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## A New Dawn for Science in Africa

WHEN AFRICA'S HEADS OF STATE MET IN JANUARY FOR THE 8TH AFRICAN UNION SUMMIT, science, technology, and sustainable development were the main topics of discussion. This week they meet again, this time to explore the prospects for creating a "union government." A United States of Africa remains a far-off dream. But growing cross-national integration is not, and science and technology are poised to play a fundamental role in such efforts.

Several African nations have already increased their investment in science and technology. Rwanda has boosted expenditures on science to 1.6% of its gross domestic product (GDP), striving for 3% within the next 5 years. Research and development funding in South Africa is scheduled to grow to 1% of its GDP by 2009. Nigeria plans to invest \$5 billion to create a national science foundation. Uganda, with a \$30 million loan from the World Bank, will establish a fund for research initiatives to be selected through a nationwide merit-based competitive process. Zambia, with a \$30 million loan from the African Development Bank, will offer postgraduate fellowships to train some 300 science and engineering students in its country. Increasing scientific and technological capabilities across the developing world, most notably in Brazil, China, and India, have opened unprecedented opportunities for South-South cooperation, particularly for the science-poor countries of sub-Saharan Africa. China's \$5 billion Development Fund for Africa is designed to help African nations meet the United Nations Millennium Development Goals through cooperative projects with China. Brazil's Pro-Africa Program supports scientific and technological capacity building in sub-Saharan Africa, especially in Angola and Mozambique. A team of Brazilian and Indian experts is now in Senegal to help forge a biofuels industry there. And India, Brazil, and South Africa have launched a tripartite initiative to finance joint problem-solving projects in which science and technology will play a key role.

There is also increasing interest among developed countries to support scientific and technological capacity building in low-income countries, especially in Africa. The challenge lies in turning this heartfelt interest into sustainable initiatives and real progress. In 2005, G8 heads of state pledged \$5 billion to rebuild Africa's universities and \$3 billion to establish centers of scientific excellence in Africa. Only a small fraction of the commitment has been fulfilled. Angela Merkel, current head of the G8, has made African development a major issue of her tenure, but the focus thus far has been on climate change and missile defense systems.

This week's African Union summit offers another opportunity for progress, but only if attention is placed on one of the most critical elements for success: homegrown science. Every African nation must educate and support a new generation of problem-solving scientists. This means reforming educational systems and building world-class research universities and centers of excellence. Scientific expertise alone, however, cannot solve the challenges of poverty and development, which are as much social and political as they are scientific and technical. Broad channels of communication must be created between these two communities, enabling them to work together, exchange ideas, and learn from one another.

Lasting success will ultimately be determined not only by aid from abroad, but by strong and enduring partnerships in science and technology between Africa and the rest of the world. Joint initiatives with developing countries, based on shared experiences and challenges, could spur programs and policies leading to rapid progress in science-based development. Sub-Saharan Africa welcomes the desire of developed countries to assist. But commitments made by Africa's friends must be tailored to Africa's overall plans for economic growth and fulfilled in a reasonable time.

It's been a long time coming, but Africa could be approaching a new dawn for building effective policies for science-based development. While not likely to attract the same public notice as calls for a United States of Africa, these efforts may nevertheless help bring the continent closer together. More importantly, they could make a real difference in the lives of Africa's most impoverished citizens.

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