Global Young Academy
The voice of young scientists around the world

2014

MEETING REPORT

1st Africa Young Academies Regional Conference

03-05 February 2014
in Nairobi, Kenya

CONTENTS



List of Abbreviations

Abbreviation	Meaning
AAS	African Academy of Sciences
ANJSS	Académie des Jeunes Scientifiques du Sénégal
ANSTS	Académie Nationale des Sciences et Techniques du Sénégal
ASSAf	Academy of Sciences of South Africa
DAAD	German Academic Exchange Service
EYAS	Egyptian Young Academy of Sciences
GAAS	Ghana Academy of Arts and Sciences
GhYA	Ghana Young Academy
GloSYS	Global State of Young Scientists
GYA	Global Young Academy
IAP	Inter-Academy Partnership
KNAS	Kenya National Academy of Sciences
KNYAS	Kenya National Young Academy of Sciences
MAST	Mauritius Academy of Science and Technology
NACOSTI	National Commission for Science, Technology and Innovation in Kenya
NAS	Nigerian Academy of Science
NASAC	Network of African Science Academies
NYA	National Young Academy
SAYAS	South African Young Academy of Science
SNAS	Sudanese National Academy of Science
SAYS	Sudanese Academy of Young Scientists
UNAS	Uganda National Academy of Science
ZIMYAS	Zimbabwe Young Academy of Sciences



Rationale of the Conference and Objectives

Low to middle income countries around the world, especially in Africa, face major challenges that impede economic growth and poverty alleviation. These challenges include: lack of access to effective and economical health care, education; food insecurity, limited energy resources, limited capacity for resource extraction, and detrimental environmental health issues. Recent changes in international communications and funding structures are promoting rapid development of global research networks to address and solve some of these issues (e.g., the giz, DAAD, DFID, the Grand Challenges research efforts funded by the Gates Foundation, USAID, Grand Challenges Canada, the Norwegian government, the Brazilian government, among others). Without a strong scientific base, however, individual countries often find it difficult to access support and funding from these research networks, or even to identify the crucial local needs that should be addressed by them. As elsewhere in the developing world, young scientists and researchers in Africa are well placed to engage effectively with these global research networks, since they are amongst the growing cadre of highly skilled, energetic and outward looking knowledge workers trained in the best centres in Africa and abroad. Unfortunately, in most African countries (as in many other parts of the world) the visibility and ability of young scientists to shape and influence policies aimed at enhancing the potential and productivity of science in their countries are not yet optimally explored, much to the detriment of the country and wider research community.

Since its foundation in 2010, the Global Young Academy (GYA) is dedicated to capacity development and strengthening science for development through the empowerment of young scientists who are at the early stages of their independent careers. Specifically, the GYA directly supports the worldwide establishment, strengthening and cooperation of National Young Academies (NYAs). The main goal of NYAs is to give a voice to young scientists in their creative prime and to encourage and motivate them to become active participants and, therefore, stakeholders in efforts to accelerate sustainable development in their respective countries. With the GYA encouragement, the last two years have seen a dramatic upsurge in the formation of NYAs worldwide. The recent formation of NYAs in Nigeria, Egypt, South Africa, Poland, Sri Lanka, Malaysia and Zimbabwe, are encouraging events which are to be celebrated by the scientific community, because young scientists in these countries now have a platform from which to contribute to and shape national and regional science policy discussions. Through these platforms, the young scientists, who represent the future of science in the region, have a forum to exchange ideas and strengthen scientific capacity development on a broader scale in their respective countries. The GYA, therefore, view it crucial and timely to accelerate the establishment of NYAs in African countries as a vehicle for young scientists to address the shortage of scientific capacity in the region. The GYA recognizes that young scientists have the creativity and skills necessary to address the challenges in Africa, and that investment in them is investment in the continent's future.

Objectives

Based on this background, the GYA organized an inaugural three-day African regional conference in Nairobi, Kenya, on 3-5 February 2014. The main objective of this Africa Young Academies Regional Conference was to engage and empower excellent young scientists and researchers from across Africa to address the challenges that impede scientific development towards a sustainable future for



the region. A secondary objective for the conference was to bring together the future leaders of scientific research and innovation from across Africa, and to facilitate the development of strong networks of collaboration and cooperation. The GYA strives to contribute to this goal through four objectives, namely:

- to stimulate and accelerate the establishment of NYAs in Africa; this is seen as a realistic and broad reaching intervention to effect change in science development, and science for development, on the African continent
- to strengthen the already existing NYAs in Africa and the cooperation between them, and the GYA
- to facilitate the exchange between African NYAs, and young scientists with NYAs and their peers in other parts of the world
- to develop young scientists' capacities as a foundation for contributing to solving the challenges facing Africa.

The conference was to contribute towards these goals by:

- Exploring the opportunities, needs and challenges in Africa, and identifying possible solutions in discussions and interactive breakout sessions
- Launching a new NYA in the host country, Kenya
- Developing concrete action steps to launch NYAs in as many countries as possible that do not have one, together with senior academies in those countries
- Creating a support network amongst NYAs in Africa (and abroad) to exchange best practices and improve impact towards scientific capacity building
- Creating space for face-to-face networking
- Facilitating bilateral or multilateral contact and exchange between African NYAs and NYAs in other parts of the world through GYA support
- Bringing together leading young African scientists in order to enrich the movement towards African research development
- Promoting collaboration and identifying key priorities for research to accelerate development on the continent in order to broaden the impact of excellent research
- Identifying opportunities for NYAs to stimulate theme-specific research consortia/networks to address major challenges in health, management of water resources, biodiversity, agriculture, energy, astronomy/space science, nanotechnology, etc.



The African Regional Conference

The inaugural Africa Young Academies Regional Conference under the theme "Accelerating Science for Development in Africa by Increasing the Momentum and Impact of NYAs" was held on 3 to 5 February 2014, in Nairobi, Kenya. The conference sought to build momentum and networks necessary to stimulate the formation of NYAs. The idea for an Africa regional conference was conceived at the GYA Annual General Meeting held in South Africa in 2012, then again discussed and a working group formed at the GYA Annual General Meeting held in Halle, Germany in 2013. The conference brought together young scientists and representatives from senior academies in the African region to contribute to regional science policies. It provided numerous opportunities for young and senior academies to network and meet partners in the NYA movement in Africa. The intended conference outcomes were: (a) to support the establishment of NYAs in Kenya and other African countries (b) to identify challenges and seek possible solutions facing the establishment of NYAs on the African continent (c) to provide a set of guidelines and a roadmap for establishing further African NYAs (d) to establish forms of networking between African NYAs and (e) to motivate African countries to participate in GloSYS Africa, among others.

Participants

Participants were representatives from most of the academies that are members of the Network of African Science Academies (NASAC), and also from all existing National Young Academies (NYAs) in Africa. They were joined by representatives of NYA initiatives and young scientists from other countries that have membership in the NASAC. A representative of the Young Academy of Sweden attended as a monitor. Over 80 participants gathered at the Gracia Gardens, a hotel with conference facilities located in Nairobi, for an intense three-day program. A founding GYA member in Kenya, Prof. Peter Ngure of Daystar University, worked hard and effectively to mobilize the human resource needed to make the conference a success. Prof. Ngure won the support of the Kenyan National Academy of Sciences (KNAS) and the Kenyan government officials from the Ministry of Science and Technology, including the Cabinet Secretary for Science and Technology. We are indebted to the stoic support provided by the NASAC Programs Director, Ms. Jackie Olang working hand-in-hand with Prof. Ngure and the GYA office to organize the conference. Ms. Olang helped to coordinate the contact with African senior academies and was pivotal in arranging and working out logistics and transportation for all African participants. The conference was graced by influential African science leaders representing senior and young academies. We were also delighted by the presence of a senior representative of the Robert Bosch Foundation, Dr. Ingrid Wünning Tschol, and other partners such as the German National Academy of Sciences Leopoldina, Prof. Dr. Jutta Schnitzer-Ungefug, and DAAD, Christoph Hansert, who contributed thoughts and ideas throughout the conference and actively participated in plenaries, breakout sessions, lunch and in casual engagement with participants about science and the NYA movement.



Opening Session

The opening ceremony was a unique, colourful and memorable musical event. "Young academies are recognized as the most effective tool to give a voice to young scientists in science policy and society more generally. It is also a launching-pad for their development as leaders in science. We have little doubt that this movement will be at the centre of the development of science on the African continent over the next couple of decades," said GYA immediate past Co-Chair Prof. Bernard Slippers from South Africa. GYA Co-Chair Prof. Sameh Soror from Egypt added, "Young scientists have the enthusiasm, creativity and skills to face the challenges in Africa. Investment in young scientists is, therefore, an investment in the future". African NYAs will create a bridge between the young and senior scientists in the region, thus promoting mentorship needed for sustainability of the scientific community in the region. For the official opening of the conference and launch of the Kenyan National Young Academy of Sciences (KNYAS), Dr. Roy Mugiira delivered a welcoming speech on behalf of Cabinet Secretary of Science and Technology, Prof. Joseph T. Kaimenyi.

The opening was made especially colourful through the entertainment by Afrizo, an Afro-pop music group from Daystar University, which played popular African songs with lyrics artfully customized to the GYA mission statement, much to the delight of the participants and distinguished guests. The group continued to serenade the conference participants throughout most of the opening session, leading in song to welcome the launch of KNYAS with a cake, pomp and colour. The musical group leader Hellen Mtawali clearly spent considerable time and effort gathering background information about the mission and nature of the GYA.

Picture 1: Band Afrizo performing at the Opening Ceremony



The opening session was chaired by Prof. Peter Ngure and comprised of introductions and opening remarks by special invited guests: the KNAS Chairman and representatives of the Kenya National Commission for Science, Technology and Innovation, a GYA Co-Chair, the IAP, NASAC, and the Robert Bosch Foundation. All speakers welcomed the first regional conference held in Africa and expressed appreciation and thanks to the GYA together with the KNAS for hosting the event.

Picture 2: Special Guests
(L-R) Dr. Roy Mugiira (Ministry of Science and Technology), Prof. Sameh Soror (GYA), Dr. Ingrid Wünning Tschol (Robert Bosch Foundation), Prof. Jutta Schnitzer-Ungefug (Leopoldina, on behalf of IAP)

Picture 3: Special Guests
(L-R) Prof. Ratemo Michieka (KNAS), Prof. Raphael Munavu (KNAS), Dr. Roy Mugiira (Ministry of Science and Technology), Prof. Sameh Soror (GYA)



Prof. Raphael Munavu, KNAS Honorary Chairman, highlighted the crucial role of young scientists and researchers in solving regional, local and national challenges. With one of the fastest growing populations in the world, it is Africa's responsibility to invest in its young people by facilitating their role in the creation of new knowledge and innovation. Prof. Munavu also emphasized that KNAS is fully supportive of the GYA initiative, which has a critical role in global development. The establishment of the Kenyan National Young Academy of Sciences (KNYAS) was a unique opportunity to enhance the ability of the African continent to connect with global science networks for the benefit of people in Kenya and Africa.

Prof. Jutta Schnitzer-Ungefug, Secretary-General of the German National Academy of Sciences Leopoldina, delivered a speech on behalf of Prof. Volker ter Meulen and Prof. Mohamed Hassan, the Co-Chairs of IAP – the global network of science academies. Considering the role of Leopoldina and the Berlin-Brandenburg Academy of Sciences and Humanities (BBAW) as the benefactors of the world's first NYA in Germany, she welcomed with pride that the idea of young academies is spreading throughout the world. She said that the IAP was prominently involved in establishing the Young Scientists Forum at the Annual Meeting of New Champions of the World Economic Forum (WEF) and was supportive of the establishment of the GYA. Prof. Schnitzer-Ungefug congratulated the GYA initiative to support the establishment of NYAs in Africa. She assured the participants that IAP will stand side-by-side with the GYA in the efforts to facilitate the cooperation between young academies in Africa and to integrate them into the global GYA network.

NASAC Programs Director Ms. Jackie Olang reminded the conference participants that the interface between science and policy is critical and can influence the government's development plans. "Currently we witness important changes in the region that require rapid science capacity development. Therefore, all academies have a collective responsibility towards young scientists". She went on to say that "Science must be a universal enterprise enabling young scientists to work in networks and not in isolation. It is NASAC's vision to make the voices of young scientists heard by politicians and societies in Africa, and to contribute to the establishment of academies in all African countries".

Dr. Ingrid Wünning Tschol, Senior Vice President of the Robert Bosch Foundation (RBF), explained that the RBF does not only fund science but also provides funds to serve society. The RBF is convinced that Africa has the answers to many regional challenges, although it is currently not as visible on the map of science as it should be. She announced that the Next Einstein Forum will be held in Africa (Senegal) in late 2015. The Next Einstein Forum is a global platform for scientists, in particular young African scientists, to share their work and enable partnerships all over the world. Dr. Wünning Tschol also held the prospect for future regional meetings in Africa following the example of the 1st Africa Young Academies Regional Conference.

