

Science-Policy Advice: Recommendations to African Policymakers on Water

NASAC, with the endorsement of its members, has developed a science-policy document entitled: **The Grand Challenge of Water in Africa – Recommendations to Policymakers**. The document addresses, in a merit-based manner, the policy issues that need to be addressed by African policymakers in order to achieve the Africa Water Vision 2025.

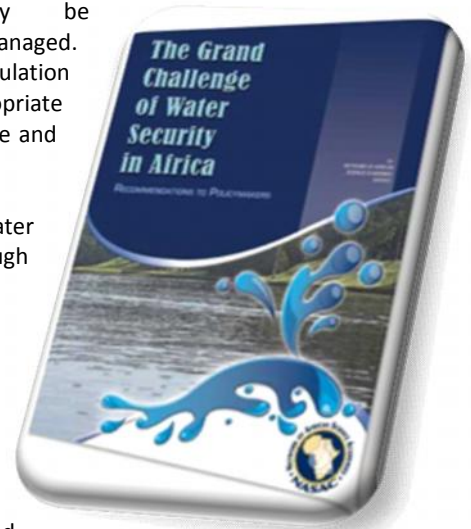
Africa is a continent with unique but diverse characteristics in terms of societal structures, its economic development and natural resources. Its complexity demands regionally differentiated solutions for many developmental strategies and security issues. This is also true for water related issues which, despite their overarching nature, are governed by the heterogeneity of African landscapes and climate. Despite efforts made by countries and the international community to promote, for example, achievement of the MDGs, a number of countries in Africa fall short of their targets, particularly in relation to water supply and sanitation coverage.

Water is directly or indirectly used in almost every economic sector in Africa including agriculture, manufacturing, trade, mining, tourism, and transport. Water is both an ecosystem 'good', providing drinking water, irrigation and hydropower, and an ecosystem 'service', supplying people, whether they are aware of it or not, with functions such as nutrients cycling and supporting habitats for fish and other aquatic organisms, as well as 'cultural services' such as scenic vistas and recreational opportunities. The rural, urban, and peri-urban environments have unique differences with regard to availability, use and management of water resources, and these differences need to be appreciated and considered in the formulation of policies related to water development and management.

The Africa Water Vision 2025 – “An Africa where there is an equitable and sustainable use and management of water resources for poverty alleviation, socio-economic development, regional cooperation, and the environment” offers a context within which the

resource may be sustainably managed. Rapid population increase, inappropriate water governance and institutional arrangements, depletion of water resources through pollution, environmental degradation, deforestation, and low and unsustainable financing of investments in water supply and

sanitation are some of the main threats that pose challenges to the management of water resources on the continent. It is widely recognized that the threats cannot be successfully addressed by adherence to business as usual in water resources management at national and regional levels. Addressing the threats calls for adoption of good governance, societal consensus, innovative technologies and well developed frameworks for cooperative action, guided by the shared Africa Water Vision and Sustainable development Goals. Therefore, there is a key role for government to play in all water development issues. This publication will be launched later in 2014.



Quote:

When the well's dry, we know the worth of water.
Benjamin Franklin (1706-1790), Poor Richard's Almanac, 1746

From the Chair

Having been elected as Chair of NASAC in November 2013, I am happy to present you with the first issue of NASAC's electronic bulletin, ***The Science Networker***! This will be a bi-annual production from the NASAC secretariat in Nairobi, Kenya.

As Chair of the NASAC Board, the first priority of my Board during the first half of 2014 has been to consider and address the two pertinent issues of sustainability and relevance. More precisely: (i) how do we address the question of sustainability for our vibrant Network and ensure that we realize our mandate in the short- and long-term? And (ii) how do we ensure that the outputs and support we offer our members remain relevant? While our efforts are just beginning to bear fruit, we aspire to set up an Endowment Fund for NASAC and begin to engage with initiatives that have a lasting impact on our continent. We are committed to collaborate and to seek partnerships with organizations and agencies that share our vision for Africa and come from an array of developmental sectors – both public and private. We are confident that our efforts will not be in vain and the two critical questions will be addressed exhaustively.

