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Toward a Green Revolution for Africa

For some months, media coverage has focused the world's attention on the human tragedy striking Ethiopia and seven other African countries. Millions of people are hungry, hundreds of thousands are starving, and thousands have already died. As individuals and as a nation, we are responding. Since 1 October 1984, the Agency for International Development has approved more than 1.9 million metric tons of food aid for Africa, valued at about $603 million. In addition, food and on-the-ground support have come from more than 120 private voluntary and church organizations.

Although the current drought is being blamed for the immediate crisis, several underlying causes are responsible for Africa's continuing food deficits. Per capita food production in sub-Saharan Africa has declined during the past several years, even though overall food production has remained level or even increased slightly.

Said to be contributing factors are high population increases, shortsighted government policies that discourage farmer productivity, poor transportation facilities, and civil strife. But a major factor is a shortage of yield-increasing technologies, such as those that stimulated the Green Revolution of Asia and Latin America. The variety of climatic and ecological conditions facing African agriculture demands an equally varied mix of improved technologies. So far, few are yet available.

It would be unfair to imply that nothing has been done to develop improved food-producing technologies. For several years, support for agricultural research in Africa has been a primary pillar of AID's development assistance program. AID has funded national and regional research programs, as well as the international agricultural research systems that produced the Green Revolution's high-yielding wheats, rices, and maize. AID also supports cooperation between U.S. universities and counterparts in Africa through the Collaborative Research Support Programs (CRSP); these deal with sorghum and millet, beans and cowpeas, peanuts, small ruminants, nutrition, and tropical soils. Total U.S. support for agricultural research in Africa rose to $85 million in 1984.

These efforts are already showing results. For example, a drought-tolerant sorghum variety recently introduced in the Sudan produces yields that are twice those of traditional varieties. New cowpea varieties, with short growing seasons, drought tolerance, and resistance to virus and bacterial diseases, have been developed at the International Institute for Tropical Agriculture in Nigeria. A disease-resistant cassava, with three times the yield of native strains, has also been developed at the institute. In Kenya and Zimbabwe, hybrid maize varieties have been adopted widely by small farmers. Native cattle tolerant to the dreaded sleeping sickness have been discovered, and this tolerance is being bred into susceptible native stock by the International Livestock Center for Africa and the International Laboratory for Research on Animal Diseases.

This is just the beginning. To give Africa the tools to meet her food needs will require the best that science can offer worldwide. Biotechnology techniques such as cell and tissue culture can be used immediately to accelerate the production of drought-tolerant and disease-resistant crop varieties. Embryo transplantation offers the possibility of rapidly developing and introducing improved livestock species. In the future, recombinant DNA technology may be appropriate.

The current tragedy in Africa has created a climate of concern for long-term solutions beyond emergency relief. Sustained commitment to agricultural research is crucial if we hope to remove the specter of famine in the future.—N. C. BRADY, *Senior Assistant Administrator for Science and Technology, Agency for International Development, Washington, D.C. 20523*