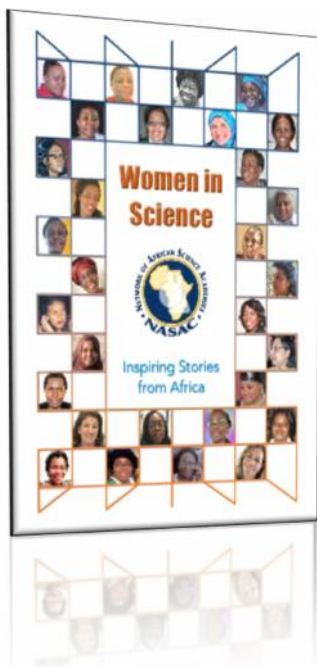


NASAC Women in Science – Inspiring Stories from Africa



positively impact their families and communities.

The stories and achievements of women in the field of science allow the reader to traverse the continent of Africa and the diverse fields of science. Through these stories, one feels their remarkable energy and commendable efforts. Their struggles to succeed amid social, economic and cultural barriers to women's up-take of science, work/life balance, perceptions and stereotypes demonstrate that women can overcome and ultimately excel in science through self-will and determination.

The women in this publication have narrated about childhood curiosity and what propelled them to science right through to their adulthood and current engagements. It is evident from their stories that an innocent early interest can and should always translate into a science career that we as women scientists are passionate about. The stories emphasize the central role played by parents,

The stories of the African women scientists in this book breathe life into the statement, *"Women in time to come will do much"* – Mary Ward, 1585-1645. Amidst a lot of resistance from the church and society in her time, she founded Loreto schools (mainly for girls) as she was convinced that with a good education, women would

siblings, teachers and close relatives as enablers of girls' success in science. Unfortunately for some, the same people stand in the way of women and girls' flourishing careers in science. From these stories, we learn the important role that information on science careers can make to girls' and women's career paths.

The stories in this book show that women scientists - old and young – are involved in projects that are conceived and driven by the struggles, day-to-day needs and the concerns of people in their communities. Indeed, through the projects they have initiated, these women scientists are providing home-grown solutions to the problems women, children, men and indeed communities face. These include disease and malnutrition, poverty, environmental degradation and food security, to mention just a few. Whole communities are reaping the benefits of their work.

This book, therefore, serves as a push to all girls and young women to take up any science in this universe and make a career out of it. It complements a previous publication from the Inter-American Network of Academies of Science (IANAS) titled [*Women Scientists in the Americas-Their inspiring stories*](#) and the lives and careers of successful women scientists in the Americas. It also assures those in doubt (often due to misinformation) that science is wonderful, it is exciting; and the women who are in scientific careers are beautiful, well-groomed, and above all, happy to be who they are.

Quote:

"As a woman in science, I sincerely hope that my receiving a Nobel Prize will send a message to young women everywhere that the doors are open to them and that they should follow their dreams."

Linda B. Buck: Biologist who was awarded the 2004 Nobel Prize for Physiology or Medicine

From the Chair



It is with great pleasure that I present you with this issue of ***The Science Networker***.

I am happy to provide an update of the activities and the happenings within our Network and invite you to read the articles to

learn more about some of the exciting accomplishments this first half of 2017.

We are delighted to announce that as part of the five-year NASAC-ICSU-ISSC “*Leading Integrated Research for Agenda (LIRA) 2030 in Africa*” programme, on the “*Understanding the Energy - Health - Natural Disasters nexus in the urban context in Africa*” nine (9) proposals were successful and have been awarded grants after going through a rigorous evaluation process. The awardees will each receive a grant worth €90,000 for their collaborative research projects over a period of two years.

As part of this program, a second call for pre-proposals on *Advancing the Implementation of SDG 11 on Cities in Africa* was launched in February this year and the pre-proposals submitted are currently undergoing scientific review. NASAC in collaboration with ICSU and ISSC purposes to encourage young researchers in their innovative pursuits through this program.

