

SCIENCE & TECHNOLOGY & AFRICA'S GLOBAL INCLUSION



ATPS
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ATPS VISION

To become a centre of excellence and brokerage between science and technology policy researchers and technology makers and implementers, and to become a centre of reference on key issues of technology policy in the sub-Saharan region.

ATPS MISSION

To improve human and institutional capacity for technology policy formulation, implementation, research, analysis, assessment, monitoring, evaluation and dialogue.

ATPS OBJECTIVES

Capacity building and enhancement for technology policy formulation implementation and research.
Generating a critical mass of knowledge on technology policy issues. Fostering networking and collaborative research.
Dissemination of research results.

SCIENCE & TECHNOLOGY POLICY'S GLOBAL INCLUSION

Acronyms & Abbreviations

AAS	African Academy of Sciences
ACP	African, Caribbean and Pacific Group of States
AU	African Union
AU-IBAR	African Union- InterAfrican Bureau for Animal Resources
BINARI	Biotechnology and Nuclear Agriculture Research Institute
CKRC	Constitution of Kenya Review Commission
COMESA	Common Market for Eastern and Southern Africa
DOSATE	Department of Science and Technical Education
EAC	East African Community
ECA	Economic Commission for Africa
EPRC	Economic Policy Research Centre
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
HCDA	Horticultural Crops Development Authority
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
IAP	InterAcademy Panel
ICIPE	International Centre for Insect Physiology and Ecology
ICTs	Information Communication Technologies
ICTSD	International Centre for Trade and Sustainable Development
IDRC	International Development Research Centre
IDEP	Institut Africain de Développement Economique et de Planification
IGAD	Inter-Governmental Authority on Development
IOC	Indian Ocean Commission
KNUST	Kumasi National University of Science and Technology
MoHET	Ministry of Higher Education and Technology
MSEs	Micro and Small- Scale Enterprises
NABDA	National Biotechnology Development Agency
NCS	Network Computer Systems
NEPAD	New Partnership for Africa's Development
NICs	Newly Industrialized Countries
NUL	National University of Lesotho
OAU	Organization of African Unity
PRS	Poverty Reduction Strategy
PRSP	Poverty Reduction Strategy Papers
RCZ	Research Council of Zimbabwe
RPS	Research Paper Series
SADC	Southern Africa Development Community
SPS	Special Paper Series
UNAS	Uganda National Academy of Sciences
UNCST	Ugandan National Council for Science and Technology
UNCTAD	United Nations Conference on Trade and Development
UNU/INTECH	United Nations University/Institute for New Technologies
USSIA	Uganda Small Scale Industries Association
WPS	Working Paper Series
WTO	World Trade Organisation



Prof Oliver Saasa



Prof Lynn Mytelka



Prof Sam Wangwe



Prof Turner Isoun



Ms Yolonda Richardson



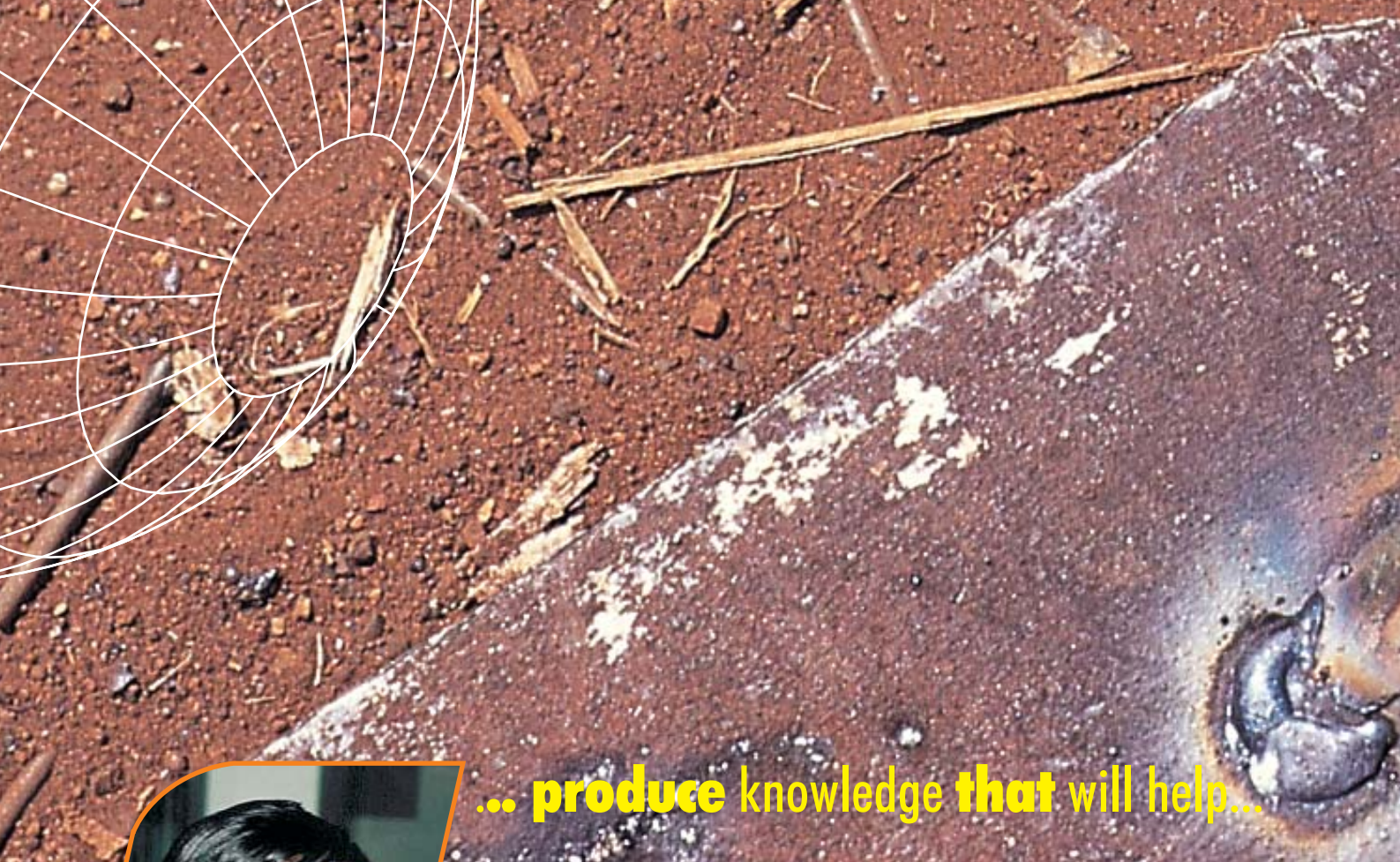
Prof Joseph Massaquoi



Prof Norah Olembo
Chair, ATPS Board



Dr. Osita Ogbu
(ex-officio member)



... produce knowledge that will help...



That science and technology policy has a principal role to play in sustainable development is not a matter of debate and I salute the African Technology Policy Studies Network (ATPS) on its vision and initiatives to popularize science and technology policy in Africa.

The novelty of the programs of ATPS and its numerous contributions to science and technology policy are not easy to measure. As a network, the ultimate impact of ATPS is the influencing of policy making in the region; developing of capacity in Africa; and creating, disseminating and exchanging information on science and technology policy issues in useful and accessible formats.

While it is important that researchers have easy and regular access to policy makers and that policy makers are regularly and meaningfully involved in the research process, researchers, in turn, should produce knowledge that will help policy makers better address the policy issues of the day.

However, we know that there is a gap between the worlds of policy makers and researchers. There are different cultures. At times, the difference takes on an adversarial aspect, us vs. them attitude. Bridging the gap requires knowing the terrain on either side. Researchers must come to understand the context in which policy makers operate and the pressures they face. On the other hand, policy makers should be more aware of the support researchers require to carry out their work satisfactorily. Knowing the needs of each group contributes to developing effective interaction.

ATPS has a distinction of being one of the first African research networks to bring together multidisciplinary science technology policy practitioners for the purpose of analyzing science and technology for development. Indeed, the success of ATPS is probably best symbolized by the continued increase in demand for its services, thus

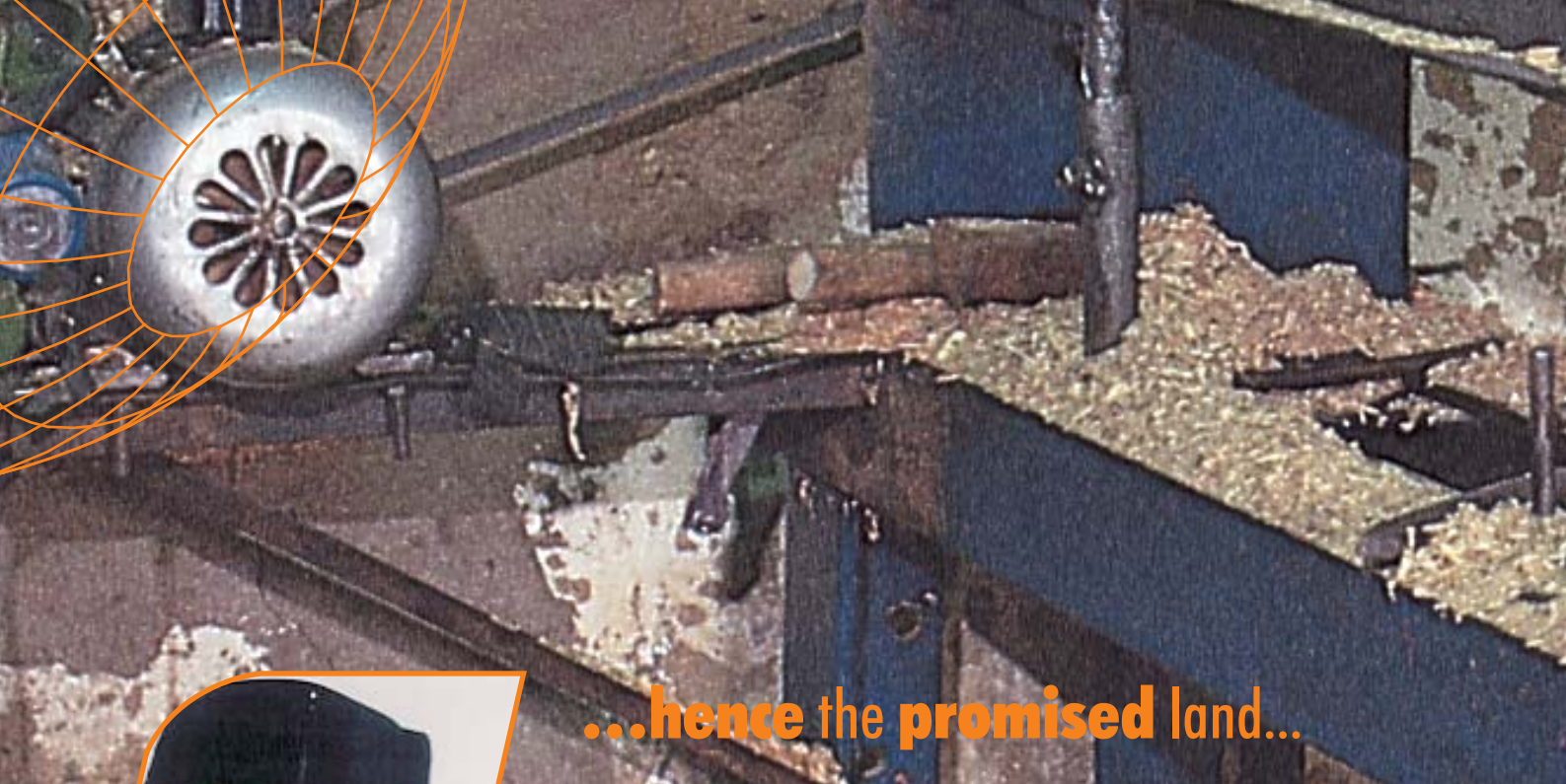


attesting to the network's credibility.