Dr. Roy Mugiira, Senior Director of Research in the Ministry of Science and Technology read a speech on behalf of the Cabinet Secretary of Science and Technology, Prof. Jacob Kaymenyi. He announced that the government aims to set aside 2% of the GDP to finance science, research and technology. "Young scientists play a crucial role in solving future problems, thus the government recognizes the



role of both KNAS and KNYAS as important institutions within the country and the GYA as important global initiative", he said. He concluded by saying that he looks forward to deeper future collaboration with KNYAS through NACOSTI and with the GYA.

Following the opening speeches, the official launch of KNYAS was celebrated in a vibrant ceremony and with an impressive cake. Prof. Kenneth Mavuti and Prof. Ratemo Michieka, both from KNAS, and Mr. Christoph Hansert, Director of the DAAD Nairobi office, announced the founding members of KNYAS, who each received their certificate of membership.



Launch of the Kenya National Young Academy of Sciences (KNYAS)

Picture 4: Celebrating the launch of KNYAS by announcing the new members and cutting the cake

Picture 5: Founding members of the Kenya National Young Academy of Sciences (KNYAS) together with representatives of KNAS, NASAC, NACOSTI, Leopoldina and GYA.

The Young Academy Movement

The 2nd session was chaired by GYA Executive Committee Member Dr. Phil Gona from Zimbabwe, based in the USA at the University of Massachusetts. The theme of the session was "The young academies movement and their role in addressing global challenges".

The session was opened by Prof. Bernard Slippers**,** GYA immediate past Co-Chair from South Africa, with a talk on "The global development of the young academy movement and its role in addressing major global challenges". Prof. Slippers retraced the global development of the young academies movement originating from the WEF-IAP Young Scientists Forums in 2008 and 2009. The group of young scientists brought together in these meetings discovered a shared vision to contribute to a better world while living out their passion for science. As a result, in 2010, the GYA was founded with the support of the IAP, Leopoldina, BBAW, Volkswagen Foundation and BMBF. The Young Academy movement has continued to grow globally since then. At the time when the GYA was founded in 2010, only 5 NYA existed. With the launch of KNYAS, today this number has risen to 21 NYAs, many of them established with support from the GYA. This global network is empowering young scientists and helping them to contribute to today's grand challenges. Prof. Slippers emphasized that the activities of the GYA and other Young Academies are crucial for science and research on an international scale.

Picture 6: Prof. Bernard Slippers of South Africa, immediate past Co-Chair of the GYA

Talking on "The benefits of a NYA for a senior national academy**"** Dr. Takalani Rambau, Senior Manager of Science, Technology and Internationalization at ASSAf in South Africa, emphasized that senior academies can benefit from the views and perspectives of young academies. Therefore, ASSAf has signed a Memorandum of Understanding and offers collaboration and support to SAYAS by hosting its secretariat. ASSAf has included a section on young scientists in its Strategic Plan for 2014 – 2017, and has regular meetings with young scientists to discuss issues of common concern and new developments. SAYAS has flourished under the leadership of many passionate young scientists.



Independence and free priority setting is very important for academies. SAYAS has taken a different approach from the senior academy in how it engages with schools and how it puts together panels and publications. Dr. Rambau pointed out the important role of academies in providing quality policy advice. Since many bodies try to advise the government, it is central for academies to reflect on what it is that they are best suited to give advice on.

Young Academies in Africa

The afternoon session of Day 1 was chaired by Prof. Bernard Slippers. The session focused on NASAC's view on the potentials of NYA in Africa, and presentations from established National Young Academies in Africa. The speakers discussed the potential and challenges of NYA in Africa focusing on the situation in their own National Young Academy.

Ms. Jackie Olang, NASAC Programmes Director, spoke about "The potential of young academies in Africa and their link with the senior academies" highlighting the significance of young academies in Africa. She pointed out that the academies are a forum for researchers, policymakers, government organizations and NGOs to meet and network. Young academies are also in the best position to collect and analyse scientific information for policymakers and scientists to shape the development agenda in Africa. For young scientists, academies are a platform to exchange ideas and experiences on critical issues of the continent and to enhance the visibility of local expertise in the regional-international-global discourses to create contextual relevance. She highlighted a number of opportunities through which young academies and senior academies can link through NASAC:

- Inter- and intra-regional networking with NASAC members and international academies
- Making progress on existing academy outputs (using regional expertise for local influence)
- Improvement of collaboration strategies beyond own respective organizations
- Gaining an appreciation for policy issues that determine the nature of science and development
- Critical examination of how science can become relevant in everyday life.

All the representatives from African NYAs gave an overview of the formation of their NYAs including the role of other organizations such as national senior academies, the GYA and TWAS. The African NYAs share the mission of giving voice to young scientist in dialogues of national and international importance and providing a platform for interaction and exchange among young researchers. The representatives of the African NYAs were:

- Dr. Abidemi Akindele, Nigerian Young Academy (NYA)
- Prof. Alex Broadbent, South African Young Academy of Sciences (SAYAS)
- Dr. Abdel Badea M. Elhassan, Sudanese Academy of Young Scientists (SAYS)
- Dr. Sibonani S. Mlambo, Zimbabwe Young Academy of Sciences (ZIMYAS)
- Dr. Amal Amin, Egyptian Young Academy of Sciences (EYAS)
- Dr. Christian Agyare, Ghana Young Academy (GhYA)
- Prof. Cheikh Diop, Académie Nationale des Jeunes Scientifiques du Sénégal (ANJSS)



The Nigerian Young Academy was established in 2010 and is among the oldest NYAs in Africa. Dr. Akindele explained that the NYA relies on the support of the national academy, which provides secretariat services. Currently the membership consists of 47 young scholars. During the past years the NYA has organized a number of workshops and events such as the Founding Workshop (Redeemer's University, 2010), two National Workshops (Young Researchers - Covenant University, 2011; Young Chemical Scientists - 2013) and three General Assemblies (FUTO, 2011; UNIZIK, 2012; UI, 2013). The Nigerian Young Academy aims in the future to strengthen relations with industry.

The South African Young Academy of Sciences (SAYAS) arose from a working group formed by the GYA and was launched in 2011. The constitution is based on the GYA blueprint. SAYAS aims to contribute towards solutions of national and global challenges facing society, provide a platform for young scientists to contribute to policy decisions, contribute to the development of scientific capacity in South Africa, and foster opportunities for interdisciplinary collaborations amongst young scientists. Dr. Broadbent explained that one of the fine lines NYAs have to walk is finding a balance between their own national plans and goals identified by the senior academy and the government. One problem he noted was that the issues that are important to the NYA may not always be funded.

Picture 7: Representatives of the African NYAs
(L-R) Dr. Abidemi Akindele, Dr. Christian Agyare, Dr. Abdelbadea Elhassan, Dr. Amal Amin, Prof. Alex Broadbent

The Sudanese Academy of Young Scientists (SAYS) was established in 2007 under the umbrella of the senior academy, the Sudanese National Academy of Sciences (SNAS). SAYS activities consist of collaborations with the Sudanese Natural Heritage Society and the NIDAA Development Organization. Jointly with SNAS and TWAS, SAYS held a conference at the Institute of Endemic Diseases (17-18 January 2009) at Nile College and held several workshops at Ahfad University for Women, Dermatology Hospital. Future plans of SAYS are to establish an African Young Academies Network. Such a network is envisioned to be a platform for NYAs in Africa to share ideas and



experiences aiming to determine research priorities in Africa and developing Africa's scientific leaders of the future.

In Zimbabwe, the Zimbabwe Academy of Sciences (ZAS), which is the senior academy, jointly with the National Research Council of Zimbabwe helped to establish the Zimbabwe Young Academy of Sciences (ZIMYAS). ZIMYAS' constitution is based on the GYA blueprint. ZIMYAS' inaugural meeting was funded by TWAS and attended by a representative from the GYA and SAYAS. ZIMYAS' future plans include schools outreach to promote science and an international research conference in 2015.

Dr. Amal Amin of the Egyptian Young Academy of Sciences (EYAS) discussed the need for a NYA in Egypt arguing that it is essential for the country to empower young scientists. EYAS aims to renew the old vision of promoting science, technology and innovation.

The Ghana Academy of Arts and Sciences (GAAS) organized a consultative meeting in February 2013 with 100 participants to facilitate the cooperation among young scientists, increase their visibility and establish Ghana Young Academy (GhYA). Dr. Christian Agyare stated that the three current GYA members from Ghana are all part of the 10-member steering committee. GhYA's media launch took place in May 2014 and the founding members will meet later in 2014.

The Académie Nationale des Sciences et Techniques du Sénégal (ANSTS) and the TWAS Senegalese chapter together with several universities and research centres in Senegal organized meetings of the Senegalese young scientists in 2011 and 2012. It was agreed during these meetings that the Académie Nationale des Jeunes Scientifiques du Sénégal (ANJSS) should be founded to deal with specific issues affecting the young scientists. The initial membership consists of 42 young scientists. They collaborate with the first vice-president of ANSTS to prepare the statues, the rules and procedures, and the different issues relevant to young scientists in Senegal. Prof. Abdulkadir Cheikh Diop pointed out that the constitution has been finalized and the NYA will officially be launched at the forthcoming general assembly.

Working Groups on NYAs and Feedback

In this section of the program, the delegates broke out into working groups to discuss the following questions:

(1) What is the need for NYAs in Africa and the value that an NYA could add to science in your country?
(2) What should be the form and function of NYAs in Africa?
(3) What challenges have you experienced or do you foresee for NYA establishment in your country?
(4) What opportunities are there for NYAs in Africa that we should use?
(5) How can we improve and better connect NYAs in Africa?

The following section summarizes the results of the working group discussions.



(1) Could a NYA add value to the science in your country?

The working groups agreed, based on the following reasons, that a NYA adds value to the science in their countries:

- Represents young scientists on issues related to their own interests
- Opportunity for networking, team building, collaboration and building synergies
- Forum for discussion, knowledge sharing, dissemination
- Provides recognition and empowerment
- Mentorship
- Gives young scientists a way to contribute on wider social issues
- Effects change or continuity for the future where necessary
- Gives YS a platform to contribute to local, national and regional issues
- Gives YS a voice speaking in a coherent way and amplifies their voices
- Potential to create future leaders and policy shapers
- Opportunity for impact on society and policy outside of routine
- Platform of technology and innovation
- Contribution to socio-economic development
- Popularizes science

(2) What should be the form and function of NYAs in Africa?

The following were suggested regarding the form of the NYA in Africa:

- Members should be young minded scientists and researchers with mutual interest. They should hold a PhD or equivalent (age limits to be discussed in each country) and be selected on the basis of merit with competitive and high standards of selection.
- There should be a geographic and demographic balance among the members.
- The NYA should have a structured constitution and a structured leadership.
- It should allow for the free flow of ideas, while at the same time respecting the law.
- It should have financial and academic independence, but not necessarily legal independence and a good working relationship with senior academies – e.g. based on a MoU.

Function of the NYA in Africa:

- Help achieve the above listed objectives
- Improve innovation
- Attract funding
- Influence policy and policy makers
- Multidisciplinary collaboration.

(3) What challenges have you experienced or do you foresee for NYA development?

- Lack of leadership
- Small membership size
- Geographic distance



- Lack of commitment or competing commitments
- Misplaced priorities of some members
- Different standards between disciplines
- Gender and race differences - active management is a good idea; quotas less so. NYA should try to strike a balance between representation of academic population vs. wider population
- Lack of funds
- Lack of supporting infrastructure (lack of premises and secretariat, internet access)
- Interference from senior academy, lack of independence from senior academy
- Lack of political influence and access to policy makers
- Political and economic sanctions

(4) What opportunities should be used?

- Membership – finding people who are both qualified and willing/able to spend the time
- For members: interdisciplinary interaction, career advancement, mutual support/encouragement, capacity building
- Balance between transient membership and need for continuity
- Meetings, conferences and workshops for exchange
- International collaboration
- Influence on academia: modernization of culture, technology/skills transfer
- Policy: interacting with policy makers, novel perspectives
- Need across countries in Africa because of common challenges
- Many national resources, young population, vibrant economies
- Political good will
- To provide local solutions using borrowed technologies
- Identifying a niche: distinguishing from senior academies
- Justifying existence of both academies in a developing country

(5) How can we better connect NYAs in Africa?