Women are under-represented in Science, Technology, Engineering and Mathematics (STEM) fields globally, but the situation is worse in Africa. In response to this, the Inter-Academy Partnership-Research (IAP-R) partnered with

NASAC to publish a book profiling African women scientists under the title *Women in Science – Inspiring Stories from Africa*. This publication profiles women in STEM fields in Africa, both young and senior. The stories are written mainly to inspire girls and young women to pursue careers in science. I take this opportunity to thank the NASAC Women for Science Working Group for their immense support in guaranteeing the realization of this publication.

His Excellency Sergio Mattarella, the President of the Republic of Italy hosted the G7 Science meeting at his presidential palace in Italy. The G7-Science Group brings together the Academies of Science of the G7 member countries (United States, Canada, Japan, Germany, France, Italy and the United Kingdom). All InterAcademy affiliated Networks from the five global regions (including NASAC for Africa) were invited to participate in this event, which took place on 4th May 2017 in Rome, Italy.

In closing, I wish to thank NASAC members who have continued to contribute to the growth of our Network and for tirelessly providing support in ensuring active and enthusiastic realization of our objectives.

Sincerely,

PROF. MOSTAPHA BOUSMINA

President and Chair of the NASAC Board

Recent Activities and Events

NASAC-IAP FNSA Editorial Team meeting: 16-17 January 2017, Nairobi, Kenya



Group photo of the FNSA Editorial team members

The meeting of the editorial team on Food and Nutrition Security and Agriculture was held in Nairobi Kenya from 16-17 January, 2017. This event, which was chaired by Prof. Sheryl Hendriks from Academy of Science of South Africa (ASSAf) brought together experts in agriculture from several African countries. The meeting was geared towards them providing background information on the key questions around the various thematic areas as well the drawing up of key messages that will go towards the development of the Policy Makers Booklet on Food and Nutrition Security and Agriculture (FNSA) for Africa. Once published, the booklet will be presented to African policy makers to facilitate the design and implementation of policy interventions to address challenges facing the continent in the area of Food Security, Nutrition, and Agriculture.

The G7-Science Conference

The president of NASAC, Prof. Mostapha Bousmina, took part in the G7-Science Conference held on 4th May 2017 in Rome, Italy. The G7-Science Group brings together the Academies of Science of the G7 member countries (United States, Canada, Japan, Germany, France, Italy and the United Kingdom). The Networks of Science Academies of America, Asia, Oceania, Europe and Africa were also invited to take part in the Conference. The aim of the conference was to discuss international scientific issues with recommendations to be formulated and communicated to the Heads of State of the G7 Group, who will meet on 26-27 May 2017 in Rome, under the presidency of Italy.



Presidents of the G7 Academies of Sciences and of Networks of Academies at the Lincei Academy of Sciences, Rome, Italy

Two Italian ministers, the Minister of Economy and Finance, Mr. Carlo PADOAN, and the Minister of Culture and Heritage, Mr. Dario FRANCESCHINI, gave speeches at the Conference. During the Dinner organized at the Lincei Academy of Science, the former Prime Minister of Italy, Mr. Romano PRODI, gave a speech about the challenges of constructing a Euro-Mediterranean region of peace and shared prosperity.



Reception at the Presidential Palace, Rome-Italy

The following three recommendations were formulated in the form of statements: (i) the modalities of resilience and preservation of the world's cultural heritage, (ii) the challenges of neurodegenerative diseases in older populations, and (iii) the role of science, technology, innovation and infrastructure in the new economic growth.

The participants also had the privilege of being hosted at the Presidential Palace by Italian President, His Excellency Sergio MATTARELLA.



The President of the Italian Republic, His Excellency Sergio MATTARELLA

Secondary plenary meeting of the IAP project “Food and Nutrition and Agriculture” in Halle

The Inter Academy Panel (IAP) project meeting on “Food and Nutrition Security and Agriculture” was held from 3-5 April in Halle, Germany. Participants from the regional academy networks, The Association of Academies and Societies of Sciences in Asia (AASSA), The European Academies Science Advisory Council (EASAC), Inter-American Network of Academies of Sciences (IANAS) and The Network of African Science Academies (NASAC) presented their project activities noting main conclusions, assessing what remains to be done to finalize country/regional outputs and how these outputs will be used at the regional level. The regional outputs of the networks will be used to advice the IAP global synthesis phase: in the context of the core template 10 questions, while exploring diversity within and between regions, and proposing priority issues for further assessment.

