

HOW HEALTHY FOR AFRICANS IS THE ALLIANCE FOR A GREEN REVOLUTION FOR AFRICA (AGRA)?

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The Gates and Rockefeller Foundations propose to increase food production on the African continent, “eliminating hunger for 30-40 million people and sustainably moving 15-20 million people out of poverty,” through their initiative of an Alliance for a Green Revolution for Africa (www.agra.com).

We all share in the goal of eliminating hunger on the African continent. However, we are also aware of the risks to health and nutrition posed by the previous green revolution in Asia and Latin America. As farmers dedicated more and more land to growing new varieties of wheat, rice, and maize, less land was available to women to grow vegetables (vitamins, minerals), and the commercial production of pulses (protein) stagnated. How will this proposed “green revolution” affect production, food security and human health in Africa?

Similar to the green revolution of the 1960-70s, increasing yields of a few crops to provide food for the hungry remains the central justification for this proposed African green revolution. The 1960s varieties of seed required fertilisers, pesticides, and water at very specific times or the yield was worse than traditional varieties. Indian farmers, for example, did increase production of wheat ten-fold and of rice three-fold. Learning from this experience, the current AGRA initiative also includes training African scientists, setting up marketing networks of small seed companies, and credit schemes. Other major differences are that the seeds will be genetically modified (GMOs) and patented, in the 1960s in India, they remained in the public domain.

The benefit of increased yields, however, came with many environmental, economic and social costs in the green revolution on the 1960-70's.. The massive increases in the use of fertilisers and pesticides contaminated the water and soil. Small-scale farmers could not sustain the purchase of all the inputs and had to sell their land. Studies in India show that only farmers with at least 6-8 hectares of land could afford the high-tech agricultural production. Inequality within villages increased, with many moving to the cities. As Secretary General U Thant summarised in 1970, “There is already a growing body of relevant literature on the experience in various regions and localities which strongly suggests that the prosperity resulting from the Green Revolution is shared by a relatively few.”

The economic and social dangers of a “green revolution” for Africa are similar to those related to the commercialisation of health care: 1) piracy of both indigenous knowledge and plants (used for medicine and/or food); 2) privatisation of bioresources necessary for human health through patenting of plants; 3) privatisation of research which directs priorities and agendas. Rather than reducing hunger, these adverse outcomes could in fact reduce the food security of Africans, increase undernutrition and thus reduce immunity against disease.

Increased yields of one or two strains of one or two crops (“monoculture within monoculture,” as stated by a Tanzanian botanist) will not provide the basis for food security to support nutritional needs. The key to ending hunger is sustaining Africa's

food biodiversity, not reducing it to industrial monoculture. Currently, food for African consumption comes from about 2,000 different plants; in contrast, the US food base derives mainly from 12 plants. Narrowing plant diversity of food increases vulnerability for all because it a) reduces the variety of nutrients needed for human health, b) increases crop susceptibility to pathogens, and c) minimises the parent genetic material available for future breeding.

Manufacturing plants for food is very similar to manufacturing them for medicine. Indigenous knowledge designates a plant as important for nutrition or for medicinal purposes. But often, corporations simply take both the plants and the knowledge with no recognition, monetary or otherwise, to the original breeders of new medicine and foods. This biopiracy of food and medicinal plants is made legal by the patenting of living organisms, through international trade agreements.

Because African farmers will have to buy the new seeds, and the pesticides and fertilisers they require for increased yields, this green revolution initiative becomes a privatisation offensive against small-scale farmers who still retain control over their seeds. Of the seeds used for food crops in Africa, 80 percent is seed saved by the farmer herself or locally exchanged with family and neighbours. Farmers do not have to buy seed every season, with cash they do not have, for they possess a greater wealth in their indigenous seeds, freely shared and developed over centuries. The very best food seed breeders in Africa, the “keepers of seed,” are women who often farm less than one hectare of land. Across Africa, women are also the food producers, tending “gardens” full of diverse crops for local consumption, while the men concentrate on cash crop production. Even when the cash crop fails, food will most likely be available for the family, for those plots are intensively farmed and carefully watered.

The proposed green revolution would shift the food base away from this treasure of seed. Instead, African farmers would have to purchase patented seeds each season, thus putting cash into the hands of the corporations providing the seed, much as already has happened with plants used in medicinal compounds. Loss of control over seed reduces the control women farmers have over production, with risks to food security and nutrition. For AGRA, the seeds will not only be patented, but new varieties will undoubtedly be genetically modified organisms (GMOs). The perils of GMOs to environmental sustainability are well documented. Most African governments have ratified the biosafety protocol which allows them to deter research and production of GM food crops until sufficient data is available about its impact on human health and the environment, but AGRA is lobbying for governments to “fast track” approval for new varieties to be planted.

Research on African food crops certainly needs financing. The US National Research Council concluded in 1996 that a major African food crop, sorghum “is a relatively undeveloped crop with a truly remarkable array of grain types, plant types, and adaptability....most of its genetic wealth is so far untapped and even unsorted. Indeed, sorghum probably has more undeveloped genetic potential than any other major food crop in the world.”

As nutritious as maize is for carbohydrates, vitamin B6, and food energy, sorghum is even more nutritious in a range of essential nutrients for health. One of the most

versatile foods in the world, sorghum can be boiled like rice, cracked like oats for porridge, baked like wheat into flatbreads, popped like popcorn for snacks, or brewed for nutritious beer. Because sorghum can tolerate dry areas and poor soil better than maize, it can provide nutritious food security in semi-arid regions and therefore, should become even more important under conditions of global warming.

Engaging African scientists to discover the potential genetic wealth of sorghum would assist African food security. In a first glimpse of foundation expenditures, however, we see funds directed to the Wambugu Consortium (founded by Pioneer Hi-Breed, part of DuPont) for experiments in genetically modified sorghum. By adding a gene, rather than mining the genetic wealth already there, the consortium can patent and sell the “new” sorghum at a premium price for DuPont.

Private expenditure on research and marketing of a few crops directs attention to crops that are profitable. Similar to health care, International Monetary Fund requirements for structural adjustment programs, supported by all donor governments, the World Bank, and the African Development Bank, have been removing African government expenditures on agricultural research and extension. Governments had to spend less on agriculture in order to repay their debts. Now, more two decades later, the private foundations step in to “save” food-deficit Africa.

High-tech answers to Africa's food crises are no answers at all if they undermine human nutrition, privatise both indigenous knowledge and bioresources through patenting of plants, and transform the genetic wealth of the continent into cash profits for a few corporations. Public policy choices around the AGRA proposals have not yet been made within Africa. There is thus still an opportunity to call for assessment and debate on the health and nutrition impacts of these proposals, including by civil society working in health, and by parliaments, and by UN agencies. We need to openly challenge its goals, motives and methodologies before Africa's political leaders accept them, and before universities and research centres divert their agendas away from other applied research that may offer a more sustainable and nutritious future for African food production. The future of African health depends on it.

For references used in this editorial and a more detailed analysis of how Africa's food biodiversity provides alternatives to chemical industrial agriculture, see Andrew Mushita and Carol B. Thompson, *Biopiracy of Biodiversity* (Trenton, NJ: Africa World Press, 2007), carol.thompson@nau.edu. Further information on nutrition and health issues can be found on the EQUINET website at www.equinet africa.org.