- Regular regional, continental meetings with a body being in charge of ensuring this happens
- Exchange programs
- Joint curriculum
- Exchange of ideas
- Mailing list including all African YA membership
- Shared calendar of events
- Align NYA activities to continental/regional priorities

Science for Development

On Day 2 the morning session addressed the issue of science for development and was chaired by Prof. Yousuf Maudarbocus, the President of the Mauritius Academy of Science and Technology (MAST) and the GYA Co-Chair Prof. Sameh Soror. The speakers during this session were:

- Dr. Benjamin Gyampoh, **African Academy of Science (AAS)**
- Mr. Christoph Hansert, **DAAD**
- Prof. Oyewale Tomori, **Nigerian Academy of Science (NAS)**

Dr. Gyampoh introduced the mission of the AAS in the light of the developments on the African continent in the last sixty years since the era of independence. The vision of AAS is to be a major player in driving sustainable development in Africa through Science, Technology and Innovation. The mission of AAS is to mobilize the entire African science and technology community for sustainable development. Dr. Gyampoh argued that Africa's major challenges are poverty, health, population growth, productivity and the impact of climate change. The most dangerous consequences of poverty are food insecurity, nutritional challenges and unsafe water, as well as health challenges such as HIV, malaria and non-communicable diseases (e.g. cancer). Threats to the continent's productivity are unstable power supply, the quality and relevance of higher education and brain drain.

Albeit facing numerous challenges, there are also major opportunities for Africa. Examples of positive developments are the remarkable economic performance during the last ten years with growth rates better than the world average (six of the top ten world best performers are in Africa) and the discovery of various resources, natural gas, oil and other commercially exploitable minerals. Advantageous is also that 60% of the world's arable land is in Africa. Science plays a central role in Africa's development and can effectively contribute to poverty alleviation, the improvement of health, the control of the growing population and it can address the consequences of climate change. The strategy AAS envisions for Africa is based on three pillars: a) developing the continent, e.g. by enhancing region- and issue-specific competencies and guidance, b) promoting the growth of the community of scholars in Africa by recognizing, supporting and enhancing excellence in scholarly research and c) nurturing Africa's scientific talents to enhance the capacity of African women and youth in the sciences. Dr. Gyampoh explained that AAS recognizes the importance of young scientists and continues to collaborate with partners in developing training programs to enhance the capacity of young African scientists.

Mr. Christoph Hansert introduced DAAD's activities in sub-Saharan Africa. DAAD collaborates with more than 800 universities in sub-Saharan Africa. DAAD has provided 4,280 scholarships to African scientists and is proud to now have 27,200 alumni. Mr. Hansert described the present situation in Africa arguing that the most important social problems are not only caused by inefficiency and corruption, but also by cartels and mafia structures (e.g., water mafia). On the macro level, he explained that the transition from universities for few to mass universities was not well organized, e.g., colloquia and mentoring programs are not sufficiently available, institutes have not developed research profiles and there are no incentives to bring in third party money to fund projects or initiatives. More exchange between older and younger researchers would be desirable. There are also challenges on the micro level such as the lack of initiative amongst academics. Mr. Hansert



explained that present day science in Africa is not characterized by competition for funding as the salaries of researchers are guaranteed. Academics engage in outside consultancy work to supplement their incomes and do not have time for their academic work. These developments are negative for the development of science in Africa. In some countries universities try to counteract this trend, for example, in Cameroon whereby universities reward their staff for papers in peer reviewed journals. However, Africa also provides advantages for science, for instance, the presence of an international science community and researchers who received their education from across the globe.

Prof. Tomori highlighted that Africa faces serious social challenges such as extreme poverty, e.g., Kiberas (slums) situated right next to excellence centres of science. Africa's priorities should be industrial development, modern technologies, balancing the urban growth and the control of environmental waste, enhancing adaptive capacity to manage the adverse effects of climate change, improving rain-dependent agricultural productivity for food security, save drinking water, meeting energy needs and reducing dependence on use of traditional fuels such as firewood, and reducing the devastating effect of diseases. According to Prof. Tomori, the reasons for the failure of science in Nigeria are that research is not licensed and too uncoordinated and that it does not focus on the needs of the country and the people. The loss of resources due to corruption (approximately 40% of oil pumped in Nigeria) and waste (production and processing are not working well) are other serious challenges that hinder science in Africa. The way forward for science in Africa would be listening to people's needs. But more direction is also needed to identify the most burning challenges, to build clusters of collaboration, also amongst the academies, to enlighten the public, to build science centres and museums and to introduce science into the education system. Scientific advancement that addresses all these challenges should happen in Africa and not elsewhere. Prof. Tomori sees a big opportunity for the next generation of scientists to contribute to the continent's challenges, but also a great responsibility of the older generation. Young scientists follow the example of the old, therefore, it is necessary to include ethics and integrity into the code of conduct of educational programmes and work towards eliminating corruption. Prof. Tomori emphasized: "the priority of the African scientist must be to use science as a channel for all-round development and a better life for the neglected majority of the society".

Africa's Major Challenges and the Role of Science

The next session was chaired by SAYAS Co-Chair Prof. Alex Broadbent and addressed the most important issues and concerns of the African continent. Africa has entered the 21st century with huge unresolved issues, such as poverty, rapid urbanization, food insecurity and political conflicts. Thus, this session aimed to discuss Africa's opportunities and possible ways forward for sustainable development focusing on the five important areas that play a crucial role in social, economic and political developments of the continent. The delegates broke out into working groups focusing on one of these areas: A) health B) environment and agriculture C) energy D) governance and E) emerging technologies to discuss the following questions:



(1) What are the major challenges?
(2) What is the role of young scientists in addressing these challenges?
(3) What can science academies and NYAs do to solve these problems?

Feedback from the Working Groups:

The following section summarizes the results of the individual working group discussions, which were presented to the audience.

Working Group A "Health"

(1) Major challenges regarding health are:

a. Political challenges regarding
   - Government health policy development and implementation
   - Misplaced government spending priorities in health service and research
   - Governance
   - Corruption
   - Effective implementation
   - Managing outside help/aid in line with national priorities
   - Co-ordination of various health efforts
   - Brain drain vs. retention of skilled workers

b. Scientific/technological challenges
   - Infrastructure – lack of facilities (e.g., hospitals, ambulances, technicians, labs, roads)
   - Brain drain
   - Sustained capacity building
   - Research priorities
   - Developing affordable health procedures
   - Technical assessment/monitoring of healthcare providers

c. Social/cultural challenges
   - Lack of awareness, lack of education (misplaced trust in quacks)
   - Cultural/religious beliefs
   - Poverty
   - Illiteracy/education levels

d. Local/environmental challenges
   - Climate
   - Terrain
   - Specific diseases
   - Sanitation
   - Side effects of health measures for local ecosystem, e.g., DDT



(2) The role of scientists in addressing the challenges regarding health

- Create awareness among policy makers and in the community
- Proper assessment of challenges
- Carrying out research
- Dissemination of research
- Working with communities and other stakeholders
- Abiding by ethical practices

(3) Science academies and NYAs can contribute to solving these problems by:

- Lobbying for the establishment of Research Councils where they don't exist
- Facilitating the dissemination of research, e.g., journals
- Creating networking opportunities such as meetings and exchange programs
- Offering platforms for advocacy and information sharing on challenges in health sector
- Improving science communication
- Improving scientist-stakeholder communication channels

Working Group B "Environment and Agriculture"

(1) Major challenges in the area of Environment and Agriculture are:

- Pollution
- Waste disposal: Unplanned waste disposal in urban areas and lack of sensitivity of society to how they waste and where waste is disposed.
- Waste water disposal leading to water pollution particularly in the many areas where water is scarce.
- There are policies in place, but these are often not applied.
- Lack of access to research results and implementation
- Natural sciences have found solutions to many problems, but these are not efficiently implemented.
    - The use of research results in agriculture – science does not get translated.
    - Governance issues on environment and water resource: outdated legislation (e.g., from 1948) and outdated implementation of this legislation
    - Assessment of what is needed in order to take informed decisions and develop policy based on evidence
    - Evidence informed prioritization of issues by government
    - Agricultural policies are not coordinated – programs change every year.
- Training farmers is still very traditional.
    - Research and training in agriculture and environmental research – and social sciences.
    - People have become addicted to chemical fertilizers and the soil is being destroyed.
    - Environmental degradation e.g., cutting of trees for cropping



- Environmental issues ultimately affect agriculture.
- Demonstrating the value of the environment and understanding the broader concept of environmental conservation.
- Land issues are subdivided into a multitude of small issues.
- Inefficient agriculture not producing enough
- Research on African crops lacking – Africa did not benefit as much from green revolution for which government support is critically needed.
- Utilizing modern technology to increase productivity, e.g. biotechnology – Need much more capacity and research systems to do research in this area.
- Productivity is often inadequate. Sometimes production is adequate, but there is too much waste after harvest. Postharvest loss is significant; wasting even the little that is produced.
- Too little value addition to what is produced
- Lack of efficient distribution further increasing post-harvest loss (e.g., in some parts of Kenya people might be dying of hunger, while in other areas people are struggling to sell their maize.
- Undervaluing of and inadequate support for farmers who produce a variety of crops
- Land use policy is critical: How land was allocated historically continues to be political issues. There is a need for social scientists to help develop sustainable land use policies.

(2) What is the role of young scientists in addressing these challenges?

- Agricultural research centres: Young scientists should do more research on the issues of the region – e.g., neglected crops, crop improvement, drought resistant crops, and soil friendly fertilizers.
- Young scientists should focus their research on certain areas that would address the problems faced by society.
- Research is needed on sustainable development in agriculture.
- Scientists have a duty to find out what is suitable in Africa and should not just import information and technology.
- Young scientists should connect to society in order to both understand and inform.
- An example was shared about students going out to farming communities to assist them, provide general education and free consultation and transform knowledge.
- In another example of a German project “Our Common Future” with regional networks between professors and schools and joint projects, students were beneficiaries. High school teachers and professors got to know each other. However, the start with ‘kick-off meetings’ was difficult, as teachers and professors both came with ready-made ideas and were not open to forming ideas. Therefore, a lot of energy was needed to get it going. It is important to develop programs together and get some examples going.
- We need to be the change we want to see, change the attitudes and be engaging.



- Community outreach issues can be complex – dealing with perceptions can be very difficult. This is influenced by past bad experiences of certain communities.
- When enhancing connections to industry, in partnership the rules of engagement are important.

(3) What can Science Academies and NYAs do to solve these problems?

- Form working chapters on subsectors across the region. NYAs can link more effectively, need to do this trustfully and aim to deliver.
- Connect with the youth!
- Engaging with media is critical – link with them via NYAs.
- Deliberating on how to measure excellence
- Participate and stimulate local colloquia.
- Transform our institutions – address and change training and assessment e.g., by training research students and promoting best practice in research quality assessment.
- Independence of advocacy is important. But will this be of interest and relevance to journalists? There is a need to work closely with journalists.
- Unique position to have an interdisciplinary discourse, but we need to learn how to speak each other's' language.
- Young scientists need to give tangible outputs in terms of the challenges society and policy face, need to translate their research into practical outputs and be solution focused.
- In view of the problems with low research capacity young scientists should participate in capacity development.



Working Group C "Energy"

(1) Major challenges regarding energy

- Unmet energy needs
- Unsustainable energy supplies
- Rationing of energy supplies/epileptic energy supply
- High cost of energy for industrialization
- Untapped potential energy sources (geo, solar, hydro, bio)
- Little research in energy sources
- Lack of capacity – infrastructure, human, finance and technology
- Lack of regional cooperation – e.g., the Nile and river Congo
- Lack of exploitation of alternative energy sources
- Lack of linkages between industry and academia
- Lack of tailored courses for energy personnel in the universities
- Lack of hands on and practical trainings for researchers
- Lack of data and mapping of energy sources available
- Lack of willingness of the end users to diversify
- Climate affecting some alternative sources of energy – hydro, solar, wind
- Lack of energy research institutions

(2) The role of scientists in addressing these challenges regarding energy

- Train in energy related fields at centers of excellence
- Encourage a career in renewable energy domains
- Map and establish a database of the potential energy sources available
- Establish an expertise database and a platform for data exchange
- Facilitate conferences, workshops on energy in Africa through AAS or the NASAC
- Partner with renowned institutions and researchers for technology transfer
- Encourage young scientists to be innovative
- Nurture the philanthropic culture in energy research
- Sensitize and encourage local investors into the energy market
- Train energy based technical personnel
- Search for cheaper energy, e.g., hydro energy
- Research in climate change
- Carry out research on energy related areas

(3) What the science academies and NYAs can do to solve these problems regarding energy

- Position papers on potential of energy sources
- Create awareness through TV and radio debates on energy related areas
- Facilitate local, national, regional and international collaboration



- Engage government and private sectors
- Develop energy focused training programs in universities

- Encourage and acknowledge innovation in energy research
- Nurture a philanthropic culture in energy research
- Sensitize and encourage local investors into the energy market
- Engage at grass root level in energy related issues
- Solicit for research of funds

Avenues of cooperation between senior and young academies can be:

- Mentorship
- Joint publications
- Joint conference organization
- Joint proposal writing and research
- Seeking and sharing opportunities
- Sharing the experiences and expertise
- Provide direction and perspective

Working Group D "Governance"

(1) Major challenges regarding governance

- Overemphasis on problems instead of solution and often a focus on conflicts, both by external actors and local leaders. This focus is understandable and leads to very direct and concrete discussions but does not raise the discussion of the underlying problems to a more general and scientific level.
- There is a lack of transparency. The career system, the funding system, and decision making are not transparent.
- The governance discussion could benefit from more differentiated analysis, because different types of governance (e.g., on regional or national level, in universities or academies) have different problems.
- Financial governance: Resources are available but not allocated well or misused. Although different countries have very different problems, the misuse of resources is a regional issue. Another challenge is the heavy dependence on donor funding and that the African countries themselves do not contribute sufficiently.
- Problem of prioritization by governments: Often money is accepted from any donor without alignment with national needs. The quality of donor money is not discussed. Donors bring in their own competence and their own good governance schemes but often leave without a transfer of these skills. They are project driven, but when a project is completed, best practices for follow-up local work might not have been transferred.
- Insufficient investment in appropriate infrastructure, however, cell phone infrastructure is a good example of how new infrastructure can be successfully deployed. What drove this rapid

development? Is there a business model here that is not used in other areas? A combination of cheap technology and a strong natural emphasis on communication?