The Halle meeting combined plenary sessions with regional breakout sessions all aimed at reviewing accomplishments to date, identify topics to bring forward to the global phase and to discuss emerging issues. In addition, a presentation by Hans-Joerg Lutzeyer of the European Commission, reviewed recent European activities on food and nutrition security, of global relevance.



Group Photo of participants at the IAP project meeting on “Food and Nutrition Security and Agriculture”

Announcements and Appointments

Capacity Enhancement Workshop on Academies' Communications, Outreach and Distribution of Science-based Advice to Policymakers and the public

NASAC in collaboration with the German Academy of Sciences Leopoldina is organizing a Capacity Building Workshop geared towards equipping the Academy staff with skills to communicate Science-based advice to Policymakers and the public. The workshop under the title "*Academies' Communications, Outreach & Distribution of Science-Based Advice to Policymakers and the Public*" will be held from 6-7 July 2017 in Nairobi, Kenya at the Hilton Hotel.

The two-day workshop which will include science journalists to participate and share experiences aims to enable participants to:

1. Share experiences on the communication events on NASAC's policymakers booklets
2. Acquire basic understanding of the scientific advice sought by policymakers.
3. Ensure that the scientific advice provided by the academy is free from political interference.
4. Exercise thoroughness when communicating to the policymakers through appropriate quality assurance and peer review processes.
5. Create an awareness of the challenges that may arise while communicating to the policymakers and the public.
6. Highlight the value of science academies as key actors and agents-of-change in the policy environment.

Transdisciplinary Training – Advancing the implementation of SDG 11 in Africa

As part of the 5-year "Leading Integrated Research for Agenda 2030 in Africa" programme, the International Council for Science (ICSU), in partnership with the Network of African Science Academies (NASAC) and the International Social Science Council (ISSC) will support 10 collaborative research projects across Africa, to the value of up to 90,000 Euros each over two years, that will advance the implementation of the Sustainable Development Goal on cities in Africa. A call for pre-proposals to identify research projects that will explore the development of new approaches and strategies towards the innovative re-thinking of urban futures in Africa - in partnership with local authorities, industry, communities, and government was launched.

Following the call, 35 pre-proposals will be selected and the applicants will then be invited to attend a training event on integrated research, which will take place on 28 August – 1 September 2017 in Kampala, Uganda. This training aims to strengthen scientific capacity to undertake this form of research, to enable researchers to build meaningful inter- and trans-disciplinary projects, to support the development of full proposals and to strengthen science communication skills.

Participants of the training will then be given a six-weeks' timeline to submit full proposals. In January 2018, 10 collaborative research projects across Africa will subsequently be awarded the grant.

Thirteenth Annual Meeting of African Science Academies (AMASA 13)

The Thirteenth Annual Meeting of African Science Academies (AMASA 13) will this year be hosted by the Nigerian Academy of Science (NAS) in Abuja, Nigeria on 13-16 November 2017. NAS will also celebrate its 40th anniversary as the “*voice of science*” in Nigeria and will organize a series of events in commemoration. In addition to hosting the AMASA-13 conference, there will also be a Learning Collaborative event, facilitated by the International Network for Government Science Advice (INGSA) and focusing on “*the art of providing science advice*”. The AMASA conference will be on theme: “*STI education and manpower development in Africa*”.

Ghana Academy of Arts and Science (GAAS) appoints Prof. Aba Bentil Andam as its new president



Prof. Aba Bentil Andam is the new President of GAAS for 2017 - 2018. She is the second woman to occupy this high office in the history of the Academy. She is also a first recipient of the prestigious Chair for UNESCO Women in Science and Technology in Africa and an Associate Professor at the School of Nuclear and Allied Sciences of the University of Ghana.