My first message is to policy makers. Policy formulation in science and technology remains a top-down rather than bottom-up process that does not allow for the involvement of researchers and other stakeholders. Indeed, the promotion of dialogue between researchers and policy makers during this meeting will significantly improve our understanding of the role of science and technology policy in sustainable development. I urge policy makers to allow science and technology to be the foundation of whatever we do in Africa. Make use of the capacity that ATPS and other institutions are creating to progress towards a common policy research agenda. We want to respond to your needs.

To researchers, I say that networks are some of the most important ways to tackle capacity building. Centres of excellence, like ATPS, are catalysts of research; they offer capacity building opportunities and peer revision. They provide the sharing of produced scientific knowledge, identification of common interests, understanding of impacts and information gathering and dissemination. The scientific community should contribute by placing their knowledge into the network. You should undertake frequent policy evaluation as well as lobby for greater role in policy processes. The language of your research, be it in biotechnology; space science; new materials science; information communications technologies, among others, should be accessible to policy makers.

I ardently recommend that we develop strategies and mechanisms to strengthen partnerships between African policy makers and African researchers. Let us promote participatory research and teamwork comprising all stakeholders because science, technology and innovation policies are not only rewards of successful development, but critical tools for achieving it.



...hence the **promised** land...

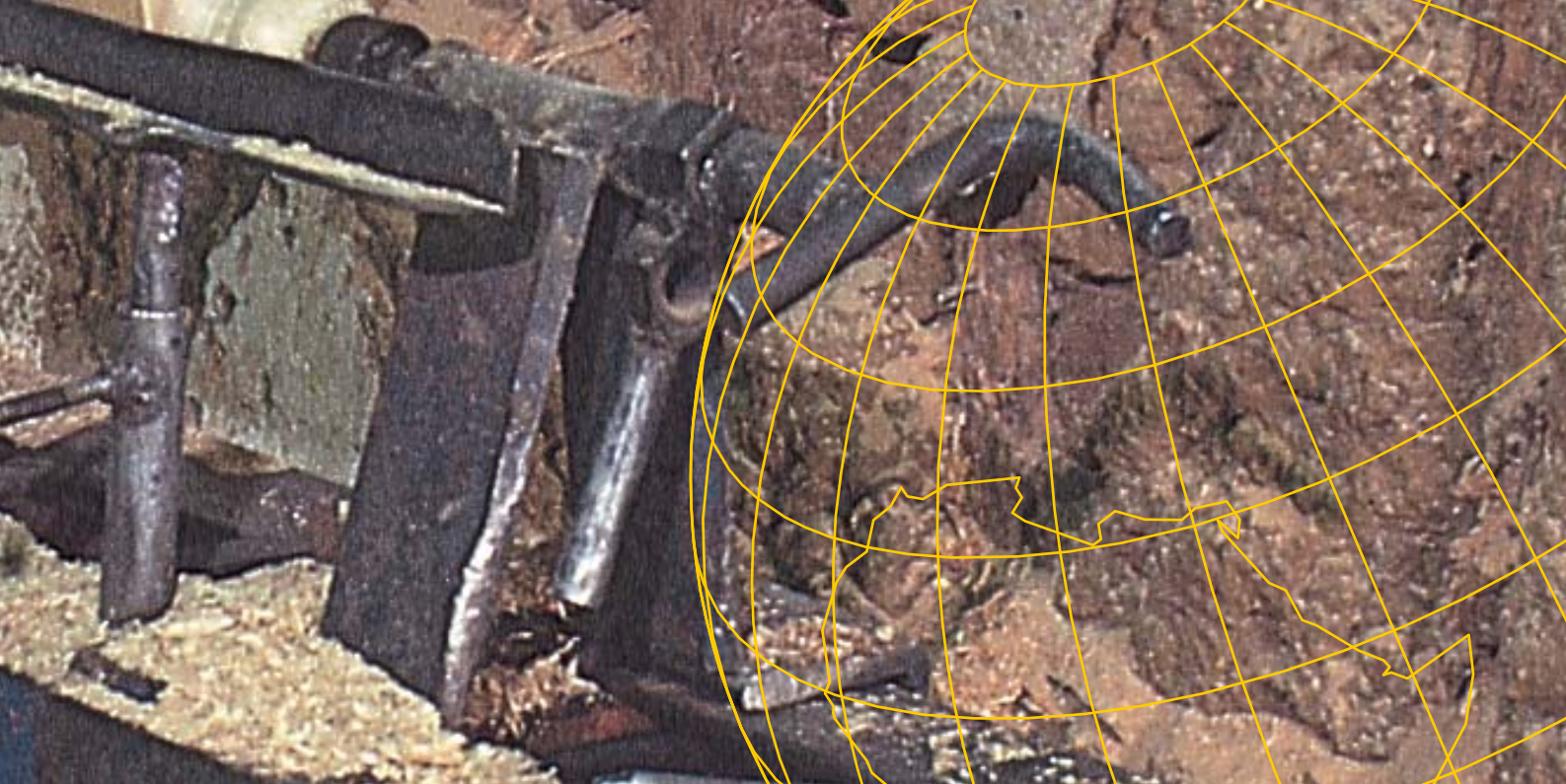


I am pleased to present to you the report of the 2002 activities of the African Technology Policies Studies Network (ATPS). The year 2002 was our first full year of operation as an autonomous institution and it had its challenges and expectations. ATPS has risen to the expectation and its role of brokering knowledge, generating new and innovative policies, action-oriented towards poverty reduction and Africa's global inclusion.

Ladies and gentlemen, the crisis of African development is deeply rooted in the crisis of self-doubt. We doubt our scientists, economists, entrepreneurs and innovators. We are timid in pursuing what is genuinely in our national interest. We have been taught what to say and how to say it and when to say it. We have surrendered our policy making process to those who barely understand us. There is no worse crisis than intellectual dependence. In inquiring about knowledge, we are afraid of reaching our own conclusions. We accept knowledge and its products without interrogating the purpose. We consume what has been given to us almost deterministically without building the capacity to translate and capture the knowledge for our purposes. Sometimes we allow our primitive instincts, fears and concerns to hinder us from pursuing our collective benefit. Knowledge must have a purpose within a social context. Human development and poverty eradication as a purpose forces us to confine our enquiry and to contextualize it. As Africans, we should not have time for frivolities for time is not in our favour. Those countries that we started with on the road to development, in fact those that were behind us 40 years ago are now at least 20 years ahead of us.

Africans have shown more dependency in science and technology than in other sectors. What we do not fully understand we consider too dangerous, too far-fetched and too expensive and is better left alone. In contrast, we do not have the policy environment to nurture and propagate what we know and have accepted to be universally in our interest. In biotechnology, information and communication technology, space engineering, material science, technology for small-scale enterprise development and agricultural technology, we are allowing others to lead while we follow. Yet, we have the opportunity not only to leapfrog but also to adapt, modernize and use these technologies to address our poverty and industrialization concerns. In a globalizing world, Africa cannot afford

Message from
the Executive
Director



to be a passenger. It is a very costly proposition. We must remain engaged in ways that enable us to shape the agenda. Using the tools of modern science and technology we must begin to close the digital gap, innovation gap, biotechnology gap, agricultural technology gap and other gaps. The starting point for bridging these gaps is a supportive and innovative science and technology policy.

This is where ATPS and indeed all of us have a role to play. At ATPS, we do not suffer from self-doubt. We believe in building, rejuvenating and using existing capacities. In pursuing knowledge brokerage, we are searching widely for new and innovative ideas that are relevant to our circumstances. We are pushing these ideas through our national chapters to policy makers and other stakeholders. Whether it is intellectual property rights in the new constitution of Kenya; dialogue on the role of science and technology with parliamentarians in Uganda and Zimbabwe; forging partnerships to formulate science and technology policy of Lesotho or the information communication technology policy for Ghana; examining the regulatory, institutional and equity issues on the propagation of ICTs from Morocco to Mozambique or the issues surrounding biotechnology and the genetically modified foods, ATPS is rising up to the challenge. We are presenting options and widening the space for dialogue.

But it has not been easy. We are training our researchers to be entrepreneurs of ideas, to develop skills that will make them active participants in the global market place for knowledge. We are training journalists and writers to assist with the popularization of science and technology. Through such forums as, the ministerial and policy forum that was held in Abuja, Nigeria, during the 2002 ATPS Annual Conference and Workshop, we want to engage the policy makers and challenge them to drive the research agenda and also to realize the critical importance of science and technology to the development of Africa. Together, we will push for the NEPAD framework to be knowledge based and science and technology driven. Above all, we want to give confidence to our people, policy makers and scientists that we have what it takes to intellectually liberate ourselves from this developmental quagmire. I must say that with the sort of enlightened leadership and good will we are beginning to see in the continent, we will soon reach the "promised land".

Dr. Osita Ogbu
Executive Director

ATPS PARTNERSHIPS



Institutional Collaborations: COMESA/ATPS Regional Workshop for Trade Negotiators on the Doha Development Agenda

The African Technology Policy Studies Network (ATPS) is seeking partnerships to advance the development agenda of the region. The first of such partnerships was forged during the first regional workshop aimed at strengthening African Trade Negotiators on the Doha Development Agenda for member states of the Common Market for Eastern and Southern Africa (COMESA) and the Southern Africa Development Community (SADC). The workshop was held in Nairobi, Kenya from 5 to 7 August 2002.

ATPS' interest in the World Trade Organization (WTO) agenda arises from its mandate to build capacity and its interest in intellectual property rights regimes, trade and technology, technology transfer and health technology policy. Besides generating a proposal for the workshop, ATPS also provided the initial intellectual incentive and administrative and logistical support. Incidentally, COMESA, having a similar objective, bought into the ATPS programme and used its convening power to bring negotiators that are based in Geneva and eastern and southern Africa that support the Geneva group to attend the workshop.

The participants received an overview of the Doha Work Programme as Co-ordinator of the Africa Group. The state of play and negotiations in the implementation, trade and environment, special and differential treatment, WTO rules, dispute settlement among other issues were also discussed. With specific reference to the Singapore issues, the participants were of the opinion that Africa should concentrate on matters that affect the continent's development. While outlining the complexity of the on-going negotiations and the need for coherence and support through inputs and guidance on key policy matters, the participants agreed that regional integration, through regional and national policy co-ordination and management, could make international trade work better. The meeting recognized the contribution of the African Group given the limited resources and urged COMESA and SADC countries to address the current WTO work programme. Participants who attended the workshop came from Angola, Botswana, the Democratic Republic of Congo (DRC), Egypt, Ethiopia, Kenya, Lesotho and Malawi. Other countries that were represented include Mozambique, Namibia, South Africa, Sudan, Tanzania, Uganda, Zambia and Zimbabwe. COMESA, SADC, the African Union (AU), the Inter-Governmental Authority on Development (IGAD), the East African Community (EAC), the Indian Ocean Commission (IOC) were represented

during the meeting. Others include the Secretariat of the African, Caribbean and Pacific Group of States (ACP); the Commonwealth Secretariat; the United Nations Conference on Trade and Development (UNCTAD); the International Centre for Trade and Sustainable Development (ICTSD) and the International Development Research Centre (IDRC).

Geneva-based ambassadors and officials from Angola, Burundi, the Democratic Republic of Congo (DRC), Egypt, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, South Africa,

Zimbabwe, Uganda and Zambia country delegates follow the Nairobi conference proceedings



Sudan, Tanzania, Uganda, Zambia and Zimbabwe also graced the occasion.