(2) The role of scientists in addressing the challenges regarding governance

- Young scientists need to talk about how science can address these challenges. Examples: Determine the actual cost of bribes for the national economy. Evidence based policy advice. Publish in daily papers addressing the public and the politicians, not only in scientific journals. Case study around access to water.
- Trans-boundary challenges: Lots of research done is not collected into a regional analysis. Young scientists with regional networks would have the potential to address the trans-boundary component.
- Trans-disciplinary challenges: There is a challenge to get business savvy people to interact with academies and vice versa. Social scientists might also not be sufficiently involved. When academies form tasks groups, they could invite external experts from fields not represented within the academy to create a more diverse and broader approach to analyze the problem at hand.
- Good young scientists often have to work very hard to make progress or even to make ends meet. Difficult to find the time and resources to be very involved. The young scientists need to lobby for more resources and be more visible.
- It would be advantageous for young scientists to have strong links with government, while still being aware of conflicts of interest. It must be possible to be an active and credible member in both the academy and in the government.

(3) What the science academies and NYAs can do to solve these problems regarding governance

- Create awareness: Problems **can** be solved internally. Self-help ***is*** possible, but this is not discussed sufficiently; it's not part of the self-image.
- Each generation understands the world slightly differently. The world changes fast and the young are the first to make use of and understand the new circumstances and opportunities.
- Young scientists could pioneer the use of new technology for betterment of society.
- Cell phones reach very deep into all segments of society and, maybe, they could be better used for awareness in different segments of society.

Working Group E "Emerging Technologies"

(1) Major challenges regarding emerging technologies

- Real understanding of the definition of Emerging Technologies and its importance
- Defining the specific needs and priorities for the technologies in each country
- Lack of technology and knowledge transfer (brain drain)
- Lack of training of staff
- Inadequate funding and infrastructure



- Lack of awareness amongst policy makers, community and industry about these technologies and its role in development
- Lack of confidence between policy makers, industry and local scientists with respect to their ability to apply these technologies to help in development of country

(2) The role of scientists in addressing these challenges regarding emerging technologies

- Networking between scientists and funding organizations
- Continuously raise funds for research in emerging technologies
- Come back home, share knowledge and keep international links alive
- Collaboration between local young scientists and those in diaspora
- Establish links between academies and industries
- Raise awareness and interest among policy makers and community
- Marketing the emerging technologies
- Establish small scale projects using appropriate technologies
- Encourage local production/innovation as part of ongoing research in emerging technologies

(3) What the science academies and NYAs can do to solve these problems regarding emerging technologies

- Motivation of interest and awareness of the importance of these technologies
- Integration of emerging technologies in society and education
- Co-operation between academies, universities, research centers and industry
- Encourage R&D projects
- Increase public awareness on emerging technologies
- International collaboration (companies, diaspora, academies, universities)
- Technology transfer
- Dialogue with decision makers, stakeholders & media for support and funding
- Encourage innovation (awards & prizes)

Wrap up of the Working Group outputs

Prof. Broadbent summarized the working group presentations and the discussion, stating that Africa faces tensions in three different areas:

1. Political versus scientific challenges
2. Challenges for doing science versus challenges for society that science might solve
3. Challenges that young scientists are best placed to solve versus challenges that nobody has solved yet, so young scientists might as well try

The following practical steps are possible directions to address the challenges identified by the working groups:



1. Communication: NYAs might (help) provide media training for young scientists to improve young scholars skills in science communication
2. Visibility: Quarterly newsletter, or radio/TV broadcasts are important tools to showcase new research. Blogs and websites could also be used to increase visibility.
3. Interdisciplinary research: leading by example
4. Priorities: Identify and answer to national priorities and regional markets
5. Regional: Post local problems to regional academic communities
6. Create virtual networks: discussion forums, email lists, bulletin boards, Twitter feeds, etc.
7. Collaboration: Bridging between expertise in old techniques and new technologies
8. Partnership: Link industry and academia
9. International: International connections
10. Local: Engagement with local communities

Young Scientists and Gender

The morning session on Day 3 discussed the importance of young scientists and the impact of gender in research and science with a focus on the situation in Africa. Dr. Amal Amin from Egypt who leads the GYA working group "Women in Science" chaired the session. The speakers were:

- Dr. des. Irene Friesenhahn, **GYA Project Officer in the GloSYS project**
- Prof. Suad Sulaiman, **Sudanese National Academy of Sciences (SNAS)**

Dr. Friesenhahn presented the findings of the GYA's Global State of Young Scientists (GloSYS) precursor study; the report was launched in Berlin, Germany in January 2014. The particular results relevant to Africa were the main focus of the talk. The study examined the state of young scientists and researchers in an internationally comparative perspective, focussing on the role of global collaboration among young scientists, mobility, motivation and career advancement. The GloSYS precursor study captured the voices of international young researchers and surveyed two countries per continent. In Africa, the surveys for GloSYS were conducted in two countries, South Africa and Nigeria. Results suggest that young scientists in academia in Africa are the most confident in comparison to other parts of the world regarding their career prospects. However, the same did not hold true for young scientists practicing in industry. Most respondents stated that they appreciate the flexibility of the academic work, which allows for creativity. The analysis also revealed issues such as a lack of structured and supportive mentoring, a certain mismatch between education and training on the one hand and international standards and societal needs on the other, insufficient transparency and fairness in the promotion processes and long working hours.

This pilot study on the state of young scientists in Africa only describes a current snapshot; hence there is a need to monitor over time for changes and improvements. Dr. Friesenhahn emphasized that in Africa there is a severe lack of data and resource on the situation of young scholars compared to other regions. Reliable data and comparable statistics are not available but would be very valuable to help governments to implement suitable actions to improve the situation of young scientists and researchers. Thus, the GYA, together with regional partners, academies, experts, organizations and other relevant stakeholders would like to launch a GloSYS Africa project addressing specifically the



situation of young researchers in Africa. GloSYS Africa aims to consider the cultural, social and academic diversity in Africa with a perspective from within and contribute to the current knowledge providing systematic and comparable data in areas in which information is missing. Interested collaboration partners were invited to get in touch with the GYA to discuss the partnerships.

Prof. Sulaiman's talk addressed gender issues in science concentrating on the situation in Sudan. She emphasized that it is crucial to increase the number of female scientists in Africa and that special support for women in science is needed. Although the graduation rates of women are rising and their academic performances outmatch those of their male peers, the number of female researchers does not reflect this trend. According to Prof. Sulaiman, the main reason for the low number of female academicians is that the major burden of balancing between family life and a career is still mainly on women. Also, women often lack professional networks. Presenting statistics for the inequality of male versus female scientists, Prof. Sulaiman stated that a female PhD who is married is 13% less likely to be employed than a male PhD who is also married. This situation is worse for mothers: a female scientist who is married and has young children is 30 % less likely to be employed than a single man. In Africa, the cultural and social conditions put women under a lot of pressure to fulfil domestic roles; even violence against women is a reality. Prof. Sulaiman emphasized the implementation of actions that would promote gender equality such as a) providing more data from different countries in order to help policymakers to realize the significance of the gender gap in science and technology and b) having more female scientists in top-level, decision-making roles in academia, government and industry to push policies that promote gender equality. Girls' and women's interest in science has to be promoted, thus special mentoring programs and support systems for females would be helpful. Society has to rethink their attitude towards women and offer support at the workplace and at home. Men need to share domestic work, responsibilities and childcare.

Working Groups on Follow-up Action

In the following part of the program the delegates broke out into working groups focusing on one of the following topics:

A. Actions towards establishing new NYAs
B. Creating an African network of NYAs
C. Identifying concrete steps for NYAs to support scientific capacity development to address African challenges
D. State of Young Scientists in Africa

All the working groups discussed the following questions:

1. What are the most important steps? Prioritize
2. Decide on the next step (timeline)
3. Identify who should be responsible for the implementation (individuals, organizations)
4. What do we need to achieve these goals
5. Expected output



Working Group A "Establishing new NYAs"

(1) Priority list of most important steps

1. Reminder letters to the African academies in countries, which do not have a NYA – from the GYA and IAP.
2. Reach a consensus on the need to establish an NYA with senior academies and relevant institutions
3. Learn from the experiences of the established NYAs
4. Have a patron from the senior academies
5. Identify a focal person and a champion for the NYA
6. Establish contacts in institutions – identify potential members of the NYA
7. Convince potential members on benefits and importance
8. Develop selection criteria for founding members to cover gender, discipline, and geographical representation
9. Briefing meeting where five members are appointed to form a steering committee
10. Have a timeline/framework
11. Develop a draft constitution – use the GYA Blueprint
12. Work on the registration of the NYA
13. Employ a full time person to coordinate the activities of the NYA.

(2) Next steps

- Reminder letters to the African countries which do not have a NYA
- Define framework for the guidelines for the NYA establishment; GYA blueprint is available. Form a working group (approx. five people and GYA coordination) to adapt the blueprint to the African context
- Working group should raise funds and write a proposal for the establishment of the NYA infrastructures and activities

(3) Identify the contact responsible for implementation (individuals + organizations)

- GYA
- Senior or National Academies
- Contact person from senior academies
- University and Research Institutions

(4) What do we need to achieve these goals?

- Individual and institutional commitment
- Finance
- Focal point
- Seed funding may come the senior academy
- Form a good relationship between senior academy and NYA
- Maintain networks and establish good working conditions with existing YA



(5) Expected output:

- Blueprint
- Proposal
- Registration of the NYA
- Establishment of at least five new NYAs within two years
- Encouragement of additional countries to establish a NYA within two years

Working Group B "Networking between African NYAs"

(1) Priority list of most important steps

Long-term goals

- Establish lines of communication between young academies concerning common causes and concerning scientific research
- Share good practice and successful strategies
- Establish and maintain regional contact between NYAs and senior academies/NASAC/GYA
- Development of GloSYS – gathering more data on the situation of young scientists in the region

(2) Next step (timeline)

<table>
<tr><th>2014</th><th>2015</th><th>2014/2015</th></tr>
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<td>

Establish mailing lists (GYA)
Questionnaire to NYAs as a way of building momentum
Should indicate interest, need; also what responsibilities particular NYAs might assume
Identification of NYA point of contact
WG members to develop questionnaire; GYA to circulate
Discussion of networking progress at May 2014 GYA Conference and Annual General Meeting (in Chile)
2nd half 2014 NYA worldwide meeting (venue tbc)

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Forum for virtual discussion/collaboration
Regular Skype meetings, Blogs, Discussion forum
Exact nature to be decided in view of needs identified by questionnaire
WG members to follow up pursuant to questionnaire
Preparation for 2nd regional meeting (to take place 2016)

</td>
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Establish and report on regular meetings between NYAs and Senior Academies in respective countries
Respective NYAs to action (recommendation)
Established NYAs to start newsletters and circulate to members/regional YAs (recommendation)

2016

2nd Africa Young Academies Regional Conference
GYA to facilitate

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(3) (4) and (5): Who is responsible, what is needed and what is the expected outcome?