In science-policy advice, NASAC has finalized, with the endorsement of its members, the document entitled: *The Grand Challenge of Water in Africa – Recommendations to Policymakers*. This will remain a vital document for the water sector in Africa and a launch event is planned for later 2014.



This publication is in keeping with our objectives of making “the voice of science heard”, this time by policymakers and stakeholders in the water sector.

It is only the first of several science-policy documents that we hope to deliver in 2014. The last General Assembly meeting endorsed the application of two additional members – science academies in Benin and Togo. This saw the numerical increase of NASAC membership to the current nineteen academies. We hope to admit two more members in 2014 subject to the General

Assembly's recommendation. NASAC will continue its awareness-campaign on the value of science academies and inspire their creation in countries where none exist.

To improve NASAC's publicity, we will strive to diligently publish this electronic bulletin, as a mode of giving overview updates on our plans and activities. This will be supplemented by a vibrant and interactive website (www.nasaonline.org), which will soon be bilingual – French and English, as well develop a structured dissemination strategy for our publications. For us to realize this, the support from our members is expected and will be critical. It is our hope that members will utilize these platforms to share ideas on improving the Network and/or highlight their academy's achievements.

Activities and Events

Agricultural Biotechnology Workshop

The Experts' Workshop on Agricultural Biotechnology was held jointly with the United Nations Economic Commission for Africa (UNECA) and the African Union Commission (AUC), with funding from the German Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung – BMBF). The theme of the workshop was ***Promoting Agricultural Biotechnology for Sustainable Development in Africa*** and it was held at the United Nations Conference Centre Addis Ababa (UNCC-AA) in Addis Ababa on 25th and 26th February 2014.

At the workshop, leading African and European scientists and policy-makers agreed on the potential of agricultural biotechnology to contribute to sustainable agriculture and address the pressing problems of food and nutrition insecurity across the continent, together with a clear commitment to provide the sound scientific advice required to inform public policy. In her opening speech, Dr. Fatima Denton, of the UN-Economic Commission for Africa, emphasized that: "African agriculture is increasingly vulnerable to environmental change as a result of climate variability and change. In this regard, biotechnology could help in breeding crop varieties that resist pests, crops that use less water, crops that use less fertilizer."

The focus of the workshop was on the increasing amount of African research in agricultural biotechnology and on the efforts of African scientists developing solutions to local needs, such as crops with improved vitamin content. There was widespread agreement that increased support for such research and training was needed, along with recognition that implementation and outreach are vital to realize the benefits of such research.

The Workshop forms part of a wider exchange and collaboration between African and European scientists, stimulated by the science academies and encompassing also other societal challenges such as Water Management, Climate Change Adaptation and Health. The Workshop also presented NASAC's contribution to a recent report by the EU academies through EASAC, "*Planting the Future*", on crop genetic improvement technologies. EASAC is the European Academies Science Advisory Council. Subsequently, the next meeting on the Agricultural Biotechnology topic is currently being planned in the form of an Editorial Workshop. During which time, the draft policy-advice document will be reviewed and revised.

Global Young Academy (GYA) Workshop

The first Africa Young Academies Regional Conference, organized by the Global Young Academy (GYA) in collaboration with NASAC took place in Nairobi, Kenya from 3-5 February 2014. The conference on "***Accelerating Science for Development in Africa by Increasing the Momentum and Impact of National Academies***" brought together representatives of member Academies of NASAC and also representatives from all existing National Young Academies (NYAs) in Africa. The opening ceremony of the conference witnessed the official launch of the ***Kenya National Young Academy of Sciences (KNYAS)***.

The main objective of this African Regional Young Academies Conference was to engage and empower excellent young researchers from across Africa to address the challenges that impede scientific development towards a sustainable future for the region. Towards this goal, the conference aimed to build the momentum, relationships and networks necessary to stimulate the formation of NYAs in Africa, and to connect them into a support network. A secondary objective was to bring together the future leaders of scientific research and innovation from across Africa, and so facilitate the development of strong networks of collaboration and cooperation.