The workshop achieved the following:

- > a strong inter-African based collaboration between two leading institutions
- > a common understanding and position on Doha and post-Doha trade negotiating issues, such as trading in services; trade related aspects of intellectual property rights (TRIPS); market access for non-agricultural products; WTO rules, trade and environment; transfer of technology; technical assistance; capacity building and conference building measures
- > an organizational mechanism for channeling ideas to the African Geneva group and for improving Africa's participation in the WTO negotiations

Lesotho National Chapter

Collaborations

The ATPS-LSC chapter has facilitated, among other things:

- > communication between the Lesotho Ministry of Trade and others who attended the Doha world trade meeting, through the ATPS
- > interest has also been raised in Lesotho for participation in the Regional (African) Project on Information and Communication Technologies (ICTs)
- > networking continues with the Swaziland Chapter

Uganda National Chapter

Collaboration with the Uganda National Academy of Sciences

In May 2002, the chapter members met the Chairman of Uganda National Academy of Sciences (UNAS), Prof Paul Mugambi, to discuss ways in which ATPS-Uganda Chapter could collaborate with UNAS to undertake joint activities to promote science and technology (S&T) in Uganda.

The National Coordinator met with a representative of the Uganda Small Scale Industries Association (USSIA) to explore areas of collaboration especially in their efforts to develop and promote middle level technology and enhance production in Uganda.

Zimbabwe National Chapter

The national science and technology policy document

The activities of the ATPS Zimbabwe Chapter for 2002 were centered on elaborating the national science and technology policy document into an action plan. The chapter collaborated with the Ministry of Higher Education and Technology in accomplishing the task.

Between February and May 2002, a committee that had been set up during the S&T planning seminar made efforts through Ministry of Higher Education and Technology (MoHET) to have the official S&T policy document improved by incorporating certain elements before the policy is officially launched.

In August and September 2002, the Government of Zimbabwe set up the Ministry of Science and Technology. Few activities were undertaken because of the need to review developments relating to national structures for managing S&T policies and programmes; and to forge the appropriate partnerships and linkages that would make efforts in promoting and influencing S&T policies and programmes fruitful.

**ATPS
RESEARCH
PROGRAMMES**



A. THE ATPS ANNUAL WORKSHOP AND CONFERENCE, ABUJA, NIGERIA

The African Technology Policy Studies Network (ATPS) and the Federal Ministry of Science and Technology, Nigeria, jointly organized the 2002 ATPS Annual Workshop and Conference running from 11 to 16 November 2002, at the Nikon Hilton, Abuja. The theme of the meeting was Science and Technology and Africa's Global Inclusion.

The objectives of the workshop were to:

- > host an international conference to discuss the theme
- > peer-review new research proposals for funding
- > run a research methodology and writing skills workshop
- > conduct a meeting for the ATPS national coordinators
- > hold a special policy forum with African ministers and directors of science and technology
- > hold the annual administrative meeting of the network

This is the second workshop that ATPS has organized since autonomy. The organization of the meeting was better because the Government of Nigeria, through the Ministry of Science and Technology, supported this activity with significant financial and material resources. ATPS is, therefore, in a new phase of its initiative to collaborate with national institutions. Such cooperation not only enhances the profile of the institution in the particular country, but it also generates resources that supplement those provided by mostly non-African donors.

The plenary session that served as the conference part of the annual event took a greater part of two days. It attracted papers from senior researchers and policy makers from Africa and international institutions. The theme was exhaustively discussed during the plenary session and the papers presented addressed the following topics:

- > Unlocking Africa's Future: Science and Technology in the New Partnership for Africa's Development, by Dr John Mugabe
- > Global Governance and National Innovation Systems: Why Africa Remains Excluded, by Prof Banji Oyeyinka
- > Science in a Globalizing World: Implications for Africa, by Prof Awele Maduemezie
- > African Women in Science and Challenges of Globalization, by Prof Alele Williams
- > Foreign Direct Investment, Technology Transfer and Poverty Alleviation: Africa's Hopes and Dilemmas, by Dr Moses Ikiara
- > Technology Transfer in a Globalizing World: Many Promises, Lack of Responsibility and Challenges for Africa, by Dr Mohamed Khalil-Timamy
- > The Future Generation of ICT Experts: Can Africa Lead the Way?, by Prof Emmanuel Aniebonam
- > Bridging the Digital Divide: The American Experience and Lessons for Africa, by Warigia Bowman
- > Indigenous Knowledge and Global Inclusion: Recent Advances in Africa's Biopharmacy Research and Application, by Prof C. Omaliko

A group photo of the participants during the 2002 ATPS workshop in Abuja



- > New Forms of Partnership for Africa's Entry into the Biotechnology Revolution, by Dr John Mugabe
- > Materials Science Challenge for Africa in a Globalized World, by Prof O.O. Adewoye
- > Science and Technology and Globalization: Perspectives from the Private Sector, by Bashorun J.K. Randle

ATPS uses this forum to bring African scholars residing in Europe and America to share their skills and knowledge with their counterparts at home. This role of networking African scholars across continents will be intensified in the coming years as relationships emerge from these initial contacts. From this workshop, a mutually and beneficial relationship is evident between the United Nations University-Institute for New Technologies (UNU/INTECH) in Netherlands and the National Biotechnology Development Agency of Nigeria (NABDA). These two institutions were represented at the conference and workshop. The occasion also provided an opportunity for the scholars and policy makers gathered to make inputs into the S&T agenda of New Partnership for Africa's Development (NEPAD). The presentation from the NEPAD Secretariat clearly indicated the role of S&T policy in advancing the NEPAD agenda. The keynote address from the Executive Secretary of the Economic Commission for Africa (ECA) was powerful in identifying key S&T challenges for Africa underscoring the need for a clear S&T regime that integrates Africa into the global economy and addresses the millennium development goals. Such a regime must address capacity inadequacy, competitiveness and diversification of the economy, integration of science and technology and innovation policies with the overall development policies, strengthening science and technology policy making, among other concerns. Other papers dealt with various issues on the global inclusion of Africa on information and communication technologies (ICTs), biotechnology, global governance of technology, foreign direct investment (FDI) and technology transfer and indigenous knowledge.

Policy makers' forum

The climax of the conference was a policy forum attended by ministers from Algeria, Guinea, Nigeria and senior policy makers from other African countries. The Minister for Science and Technology for Nigeria, also an ATPS Board member, invited various African ministers for science and technology to deliberate on how to use science and technology to integrate African economies into the global one. The deliberations were open and purposeful. The need for collaboration, exchange of ideas and learning between African countries was emphasized. In the end, a communiqué was issued. This meeting is significant because it marked the

beginning of a process that will be repeated annually if resources permit. In order to hold this forum, the Government of Nigeria provided accommodation and logistics to the visiting ministers and some of the senior policy makers. It also provided an avenue for ATPS to concretize its S&T policy knowledge brokerage role and to announce its presence as a resourceful partner in Africa's development process.

Ministerial Forum Participants. From left, River State representative, Algerian Embassy representatives, Dr Osita Ogbu, ATPS, Hon Prof Turner Isoun, Minister for Science & Technology, Nigeria and Hon Rasheed Harraoubia, Minister for Higher Education & Scientific Research, Algeria



B. REGIONAL RESEARCH PROGRAMMES

The African Technology Policy Studies Network (ATPS) intends to launch three regional programmes that will be funded independently from the core resources. The programmes are:

- > Strengthening National ICT Policies in Africa: Governance, Equity and Institutional Issues
- > Biotechnology in Sub-Sahara Africa
- > Towards a Policy Research Agenda and Foreign Direct Investment, Technology Transfer and Poverty Alleviation

These programmes will address cross-cutting issues that are of importance to the development of Africa. Adequate funding has been sourced for the programme on information communication technology policies and research is now underway. The ATPS secretariat and a part-time coordinator are supervising the research.

STRENGTHENING NATIONAL ICT POLICY IN AFRICA: GOVERNANCE, EQUITY AND INSTITUTIONAL ISSUES PROGRAMME

The year 2002 ushered a new regional research programme: Strengthening National ICT Policy in Africa: Governance, Equity and Institutional Issues, that was launched with a pre-study workshop from 8 to 10 July 2002 in Nairobi, Kenya. The participating countries include Ghana, Ethiopia, Kenya, Morocco, Mozambique, Nigeria, Rwanda, South Africa, Tanzania, Uganda, Zambia and Zimbabwe.

These countries were selected to reflect regional representation, various stages of Information Communication Technology (ICT) policy formulation, per capita income levels, Internet density and public access as well as the different stages of the public reform process. Although the African Technology Policy Studies Network (ATPS) does not have national chapters in Morocco, Rwanda, South Africa and Mozambique, the programme was extended to cover these countries as a forerunner to the setting up of chapter offices. The network intends to use the contacts and the research teams that have participated in this programme as the nucleus upon which the national chapters would be built.

The ICT programme is intended to offer choices to policy makers in the various countries on how to improve policy/legislative and regulatory environment to ensure consistency of policies and to improve ICT access, equity in access and the governance of the sector for better social benefits.

Prior to the workshop, Prof Melvin Ayogu, the Programme Coordinator developed a concept note in consultation with other stakeholders including researchers, policy makers and relevant actors in the sector. The research agenda expounded the almost universal appreciation and acceptance of the benefits of ICTs in contemporary societies, yet the pace of ICT dissemination in Africa has not reflected the ostensibly huge expected social benefits. According to the concept note, the various actors argue that policy and regulatory environment affect effective dissemination either because there is no coherence or consistency in

Resource persons guiding participants at the pre-study workshop held in Nairobi



policy. In some sectors, policies are missing. In recognition of the centrality of telecommunications to ICTs, the research will also be devoted to case studies and thematic papers to reform the telecommunication industry.

It was also noted in the concept note that African legislative regimes lag behind in e-commerce and in new financial instruments that are ICT based. For the continent to compete globally, these laws need to be updated and create or reform institutions, taking account of the growth of ICTs. The research problems that need to be addressed, therefore, are:

- > How to provide an enabling environment for ICTs in Africa that will extend networks to the overwhelming majority of constituencies who cannot currently enjoy them
- > How to maximize the use of existing ICTs and promote their evolution

Besides the concept paper, research teams from the participating countries presented specific country proposals that addressed common and distinctive issues. The approach is intended to make region-wide pronouncements on some issues but also bring out certain national propositions from which other countries can learn.

The pre-study workshop helped to harmonize the research process, establish a common understanding of the research problem and revise the proposals. It offered a forum for capacity building and for learning about advances and problems on ICT processes and reforms in other countries.

A mid-term review workshop is scheduled for June 2003 to assess interim reports and to provide peer review and learning on the programme.

ATPS SMALL GRANTS

During the 2002 ATPS Annual Conference and Workshop, 47 research proposals from 16 countries were presented for peer review. The proposals were grouped into the following themes:

- > Agricultural Technology Policy
- > Information and Communication Technology
- > Biotechnology, Gender and Food Technology Policy
- > Innovation, Technology Transfer and Environmental Technology Policy

The quality of the proposals was high due to peer review at the national chapter level and at the regional secretariat. The ATPS Board approved the funding of 16 proposals. The 16 contracts have been signed and work is now on-going in the field. An average grant is about US\$10,000.

The peer review process and the use of resource persons within and outside Africa continue to be beneficial to researchers who may or may not get a grant. The attendance at ATPS conference and workshop including the methodology workshop is also valuable to the researchers and some policy analysts who participate because it increases their appreciation of science and technology policy. As the institution moves into a new strategy, the network members plan to continue conducting science and

Participants listen attentively during an ATPS Workshop



technology planning seminars and training that will target policy makers and researchers at all levels.

Cameroon National Chapter

Four research proposals were accepted for presentation and defense at the 2002 ATPS Annual Conference and Workshop in Abuja, Nigeria. Four members of the chapter attended the workshop and their proposals were funded.

Ethiopia National Chapter

Currently the chapter is running three research projects on women and agricultural technology, indigenous knowledge systems, and the regional project on ICT. ATPS-Ethiopia presented four research proposals during the second ATPS Annual Conference and Workshop in Abuja, Nigeria that were selected for funding.