Deliverables	Resources required
▪ Mailing list (2014) ▪ Report on findings of questionnaire (2015) ▪ Forum, whatever form it takes (2015) ▪ NYA reports on meetings with seniors (2014 onwards) ▪ NYA newsletters (2014 onwards) ▪ 2nd Africa Young Academies Regional Conference (2016)	▪ Time and commitment - of NYA members and officers - of the GYA secretariat ▪ Funds and contributions in kind ▪ Expertise

Working Group C "Capacity Development"

The group identified areas in which (Young) Academies should take concrete steps for the support of scientific development to address African challenges:

1. Advocacy for academies as a platform of excellence

a. Develop criteria on how to define excellence

b. Ensure transparency

c. Reward & highlight excellence

d. Take responsibility for advocacy to speak on issues of social relevance and policy using an interdisciplinary approach

e. Quality assurance – for industry and others to identify skills and centres of excellence.

2. Skills development & training

a. Publication and grant writing, ethics, science communication

b. Developing new resources

c. Collating and awareness of available resources.

3. Funding – senior and young academies to advocate for investment (government and industry), and to raise awareness of what is available

a. Networking – regional and international

b. Interdisciplinary research

c. Facilities and research infrastructure

d. Using opportunities of brain circulation

4. Data gathering about needs and strengths in science and science development

a. Blueprint in Kenya and elsewhere on health sciences; young scientists to do this for all sciences; working together of senior and young academies.

b. Centres of excellence, training centres and their strength, personnel

c. Challenges and shortcomings

d. GloSYS – partner with other academies

e. African journals – navigating, awareness

5. **Mentorship and networking**

a. Linking young and senior academicians: activities, meetings, mutual ambassadors, coordinators within the governance structures.

b. Young academies to also mentor younger scientists.



These issues should be discussed in more detail at the next conference.

Working Group D "Global State of Young Scientists"

(1) Priority list of most important steps

Organisational Steps	Project Steps
▪ Draw together the committed partners and establish a close network of collaborators → build a task force ▪ Supporting Senior Academies: Egypt, Ethiopia, Ghana, Kenya, Morocco, Mozambique, Nigeria and Uganda, ▪ Supporting Young Academies: Ghana, Nigeria, South Africa, Sudan, African Academy of Sciences - All the partners explain their aims and expectations for a Africa collaboration project - Find regional supporters and possible funders → Organisations such as AAS, NASAC, Association of African Universities, DAAD, Commonwealth, Ministry of HE in France, Council for Social Science Research in Africa, National Science Foundation, Fulbright, Carnegie Foundation, Grand Challenges, Gates. ▪ Advertise the project in all the countries and in the media ▪ Secure funding ▪ Modify the existing questionnaire ▪ Initial workshop for all partners ▪ Representation of different cultures, regions, HE systems ▪ Develop research groups with specific responsibilities and competences	▪ Collect the available statistics in every field ▪ Distribution of own survey with respect to total population in the country, fields, gender, regions and research systems ▪ Identify the sector where researchers work, such as universities, research institutions, industry, government, banks ▪ Define measures of success in each of the sectors ▪ Redesign the current questionnaire to focus on national and regional specifics. ▪ Bring all the stakeholders together in a meeting to discuss and agree on a baseline survey based on the questionnaire that was used for GloSYS ▪ Validate every questionnaire in the countries ▪ Collect data ▪ Task force will organise review phases for the findings



(2) Next step (timeline)

- Concept note for workshop (at the Conference)
- Prepare and submit proposals for project and workshop (in Spring 2014)
- Ensure commitment of the partners (Spring 2014)
- multinational taskforce will work on the modification of the questionnaire to include national and regional specifics
- Workshop in a partner country, e.g., Egypt, Ghana, Nigeria (or any other country)

→ Input from all the partner countries required to discuss the national features

(5) Expected output

Output of the workshop

- Finalised questionnaires
- Definition of clear next steps, distribution of tasks and milestones for every country
- A steering system to ensure information flow between partners

Output of the project

- Provide statistics about young scholars (most of them are missing)
- Enhance programs that are already existing in Africa
- Provide information for policy makers
- Direct education in Africa
- Enhance the impact in solving key problems in the countries and on the African continent
- Initiate change of attitude in government
- It is expected that the findings will have an impact on developmental issues of countries in Africa

Closing Session

In summary, we held an extraordinary First African Young Academies Regional Conference. The conference met its objectives which were: (a) to stimulate and accelerate the establishment of NYAs in Africa (b) to strengthen the already existing NYAs in Africa and their cooperation amongst themselves and with the GYA (c) to facilitate the exchange between African NYAs and young scientists with NYAs and colleagues in other parts of the world (d) and finally, to develop young scientists' capacities to lay the foundation for contributing to solving the challenges facing Africa. Moreover, the conference laid the foundation for cooperation on a future GloSYS Africa project.

The conference brought together senior academies organized in the NASAC network with existing African NYAs and YS representatives from those countries where NYAs do not yet exist. Thus, it provided plenty of opportunities to network and get to know the players in the NYA movement in Africa, and it also supported their cooperation with senior academies. In addition, it was a welcome opportunity to showcase the GYA and a boost to the newly launched KNYAS. Last but not least, the



first African Regional Conference provided the GYA with a model for future regional conferences in other regions, not just in Africa.

The participants agreed that African NYAs will be a symbol of scientific excellence by bringing together young scientists and researchers in the region to champion innovation and excellence in home countries. African NYAs will contribute to regional development of science, technology and innovation, through recognition of top young researchers and encouraging them to remain committed to the development infrastructure of their home countries. African NYAs will promote interdisciplinary research collaboration in the region. African NYAs will also be an effective link between the GYA and young scientists and researchers in the region. Action items decided will be taken up at the GYA AGM in Chile in May 2014.

In her closing remarks, Dr. Wünning Tschol called upon the young scholars attending the conference "to join forces and voices". She emphasized that science in Africa has to become visible in order to be heard. She encouraged young scientists to solve the problems of the continent and promised to attend and support the follow-up young scientists' conference in Africa. Prof. Mavuti, the KNYAS patron, expressed his gratitude to Prof. Ngure for organizing the conference and stressed its great outcome. NYAs can have a great impact on science and development in Africa and are capable of important achievements. He also promised that KNAS would support KNYAS by providing office space and the services of KNAS secretariat.

Dr. Bjourn Meru spoke on behalf of Prof. Shaukat Abdurrazak, CEO of the National Commission for Science, Technology and Innovation (NACOSTI). The CEO promised government support for KNYAS with an annual budget of 50 Million Kenyan shillings. He emphasized that his ministry has high expectations of KNYAS and is convinced that KNYAS will improve the local and international networks and increase the number of PhDs in Kenya. The GYA found it very encouraging that KNYAS received this pledge for a substantial financial support from the central government during the closing session and that KNAS committed to providing KNYAS with office space and secretariat services. These thoughtful considerations from the central government and the senior academy are testimony and a promise that it will become possible for young scientists in Kenya to create a bridge between the young and senior scientists and that the senior academy will provide mentorship to the young scientist.

Finally, the GYA Co-Chair Prof. Soror summarized his impressions of the meeting. He was impressed by the intensive discussions, the development of ideas and plans to improve science in Africa and is convinced that "this is just the start and not the end. In the following two years, the outcome of the conference will be implemented to improve science in Africa". He also thanked the participants and contributors, in particular the Bosch Foundation for supporting the first meeting financially and for their commitment to support further regional conferences. Prof. Schnitzer-Ungefug from Leopoldina and Prof. Åkerman from the Young Academy of Sweden were acknowledged for sharing their experience from other continents. Ms. Jackie Olang was recognized and thanked for her pivotal leadership and contribution that led to the success of the conference. KNAS was recognized for providing logistical support and hospitality. Special thanks were given to Prof. Ngure and his team for investing so much time and effort on organizing the conference, Dr. Gona, Prof. Slippers and Dr. Amin received thanks for their contribution and commitment to the conference Working Group,



since the planning and preparation phases. Dr. Heidi Wedel and the GYA office team were recognized for organizing the event.

Remarks

Several sessions at the GYA Annual General Meeting in Santiago, Chile, in May 2014 and the preceding meeting of NYAs were devoted to reporting back to the GYA membership about the first regional conference and to further work on the actions planned. For the resounding success that the first African regional conference was, the Working Group that spearheaded the first Africa Regional Conference was given the mandate to continue with developing plans for the follow-up regional conference in 2016. The Working Group met several times at the GYA general meeting in Santiago, Chile. Working Group members, Prof. Sameh Soror, Prof. Bernard Slippers, Dr. Phil Gona and Prof. Peter Ngure will lead the planning and organization of the follow-up conference together with GYA members from the African region. A preliminary plan was developed and presented and discussed at the GYA Annual General Meeting.

The GYA will take lessons learned from this first regional conference. The Nairobi conference leadership and Working Group held a de-briefing and a SWOT (strengths, weaknesses, opportunities and threats) analyses so as to learn from it. The GYA will use that knowledge in planning and designing the next regional conference.

Funding and Support

The meeting would not have been possible without the generous financial support of the Robert Bosch Foundation, who bore all expenses for the venue, the meals during the conference, the travel costs and accommodation of delegates, and the associated costs of the meeting.

Robert Bosch Stiftung

Acknowledgement

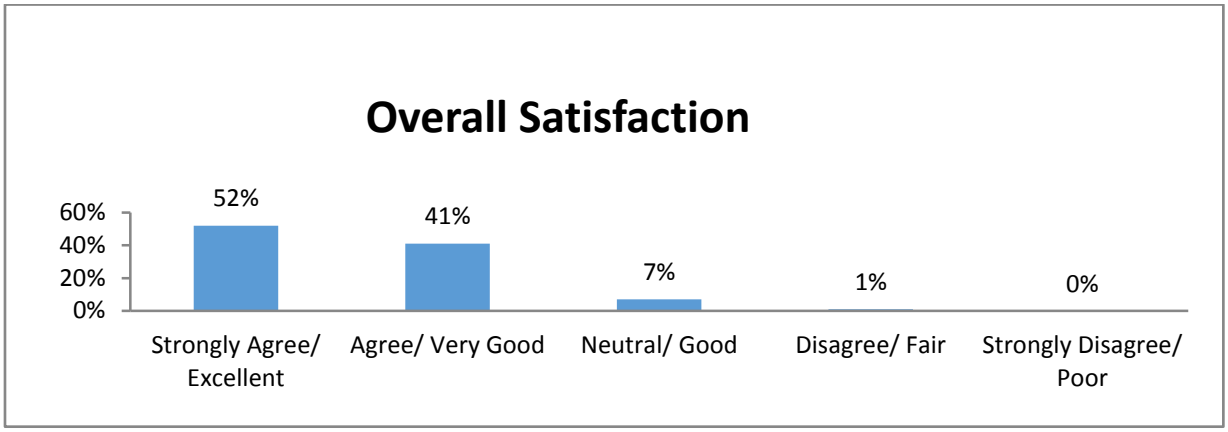
This report was prepared by Irene Friesenhahn, Phil Gona, Fridah Kanana, Bernard Slippers, Sameh Soror and Heidi Wedel.



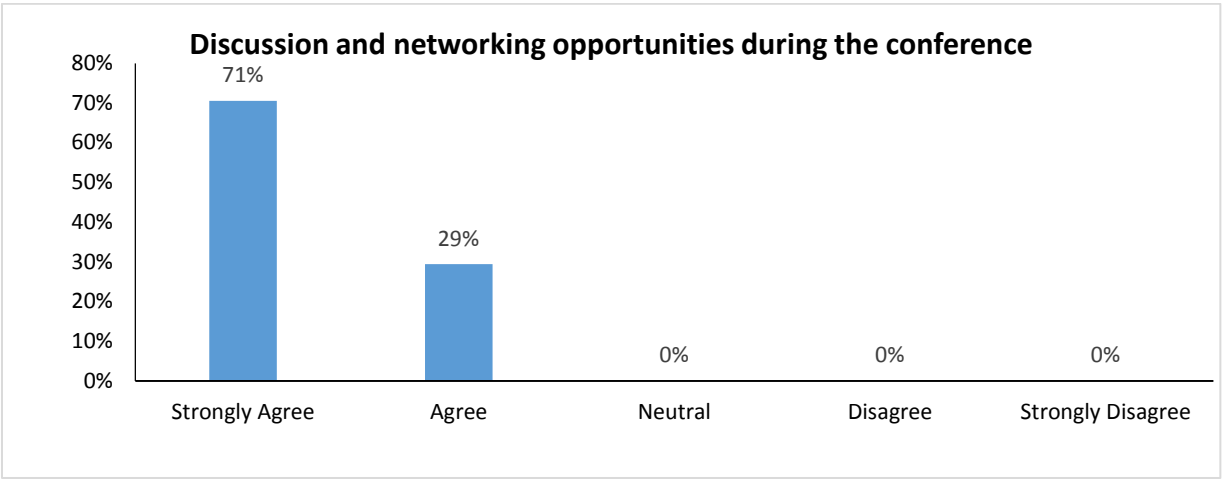
Appendix A: Evaluation

We received 35 completed feedback forms. Participants were asked to rank 11 positive statements on a Likert scale and answer 13 open questions on each session of the program. They were also encouraged to make suggestions regarding future conferences and the role of the GYA. Please see the attached template for more details.

