

Brain drain in Africa

We, the members of the Network of African Science Academies (NASAC), submit the following statement to the heads of state and government attending the G8 + 5 Summit in Italy, in July 2009, for consideration and action.

As representatives of one of the most prominent organizations for the promotion of scientific and technological capacity building in Africa, we, the members of NASAC¹, are convinced that a sustainable economic future for Africa lies in strengthening the continent's S&T capacity. We believe, moreover, that this goal can only be met if Africa educates and retains a critical mass of world-class scientists and technologists with the knowledge and expertise to address the continent's key scientific, technological and economic problems.

One-third of all African scientists live and work in developed countries. This outflow represents a significant loss of economic potential for the continent, especially in today's global society where scientific and technological knowledge drive development.

In the 1960s and 1970s, Africa boasted some of the developing world's finest universities. But a steep decline in funding, political indifference and widespread conflict created conditions in which the opportunity to pursue professional careers was stunted.

Educational experts agree that higher education throughout Africa must be revitalized. Universities have been hollowed out by decades of brain drain and now find themselves severely handicapped by dilapidated facilities and inadequately trained staff. According to the *Science Citation Index*, Africa currently produces just 1.4 percent of the articles published in peer-reviewed international journals.

The migration of African scientists to developed countries represents a personal decision shaped in large measure by an individual's assessment of where the best career opportunities lie. Governments can help influence this decision by developing and implementing policies for African scientists that improve their living and working conditions at home and that offer realistic prospects for secure and rewarding professional careers in Africa.

By some estimates, Africa needs an additional one million researchers to address its critical needs. Despite Africa's predicament, it is important to note that

scientific progress depends on the free flow of information and individuals. It can be argued that the migration of African scientists has not only benefited those who leave their countries but global science as a whole. While Africa has paid a high price for this trend (due to the on-going loss of its most educated and skilled citizens), denying talented individuals adequate education and training opportunities elsewhere carry significant costs too. As Rajiv Gandhi, former prime minister of India, once observed, "better brain drain than brain in the drain".

We believe that past experience calls for a new, more sophisticated approach to the brain drain challenge. This approach would recognize not just the obstacles but also the opportunities for S&T capacity building in Africa afforded by the migration to developed countries of well-educated, productive scientists with great drive and ambition.

Such an approach would acknowledge that global progress in S&T depends on international exchange and the ability of scientists and technologists to move freely across borders.

It would also recognize that even the poorest nations need a critical mass of talented scientists and technologists. Such well-educated citizens must not only possess a deep understanding of the science-based challenges that their nations face, but must also be able to participate fully and freely in global scientific initiatives as valued partners.

We appreciate the efforts taken by others to address Africa's brain drain challenge, including those by the UN's African Millennium Initiative for Science and Technology; the G8's focus on S&T as fundamental building blocks in Africa's overall efforts to improve the economic and social well-being of Africans; funding strategies devised by the World Bank for the creation of centres of scientific excellence; and initiatives by the InterAcademy Panel (IAP) to strengthen and expand merit-based science academies.

We also urge African countries to do all that they can to meet the challenges posed by the brain drain phenomenon. We are encouraged by the steps that a number

of African nations have recently taken to increase the percentage of the national gross domestic product (GDP) devoted to S&T; and by the ongoing efforts, for example, of the African Union (AU), the New Partnership for Africa's Development (NEPAD) and the African Development Bank (AfDB), to place S&T at the centre of the continent's economic development agenda.

Yet, such efforts, whether led by African countries, pan-African organizations, international agencies or developed nations, continue to be insufficient. Africa remains the world's least scientifically proficient region and, not coincidentally, the world's poorest continent. We acknowledge that primary responsibility to address such critical problems rests with the governments of Africa. But external assistance will remain instrumental for poor countries that do not have sufficient resources to adequately invest in systems of higher education and research.



To help successfully address the brain drain challenge, we call upon G8 + 5 countries to:



1. Invest in the rebuilding of universities and research centres in Africa. The brain drain phenomenon can only be overcome if Africa builds a research infrastructure that enables its native-born scientists to engage in world-class research without having to emigrate.

2. Extend financial support to young African scientists to pursue postgraduate and postdoctoral training in universities in Africa and other developing countries. To help ensure that these students do not become part of the brain drain, it is also important that funding be provided to young scientists at the beginning of their careers to help promote their research productivity in Africa.

3. Launch regional and international centres of excellence in Africa in areas of study of critical importance to Africa's development, especially in those areas related to advancing the Millennium Development Goals (MDGs): poverty alleviation, access to safe drinking water, improved public health and biodiversity conservation. These centres should provide incentives to attract the best scientists, both in and outside of Africa, and should promote international collaboration in solving global problems relevant to Africa.

4. Broaden efforts to encourage Africa's diaspora to participate in initiatives to address critical science-based issues on the continent and to engage Africa's scientists in joint projects. The brain drain phenomenon is well established. Tens of thousands of Africa's scientists now live and work in developed countries. Most will never return. It is important to recognize this reality and to devise policies that will allow Africa to take advantage of the knowledge and expertise of their emigrant citizens. One of the best ways to do this is to encourage short-term visits and to develop joint projects between Africa's scientific diaspora and scientists who have remained in their home countries. We call on the G8 + 5 countries to support initiatives that continue to expand North-South scientific exchange. Specific measures that might be taken include the development of a database of highly qualified Africans in the diaspora who have expressed an interest in collaborating with scientists in Africa.

5. Honour the commitments made by G8 + 5 countries at the 2005 G8 Summit and based on the recommendations of the Commission for Africa's publication, *Our Common Interest*, which called on its members to provide US\$5 billion to help rebuild universities and US\$3 billion to help establish centres of scientific excellence in Africa.

The solution to the brain drain challenge lies primarily with Africa. But G8 + 5 countries can help by financing improvements in Africa's S&T infrastructure, and by creating pathways for interaction that turn today's largely one-way flow of African scientists into a two-way flow of interaction between Africa's diaspora and home-based scientific communities. We urge the G8 + 5 countries to embrace S&T as a collaborative enterprise where national borders count but nevertheless remain open, and where S&T endeavours ultimately serve as bridges, not barriers, to social and economic progress.

African Academy of Sciences

Nigerian Academy of Science

Uganda National Academy of Sciences

Cameroon Academy of Sciences



Academie des Sciences et Techniques du Senegal

Zambia Academy of Sciences

Ghana Academy of Arts and Sciences

Academy of Science of South Africa

Zimbabwe Academy of Sciences

Kenya National Academy of Sciences

Sudan National Academy of Sciences

Madagascar National Academy of Arts, Letters, and Sciences

Tanzania Academy of Sciences

¹ NASAC members include: African Academy of Sciences; Cameroon Academy of Sciences; Ghana Academy of Arts and Sciences; Kenya National Academy of Sciences; Madagascar National Academy of Arts, Letters, and Sciences; Nigerian Academy of Science; *Academie des Sciences et Techniques du Senegal*; Academy of Science of South Africa; Sudan National Academy of Sciences; Tanzania Academy of Sciences; Uganda National Academy of Sciences; Zambia Academy of Sciences; Zimbabwe Academy of Sciences.