Ghana National Chapter

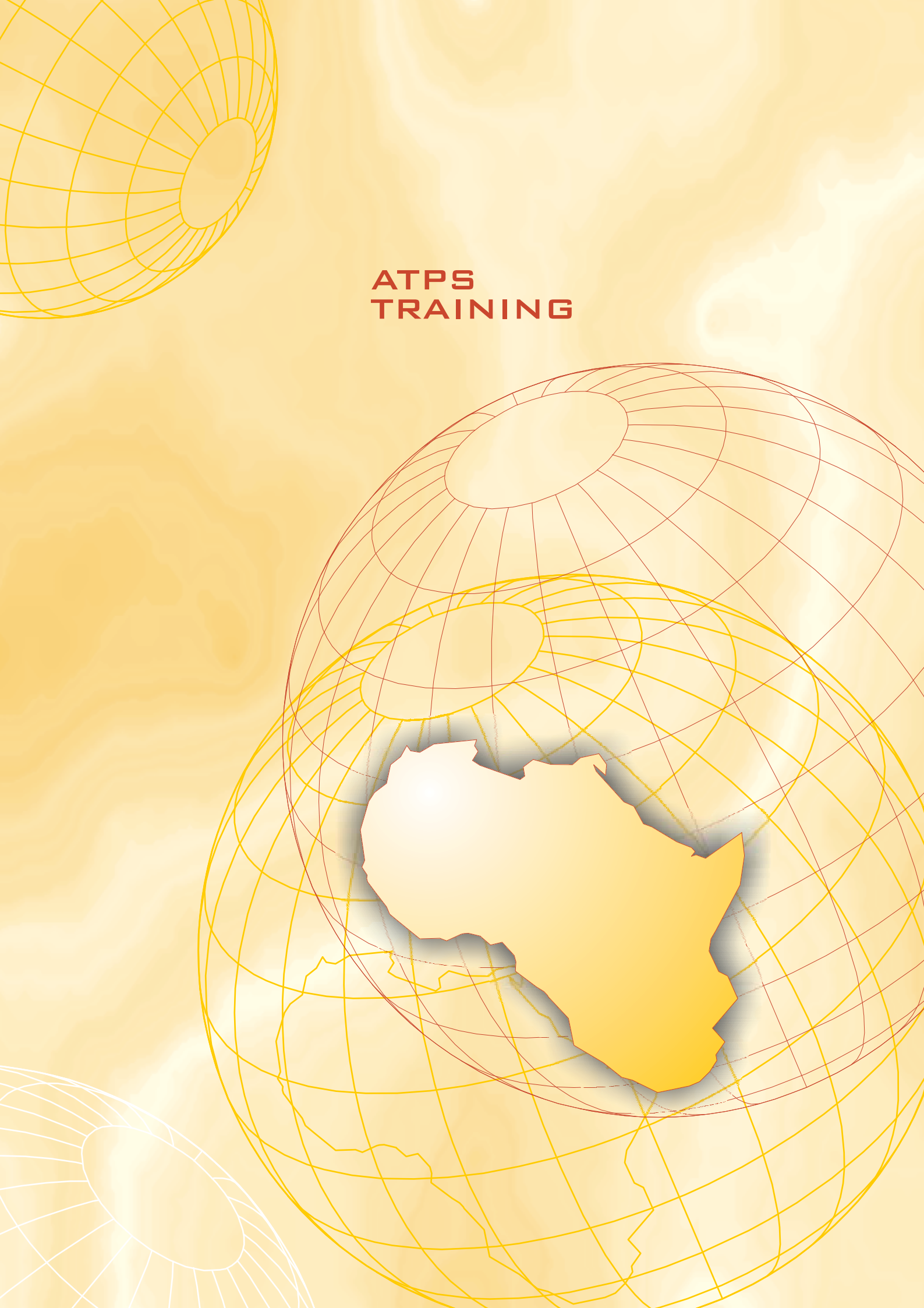
Three research proposals were submitted to the National Co-ordinator for presentation to the ATPS secretariat. The three researchers were invited to attend the Annual Workshop in Abuja, in November 2002. As in the previous year, only one proposal out of the three was approved for direct funding; the topic of the proposal is *Small and Medium Enterprises in Grain Drying and Storage in Ghana: A study of Technology Issues in the Agricultural Sector*. Dr Komla Dzisi of the Agricultural Engineering Department at Kumasi National University of Science & Technology (KNUST), Kumasi, is the lead researcher. A research proposal, submitted by Mr Biney and colleagues from the Ghana Biotechnology and Nuclear Agriculture Research Institute (BINARI), is to be implemented as part of a regional project on Biotechnology Policy for Africa to be co-ordinated by the ATPS secretariat.

Uganda National Chapter

In March, the chapter called for research concept notes through an advert in the New Vision newspaper. The main areas of interest included intellectual property rights, ICT development, gender and rural development, HIV/AIDS and related issues, indigenous knowledge development and promotion. Ninety-two (92) concept notes were received, representing a 70% increase over total number received in 2001. Nineteen proposals were selected and the researchers were asked to develop them to full research proposals to be considered by the chapter.

Five participants represented the chapter at the Annual Workshop. Four of them presented their proposals; the fifth participant was a resource person, representing the national coordinator at the workshop. One proposal, *Agro processing Technology and women 's Access to markets will be funded*.

ATPS TRAINING



Ethiopia National Chapter

On 10 October 2002, ATPS-Ethiopia Chapter held a one-day methodology seminar to benefit active researchers in the chapter. During the seminar, resource persons and participants commented on draft methodologies prepared by grant award winners. The beneficiaries gained from comments by the participants. The chapter intends to hold methodology seminars before the fieldwork phase of the research.

Ghana National Chapter

On 12 February 2002, the ATPS-Ghana Chapter organized a national workshop that also doubled as the Annual General Meeting. About 35 participants attended the meeting. Notable among the participants was Dr Osei, who represented the Deputy Minister of Science and Environment. The Chairman of the Board of Trustees and National Coordinator of ATPS-Ghana and the Deputy Minister's representative delivered three key addresses.

Besides the main addresses, there were three technical presentations, one on biotechnology and two on ICTs. Mr George Essegbey delivered the presentation on biotechnology on the topic *Technological Capacity Building for Biotechnology Development: Stakeholder Linkages and Public Dialogue*. Mr Essegbey's research project was the only project from Ghana approved for funding during the 2001 ATPS Annual Workshop and Conference in Nairobi, Kenya. The first presentation on ICTs was a joint one by Mr George Obeng and Dr Rudith King. They presented findings from an ongoing research project on the potentials of ICTs in micro and small-scale enterprises (MSEs) in Africa. This project was initiated by the United Nations University/ Institute of New Technologies (UNU-INTECH) and is being implemented in MSE clusters in Ghana and Kenya. Mr Ken Aikins made the other ICT presentation on a research proposal that sought to evaluate the impact of science resource centres in senior secondary schools in Ghana.

Uganda National Chapter

ATPS-Uganda Chapter organized the First Scientific Proposal Writing Workshop for the authors of concept notes and other researchers in Uganda. Twenty-five participants from the private sector, research institutions and Makerere University attended the workshop that was held in the Conference Room of the Faculty of Forestry and Nature Conservation on 17 and 18 June 2002. Renowned scholars and researchers from Makerere University and the Economic Policy Research Centre (EPRC) facilitated the workshop. The objectives of the workshop were to develop skills for preparing policy proposals; understand the elements of a winning proposal; analyze examples of good proposals; and gain practical skills in organizing components of a proposal.

Zimbabwe National Chapter

Training seminar on science and technology planning

A training seminar on S&T planning was held from 7 to 10 March 2002 at Brondesbury Park Hotel in Nyanga to build the capacity of stakeholders that were to be involved in S&T plan elaboration. During this training seminar, other stakeholders learnt that the government had adopted the Research Council of Zimbabwe (RCZ) document. Twenty-two participants including resource persons attended the meeting. Dr Michel Nageri of Institut Africain de Développement Economique et de Planification (IDEP), in Senegal was one of the resource persons.

**ATPS
COMMUNICATION
& OUTREACH**



SCIENCE COMMUNICATION FOR SUSTAINABLE DEVELOPMENT

ATPS joined SciDev.Net in holding a four-day workshop, running from 29 September to 3 October 2002, on Science Communication for Sustainable Development that took place in Entebbe, Uganda.

The workshop brought together scientists, public relations officers, print and radio/TV journalists along with professionals from academies of science, government departments, science and technology policy institutions and non-governmental organizations. Participants were mostly from the eastern African region but ATPS sponsored eight journalists from Ghana, Cameroon, Swaziland, Nigeria and Lesotho. They explored how capacity for science communication can be enhanced in the region. ATPS intends to use the journalists to further science and technology policy issues through media in the various countries.

The workshop combined presentations from invited speakers (from Africa, Europe and North America) with a series of practical learning exercises and structured discussion groups aimed at sharing and strengthening science communication practices and helping to identify key resource and training needs. Other collaborating institutions were the African Academy of Sciences (AAS), the Uganda National Academy of Sciences (UNAS), the Uganda National Council for Science and Technology (UNCST), and the InterAcademy Panel (IAP).

Prof Mondo Kagonyera, the Minister for General Duties in the Office of the Prime Minister, Uganda, highlighted the growing awareness regarding the contribution of science and technology to the three pillars of sustainable development. "Firstly, they contribute to the economic pillar by providing the source of new goods and services on which any modern economy depends. Secondly, they make major contributions to the social pillar through research into more effective methods of food production and the improvement of health through the control of infectious and other diseases. Thirdly, despite the skepticism of some critics, science and technology also provides one of the keys to the use of environmental resources in a sustainable way," he elaborated. The minister was confident that the workshop would make practical recommendations to improve skills in science and technology communication among journalists, public information officers, policy researchers, scientists, politicians, as well as the masses.

Jean-Marc Fleury, the Director of Communications at the International Development Research Centre (IDRC), Canada, highlighted the amount of trust that the public places on journalists, saying that they are often seen to give a 'stamp of approval' to a particular story.

The group of almost 50 professional science communicators and others directly involved in science communication from eight African countries came to a consensus on the following:

- > the need for effective science communication in Africa
- > the obstacles that create difficulties in achieving this goal
- > the potential contributions of different institutions and

Participants of Science Communication for Sustainable Development Workshop, Entebbe, Uganda



social actors

- > concrete measures that science communicators can take

Obstacles

They agreed that the following obstacles limit the ability of science communication to contribute to economic and social development in Africa.

- > low awareness by scientists on the importance of communicating their research to the public
- > low awareness by media editors and other 'gatekeepers', resulting for example in a poor market for science stories in Africa
- > inadequate infrastructure and basic working tools (for example, internet connectivity) for science communicators
- > insufficient resources committed to science communication
- > lack of suitable professional training and personal development opportunities for science communicators
- > poor remuneration for science journalists

Institutional responsibilities

To help overcome these obstacles they suggested that:

- > Governments should introduce comprehensive policies and strategies on science communication into their national planning and resource allocation, and to strengthen such policies and strategies where these already exist
- > Scientific bodies, including research institutions and scientific academies, should actively support science communication, and also enhance the communication of their research to the public
- > Science communicators should develop their professional skills and capacities
- > International aid agencies should consider introducing support for activities in this field, and increasing such support where it already exists
- > National and regional networks to promote science communication should be created, and the cross-fertilization of ideas and experience between members of such networks encouraged
- > Institutions of higher education in Africa, including in particular schools of mass communication where these exist, should be encouraged to introduce courses on science communication
- > Media editors and other 'gatekeepers' should raise the priority given to science-related stories in their coverage
- > The New Partnership for Africa's Development (NEPAD) should consider supporting science communication in its programmes

Lily Aduke, ATPS Communications & Outreach Officer, left with Kellen Kebaara, ICRAF Information Officer, during the Entebbe workshop



The participants also agreed that science communicators should take the following steps to enhance science communication in Africa:

- > organizing professional science communication associations (for example, associations of science writers or public affairs) on a national basis
- > compiling a regional database of science communicators
- > compiling a short introductory booklet aimed at those who want to become science communicators
- > developing ways to recognize and reward best practice in

science communication, for example through annual science writing or science communication prizes

- > investigating ways to reduce the cost of access to electronic information about science
- > exploring ways to develop and support internships and other practical ways of building bridges between scientists and science communicators investigating the use of science days and other such events to promote science

SCIENTIFIC REVIVAL DAY IN AFRICA

June 30 of each year will remain an important day in the calendar of African policy makers, scientists and industrialists. It is a day that Africa and its people rededicate their efforts to scientific and technological development.