Detailed Feedback on the Sessions



I had the opportunity during breaks to exchange views and connect with other participants.

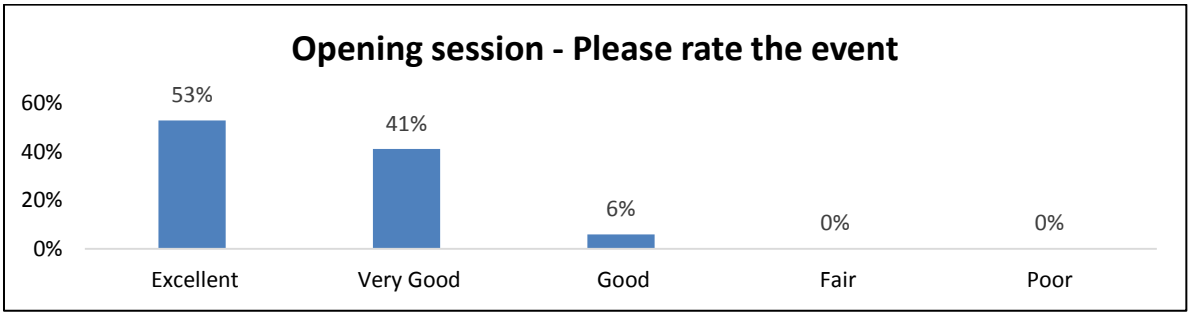


What could we do better to facilitate discussion and networking during the conference?

Some participants would appreciate to have a less tight program and more time for discussions and networking. It was also mentioned that having all participants stay in one hotel would facilitate networking.



Welcome Remarks and Launch

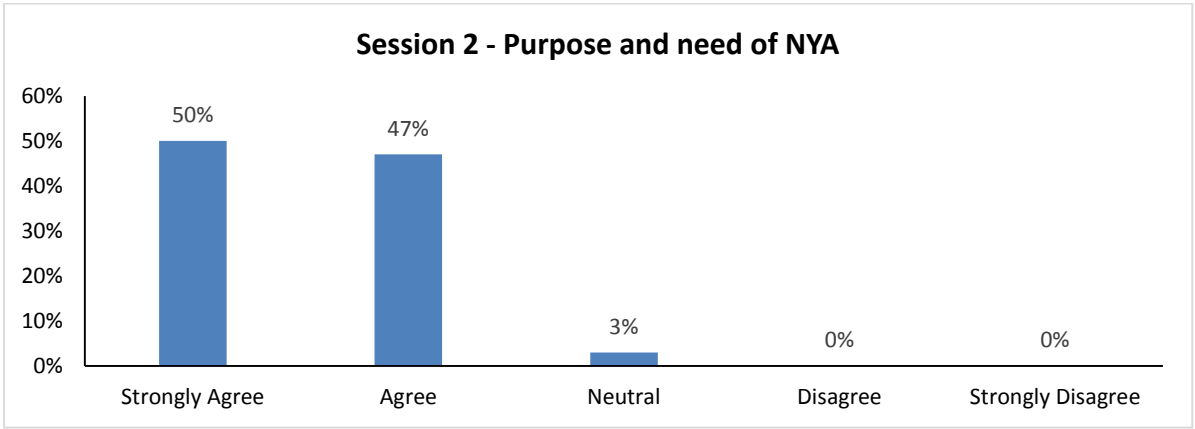


The opening session received enthusiastic comments. In addition to inspirational opening speeches, the representation from across Africa and other parts of the world, and the announcement of the Kenyan government to dedicate 2 per cent of the GDP to science, the participants appreciated that the ceremony was innovative; thanks to the cake and the music component. More than half of the respondents considered the music with its inspirational lyrics and message as a highlight of the opening ceremony.

Session 2

Global development of the Young Academy Movement; The Benefits of a NYA for a Senior National Academy

This session helped me understand and communicate better to others the purpose and need of establishing a National Young Academy in my country.



When asked what was especially helpful regarding session 2, the majority of participants stated that they appreciated learning about the challenges and needs of establishing and sustaining NYAs. Participants from countries which already have a NYA were asked to explain how the session helped them to advocate for more support for their NYA within the scientific community of their country. They mentioned that the exchange of strategies to identify potential partners and networking opportunities were very helpful for the future of the NYAs.

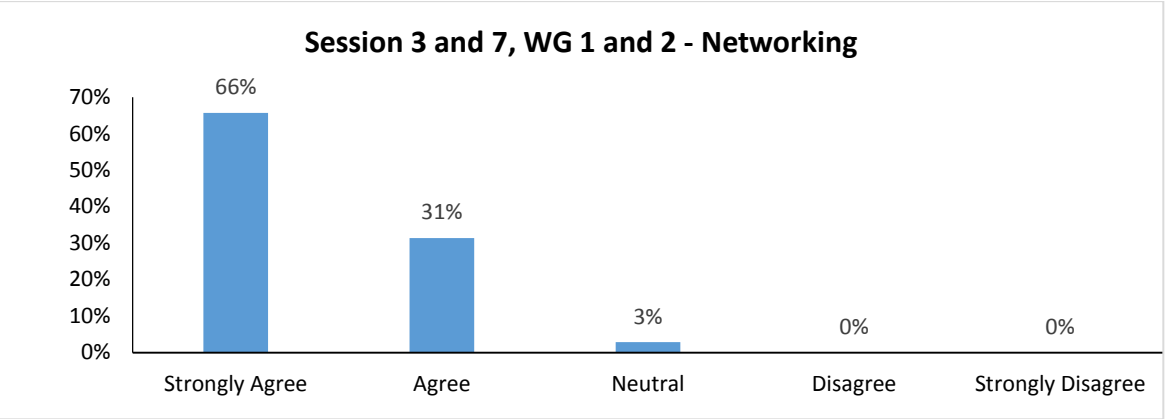


Session 3 and Session 7, Working Groups 1 and 2

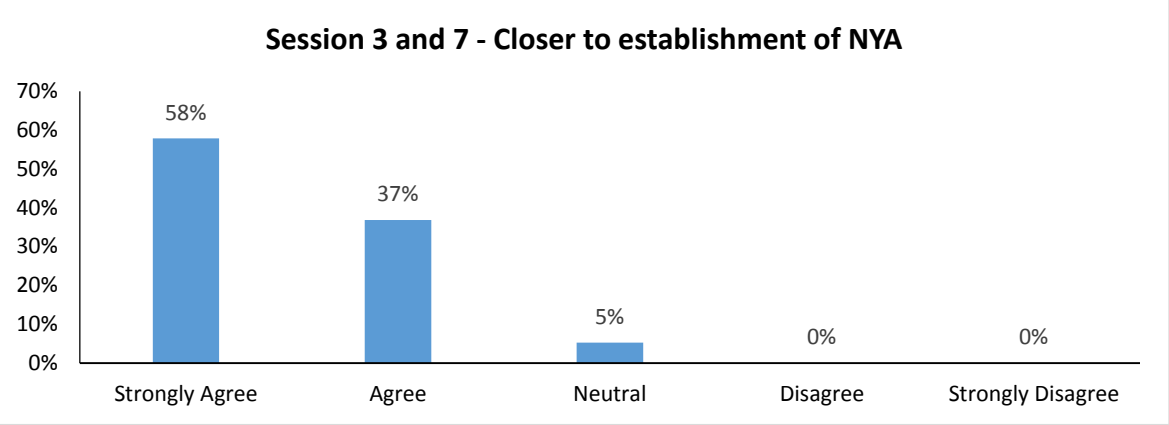
Potential and Challenges of National Young Academies in Africa

When asked what they learnt about the challenges of established National Young Academies in Africa that will help them in the future, respondents mentioned the need for fundraising strategies and securing commitment, official recognition and sustainability. Establishing criteria for membership is also seen as a challenge for National Young Academies.

I have been able to establish new contacts and identify opportunities for future cooperation.



If your country does not have a National Young Academy yet: The sessions brought me closer to establishing a NYA in my country.



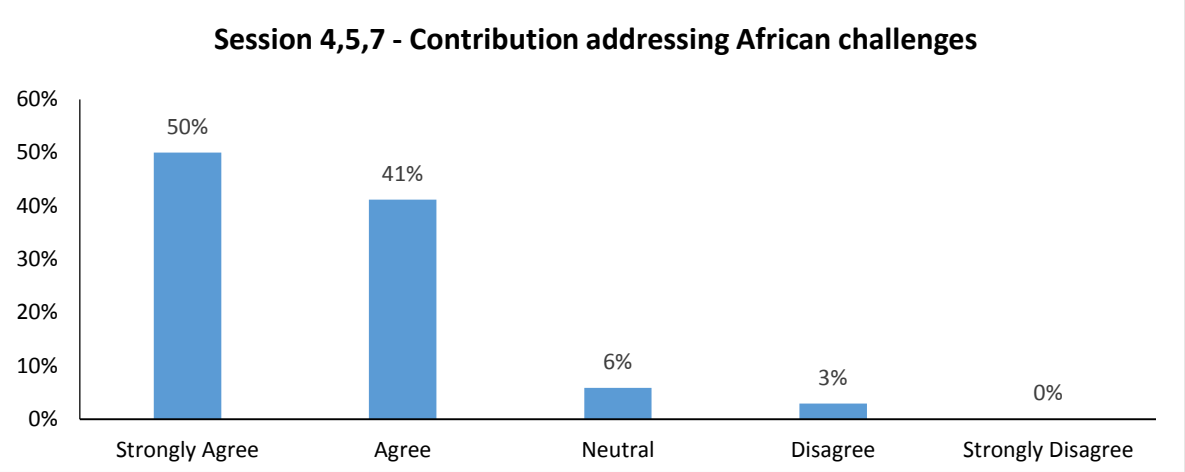
When asked what will be their next step towards establishing a NYA, participants affirmed that they will seek support from their National (Senior) Academy and will initiate collaboration between the latter and Young Scientists willing to establish a NYA in their country. Respondents also mentioned their interest in consulting multiple stakeholders such as research institutes, universities and the GYA on how to establish a NYA in their country.



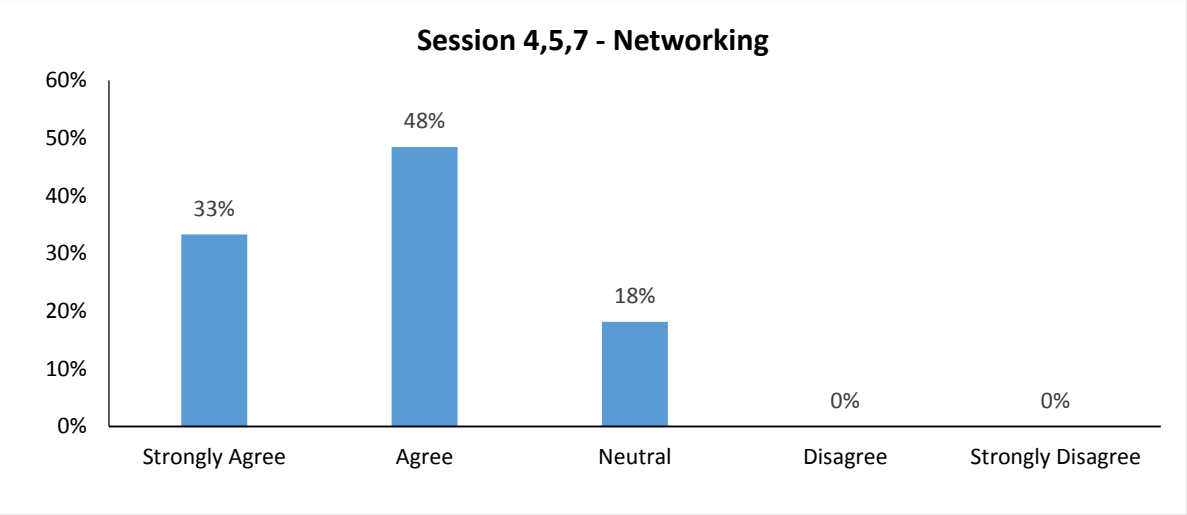
Session 4 and Session 5, Session 7, Working Group 3

Science for Development; Challenges to Scientific Development in Africa

The sessions helped me better identify my contribution as a scientist to addressing African challenges.



I have been able to establish new contacts and identify opportunities for future cooperation.



"We have the potential to develop Africa and we know how to do it."