On the Spotlight

LIRA 2030 Africa: Projects awarded

As part of the 5-year “Leading Integrated Research for Agenda (LIRA) 2030 in Africa” programme, ICSU-NASAC-ISSC launched a call for pre-proposals on the “Understanding the Energy - Health - Natural Disasters nexus in the urban context in Africa”. Following the call, 35 pre-proposals were selected to attend a training event on transdisciplinary research (TDR), and this took place on 3-7 October 2016 in Nairobi, Kenya. The workshop aimed to develop a team of early career researchers from different communities of practice with experience in sustainability research within a transdisciplinary, action-oriented and reflexive learning paradigm. The training workshop presented theories, methods, and examples of TDR within the context of integrated science. The objective was to transmit the principles of TDR and the various steps to follow; introduce the most frequent methods used; teach case studies; include a virtual field visit, and introduce available resources. The workshop enabled the trainees to work on their pre-proposals in order to refine them to full proposal status using integrated approach and TD methodology.

Following submission of the full proposals, below is the list of the proposals that have been awarded and the lead researcher for each project.

Mabel Nechia Wantim, University of Buea, Cameroon	<i>Assessment and characterization of volcanic and flood hazards and their health implications in the cities of Goma (Democratic Republic of Congo), Buea and Limbe (Cameroon)</i>
Ng'weina F. Magitta, University of Dar es Salaam, Tanzania	<i>Delivery of clean air strategies for mitigating household air pollution and associated respiratory illnesses in urban informal settlements in Dar es Salaam (Tanzania) and Lilongwe (Malawi)</i>
Kenneth Arinaitwe, Makerere University, Uganda	<i>Reducing human exposure to combustion-derived pollutants in urban areas of the Lake Victoria watershed; Improvement of indoor air quality in selected urban communities of Kampala (Uganda) and Mwanza (Tanzania)</i>
Keneiloe Sikhwivhilu, MINTEK, South Africa	<i>Biogas-supported decentralized water treatment system for communities in Diepsloot (South Africa) and Chambishi (Zambia) townships</i>
Kabera Telesphore, University of Rwanda	<i>Health effects of indoor air pollution from cooking stoves in Kigali (Rwanda) and Dar es Salaam (Tanzania)</i>
Ambolé Lorraine Amollo, University of Nairobi, Kenya	<i>Co-designing energy communities with energy poor women in urban areas (Kenya, Uganda and South Africa)</i>
Eze Kevin, University of the Sahel, Senegal	<i>Limiting the health hazards of fossil fuel generators' use in Lagos (Nigeria) and Dakar (Senegal) with traditional knowledge</i>
Kouamé Parfait Koffi, Centre Suisse de Recherches Scientifiques in Ivory Coast	<i>Mitigating risks to flood-related waterborne diseases in Abidjan (Ivory Coast) and Kampala (Uganda)</i>

Member-Academy's Feature

THE GHANA ACADEMY OF ARTS AND SCIENCES (GAAS)

Brief About the Academy



The Ghana Academy of Arts and Sciences is a learned society established by an Act of Parliament in 1959 to promote the study, the extension and the dissemination of knowledge of all the Arts and Sciences. With a membership of over 120 living Fellows drawn from all fields of learning, the Academy has from its inception been charged with a key role in thought leadership and making inputs into policymaking through research and evidence-based advice. The Academy's objectives, partly reviewed over the years are:

- i) To promote the study, extension, and dissemination of knowledge of the arts and sciences.
- ii) To establish and maintain proper standards of endeavour in all fields of the arts and sciences.
- iii) To recognize outstanding contributions to the advancement of the arts and sciences in Ghana.
- iv) To contribute actively to the development of Ghana and Africa generally by examining and addressing crucial issues of development.
- v) To do such other things as are conducive or incidental to the attainment of all or any of the foregoing objects.



