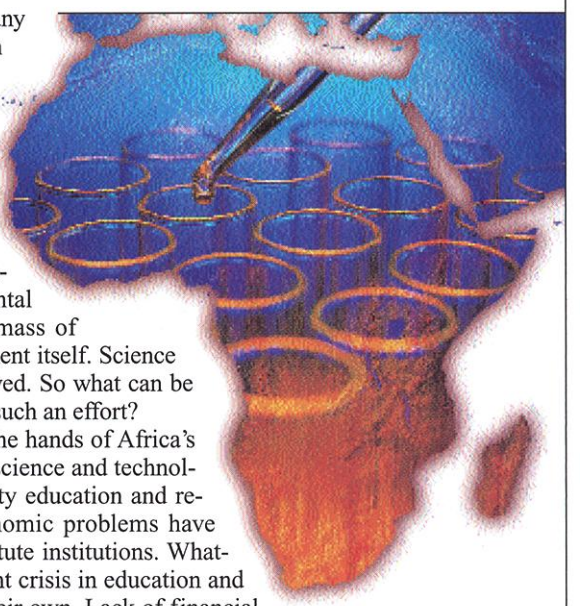
Can Science Save Africa?



In the late 1960s and early 1970s, science departments in many African universities, including the University of Lagos in Nigeria, Dar-es-Salaam in Tanzania, Accra in Ghana, and Khartoum in Sudan, were among the finest in the developing world. Once heralded as beacons of progress on the continent, these departments now suffer from a host of problems that have made it all but impossible for them to meet even minimal responsibilities. The difficulties encountered by Africa's science departments have impacts that extend well beyond the departments themselves. Many of the continent's most serious problems, including malnutrition, disease, and environmental degradation, cannot be met without the presence of a critical mass of African scientists working on issues of direct concern to the continent itself. Science alone cannot save Africa, but Africa without science cannot be saved. So what can be done to revive African science, and who is responsible for leading such an effort?

Major responsibility for the future of African science rests in the hands of Africa's governments. During the late 1960s and early 1970s, funding for science and technology in Africa was driven by governmental commitments to quality education and research. But years of political instability and chronic socioeconomic problems have turned what became increasingly neglected universities into destitute institutions. Whatever responsibility Africa's political institutions bear for the current crisis in education and research, they cannot be expected to overcome the situation on their own. Lack of financial resources and skilled personnel will make such a scenario virtually impossible. That means Africa's governments will need help from national and international aid organizations.

Yet, when it comes to science and technology, Africa does have its own internal pockets of strength. For example, such national and regional centers of scientific excellence as the Immunology Biotechnology Laboratories in Cameroon, the African Centre for Meteorological Applications in Niger, and the African Centre for Technology in Senegal could be transformed into international centers of excellence capable of functioning even more effectively than they do now. Africa also enjoys successful experiences in the application of science and technology for development that too often have been drowned out by the din of dismal news concerning Africa. The development of genetic molecular markers to improve tea harvests in Kenya, ongoing efforts to examine alternative treatments for river blindness in Uganda, sickle-cell research in Ghana, and studies of the use of indigenous plants for the treatment of diabetes in Madagascar are examples of science-based initiatives in Africa that deserve greater public recognition. And Africa's science academies must become more active in policy debates related to science-based development. Currently, Africa, a continent with 53 nations, has only nine merit-based science academies. The need to strengthen existing academies must be accompanied by strategies to launch such institutions where they do not exist. Several African nations (among them Nigeria, South Africa, and Tanzania) have recently invested in science and technology programs and displayed a commitment to democratic principles that bodes well for the future, regardless of how fragile their current promising situations may be. The key question is whether these nations will serve as models for others to follow or become part of a litany of examples of hope unsustained.

Southern hemisphere cooperation could prove to be a key element in the enhancement of science and technology. Advanced developing nations such as Brazil, China, and India should forge strategic alliances with African nations. Not only would such alliances among developing nations make them less beholden to the "benevolence" of the North, but the kinship of experience would also represent a more realistic and effective way of addressing science-based development issues in Africa.

Beyond the issue of South-South cooperation is the issue of North-South cooperation. Experts estimate that 30,000 Ph.D. holders of African descent, many with science degrees, live and work outside their home countries. That figure far exceeds the total number of African-born scientists with Ph.D.s working in Africa. That is why it is important for all scientists, and especially those of African origin living and working in the North, to assist efforts to rebuild the capacities of Africa's scientific communities. And that is why it is important for the governments of Africa to nurture environments that not only provide sufficient financial resources but also allow scientists from Africa and elsewhere to interact freely and without constraints.

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