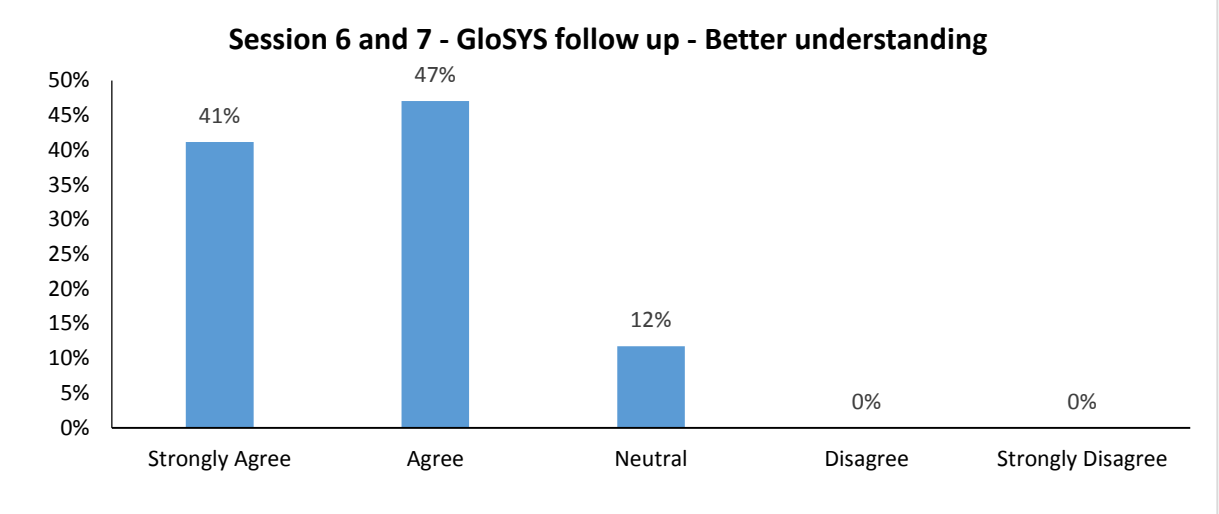
When asked what was especially helpful regarding the above mentioned sessions, participants mentioned the networking opportunities with other young scientists, the DAAD, Bosch Foundation and the GYA as well as the encouragement and ideas for overcoming the challenges Africa faces. One participant stated that it was helpful "to see that even if it is difficult to develop Africa, we have the potential and we know the ways of doing it."



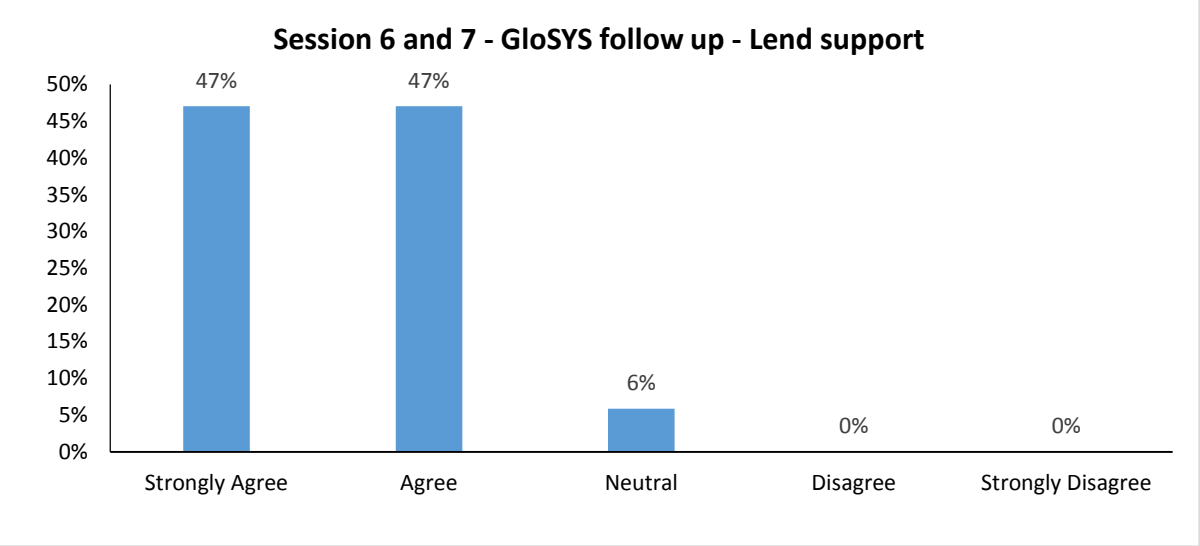
Session 6 and Session 7, Working Group 4

GloSYS Follow up in Africa

This session helped me understand and communicate better to others the purpose of the GloSYS study and the benefits of collaboration in my country or region.



It motivated me to lend support to such a study in my country or region.



"A very useful exercise which should be extended and consolidated"

When asked what was especially helpful about the above mentioned sessions, participants mentioned that the GloSYS study presentation allowed them to identify the challenges young



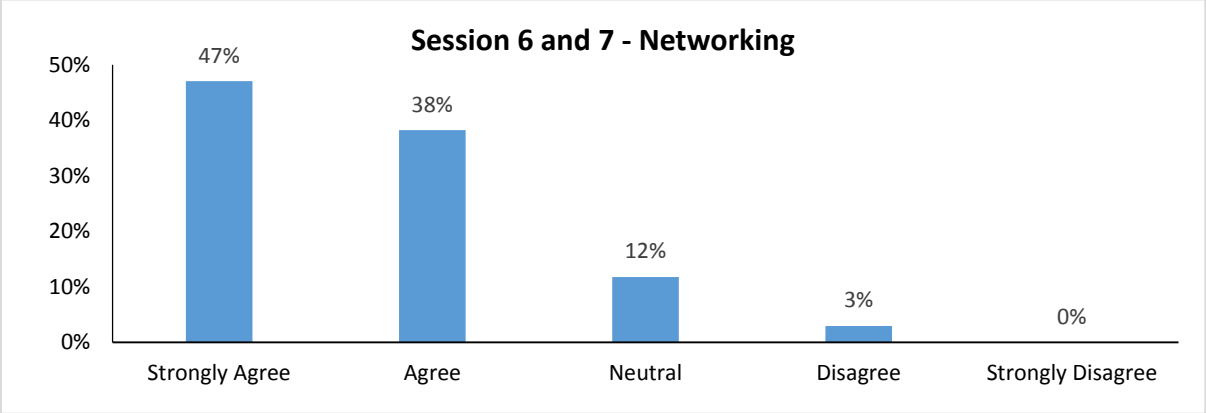
scientists in Africa are facing and the steps ahead to improve their situation. Respondents further stressed the need for country-specific data on the status of young scientists in Africa.

Women in Science in Africa

"The development of Science and by Science in Africa needs women to participate and partner."

When asked what they learnt about women in science in Africa that will help them in the future, participants affirmed that the contribution of women in science is essential for the development of academies and Africa in general. While some participants emphasized that there has been significant improvement in supporting women, other stressed that there is still a low representation of women in science in Africa and some even feel that women are still not seen as invaluable by some men in Africa. Regarding the challenge of combining career and family, some of the women at the conference were considered as role models as they have families and are excelling in their career.

I have been able to establish new contacts and identify opportunities for future cooperation.

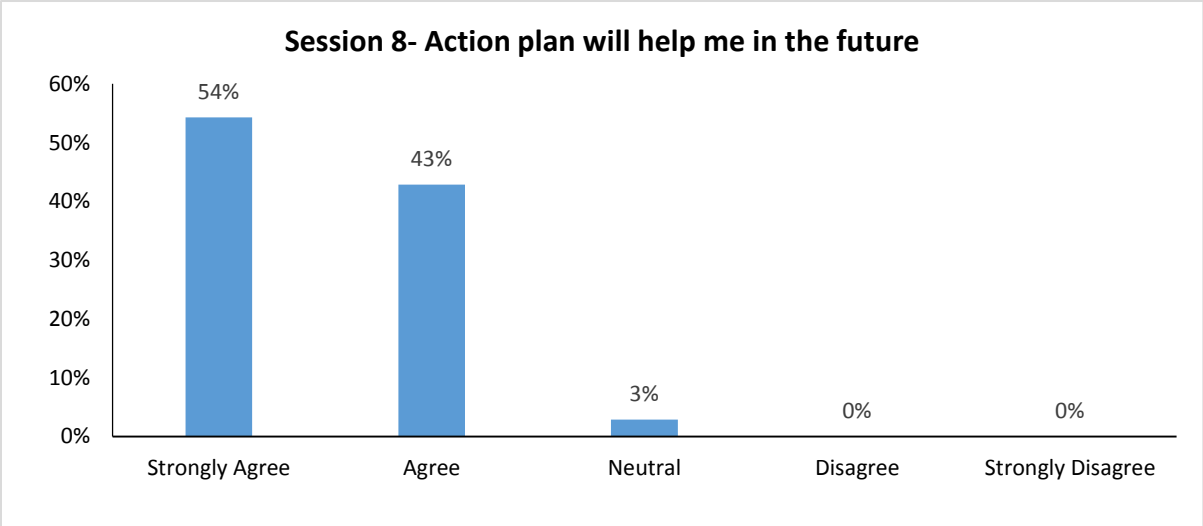


Session 8

Feedback from WGs, Action steps, the Way Forward, Closing Ceremony

The action plans for the establishment of National Young Academies and for supporting scientific capacity building will help me in the future.





"Being from outside of Africa, it is inspiring to see the enthusiasm and professionalism of the attendees wanting to found NYAs"

When asked what motivated them most regarding the closing ceremony, the majority of the participants mentioned the determination and the discussions held to establish new NYAs and the commitment and concrete steps participants agreed on in the session on the way forward. Existing NYAs were considered as inspiring examples for success. Participants further appreciated the support from the NASAC, senior academies in general and the GYA blueprint for the establishment of National Young Academies.

Suggestions for Future Regional Conferences in Africa

Respondents suggested expanding participation to future conferences and include NYA members from more countries, including those from outside Africa; and from countries without National Young Academies as well as more members from national academies and potential donors. Regarding the latter, some participants emphasized the need to have more support and funding from African partners. It was further suggested to hold the conference either annually or biannually, preferably in countries which are just developing NYAs. Some participants also recommended including a slot on the program where representatives from senior academies can commend Young Scientists on their commitment and involvement in NYAs, and present examples of the collaboration between National Academies and National Young Academies.

Questions and Suggestions Related to the Global Young Academy

Participants congratulated the GYA for having connected scientists in the region with this conference. Some respondents asked for more precise information on the support the GYA provides for the establishment of NYAs and mentioned the idea of creating a guide for setting up global or regional network of NYAs. There were suggestions made on the criteria for membership and the recruiting process and also diversification of the membership in terms of disciplines. Some respondents further encouraged the GYA to contact African senior academies and convince them of the need for National Young Academies.



Appendix B: Programme

DAY 1: MONDAY, 3 FEBRUARY 2014	
Session #1 Opening of the Conference and Launch of KNYAS, Chair: Prof. Peter Ngure	
8.00 – 8.30 a.m.:	Arrival and Registration of Participants
8.30 – 8.35 a.m.:	Introduction of Special Guests by Prof. Peter Ngure
8.35 – 8.45 a.m.:	Welcome Remarks by KNAS Honorary Chairman Prof. Raphael Munavu
8.45 – 8.55 a.m.:	Opening Remarks by GYA Co-Chair Prof. Sameh Soror
8.55 – 9.05 a.m.:	Welcome Remarks from the IAP, Prof. Jutta Schnitzer-Ungefug
9:05 – 9:15 a.m.:	Welcome Remarks by NASAC Programmes Director Ms. Jackie Olang
9.25 - 9.35 a.m.:	Welcome Remarks by Robert Bosch Foundation Senior Vice President Dr. Ingrid Wünning Tschol
9.35 – 10.55 a.m.:	Official Opening of the Conference and Launch of the Kenyan National Young Academy of Sciences (KNYAS), Cabinet Secretary Prof. Jacob T. Kaimenyi
10.55 – 11.00 a.m.:	Vote of Thanks by Honorary Secretary of the Kenya National Academy of Sciences KNAS Prof. Ratemo Michieka
11.00 – 11.30 a.m.:	**Group Photo and Tea Break**
Session #2 NYA Development, Chair: Dr. Phil Gona	
11.30 – 12.00 a.m.:	The Global Development of the Young Academy Movement and its Role in Addressing Major Global Challenges (Prof. Bernard Slippers, GYA)
12.00 – 12.30 p.m.:	The Benefits of a National Young Academy for a Senior National Academy (Dr. Takalani Rambau, ASSAf)
12.30 – 1.30 p.m.	**Lunch Break**
Session #3 NYAs, Chair: Prof. Bernard Slippers	
1.30 – 2.00 p.m.:	The Potential of Young Academies in Africa and their Link with the Senior Academies (Ms. Jackie Olang, NASAC)
2.00 – 3.00 p.m.:	Presentations from Established National Young Academies in Africa and Discussion on the Potential and Challenges of NYA
	Nigerian Young Academy (Dr. Abidemi J. Akindele)



