to disrupt health programmes.

Failure to implement health programmes is like a patient in the village who needs insulin but decides to take it at their convenience. Health is priceless but health care has a cost. Poverty associated with income deficiency is a major need. . There is opportunity to cash in to build a contraction moving from the informal sector management of traditional/institutions moving to a more formal sector of health insurance.

My second successor has declared that his priority in his mandate will be HIV/AIDS and we shall all be glad if he manages to make a dent on this problem.

I am privileged to say HIV entered this continent in 1980/81 when we were practicing medicine in a number of teaching hospitals across the continent. Syphilis was rampant then in the 1980,s and 1990,s and younger people started testing positive for HIV/AIDS. There have been many laudable efforts in the continent especially by the international community but we regret to be reporting a lost fight in some of our countries for almost a decade.

I was almost pushed out of the 1990 World AIDS Summit in Abuja when I was told that the president would not hear our speech. We had prepared a declaration that was not read however I insist that non-involvement of communities from the beginning has been a major weakness. We have done everything that can be done and a lot of money has been spent but everyone agrees HIV is scoring goals against us.

I now believe that quality innovation, prevention, treatment vaccines, care is where the fight has to be fought and won.

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The incidence of food security and deficiencies remains with us despite the fact that our countries have sufficient land for sustainable agriculture and here again there is room for science and technology.

Modern life stresses also contribute to health problems. We should not forget the existence of illiteracy. It is almost intractable and illiteracy is the mother of ignorance. We need to combat this problem through health literacy programmes and spend a lot of time and money on health education programmes.

Messages and information can only be embedded on people's minds when they are literate. When I was in the Caribbean, I compared the market system there which is not much different from the African one except that they are more literate in the Caribbean and they made accounts of sales of yams etc whereas in Africa, people carry the information in their heads. The difference is that those who were literate were able to move on to other businesses while the rest remained where they were literally. Literacy is very important possibly as important as health itself.

Let us remember national emergencies and as we see more of our politicians getting into political dilemmas we hope they are realizing that when you create a crisis, confusion arises and therefore diseases like HIV becomes the winner.

We need the private sector to understand what the community is. We often see people speak of the community level as the lowest in the national hierarchy. The community is important because they are the alpha and omega, the principle stakeholder in health programs. I strongly believe that involving communities and have community cooperatives will help in the response against the HIV/AIDS problem.

We should take every opportunity to strengthen and build community capabilities and research that is done in that aspect. The Community would be in a position to collaborate with external donors and partners to come up with practical programmes that succeed. The community could collaborate with them.

ACCELERATING DECISIVE ACTION

This implies identifying key actors and elements, achieving a consensus in policies, defining strategies and pre-requisites and building health development networks. We must overcome the tendencies for policies to be developed by top public hierarchy and dictated to the people in the community instead there should be systems that allow for time to dialogue with communities.

If all key actors are involved and committed, decisive action will be accelerated and networking of actors which will be able to bring all partners in a developmental aircraft that will help the aircraft to accelerate to take off. It is in this respect that recognition of districts as the operational units for health care is factored and decisive action can be initiated and extended to other provinces and eventually to the rest of the continent.

There should be efforts to involve universities and research institutions as reservoirs of national expertise and more important, youthful energy. Health information systems are important; there is insufficient or poor documentation in Africa which is an area of weakness in the continent in addition to sluggish monitoring if any and an almost pathological fear of evaluation. These constraints have to be overcome because to move forward we need indicators on performance.

Decisive action also recognizes the value of capacity building through joint health and development initiatives at the local level. It is fruitless, to work in a health institute in itself if you are not working for development. Good health will result in development because healthy people are more productive and this will be felt in development where the equation is.

We want to be healthy to be developed. We want to be developed to have decisive action that will bring various actors together.

Finally, let us pull together, The destination of this journey is health for all communities, the vehicle is community oriented programs, the road map is the national health plan, the fuel is the financial resources derived from the health project or the health sector or the communities. The lubricants are educational management and research institutions. The drivers are the politicians at local international/regional level assisted by the national engineers and actors in primary secondary and tertiary services, the travelers are the community who are at the local, intermediate and central level.

The major community Health care challenges/Issues are:

- HIV/AIDS prevention
- Health Care financing
- Change of lifestyle on an individual
- Reproductive practices of families
- Environmental management of communities

Setting out on a long journey requires careful preparation and support of international systems. This is our challenge at this conference and we can begin with health care providers, who decided to contribute to work with correct levels, and actors who work with social-cultural, socio-economic and enterprise and with other information and knowledge.

Certainly in my short life time, I have seen there is a wealth of resolutions, details and information lying out there waiting to be put together and utilized so that we can move forward. Contributions of such people focus on communities that can hopefully accelerate resolution of the health crisis.

We can postpone and prevent illness to preserve our health heritage. Thank you.