African – European – Mediterranean Academies for Science Education Conference

Although the focus was on Europe and Africa (AEMASE stands for African European Mediterranean Academies for Science Education), participants also came from Argentina, Australia, Malaysia, Mexico and the United States. A number of inquiry-based science education (IBSE) initiatives were presented, including the French initiative La Main à la Pâte (LAMAP), which has been operating for over 20 years and is now being replicated in Haiti and Senegal – both of which were represented at the meeting.

At this Conference, NASAC was represented by its Chair, Prof. Mostapha Bousmina, the NASAC Science Education Programme Focal Points Vice-Chair and Secretary, Prof. Ahmadou Wague (Senegal) and Dr. Gilford Hapanyengwi (Zimbabwe) respectively. Ms. Jackie Olang, the Programmes Director, reported on how NASAC was promoting IBSE in Africa and made mention of the SEP Focal Points baseline study, which

would be used to report on the status of science education in the continent. Likewise, Norma

Nudelman, IAP Science Education Programme representative for IANAS, based at the University of Buenos Aires, Argentina, reported on the efforts of the Academia Nacional de Ciencias Exactas, Físicas y Naturales República Argentina (ANCEFN) in promoting the HaCE (Haciendo Ciencia en la Escuela = Doing science at school) programme in Argentina – also based on LAMAP.

Among the guests at the conference were Her Excellency Souad Abdelrazzak, Minister of Education for Sudan, who confirmed that: “Education is the foundation on which our scientific progress is built – and science solves problems and creates opportunities for the future.” In Sudan, she continued, her ministry is working with UNESCO on a pilot project teacher-training that she hopes will be rolled out to cover 20,000 primary and 3,000 secondary schools. Minister Abdelrazzak also showed her support to AEMASE by offering to host the next conference in Sudan in 2015.

Yolanda Valle-Neffe, director of the UNESCO Regional Bureau for Science and Culture in Europe, representing the UNESCO director general, also highlighted UNESCO’s key role in supporting education around the world, confirming that promoting science, technology and innovation in the interests of peace, security and well-being is central to UNESCO’s activities. She also gave her support to IBSE, adding that UNESCO is providing micro-science kits to schools in many countries. “These are real mini laboratories,” she confirmed. “They are affordable, safe, unbreakable and can be re-used many times.”

Summing up the on the final day of the meeting, Dato Yee-Cheong Lee, chair of the IAP Science Education Programme, concluded that there were still some roadblocks to a wider uptake of IBSE in school curricula around the world, but by working together with UNESCO and other organizations, and strengthening networks such as AEMASE with its academies of science able to bring together such stakeholder communities as teaching professionals and government officials, then there is hope for IBSE. “Only by promoting a culture of investigation and reasoning in the young minds of today,” concluded Lee, “can we hope to make better citizens for tomorrow able to tackle such issues as population growth and climate change.”

Launch of the Tobacco Report

Preventing a Tobacco Epidemic in Africa: A Call for Effective Action to Support Health, Social, and Economic Development is the title of a new report developed by a committee convened by NASAC. The report outlines strategies to combat increasing tobacco use in Africa. While tobacco use has declined in high-income countries, it is growing in many developing parts of the world, especially Africa, where, without interventions, it could double within the next 10 years, according to the report.

The report was a collaborative initiative between NASAC and US-National Academies of Science and discusses the evidence, obstacles and opportunities for implementing and enforcing tobacco use prevention and control policies in Africa. The Committee consisted of 16 experts drawn from 8 countries in Africa, and their work was funded by the *Campaign for Tobacco Free Kids*. Based on the evidence gathered the committee reached consensus on actions that African leaders and other stakeholders should take to combat the growing tobacco-smoking menace. The report has since been launched in Kenya, Ghana, South Africa, Nigeria, Uganda and Senegal to inform their health ministries of the strategies that can place tobacco control policy on the African leadership agenda and also challenges civil society to share in the responsibility of protecting those most vulnerable to the misleading and deceitful messaging by the tobacco industry.