	South African Young Academy of Science (Prof. Alex Broadbent)
	Sudanese Academy of Young Scientists (Dr. Abdel Badea M. Elhassan)
	Zimbabwe Young Academy of Science (Dr. Sibonani S. Mlambo)
	Egyptian Young Academy of Sciences (Dr. Amal Amin)
	Ghana Young Academy (Dr. Christian Agyare)
	Académie des Jeunes Scientifiques du Sénégal (Prof. Cheikh Diop)
3.00 – 5.00 p.m.:	Group Work on Challenges and Opportunities for the New NYAs
5.00 – 5.30 p.m.:	**Tea Break and Travel Reimbursement**
5.30 – 6.30 p.m.:	Feedback to Plenary: Plan for Action for the Development of NYA in Africa
7.30 – 9.00 p.m.:	**Dinner**

DAY 2: TUESDAY, 4 FEBRUARY 2014:
Session #4 Science for Development, Chairs: Prof. Yousuf Maudarbocus/ Prof. Sameh Soror

8.30 – 9.00 a.m.:	Science for Development in Africa: Priorities and Enablers – an African Perspective (Dr. Benjamin Gyampoh, African Academy of Science)
9.00 – 9.30 a.m.:	Science for Development in Africa: Priorities and Enablers – a Supporter's View (Mr. Christoph Hansert, DAAD)
9.30 – 10.00 a.m.:	Discussion
10.00 – 10.30 a.m.:	**Tea Break**
10.30 – 11.00 a.m.:	Scientific Advancement in the African Continent: The Role of Academies of Sciences (Prof. Oyewale Tomori, Nigerian Academy of Science)
11.00 – 1.00 p.m.:	Group Work on Challenges to Scientific Development and Innovation in Africa and the Role of Young Scientists
	1) Health, Group Leaders: tbd
	2) Environment and Agriculture, Group Leaders: tbd
	3) Energy, Group Leaders: tbd
	4) Governance, Group Leaders: tbd



	5) Emerging Technologies, Group Leaders: tbd
1.00 – 2.00 p.m.: Lunch Break	
Session #5 Science for development, Chair: Prof. Alex Broadbent	
2.00 – 4.00 p.m.:	Africa's Major Challenges and Science's Role in Addressing them: Feedback from the Group Work and Discussion on Plan for Action
4.00 – 4.30 p.m.:	**Tea Break**
	Opportunity for Group Work to Continue
7.00 – 9.30 p.m.:	**Dinner**
DAY 3: WEDNESDAY, 5 FEBRUARY 2014	
Session #6 Young Scientists and Gender, Chair: Dr. Amal Amin	
8.30 – 9.00 a.m.:	The Global State of Young Scientists (GloSYS): Findings of the GYA Project and Possible Follow-up in Africa (Dr. des. Irene Friesenhahn, GYA)
9.00 – 9.20 a.m.:	Women in Science in Africa (Prof. Suad Sulaiman, Sudanese National Academy of Science (SNAS)
9.20 – 10.00 a.m.:	Discussion and Plan for Action Regarding GloSYS Follow-up in Africa
10.00 – 10.30 a.m.:	**Tea Break**
Session #7 Developing Concrete Action Steps, Chair: Prof. Sameh Soror	
10.30 – 11:00 a.m.:	Discussion and Identification of Group Leaders
11.00 – 1.00 p.m.:	Working Group 1: Actions Towards Establishing New NYAs Group Leaders: tbd
	Working Group 2: Creating an African Network of NYAs Group Leaders: tbd
	Working Group 3: Identify Concrete Steps for NYAs' to Support Scientific Capacity Development to Address African Challenges Group Leaders: tbd
	Working group 4: State of Young Scientists in Africa Group Leaders: tbd
1.00 – 2.00 p.m.: Lunch Break	



Session #8 Closing Session, Chair: Prof. Bernard Slippers	
2.00 – 3.00 p.m.:	Feedback from all Groups, Group Leaders
3.00 – 4.00 p.m.:	Actions Steps to Complete Documentation, and Responsibilities Towards NYA Establishment
4.00 – 4.30 p.m.:	The Way Forward: GYA Co-Chair Prof. Sameh Soror
4.30 – 5.00 p.m.:	Closing ceremony, CEO National Commission for Science, Technology and Innovation, Prof. Shaukat Abdulrazak
5.00 – 5.30 p.m.:	**Tea Break and Collection of Feedback Forms**
7.00 – 9.00 p.m.: Dinner	
DAY 4: THURSDAY, 6 FEBRUARY 2014	
Departure from Nairobi / Individual Programme	



Appendix C: List of Participants

	Name	Organization	Function	Country
1	**Felix Assah**		YS nominated by senior academy	Cameroon
2	**Samuel Domngang**	**Cameroon Academy of Sciences**	President	Cameroon
3	**Amal Amin**	**EYAS**	Steering committee	Egypt
4	**Sameh Soror**	**GYA**	Co-Chair	Egypt
5	**Manyingerew Shenkut**	**Youth Science Forum at the Addis Ababa University**	President	Ethiopia
6	**Masresha Fetene**	**Ethiopian Academy of Sciences (EAS)**	Vice President	Ethiopia
7	**Aba Bentil Andam**	**GAAS**	Vice President	Ghana
8	**Christian Agyare**	**Ghana Young Academy (GhYA)**	Steering committee	Ghana
9	**Archana Bhaw-Luximon**	NYA initiative	YS nominated by senior academy	Mauritius
10	**Yousuf Maudarbocus**	**Mauritius Academy of Science and Technology (MAST)**	President	Mauritius
11	**Mohamed Gouighri**		GYA member	Morocco
12	**Sonia Enosse**	**Academy of Sciences of Mozambique (ASM)**	Secretary of the Biomedical Sciences Section	Mozambique
13	**Abidemi Akindele**	**Nigerian Young Academy**	Chair	Nigeria
14	**Oyewale Tomori**	**Nigerian Academy of Science**	President	Nigeria
15	**Cheikh Diop**	**Académie Nationale des Jeunes Scientifiques du Sénégal**	Steering committee	Senegal
16	**Alex Broadbent**	**South African Young Academy of Science (SAYAS)**	Co-Chair	South Africa
17	**Bernard Slippers**	**GYA**	Immediate past Co-Chair and Conference Co-Chair	South Africa



18	**Takalani Rambau**	**ASSAf**	Senior Manager: Strategy & Liaison	South Africa
19	**Abdel Badea M. Elhassan**	**Sudanese Academy of Young Scientists (SAYS)**	Acting President	Sudan
20	**Suad Sulaiman**	**Sudanese National Academy of Science (SNAS)**	Executive Committee member	Sudan
21	**Johan Åkerman**	**Young Academy of Sweden**	Member	Sweden
22	**Esther Mwaikambo**	**Tanzania Academy of Sciences (TAAS)**	President	Tanzania
23	**Negussie Beyene**		GYA member	Tanzania
24	**Nelson Sewankambo**	**Uganda National Academy of Sciences (UNAS)**	President	Uganda
25	**Noble Banadda**	**NYA initiative**	Steering committee	Uganda
26	**Phil Gona**	**GYA**	Executive Committee member and Conference Co-Chair	USA/Zimbabwe
27	**Chisha Chongo Mzyece**		YS nominated by senior academy	Zambia
28	**Charles Nhachi**	**Zimbabwe Academy of Sciences (ZAS)**	EC member	Zimbabwe
29	**Sibonani Mlambo**	**Zimbabwe Young Academy of Science (ZIMYAS)**	Treasurer	Zimbabwe
30	**Peter Ngure**	**Kenya National Young Academy of Sciences (KNYAS)**	KNAS Patron for KNYAS	Kenya
31	**Raphael M. Munavu**	**Kenya National Academy of Science (KNAS)**	Chairman	Kenya
32	**Ratemo W. Michieka**	**Kenya National Academy of Science (KNAS)**	Hon. Secretary	Kenya
33	**Paul Baki**	**Kenya National Academy of Science (KNAS)**	Assistant Treasurer KNAS	Kenya



34	**Julius Mwabora**	**Kenya National Academy of Science (KNAS)**	Hon. Assistant Secretary, Physical and Chemical Sciences	Kenya
35	**Kenneth Mavuti**	**Kenya National Academy of Science (KNAS)**	Hon. Ass. Secr. Biological Sciences	Kenya
36	**Joash Aluoch**	**Kenya National Academy of Science (KNAS)**	Council Member	Kenya
37	**Noel Abuodha**	**Kenya National Academy of Science (KNAS)**	CEO	Kenya
38	**Bjourn K. Meru**	**National Commission for Science, Technology and Innovation**	Science Secretary	Kenya
39	**Abigael Ouko**	**UON**	KYNAS	Kenya
40	**Elsebah Maseh**	**Moi University**	KYNAS	Kenya
41	**Irene Moseti**	**Moi University**	KNAS	Kenya
42	**Kemunto Michieka**	**ENGEN**	KNAS	Kenya
43	**Kenneth Ngure**	**JKUAT**	KYNAS	Kenya
44	**Najya Muhammed**	**Pwani University**	KYNAS	Kenya
45	**Samuel Mong'are**	**JKUAT**	KNAS	Kenya
46	**Amenya Migiro**	**UON**	KYNAS	Kenya
47	**Anne Muohi**	**UON**	KYNAS	Kenya
48	**Caroline Ngugi**	**JKUAT**	KNAS	Kenya
49	**Edward Muge**	**UON**	KNAS	Kenya
50	**Florah Kirirah**	**UON**	KNYAS	Kenya
51	**Elizabeth Echoka**	**KEMRI-CPHR**	KYNAS	Kenya
52	**Emily Bosire**	**Moi University**	KYNAS	Kenya
53	**George Ooko**	**UON**	KNAS	Kenya
54	**Gladys Kianji**	**UON**	KNAS	Kenya
55	**Jane Ambuko**	**UON**	KYNAS	Kenya
56	**Karanja Robert**	**KEMRI**	KYNAS	Kenya
57	**Lilian Waiboci**	**UON**	KNAS	Kenya
58	**Michieka Okioga**	**GoK**	KNAS	Kenya
59	**Peter Wachira**	**UON**	KYNAS	Kenya
60	**Roy Mugiira**	**MoEST**	KNAS	Kenya
61	**Vincent Madadi**	**UON**	KYNAS	Kenya
62	**Virginia Wang'ondu**	**UON**	KNAS	Kenya
63	**Oliver Nyogesa**	**UON**	KYNAS	Kenya
64	**Maureen N. Kuboka**	**UON**	KYNAS	Kenya



65	**Paul Ruto**	**Daystar University**	Daystar	Kenya
66	**Lydiah Ambwaro**	**KNAS Secretariat**	KNAS	Kenya
67	**Nancy Maranga**	**Daystar University**	Daystar	Kenya
68	**Nyawira Gikandi**	**Daystar University**	Daystar	Kenya
69	**Anne Musyoka**	**Daystar University**	Daystar	Kenya
70	**James Muiah**	**KNAS Secretariat**	KNAS	Kenya
71	**Jane Irungu**	**Daystar University**	Daystar	Kenya
72	**Ann Muthoni**	**Daystar University**	Daystar	Kenya
73	**Harrison Njuguna**	**Daystar University**	Daystar	Kenya
74	**Heidi Wedel**	**GYA**	Managing Director	Germany
75	**Irene Friesenhahn**	**GYA**	GloSYS Researcher	Germany
76	**Ingrid Wünning-Tschol**	**Robert Bosch Foundation**	Senior Vice President	Germany
77	**Jutta Schnitzer-Ungefug**	**Leopoldina**	Secretary General	Germany
78	**Jackie Olang**	**NASAC**	Programmes Director	Kenya
79	**Benjamin Gyampoh**	**African Academy of Sciences AAS**	Program Officer	Kenya
80	**Christoph Hansert**	**DAAD Nairobi Office**	Director	Kenya
81	**Fredrick Oluoch Nyamwala**	**DAAD**	Alumnus	Kenya
82	**Fridah Kanana Erastus**	**DAAD**	Alumna	Kenya
83	**Justus Makokha**	**DAAD**	Alumnus	Kenya
84	**Nelson Owuor Onyango**	**DAAD**	Alumnus	Kenya
85	**Patrick Okanya**	**DAAD**	Alumnus	Kenya
	registered but unable to come			
	Mwananyanda Mbikusita Lewanika	Zambia Academy of Sciences (ZaAS)	President	Zambia
	Nilsa de Deus		YS nominated by senior academy	Mozambique
	Roger Steinkamp	USAID/Kenya	Education & Youth Office	Kenya