The Organization of African Unity (OAU) declared this day as the Scientific Revival Day of Africa in 1987. But not much happened after the declaration. In 2002, ATPS in keeping within its brokerage role decided to awaken the scientific community in Kenya to mark this day by organizing a roundtable discussion.

During the discussion it was the view of a number of leading scientists that African governments should allocate more resources to science and technology as is being done in the developed nations and the Newly Industrialized Countries (NICs).

Dr Osita Ogbu, the Executive Director of the African Technology Policy Studies Network (ATPS), said, "This should be a day for Africa to note what we have not achieved including the missed cues and inventions, lack of interest and inappropriate environment for science and technology to thrive." He also pointed out that there is need for Africa to invest in research and build capacities that would enable countries to own technology and direct these technologies to Africa's real problems while maximizing benefits. Ogbu gave the example of NICs, such as Brazil, China and India that have achieved sustained growth, saying that such countries have a strong determination to build indigenous science and technology capacities.

He explained that this is evident from their research and development (R&D) expenditures and the number of researchers per million inhabitants. The NICs spend US\$66 per inhabitant while China spends \$17, India \$11 and Africa \$6. Statistics indicate that sub-Saharan Africa has 113 researchers per million population compared to China's 454, India's 151 and NICs 595. With the African Union (AU) in place there is need to impress upon national governments to put science and technology research and application a top priority item.

He said that many of the governments have set a target of being industrialized by 2020. Experts predict that, this would not be the case if the social context of science and technology were not considered. They argue that the direction of development and impact of any given technology is shaped by social and economic forces embedded in well-crafted science and technology policies. African experts blame their national governments for neglecting the pledges they made from the Lagos Plan of Action of 1980, to set aside one % of their Gross Domestic Products (GDP) for research and development by 1990. It is clear that African political leaders,

Some members from the Scientific fraternity who attended the 2002 event. Seated, from left, Prof R. Michieka, JKUAT, Dr O. Ogbu, ATPS. Standing, from left Dr S. Salim, ICRISAT, Prof J. Massaquoi, UNESCO/ATPS Board, Dr J. Mugabe, NEPAD, Mr K. Aduda, KIRDI, Mr E. Agevi, ITDG, Dr H. Herren, ICIPE



at least on paper, understand the importance of science and technology in the socio-economic development of the continent. African governments have all created national science councils with lofty objectives but given them very little resources with which to champion their mandates.

In Kenya, for example, only 0.01 % of GDP is set aside for research and development that is supposed to be shared by all government research institutions. Time has come for African governments to respect their commitments to promote science and technology for development. It is time that governments put in place policies that can be implemented to attract Foreign Direct Investment (FDI) make technological linkages to their local firms that would eventually propel autonomous technical changes. All hope is not gone for Africa, the continent has another opportunity through the NEPAD process to acquire and sustain its science and technological capabilities. These were the sentiments expressed by the ATPS Executive Director.

Ogbu and other scientists told journalists that they, as the fourth estate, also have a social responsibility to popularize science and technology in the continent.

Dr John Mugabe, Executive Secretary of the African Commission on Science and Technology, linked to NEPAD said, "Africa must invest more resources in science and technology if it is to develop."

Voicing their opinion during the Scientific Revival Day for Africa, scientists in Nairobi said the NEPAD initiative must champion and popularize science and technology as the real forces for socio-economic growth. Many were of the opinion that science should be approached in a more holistic manner that would help foster linkages with political, social, economic, traditional, chemical, biological and geological systems. There is need to emphasize effective structures rather than sticking to dormant or dying institutions and science should be part of the people's culture.

While officially opening the event, the Kenyan Minister for Science and Technology, Mr Gideon Ndambuki, said that the government, through its National Council for Science and Technology (NCST), must work towards reviving the Science and Technology Act. This will include putting more emphasis on biotechnology, information technology, allocation of more resources for research and development and identification of appropriate partners in funding research.

Hon Gideon Ndambuki, Minister for Education, Science & Technology opening the event, on his right is Prof R. Michieka, Vice Chancellor, JKUAT



The African Union-InterAfrican Bureau for Animal Resources (AU-IBAR) in a speech read on behalf of the Director, Dr Jotham Musiime, urged African governments to increase allocation of funding for the continent's research and development activities that will include capacity building especially in emerging technologies like biotechnology.

The African Academy of Sciences (AAS) Director, Prof G. B. A. Okello said that the institution was considering strengthening two science centres in Nigeria and Ghana. He appealed for the setting up of more centres in basic sciences like mathematics and biotechnology.

Prof Ratemo Michieka, the Vice-Chancellor of Jomo Kenyatta University of Agriculture and Technology (JKUAT) said that there are fewer doctoral students in science subjects like maths, physics and chemistry. He urged that something needs to be done to change the trend.

A second major concern was brain drain due to “lack of recognition of opportunities to further one's career. Africa needs to value and respect its scientists for their contribution to society,” said Prof Judi Wakhungu, Executive Director of African Centre for Technology Studies (ACTS).

Dr Hans Herren, the Director of the International Centre for Insect Physiology and Ecology (ICIPE), said that farmers too needed recognition and called for the motivation of the private sector's involvement in science and technology for development.

Members of the civil society and private sector were also present at this event that discussed how to revive science and technology in Africa and the role of the various actors. In the coming years, the event will take the form of an exhibition where key players will be asked to demonstrate what they have been doing to promote science and technology.

Ethiopia National Chapter

The National Coordinator continues to enlighten people about the seriousness of the brain drain from Africa. The article that he wrote for a popular local newspaper (The Reporter) continues to be quoted widely. The next step in his work is to investigate the intentions and future plans of returnees from abroad. ATPS-Ethiopia, in collaboration with a private consulting firm, has submitted a pre-proposal to the National ICT Program (of the Ministry of Capacity Building) to undertake a nation-wide survey on ICT in Ethiopia.

Ghana National Chapter

The ATPS Ghana Chapter Organized an Information Communication Technology (ICT) Policy Roundtable discussion at the La Palm Beach Hotel in Accra on 13 February 2002. In attendance were about 40 ICT experts, professionals and ATPS-Ghana Chapter members. Notable among the participants were the Deputy Minister of Communication and Technology, the Late Hon. John Achuliwor, Prof Alex Agyapong, former Vice Chancellor of the University of Cape Coast, Prof Clement Dzidonu, a renowned African ICT expert, and Dr Nii Narku Quaynor, Chairman and Chief Executive Officer of Network Computer Systems (NCS), one of the two major internet service providers in Ghana. The roundtable was organized to discuss the draft National ICT Policy Document with the view of making critical inputs to feed into the documents.

Kenya National Chapter

The ATPS Kenya Chapter and the secretariat staff jointly met the Constitution of Kenya Review Commission (CKRC) on 20 February 2002. Through Bernard Sihanya, a member of the chapter, a presentation was made based on the ATPS Technopolicy Brief, How Can We Constitutionalize

How can we constitutionalize innovation, technology and intellectual property rights? ATPS Kenya Chapter members during a presentation to the CKRC, left to right, Alex Gacuhi, Nancy Baraza, the late Dr Ooki Ombaka, Bernard Sihanya



Innovation, Technology and Intellectual Property? The following questions were raised during the discussion:

What is the role of innovation and technology in social, economic and political development?

What is the place of intellectual property in Kenya's development?

How can innovation, technology and intellectual property in Kenya be constitutionalized?

According to Sihanya, Kenya's intellectual property system promises to protect all stakeholders in the political economy. However, the constitutional and regulatory law and process and the institutional profiles are inadequate. He informed the commissioners that the scenario is crying for constitutional, legal, policy and institutional reform. Kenya needs to constitutionalize norms that promote innovation and also make offices that regulate intellectual property politically and financially autonomous through clear constitutional and legal provisions.

Seminar on Science and technology issues that affect the productivity of the agricultural sector in Kenya
ATPS-Kenya held a seminar, on 17 October 2002, to address science and technology issues that affect the productivity of the agricultural sector in Kenya. The objective of the seminar that was attended by representatives from the private sector and government departments was to share the results and findings from the ATPS supported research. Papers that were presented discussed such issues as increased banana production through biotechnology; technology policy issues for small-scale horticultural development; increased production of green leaf for the smallholder tea farmer and technology transfer and gender roles in tea and coffee production. The forum also provided an opportunity for the Horticultural Crops Development Authority (HCDA) to present a paper that articulated its policy concerns and to challenge researchers to use their skills to urgently provide needed ideas on how to improve the sector.

Lesotho National Chapter

Information-sharing of science and technology policy meeting

Of Lesotho's S&T policy formulation was given high priority by the ATPS-Lesotho Chapter in 2002 and some of its members participated in the Department of Science and Technology's national information-sharing on S&T policy.

Media

A media S&T information sharing meeting was held in July 2002. The journalists were informed about the activities, mission and objectives of ATPS, and about the Lesotho Chapter in particular. A general information meeting session for the Lesotho-based media followed this meeting on 20 December 2002 at the Lerotholi Polytechnic in Maseru.

Library

In line with the ATPS-LSC agreement to establish a centre in Maseru, beside the current National University of Lesotho (NUL) based (ISAS) centre, the administration of the Lerotholi Polytechnic had agreed to make a section of its library available for the purpose. Already some furniture has been purchased and



arrangements are underway to purchase a computer to facilitate e-mail and Internet facilities on S&T issues. The Maseru-based ATPS-LSC centre is crucial to the success of S&T in Lesotho. The centre was officially opened on 20 December 2002.

Nigeria National Chapter

Essay Competition

ATPS-Nigeria organized two essay competitions for university and senior secondary school students. For the undergraduates, the topic was, "The Place of Emerging Science and Technology in the Development Process" and for the secondary school students, it was *The Role of the Youth in Science and Technology Development in Nigeria*. This was an exercise meant to sensitize the youth on the importance of science and technology in Nigeria's economic and social development. The competition elicited a lot of interest. ATPS-Nigeria also actively participated in a national workshop to develop a national biotechnology research agenda for Nigeria and in a stakeholder forum on information technology. The relationship built from these collaborations helped to create avenues for dissemination of ATPS research and in turn feed the research process.

Research Dissemination Seminar

The chapter also organized a one-day research dissemination workshop in Abuja. Ten ATPS funded research reports were presented at this seminar. It also provided an opportunity for other relevant research papers on science and technology to be presented to the wide audience that was present in Abuja. One such paper on bread manufacturing was extensively reported in the media and has now fed into the policy process of the National Drug Administration Agency (NDAA). This brokerage role is increasingly emphasized by ATPS.