Upcoming Events

Conference on Open Access for Africa – September 2014

NASAC with funding support from UNESCO and the Royal Netherlands Academy of Arts and Sciences, will organize a Consultative Workshop on Open Access/Science on 4-5 September 2014 in Nairobi, Kenya. Under the specific thematic area of Open Access (OA) Initiative in Africa, NASAC it is hoped that the conference will facilitate:

- Coordination between a multitude of small-scale, continent wide strategies and often very energetic and creative pilot initiatives and pockets of innovation in order to reach economies of scale for relevant outcomes ;
- Connection to the knowledge created by earlier isolated and well-meaning initiatives.
- Consultation with scientific communities across the continent on the opportunities for OA for their countries and fields;
- Enhancement of awareness that Open Scholarship products can be of the highest scientific quality and societal relevance, notably in the spirit of autonomous S&T development of Africa;
- Placing the issue of Open Scholarship and Open Access squarely on the agenda of the highest level of African political leaders and policy-makers, both at national and at international level, for example in their interaction with the Heads of State of the European Union, the United States, major development agencies, and in the context of global ICT negotiations; and
- Delivery of proposals for high level policy setting environments, nationally and continentally, and an implementation plan for OA policies.

More specifically, the role of NASAC as a regional champion of this initiative in Africa is to consult with experts and policymakers to determine a sustainable Open Access programme in Africa.

Editorial Workshops for Science-Policy Documents on Climate Change Adaptation and Health

NASAC is coordinating the development of science-based recommendations to policy-makers on two critical topics of (i) Climate Change Adaptation and (ii) Changing Patterns of Health Problems in Africa. Drafts of the proposed science-policy-documents are in their near final stages of development. The input to the documents has been a collaborative effort from experts to various workshops and conferences at which African scientists, decision-makers, activists and journalists, as well as international experts, met and brainstormed policy options for the topics in the context of Africa. The editorial meetings are planned to take place later in 2014 (September/October), bringing together a few key experts to discuss drafts and then finalize the content leading to key messages for policymakers. Importantly, the African and European experts will seek consensus on the key recommendations from Science Academies in Africa that will be made to policymakers in Africa on these topical issues.

African Science, Technology and Innovation Forum

The African Development Bank (AfDB) is organizing an African Forum for Science and Technology in Rabat, Morocco in October 2014. The forum will be held in collaboration with NASAC through the Hassan II Academy of Science and Technology, Morocco. Discussions on this forum are ongoing, and it is expected that NASAC will be have a session in the programme to discuss the value/relevance of science academies in Africa. The forum will be attended by both policymakers and scientist alike from all over the continent. NASAC will host its Board and General Assembly meetings back-to-back to the STI Forum. More information will be provided in the next issue of the *Science Networker*.

Announcements and Appointments

NASAC-Leopoldina Fundraising Training Workshop

NASAC and Leopoldina are organizing a Training Workshop on Fundraising Initiatives for African Science Academy Staff and Officials. The Training workshop will be held on **7th and 8th August 2014 in Nairobi, Kenya** with the main objectives of: (i) Providing participants with practical fundraising skills and technical knowledge that will be useful to them in designing, planning, managing, and disseminating their own academy's activities; (ii) Fostering an exchange of ideas on how science academies in Africa might be used to better support policymaking; and (iii) Providing different African science academies a chance to network and develop stronger professional relationships with their counterparts. The training will be offered by an outsourced and funded through the NASAC-Leopoldina Cooperation.