GAAS DEDICATES FIVE-STORY OFFICE COMPLEX

The Ghana Academy of Arts and Sciences, Ghana's premier learned society, dedicated its 5-storey ultra-modern headquarters building on 11th May 2017 at a short ceremony in the atrium of the new facility. The officiating clergy were Most Rev. Prof. Emmanuel Asante, Former Presiding Bishop of the Methodist Church Ghana, and immediate past Chairman of the National Peace Council; and Very Rev. Prof. J. Kwabena Asamoah-Gyadu, Baëta-Grau Professor of African Christianity and Pentecostal Theology and Vice President of the Trinity Theological Seminary, Legon, both Fellows of the Academy. The construction of the facility was fully funded by the Ghana Education Trust Fund (GETFund) began in October 2012 and was commissioned after completion by His Excellency John Dramani Mahama, then President of the Republic of Ghana on 30th Dec. 2016.





During the ceremony, the President of the Academy expressed delight that after several years of assurances the Academy finally had its own office-building complex. She said the fellows and staff of the Academy were grateful to the government and people of Ghana for the kind gesture. She promised that the Academy will ensure that its campus will be *“a home where the pursuit of knowledge will be a pleasure and a fruitful experience”*.

Present at the event were Fellows of the Academy including Dr. E. Evans-Anfom, Dr. Letitia E. Obeng, Prof. Reginald F. Amonoo and prof. F. K.A. Allotey, all past presidents of the Academy; Prof. Ralph Mills-Tettey, a Fellow of GAAS and Coordinating Consultant for the project, Mr Kenneth Anewenah, Chief Executive of Mytrun Construction Company Limited, a local company that built the facility, as well as Staff and Friends of the Academy. There were also goodwill messages from Prof. Volker ter Meulen, Honorary Fellow of GAAS and former President of the Leopoldina; Prof. K. Mosto Onuoha, President of the Nigerian Academy of Science, and Prof. Roseanne Diab, Executive Officer of the Academy of Science of South Africa. They all wished GAAS, many years of successful and thriving activities in the new building.

The five-storey building comprises a courtyard cum atrium that can seat up to 150 persons; 24 Guest rooms, a restaurant, a research library, offices on all five floors, conference rooms and a rooftop garden for cocktail receptions, meetings and other public engagements. There is also a 550-seater auditorium commissioned for use in 2015 by Prof. Naana Jane Opoku-Agyemang, a Fellow of the Academy, the then Minister for Education.

The Network of African Science Academies (NASAC) was established on 13th December 2001 in Nairobi, Kenya and is currently the affiliate Network for InterAcademy Partnership (IAP) in Africa.

NASAC is a consortium of merit-based science academies in Africa and aspires to make the “voice of science” heard by policy and decision makers within and outside the continent. NASAC is dedicated to enhancing the capacity of existing national science academies and champions in the cause for creation of new academies where none exist.

As at November 2016, NASAC comprised of the following twenty four members:

- Académie des Sciences et Techniques du Sénégal (ANSTS)
- Académie Nationale des Sciences du Burkina (ANSB)
- Académie Nationale des Sciences et Technologies du Congo (ANSTC)
- Académie Nationale des Sciences, Arts et Lettres du Benin (ANSALB)
- Académie Nationale Des Sciences, Arts Et Lettres Du Togo (ANSALT)
- Academy of Science of South Africa (ASSAf)
- Academy of Sciences of Mozambique (ASM)
- African Academy of Sciences (AAS)
- Algerian Academy of Science and Technology (AAST)
- Botswana Academy of Sciences (BAS)
- Cameroon Academy of Sciences (CAS)
- Ethiopian Academy of Science (EAS)
- Ghana Academy of Arts and Sciences (GAAS)
- Hassan II Academy of Science and Technology in Morocco
- Kenya National Academy of Sciences (KNAS)
- Madagascar's National Academy of Arts Letters and Sciences
- Mauritius Academy of Science and Technology (MAST)
- National Academy for Cote d'Ivoire
- Nigerian Academy of Science (NAS)
- Sudanese National Academy of Science (SNAS)
- Tanzania Academy of Sciences (TAS)
- The Uganda National Academy of Sciences (UNAS)
- Zambia Academy of Sciences (ZaAS)
- Zimbabwe Academy of Sciences (ZAS)

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