Tanzania National Chapter

Mainstreaming Science and Technology into the Poverty Reduction Strategy

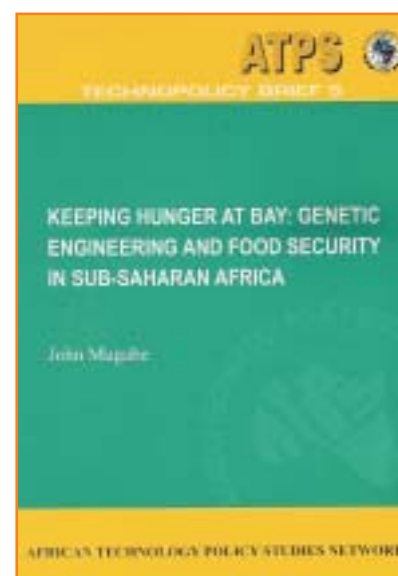
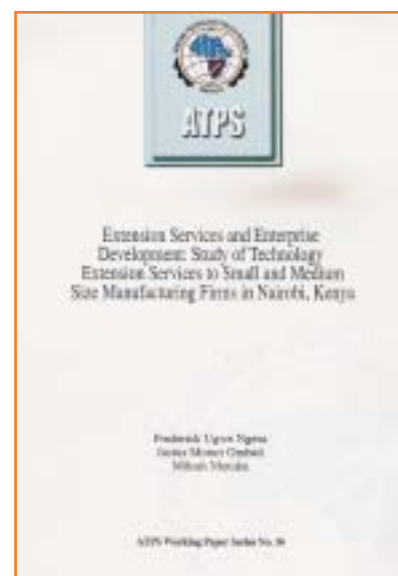
On 9 September 2002, the Tanzania Chapter organized a workshop, Mainstreaming Science and Technology into the Poverty Reduction Strategy. Key decisions were taken during the workshop. The purpose of the roundtable meeting was to put together stakeholders in S&T and Poverty eradication to assess and share experience on the progress that have been achieved in poverty reduction and how S&T can be mainstreamed in the Poverty Reduction Strategy Paper (PRSP). The roundtable meeting drew about 25 participants from different parts of the country representing different institutions.

The following key policy people participated:

- > The Director of Macro-economy in the President's office, who is also the Chairperson of the Research and Analysis Group in the Poverty Reduction Strategy (PRS) structure
- > The Director of Science and Technology in the ministry of S&T and Higher Education
- > The Director General of Tanzania Commission for Science and Technology

The major objective of the round table was to bring in technology dimension into the PRS. In the current version of the PRSP, technology is at best implied and at worst not even referred to in any way in most of the Tanzanian PRS.

Five background papers led the discussion around the above major objective on the following topics:

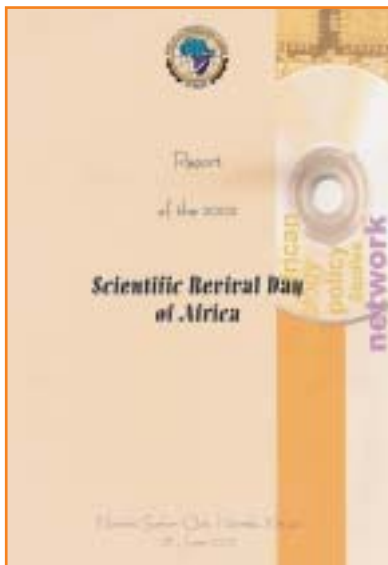


- > Technology and Wealth Creation
- > Agricultural Productivity and Technology with special emphasis on biotechnology
- > Science and Technology Intervention in Water Development for Poverty Reduction
- > Health and technology
- > ICT and Poverty alleviation

The paper presentations were followed by the group work according to the themes .

The groups had two major assignments:

- > To identify technology programs ready for implementations alongside PRS, and Identify areas for further research in the respective sectors
- > A number of issues were raised, these includes areas for future research and measures to be taken by PRSP committees as outlined below:
- > The technology divide is an important indicator of wealth divide between countries in the world calling for measures to close the divide between the rich and the poor in the country and between sectors
- > S&T and wealth creation are important linkages to poverty reduction. The policy issue should address how S&T could be improved to create wealth among the poor.
- > S&T in productive sectors raises productivity and thus enhances wealth creation. S&T is also important in the social sector to alleviate poverty



Uganda National Chapter

Consultative workshop on the development of a curriculum for Community Polytechnics in Uganda

In July 2002, the ATPS Uganda Chapter organized and conducted a consultative workshop on the development of a curriculum for Community Polytechnics in Uganda. The workshop also discussed the contribution of the private sector and NGOs in the establishment, maintenance and sustenance of community polytechnics in the country.

The objectives of the workshop were to discuss:

- > the core contents of a curriculum for Community Polytechnics
- > the role of the private sector and community in the development of Community Polytechnics
- > the way forward for Community Polytechnics

Over 35 participants from the National Curriculum Development Centre, Uganda Institute of Professional Engineers, Private Sector Foundation, Heads of community polytechnics, UNCST, Ministry of Education and Sports, representatives of different Media groups and legislators from the Parliament of Uganda attended the workshop. The National Coordinator conducted consultative studies on Community Polytechnics in Uganda for the Ministry of Education and Sports. This was a direct result of the workshop. The chapter identified a graduate student to study Science and Technology Policy in Uganda. This activity was jointly conducted with the Department of Science and Technical Education (DOSATE) Makerere University.

Working with the media

In September 2002, the National Coordinator held a meeting with representatives of Monitor Newspaper to explore ways by which the Uganda Chapter and Monitor publications could jointly work to promote science and technology in the country. The chapter plans to employ the services of a professional journalist from the media group to publish science briefs when needed.

Publicity material

The chapter developed a symbol, a small round drum drenched in the network colours against a black cow hide with symbolic beating sticks in the country's national colours. The chapter also designed a poster depicting the major activities in the past few years that was presented at ATPS Annual Workshop and Conference in Abuja Nigeria.

PUBLICATIONS

ATPS publishes the Working Paper Series (WPS), Research Paper Series (RPS), Special Paper Series (SPS), Technopolicy Briefs and Executive Summaries. The network targets six constituencies as its audience: the legislature and executive policy making organs of the government, the organized private sector, mass media and the civil society; technical and engineering institutions and the farmers and small scale producers.

Since its autonomy in October 2001, ATPS has published 35 documents in the ATPS Working Paper Series; 14 documents under the Special Paper Series, two Research Paper Series; four Technopolicy Briefs, three ATPS workshop and conference reports and one report of the 2002 Scientific Revival Day in Africa. Publications continue to improve in quality and content and are also varied to take account of the different audiences. The Technopolicy Brief Series, designed with the busy policy maker, in mind are popular. Intended to answer specific policy questions, they are deliberately written in simple language to serve as advocacy tools. They are also used to address current policy concerns with a view to maximizing impact. The Research Paper Series are more technical, targeting policy makers and policy technocrats.

Cameroon National Chapter

Newsletter

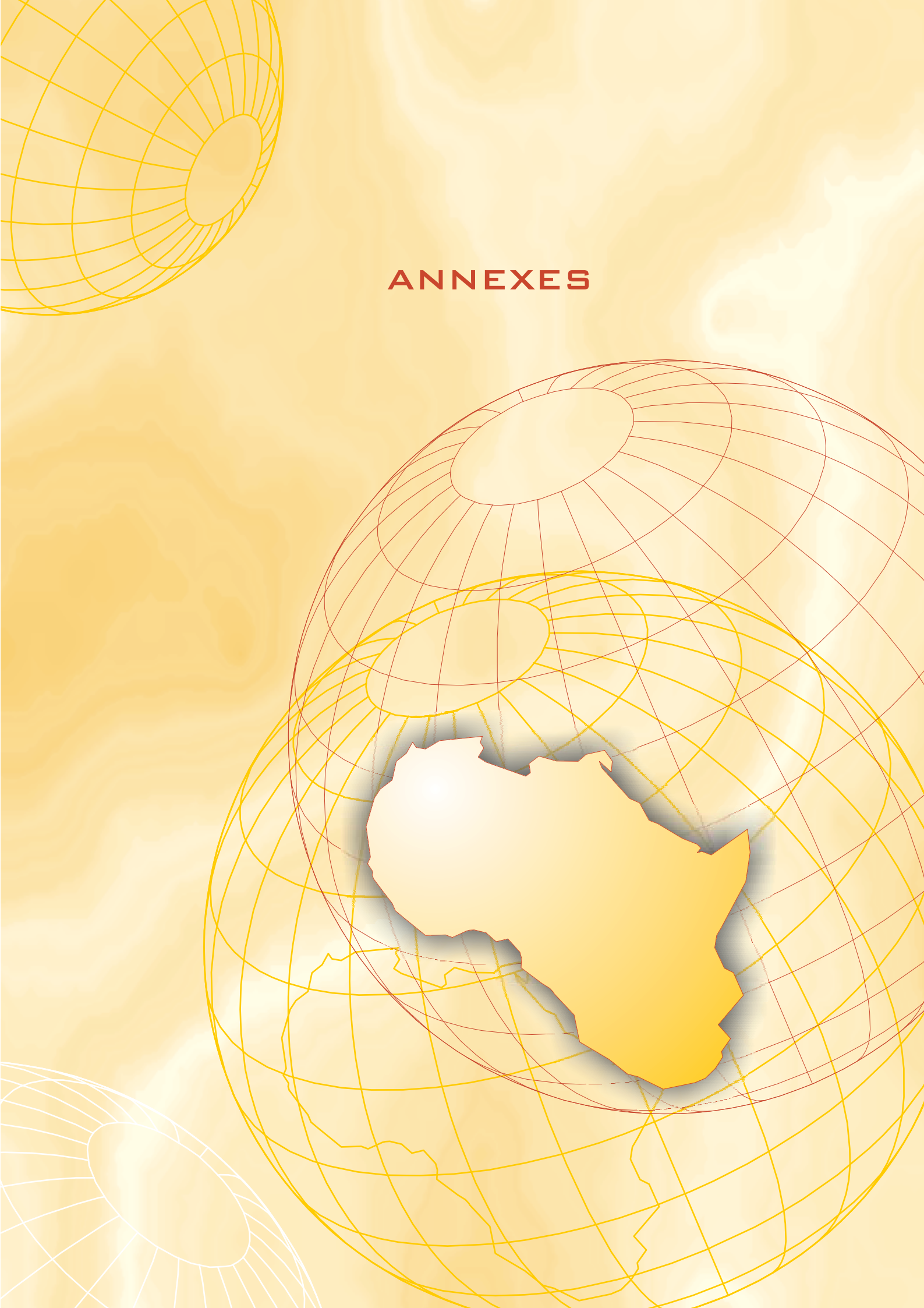
In November 2002, the Cameroon Chapter launched a newsletter to facilitate advocacy, networking and collaboration with key institutions that deal with issues of science and technology in the country.

Lesotho National Chapter

Newsletter

The first Lesotho S&T newsletter was published in February 2002 and disseminated to government ministries and departments, private sector institutions, non-governmental organizations, parastatal organizations and secondary and high schools. This was a major information-sharing activity of the ATPS-LSC for the year 2002 (see annexe for the full range of publications).

ANNEXES



Publications List

ATPS is a multi-disciplinary network of researchers, policy makers and other end-users interested in the generation, promotion and strengthening of innovative technology/industrial policies in 17 Africa countries.

ATPS publishes the Working Paper Series, Research Paper Series, Special Paper Series, Technopolicy Briefs and executive summaries. The ATPS targets six constituencies as its audience, The legislature and executive policy making organs of government, the organized private sector, mass media, civil society, technical and engineering institutions, farmers and small scale producers.

Papers published under the Working Paper Series (WPS) and Special Paper Series (SPS) are produced through the ATPS small research grants process or from regional projects. Research Paper Series (RPS) is subjected to strict external reviewing process required before publication. Researchers publishing under the WPS are encouraged to produce final drafts of their reports in easy-to-read format. The WPS does not meet the strict requirements set out for RPS. SPS are commissioned as concept papers, think pieces, leading conference papers or keynote addresses. The Technopolicy Briefs Series provides critical knowledge and advice on fundamental policy issues in the realm of technology. These briefs are written with the busy policy maker in mind.