Tenth Annual Meeting of the African Science Academies (AMASA-10) 10–12 November 2014

Uganda National Academy of Sciences (UNAS), Network of African Science Academies (NASAC), and U.S. National Academies (USNAS) are pleased to announce the Tenth Annual Meeting of the African Science Academies (AMASA – 10) on the theme ***Ensuring Country Ownership of Africa's Development Agenda Beyond 2015***. This international conference will be held in Kampala, Uganda on 10-12 November 2014. The overall objective of the international conference is to inform and create synergies within a diverse community of researchers, implementers, and

decision makers, and development partners committed to promoting ownership through efforts that are evidence-informed, innovative, and cross-sectoral. Discussants will address lessons learned in promoting ownership of the development agenda in some Africa nations, and how these lessons can be adapted to other countries—currently scheduled for the latter half of the morning of 11 November 2014. Prior to that, on 10 November 2014 evening, a joint report of the African science academies will be released. The report seeks to outline evidence-based advice on what African development institutions should do in order to promote ownership of Africa's ambitious development agenda at all levels of African society.

UNAS Elects Prof. Nelson Sewankambo as its President

In February 2014, the Uganda National Academy of Sciences (UNAS) announced the election of Prof. Nelson Sewankambo as its President. Prof. Sewankambo took over from Prof. Paul Edward Mugambi, who also served on the NASAC Board as Vice-Chair for Public Relations and Outreach. Prof. Sewankambo is the Principle of the College of Health Sciences of Makerere University and has a long and illustrious career in the medical field, being recognized with several honorary PhDs from prestigious universities in the United States of America. He will work to further the mandate of UNAS with a Council of eleven members (2013 to 2016) and also replaced Prof. Mugambi on the Board of NASAC (also 2013-2016).

On the Spotlight

NASAC Board Members: 2013–2016

The NASAC's General Assembly (GA) held its 10th meeting in Addis Ababa, Ethiopia on 15 November 2013. During this meeting the GA elected a new substantive Board comprising of the following members:



Chair

PROF. MOSTAPHA BOUSMINA
Hassan II Academy of Science and
Technology of Morocco



Vice-Chair for Administration and
Policy Review

PROF. YOUSUF MAUDARBOCUS
Mauritius Academy of Science and
Technology



Vice-Chair for Resource Mobilization
and Development

PROF. AHMADOU LAMINE NDIAYE
National Academy of Sciences and
Techniques of Senegal



Vice-Chair for Public Relations and
Outreach

PROF. NELSON SEWANKAMBO
Uganda National Academy of
Sciences



Treasurer

PROF. BENARD ADUDA
Kenya National Academy of Sciences



Member for Scientific Matters

PROF. OYEWALE TOMORI
Nigerian Academy of Science



Secretary General

PROF. BARNEY PITYANA
Academy of Science of South Africa



Immediate Past Chair

PROF. ROBIN CREWE
Academy of Sciences of South Africa



Past President

PROF. MOHAMED HASSAN
African Academy of Sciences

ANSALT and ANSALB become new members of NASAC

The Academie Nationale des Sciences, Arts et Lettres du Togo (ANSALT) and the Academie Nationale des Sciences, Arts et Lettres du Benin (ANSALB) became NASAC's newest members as at 2013. Both Francophone academies were established with 25 founding members through the mentorship of the Academie Nationale des Sciences et Techniques du Senegal (ANSTS). The application for membership of the two academies was endorsed by NASAC members during the 10th General Assembly held in Addis Ababa, Ethiopia in November 2013.

NASAC Board Meeting at the Hassan II Academy of Science and Technology of Morocco

On 5th and 6th June 2014 the NASAC Board held its meeting at the invitation of the Hassan II Academy of Science and Technology of Morocco in the Moroccan capital Rabat.

The Permanent Secretary of Hassan II Academy of Science and Technology, Professor Omar Farsi Ferhi, and the Chancellor, Professor M. Bousmina welcomed the Board members. The Programmes Director presented activity reports and this together with a financial review for 2013 and 2014 budget, the preparation for the General Assembly 2014 in

On the right: NASAC Board members and secretariat staff - 5-6 June 2014 Board meeting in Rabat, Morocco



About the host academy: Hassan II Academy of Science and Technology of Morocco

Placed under the guardian protection of His Majesty the King Mohammed VI, the Hassan-II Academy of Science and Technology has the mission of promoting and developing the scientific and technical research, contributing at setting the general orientations for the scientific and technological development, making pertinent recommendations regarding the national priorities in terms of research, evaluating the research programs and ensuring their grants and contributing at integrating the Moroccan scientific and technical research activities within the national and international socio-economical environments.