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APPENDIX 2: WORKSHOP PROGRAMME

PLENARY SESSION

ATPS/NEPAD CONFERENCE AND WORKSHOP

SCIENCE & TECHNOLOGY AND HEALTH INNOVATION SYSTEMS IN AFRICA

Monday, 28 November 2005

Opening Session

Chair: Prof. Oliver Saasa, *Managing Consultant, Premier Consult and ATPS Board Member*

09:00 - 09:30 Brief welcome remarks from Mr. Alex Gacuhi, National Coordinator, ATPS-Kenya
Brief remarks from Dr. Osita Ogbu, *Executive Director, ATPS*
Brief remarks from Prof. Norah Olembo, *Chair, ATPS Board*

09:30 - 10:30 **Keynote Address – “Africa’s Persisting Health Crisis: What can we do?”** by Prof. Gottlieb Lobe Monekosso, *Founding President of the NGO’s Global Health Dialogue and former Minister for Public Health, Cameroon.*

Official Opening: Honourable Charity K. Ngilu, *Minister for Health, Kenya*

10:30 - 11:00 TEA/COFFEE BREAK AND PHOTO SESSION

Session I – Institutions & Health Innovation Systems

Chair: Dr. Khalil Timamy, *African Union (AU)*

11:00 - 11:30 **“Innovation Systems and Development: Institutions and Policies for Competence Building in the Health Systems in Africa”** by Prof. Banji Oyeyinka Professor/ Senior Researcher, *UNU/INTECH, Maastricht, The Netherlands*

11:30 - 12:00 **“Health Innovation Systems: A comparative perspective”** by Prof. Lynn Mytelka, *Former Director, UNU/INTECH, Maastricht, The Netherlands*

Discussant: Dr. George Essegbey, *Senior Scientific Secretary, STEPRI/C.S.I.R. and National Coordinator ATPS-Ghana Chapter*

12:00 - 13:00 Open Discussions

13:00 - 14:00 LUNCH

Session II: - IPRs & Health Systems

Chair: Prof. Norah Olembo, *Chair, ATPS Board*

14:00 - 14:30 **“The Premise of Health Innovation on Africa’s S & T Consolidated Plan of Action”** by Prof Aggrey Ambali, *Coordinator, NEPAD Biosciences Initiative, SouthAfrica*

14:30 - 15:00 **“IPRs and Health Innovation Systems in Africa”** by Ms Linda Opati, *Legal and policy Officer, Southern Environmental and Agricultural Policy Research Institute (SEAPRI), ICIPE*

Discussant: Dr. Sylvester Ndeso Atanga, *Senior Lecturer/Epidemiologist, Faculty of Health Sciences, University of Buea, Republic of Cameroon and National Coordinator ATPS Cameroon*

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15:00 - 15:30 Open Discussion

Session III: - Brain Drain in the Health Sector

Chair: Prof. Femi Olekesusi, *Nigerian Institute for Social and Economic Research (NISER) and Associate Coordinator, ATPS Nigeria Chapter.*

15:30 - 16:00 **“Brain Drain – Painting a picture for Africa”** by Mr. Divine Ikenwilo, *Research Fellow, Health Economics Research Unit, University of Aberdeen Medical School, UK*

16:00 – 16:30 **“A Framework for the Strategic Analysis and Management of the Impact of the Brain Drain of African Health Care Professionals”** by Prof. Rubin Pillay, *Senior Lecturer, Department of Management, Faculty of Economic & Management Services, University of Western Cape South Africa*

Discussant: Prof. Melvin Ayogu, *Professor of Economics, University of Cape Town, South Africa*

16:30 - 17:00 Open Discussion

**17:00 - 18:00 TEA/COFFEEBREAK
Marketplace/Exhibition and Networking**

18:30 - 20:30 COCKTAILRECEPTION

Tuesday, 29 November 2005

Session IV: - National and Regional Initiatives

Chair: Prof. Oliver Saasa, *Managing Consultant, Premier Consult ant, Premier Consult and ATPS Board Member*

08:30 - 09:00 **“The Premise of Health Innovation on Africa’s S&T Consolidated Plan of Action”** Prof. Aggrey Ambali, *NEPAD Office of Science and Technology, South Africa*

09:00 - 09:30 **“Biosciences and the Future of Health in Africa: The NEPAD North African Initiative** by Prof. Amr Karim, *Uni Shams University, Egypt*

09:30 - 09:55 **“System wide Initiative on Malaria and Agriculture (SIMA)”** by Dr. Cliff Mutero, *International Water Management Institute (IWMI)*

09:55 - 10:15 TEA/COFFEE BREAK

10:15 - 10:45 **“National and Regional Initiatives: Do they reach the grassroots”** by Dawn Surratt, *Capacity Building Officer – HIV/AIDS, Kauwi, Kauma & Maseki Health Partnership*