For any comments and requests get in touch with us through The Executive Director, African Technology Policy Studies Network, 3rd Floor, The Chancery, Valley Road, P.O. Box 10081 00100 GPO, Nairobi, Kenya. Tel: 254-020-2714168/092/498. Email: info@atpsnet.org

Working Paper Series

Publication Title	Author(s)
The Effects of Economic Reform on Technological Capability	T. Adeboye M.S. D. Bafachwa
Methodological Issues in Science and Technology Policy Research	T. Adeboye N. Clark
Rehabilitation in the Manufacturing Sector in Tanzania: Approaches Characteristics and Technology Implications	Samuel M. Wangwe
Agricultural Policy and Technology in Sierra Leone	C. Squire 1996
Effectiveness of Agricultural Research Extension in Sierra Leone	A.K. Lakoh 1996
Generation and Utilization of Industrial Innovation in Nigeria	O. Oyeyinka G.O.A. Laditan A.O. Esubiyi
Irrigation in the Tuli Block, Botswana Water Conservation Techniques	I.N. Mazonde 1996
Endogenous Technology Capacity and Capability under Conditions	S.E. Chambua
Technology and Female-Owned Business in the Urban Informal Sector of South-West Nigeria	R.O. Soetan

Publication Title	Author(s)
Technological Innovations Used to Overcome the Problem of Resource Scarcity in Small Scale Enterprises	C.W. Ngahu
Financing of Science and Technology Institutions in Kenya during Periods of Structural Adjustment	M. Mwamdzingo 1999
Impact of Economic Liberalization on Technologies in Enterprises Processing Agricultural Produce	P. Madaya 1999
Technology and Institutions for Private Small and Medium Firms	B. Oyeyinka 2000
Institutional Reform, Price Deregulation and Technological Change in Smallholder Agriculture	E.C. Eboh 1999
Adoption of Agricultural Technologies by Rural Women under the Women-in-Agriculture Program in Nigeria	D.S. Ugwu 1999
Electrical Power Utilities and Technological Capacity Building in sub-Saharan Africa	Brew-Hammond 1999
Investigation into Factors that Influence the Diffusion and Adoption of Intentions and Innovations from Research Institutes and Universities in Kenya	H.M. Bwisa A. Gachui
The Effects of Economic Reforms on the Quality of Technological Manpower Development in Nigeria	H.E. Nnebe 1999
Issues in Yam Minisett Technology Transfer to Farmers in Southern Nigeria	Michael Madukwe Damian Ayichi Ernest C. Okoli 2000
Technological Response to Telecommunications Development: A Study of Firms and Institutions in Nigeria	Adeyinka F. Modupe 2001
Gender Differences in Small Scale Rice Farmers' Access to Technological Inputs in Enugu State of Nigeria	David Nwoye Ezeh 2001
Adoption of Sustainable Palm Oil Mini-Processing Technology in Nigeria	Nkechi Mbanefoh 2001
Domestic Energy Situation in Nigeria: Technological Implications and Policy Alternatives	Olabisi I. Aina 2001
Technological Capability in the Nigerian Leather Industry: A Firm-Level Case Study	Uka Ezenwe E. Dike A. Ihuoma Mike Duru 2001

Publication Title	Author(s)
Agriculture Research and Delivery in the South-Eastern Highlands of Ethiopia: A Case Study of the SG-2000 Approach in Hitosa District	G. Yiemene 2001
Impact of Computer Technology on Banking Operations in Nigeria	A.I. Odebiyi 2001
Agricultural Technology Adoption on Small-Holder Farmers: Policy Options for Nigeria	J.O. Olusi 2001
Donor Funding and Sustainability of Rural Water Supply and Sanitation Technologies in Swaziland	Aja Okorie M. Mabuza Uzoma Aja-Okorie 2001
Promotion of Production and Utilization of Ceramic Roofing Materials in the Informal Housing Industry in Sierra Leone.	Tamba Jamiru 2001
Technology Transfer and Acquisition in the Oil Sector and Government Policy in Nigeria.	R.I. Chima E.A. Owioduoki R.I. Ogoh 2002
Acquisition of Technological Capability in Africa: A Case Study of Indigenous Building Materials in Nigeria.	Yomi Oruwai Margaret Jev Opuene Owei 2002
Analysis of Indigenous Knowledge in Swaziland: Implications for Sustainable Agricultural Development.	Musa A. Dube Patricia J. Mus 2002
Analysis and Comparison of the Agricultural Development Programme and University Agricultural Technology Transfer System in Nigeria.	M.C. Madukwe E.C. Okoli S.O. Eze 2002

Special Paper Series

Publication Title	Author (s)
Globalization and Technology: Africa's Participation and Perspectives: Concept Paper and Research Agenda	Melvin Ayogu Osita Ogbu 2002
Globalization, Markets for Technology and the Relevance of Innovation Policies in Developing Economies	Sunil Mani 2002
Biotechnology in sub-Saharan Africa: Towards a Policy Research Agenda	John Mugabe

Publication Title	Author (s)
The Impact of Globalization in Sub-Saharan Africa Countries	Mwindace N. Siamwiza 2002
A Blueprint for Developing National ICT Policy in Africa	Clement Dzidonu 2002
Impact of Foreign Direct Investment (FDI) on Technology Transfer in Africa	Moses M. Ikiara 2002
Pursuing Technology Policy Research in Sub-Saharan Africa: Reflections on the Dimensions, Applications and Implications of a Methodological Framework	M.H. Khalil-Tammy 2002
African Response to the Information Communication Technology Revolution	G. Olalere Ajayi 2002
Information and Communication Technologies (ICTs): Poverty Alleviation and Universal Access Policies	Andrew Dymond Sonja Oestmann 2002
ICT Human Resource Development in Africa: Challenges, Strategies and Options	T.M. Waema 2002
Application of ICTs in Africa: Development of Knowledge Workers in Centers of Learning	John M. Waibochi 2002
State of Science and Technology Capacity in sub-Saharan Africa	M. H. Khalil-Timamy 2002
Strengthening National Information and Communication Technology Policy in Africa: Governance, Equity and Institutional Issues	Melvin Ayogu 2003
A Science Agenda from an African Perspective	Turner T. Isoun 2002

Technopolicy Briefs

Publication Title	Author (s)
Who Benefits from the International Intellectual Property Rights Regime? And What Should Africa Do?	Ha-Joon Chang 2001
How Can we Constitutionalize Innovation, Technology and Intellectual Property in Kenya?	Bernard Sihanya 2002
What Can Biotechnology Do for Africa? How Can the Associated Risks and Uncertainties Be Managed?	Norman Clark 2002
Who Needs Technology Policy?	Ha-Joon Chang 2002

Research Paper Series

Publication Title	Author (s)
Small Scale Farmers Adoptive Responses to Banana Biotechnology in Kenya: Implications for Policy.	Margaret Karembu 2002
Policy-Induced Local Sourcing of Raw Materials and Technology Development in Nigerian Industry?	Femi Kayode Ademola Oyejide Afolabi Soyode 2002

ATPS Workshop and Conference Reports

Publication Title	Author (s)
Globalization and Technology: Report of the ATPS 7th Annual Workshop, Lusaka, Zambia. November 2000	ATPS 2001
ICT for Development in Africa: Report of the ATPS 1ST Annual Workshop held on October 29 November 1, 2001	ATPS

Others

Publication Title	Author (s)
ATPS Annual Report 2001	ATPS 2001

Research Grants

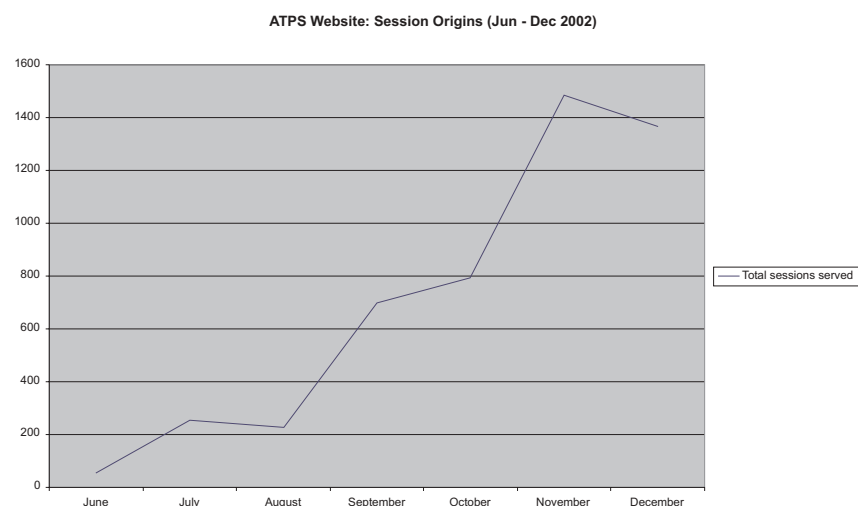
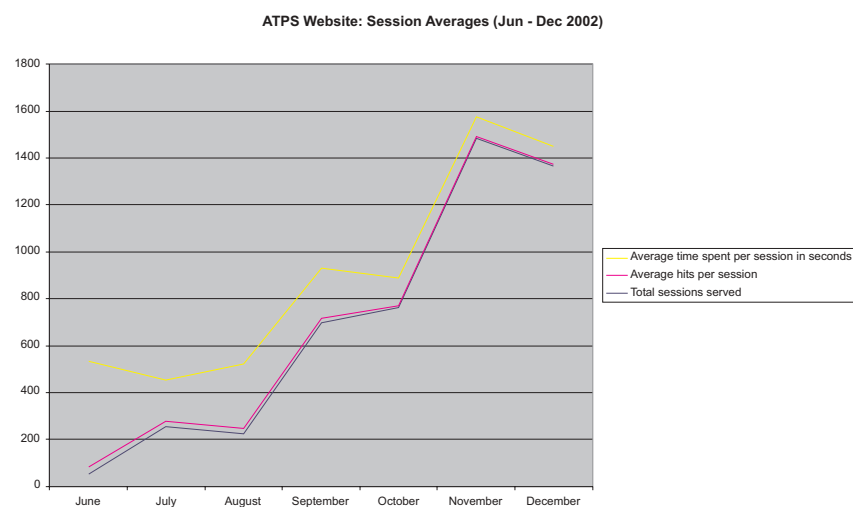
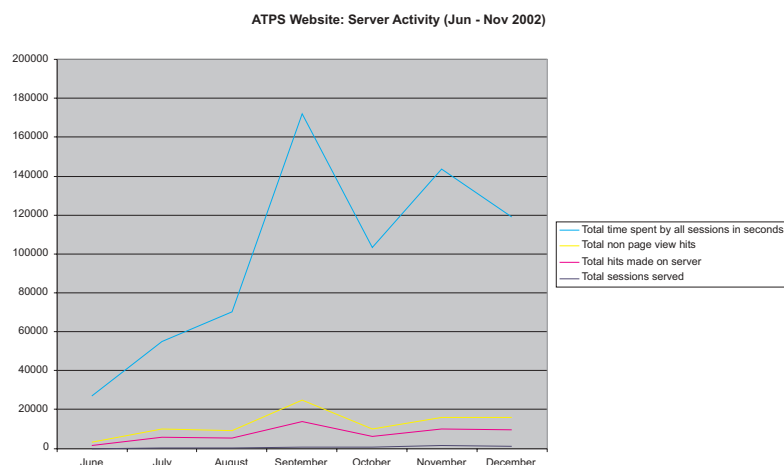
Grantee(s)	Title	Year started	Status/Stage
Itika, J.S.	Managing Manufacturing Firms in a Competitive Environment: Systems Approach to the Assessment of the Role of Technological Acquisition Process in Tanzania	2002	On-going
Adeboye, A	The Impact of World Trade Organization's Intellectual Property Rights on the Nigeria's Domestic Technological Capability (The Case of Nwewi Industrial Cluster)	2002	On-going
Manyire, H.	Technology Attributes, Farmer Perceptions and Adoption Decisions: the Case of Improved Cereal Varieties	2002	On-going
Uguru	Information Technology: Access, Capabilities and Use among Administrators of Agro-technology Transfer Programmes in South-eastern Nigeria	2002	On-going
Ogwo	Technological Development in the Maintenance Operations of Imported Used Automobiles and Their Policy Implications for the Automobile Industry in Nigeria	2002	On-going
Ezeh, D.	Poverty, Gender and Environmental Degradation: Technology Adoption and Use in the Production of Staple Food in Nigeria	2002	On-going
Essegbey, G.	Technological Capacity Building for Biotechnology Development: Stakeholders Linkages and Public Dialogue	2002	On-going
Khalil, Randiki	Innovations and Capacity Utilisation in the Kenya Textile Sector	2002	On-going
Masha et al	A Review of the Policy Framework towards Strengthening of Fish Industry in Kenya	2002	On-going
Ndalut, P, Rono, P.	Technology Adoption Challenges and Obstacles Facing Small and medium Enterprises in Agro-processing of Oilseeds in Western Kenya	2002	On-going
Squire, C.	Strategic Integration of S&T into National Reconstruction and Development Planning Processes for Sustainable Development in Sierra Leone	2002	On-going
Phiri, D.	Information Technology and Implementation in Public Service Organizations in Zambia: Policy, Organizational, Economic and Legal Implications	2002	On-going
Keregero, M.	Linking Appropriate Technology Utilization by Rural Women and Household Food Security in Swaziland	2002	On-going
Mashinini et al	Indigenous Knowledge Systems and Sustainable Agriculture in Lesotho, the Case of Sorghum Production	2002	On-going
Tizazu, T.	Female-Male differentials in the adoption of Agricultural Technologies in Ethiopia	2002	On-going
Dejene, A.	Identification and Recording of Indigenous Knowledge in the Area of Traditional medicine in Ethiopia	2002	On-going