Morocco as well as review of academies application for membership in NASAC which will be submitted for subsequent decision by the General Assembly in October 2014 were addressed during the meeting. The Chair reported further exchanges with two Moroccan-based companies, Moroccan Ministry of Foreign Affairs, the Resident Representative of the African Development Bank in Morocco, and the French Academy regarding fundraising for NASAC endowment, Projects and NASAC prize. The Board welcomed the initiatives towards enhancing sustainability for the Network to enable NASAC achieve its mandate of providing an independent forum for African science academies to offer authoritative credible advice for policy formulation towards economic, social and cultural development in the continent.

In the course of the meeting, the participants visited the extraordinary facilities of the Hassan II which offered to host the NASAC General Assembly in the year 2014 in with funding support from the African Development Bank.

Member-Academy's Feature

The Ethiopian Academy of Sciences (EAS)

The establishment of the Ethiopian Academy of Sciences (EAS) by an act of Parliament was preceded by a series of activities undertaken by a group of prominent scholars since 2007. This initiative aimed at addressing the felt need for the promotion of a culture of science and science-based development in the Ethiopian society. This initiative culminated in the establishment of the Academy by an Act of Parliament (Proclamation Number 783/2013) in March 2013.

EAS aims to provide evidence-based advice to the Government and to promote the development of the sciences and their applications. It plans to do this by undertaking consensus studies, organizing conferences and workshops on significant national issues, awarding prizes in recognition of excellence and publishing reports in its own journal as well as other periodicals and books.

The vision of EAS is to realize the development of scientific culture and scholarship in Ethiopia, and the improvement of the quality of life of its people.

The mission of EAS is to foster scientific culture and innovation and advance the knowledge of the sciences, including indigenous knowledge.

The Academy is committed to assist the national development agenda and to advance the natural and cultural heritages of the nation. The sciences include the fields of agriculture, engineering and technology, health, natural and social sciences and the humanities.

The Ministries of Science and Technology, Agriculture, Education and Health; government higher learning institutions, various research institutions and professional associations are among the local partners of the Academy.

Outside of Ethiopia, the major partners of EAS are the US National Academies of Science, (US NAS) the Royal Society, UK, the German Academy of Sciences (Leopoldina), the African Academy of Science (AAS) and The Network of African Science Academies (NASAC). Other partners in Africa include Science Academies in Ghana, Kenya, Nigeria, Senegal, South Africa, Tanzania and Uganda. EAS is also a member of the global network of science academies, Inter Academy Panel (IAP).



Founding fellows of EAS 27 March 2010

The Network of African Science Academies (NASAC) was established on 13th December 2001 in Nairobi, Kenya, under the auspices of the African Academy of Sciences (AAS) and the InterAcademy Panel (IAP)

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 Africa and worldwide. 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 June 2014, NASAC comprised of the following nineteen members:

- African Academy of Sciences
- Cameroon Academy of Sciences
- Ghana Academy of Arts and Sciences
- Kenya National Academy of Sciences
- Madagascar’s National Academy of Arts, Letters and Sciences
- Nigerian Academy of Science
- Académie Nationale des Sciences et Techniques du Sénégal
- Uganda National Academy of Sciences
- Academy of Science of South Africa
- Tanzania Academy of Sciences
- Zambia Academy of Sciences
- Zimbabwe Academy of Sciences
- Sudanese National Academy of Sciences
- Mauritius Academy of Science and Technology
- Hassan II Academy of Science and Technology, Morocco
- Academy of Sciences of Mozambique
- Ethiopian Academy of Sciences
- Académie National des Sciences, Arts et Lettres du Benin
- Académie Nationale des Science, Arts, Lettres du Togo

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