Discussant: Dr. Roch Mongbo, *National Coordinator, ATPS Benin Chapter*

10:45 – 11:30 Open discussion

Session V – IK & Health Systems

Chair: Prof Femi Olokesusi, *Nigerian Institute for Social and Economic Research (NISER) and Associate Coordinator, ATPS Nigeria Chapter.*

11:30 - 12:00 **“Promotion of Public Health Care using African Indigenous Knowledge Systems and Implications for Intellectual Property Rights: Experiences from Southern and Eastern Africa”** by Prof. Hassan Kaya, *North West University, South Africa*

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12:00-12:30 **“Traditional Medicine”** by Dr. Jack K. Githae, *Medical Herbalist, and Director of the School of Alternative Medicine and Technology (SAMTECH) in Kenya, and a WHO expert advisor on traditional herbal medicine*

Discussant: Ms. Charlotte Wonani, *Lecturer, Development Studies Dept., University of Zambia*

12:30-13:00 Open discussion

13:00-14:00 LUNCH

Session VI – Economics, ICT & Health

Chair: Eng. Lourino Chemane, *ICT and Planning Advisor, Mozambique ICT Policy Commission and National Coordinator, ATPS Mozambique Chapter.*

14:00-14:30 **“ICTs and Health Technology at Grassroots Level”** by Ms. Margaret Nyambura, *AFRI/AFYA, Kenya*

14:30-15:00 **“The Private Sector and Health Innovation Systems in Africa”** by Amit Thakkar, *MD/CEO Avenue Healthcare and Chairman of Kenya Hospital Owners Association*

Discussant: Ms. Bitrina D. Diyamett, *Senior Scientific Officer, COSTECH and National Coordinator, ATPS Tanzania*

15:00-15:30 Open discussion

15:30 - 16:00 TEA/COFFEEBREAK

16:00-17:30 Panel Discussion

17:30-18:00 Summary and the Way Forward

18:00-18:30 Closing Session

Country Reports

Wednesday, 30 November 2005

Resource persons:

Session I

Chair: Mr. Chris Squire, *Head, Dept of Mechanical Engineering, University of Sierra Leone and National Coordinator ATPS Sierra Leone Chapter.*

08:30 - 10:30 Country presentations: Uganda, Benin, Nigeria, Mali, Cote d’Ivoire

10:30 - 11:00 TEA/COFFEEBREAK

Session II

Chair: Prof. Dejene Aredo, *Assoc. Professor of Economics, Addis Ababa University and National Coordinator, ATPS Ethiopia Chapter*

11:00-13:00 Country presentations: Tanzania, Cameroon, Zambia, Senegal, Mozambique

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13:00 - 14:00 LUNCH

Session III

Chair: Prof. Joseph Obua, *Professor, Faculty of Forestry & Nature Conservation, Makerere University and National Coordinator, ATPS Uganda Chapter.*

14:00 - 16:00 Country presentations: Ethiopia, Kenya, Malawi, Burkina Faso, Lesotho

16:00 - 16:30 TEA/COFFEEBREAK

Session IV

16:30 - 17:30 Country presentations: Zimbabwe, Ghana, Swaziland

17:30 - 18:30 Summary and the way forward
Prof. Banji Oyeyinka
Dr. Padmashree Gehl Sampath
Prof. Michael C. Madukwe

Other Sessions

Thursday, 1 December 2005

Research Methodologies in S&T, Health, Water and Environment

Resource persons: Prof. Banji Oyeyinka, Dr. Mohamed Khalil, Dr. Padmashree Gehl Sampath, Dr. Kevin Urama, Dr. Francis Mutua, Dr. Osita Ogbu

09:00 – 10:00 An Introduction to Science and Technology Policy Issues by Dr. Mohamed Khalil
10:00 – 11:00 An Overview of Research Methodologies in Science and Technology by Prof. Banji Oyeyinka
11:00 – 11:30 TEA/COFFEE BREAK
11:30 – 13:00 Research Methodologies in Health Systems Policy by Mr. Divine Ikenwilo
13:00 – 14:00 LUNCHBREAK
14:00 – 15:00 Research Methodologies Policy Brief in Water and Environment by Dr. Kevin Urama and Dr. Francis Mutua

15:00 – 16:30 Workshop on writing skills by Mr. Magayu Magayu

16:30 – 17:00 TEA/COFFEEBREAK

The ATPS Board Meeting will be held concurrently in the Habari 1 room

Friday, 2 December 2005

Annual General Meeting and Award Ceremony

Chair: Prof. Norah Olembo

09:00 - 11:00 ATPS Annual General Meeting and Award Ceremony
11:00 - 11:30 TEA/COFFEE BREAK
11:30 - 12:30 ATPS Annual General Meeting and Award Ceremony
13:00 – 14:00 LUNCHBREAK

Afternoon Free

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3 - 4 December 2005

National Coordinator's Training Workshop

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APPENDIX 3: LIST OF PARTICIPANTS

BENIN

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