Website Report (June - December 2002)

Usage of the ATPS Website has been growing steadily since June 2002, sessions served have progressively grown from 53 in June to 1367 in December 2002 with 1485 November 2002 being the most active month. The Total number of hits also grew from 1675 in June to 8428 in December 2002 with 8509 in November 2002 being the highest. Overall the most commonly accessed page is the home page (/default.asp), this page also ended up being the entry and exit point page. Most browsers used either the MSIE 5.x or an Unknown browser to access our website. There were a few who used Windows NT. Most of our users were referred to our website by 3 domains internetconferences.nl, google.com, or yahoo.com. An interesting observation is that in the months of November and December 2002 the most active new referring URL were scidev.nt and infodev.org.

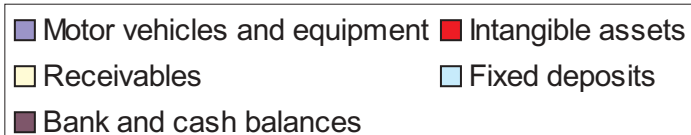
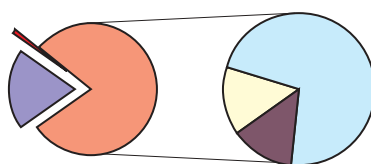
The Sessions by Network Location report are not be a true representation of the facts because the report shows that there was no traffic from Africa where our researchers constitute, this is because our website is hosted in the United States and statistics recorded are biased towards North America.

Below are graphs showing the website activity between the months of June and December 2002.



Balance Sheet as at 31st December, 2002.

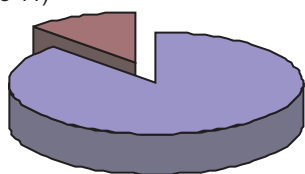
Total Assets:



Balance Sheet as at 31st December, 2002.

Funds and Liabilities:

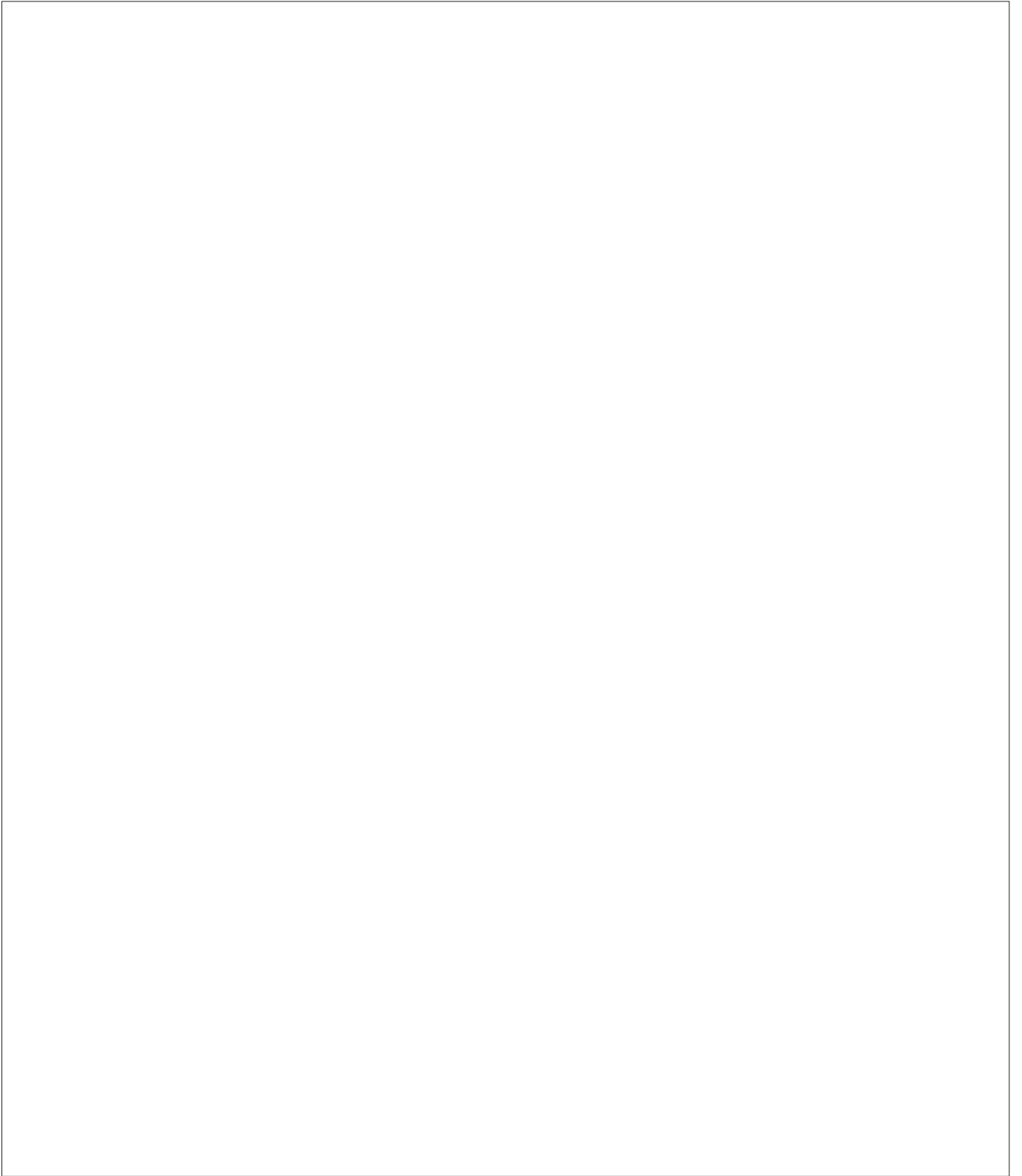
US \$43,585
(Notes 11)

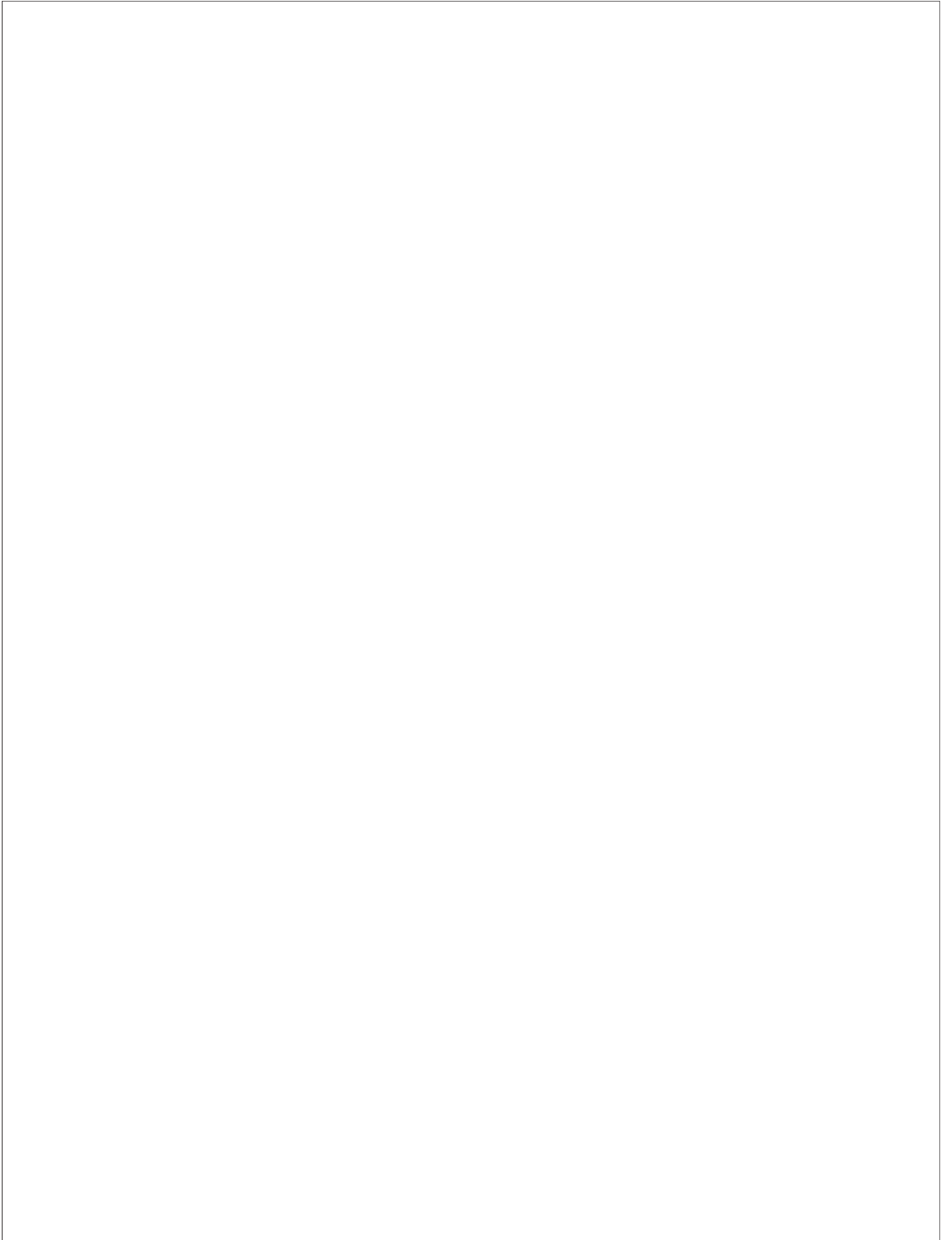


US \$309,222
(Notes 10)











Transfer of assets and liabilities

On 1 October 2001, ATPS programmes separated from IDRC. The assets and liabilities relating to ATPS was transferred to the autonomous ATPS as appropriate. Assets and liabilities from IDRC were transferred at cost.

2	INCOME	US\$
	Dutch Government	400,000
	International Development Research Centre	428,629
	Rockefeller Foundation	225,000
	Carnegie Corporation	153,761
	Ford Foundation	150,000
	Nigerian Federal Ministry of Science and Technology	50,000
	COMESA	49,423
	OPEC Fund	40,000
	Coca-Cola EA	37,358
	Interest income	2,245
		<hr/>
	Total income	1,536,416
		<hr/>

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