

# Africa's Famine: The Human Dimension

## *Socioeconomic factors may play as big a role in Africa's crisis as does the 17-year drought*

By JANET RALOFF

Second of two articles

Famine is taking a big toll in Africa. According to World Bank President A. W. Clausen, half to three-quarters of the inhabitants of sub-Saharan Africa live in absolute poverty, which means that they are too poor to afford a "calorie-adequate diet." In the 45 countries that make up this region, the average life expectancy at birth is only 49 years, less than two-thirds of the industrial world's average. A 17-year drought has preyed most ruthlessly on the semiarid sub-Saharan nations of Africa's trans-Saharan zone (SN: 5/4/85, p. 282). According to the United Nations Food and Agricultural Organization, last year more than 150 million people in 24 African nations were "on the brink of starvation" because of droughts. In Ethiopia, events triggered by the current drought have already claimed the lives of more than 200,000.

Many would see the stricken as having succumbed to a natural disaster. But that view is deceptively naive, according to a report prepared for Earthscan, a London-based agency of the International Institute for Environment and Development. "The common view of 'natural disasters' is due for a radical change," says the report. "Today man is playing too large a role in natural disasters for us to go on calling them 'natural.'"

For example, drought is commonly held responsible for the wide-scale human suffering and death occurring in Ethiopia and Chad. Acknowledging that the weather has indeed served as a trigger for the eruption of famine and disease, the Earthscan report says that human activity has made this disaster far worse. It notes, for instance, that although desertification is stealing more land in Sudan each year, the Sudanese government continues to permit overcultivation and overgrazing in the affected areas. Together with deforestation, similar practices have denuded so much of Ethiopia's highlands that the government there is in the process of forcibly resettling 1.5 million "environmental refugees" into its less populated lowlands.

Most peasant farmers and herders are probably aware of the destructiveness of their activities, according to a report on Africa's food problem published by the Office of Technology Assessment (OTA) last December. But when these individuals are scrambling to find the food, water and



World Bank/Yosef Hadar

*Food aid doesn't combat the poverty that keeps so many Africans hungry.*

firewood necessary to survive another day or week, the report says, it's easy to understand why they ignore the long-term environmental consequences of their practices. The report argues that blame should really be put on the social and political factors that have weakened and impoverished these people.

According to the Swedish Red Cross, people become less vulnerable to natural disasters such as drought only as they develop economically and politically. Therefore, efforts aimed at mitigating natural disasters in the developing world must be concerned with economic development.

The World Bank's Clausen agrees. In a recent speech he pointed out that while food relief is important, it is not enough to save those starving in Africa's sub-Sahara. "We must act with equal vigor to tackle Africa's long-term development problems," he said. "Otherwise we are bound to see deepening poverty — mass starvation again and again — in sub-Saharan Africa."

To survive, Clausen says, Africa must lower its devastating rate of population growth (approaching 3 percent annually, it's the world's highest), adopt sustainable agricultural practices and overcome its absolute poverty through economic development.

It is poverty that marries famine to drought. This economic side of famine is often masked by other, more physical symptoms—like parched crops, baked soils and dying livestock. However, the Earthscan report contends, few people die in a drought-related famine simply because there is no food; most starve instead because they can't afford to purchase food.

This is not to say there is plenty of food in Africa these days. According to Clausen, even if all the food available to Africa, including imports, were distributed equally, "it wouldn't be enough to meet minimum per capita calorie requirements." However, what there is tends to be distributed particularly inequitably during drought times, according to a study by Oxfam, an international crisis-relief and development-assistance organization based in Oxford, England.

Seventy percent of Africa's population is rural, and most of these people are living at only subsistence levels. Yet, as farmers and herders, they provide most of Africa's food. Even in good years, the poorest of them cannot grow enough to feed their families adequately. When a drought depresses crop yields even further, farmers must go to the marketplace to buy what they have not produced. To finance this, many have to sell off their livestock at fire-sale prices—livestock that had previously provided their families not only with milk but also with the manure that fertilized their fields.

According to the Oxfam report, "Behind the Weather: Drought and the Sahel," the staples that drought-stricken farmers must now buy are generally offered by private grain traders, who during drought periods will have cornered the market. Exploiting short supplies, the traders raise food prices, thereby shrinking the value of what little capital the affected farmers have acquired. It doesn't seem to matter that in many of the nations in which this occurs, there are official price ceilings on agricultural commodities; seldom are the governments staffed to police the rural operation of this black-market trade.

In the report, Oxfam says that these private traders "dominate the grain market throughout the Sahel, supplying deficit regions with cereals they have bought elsewhere. ... In contrast to the traders'



World Bank/Ray Wilkin

*Livestock is a major measure not only of wealth but also of agricultural health in agrarian Africa. Most farmers, like the Ethiopians shown here, survive lean drought years only by selling off livestock acquired in more bountiful times.*

competence, [government] institutions established for grain purchase and resale appear inefficient and bureaucratic." Moreover, these government agencies seldom service rural areas, where drought hits hardest.

Ironically, although weather is blamed for bad food harvests during a drought, crops grown for export seldom suffer commensurately. For example, Oxfam reports that during a 1967-72 famine in Mali, the production of cotton grown for export quadrupled and the production of peanuts, another export crop, increased 70 percent.

The strategic value of these cash crops — in helping to pay off the enormous foreign debts many of these countries have acquired — has led Sahelian governments to reserve their best farmland for them. Moreover, much of the developmental aid by foreign governments has been focused on irrigated agricultural projects for export, while almost all of the Sahel's cereals are grown under rain-dependent conditions, the report notes. The latter factor accounts in part for the drop in grain yields throughout the Sahel. Exacerbating the situation, many of these governments have increased the price they pay farmers for cash crops. There has been no similar incentive for food production; in fact, there have actually been a host of economic disincentives.

According to Michigan State University agricultural economist Carl K. Eicher, African political leaders have "tended to view agriculture as a backward sector that could provide surpluses — in the form of taxes and labor — to finance industrial and urban development." Among the most devastating of these policies, Eicher says, is the decision by many African countries to maintain artificially low food prices to "placate urban consumers."

In an analysis of Africa's food situation appended to OTA's study on Africa, Eicher

describes as "extortion" one situation affecting small Mali farmers during the 1979-80 drought season: While it cost Malian farmers 83 francs per kilo to produce their irrigated rice, the government paid them only 60 francs per kilo. Not surprisingly, he notes, farmers smuggled rice across the border to Senegal, Niger and Upper Volta, where the black market brought up to twice the official price. Eicher also refers to a World Bank analysis of pricing and tax policies, which, after accounting for taxes and overvalued currencies, concluded that farmers in the 13 surveyed countries received less than half the real value of their crops.

The Oxfam report points to another type of disincentive. The traditional fallow periods of up to seven years, during which time farmed plots have been allowed to replenish their depleted nutrients—and in arid lands, their moisture — are discouraged. Under a Senegalese law, for instance, any land not cultivated within a three-year period is to be confiscated. Eicher addresses possible repercussions of reducing these fallow periods in a paper he prepared for a World Bank conference held in March on sub-Saharan agricultural research priorities. Citing research on three villages in eastern Nigeria, he notes that "cassava yields fell dramatically from 10.8 tons to 2 tons per hectare as the length of fallow was reduced from 5.3 to 1.4 years. Moreover, the length of fallow was found to explain 60 percent of the variation in cassava yields. In addition to a reduction in soil fertility, there was an increase in soil erosion, acidity and weeds as the length of fallow was reduced."

"A simple but powerful conclusion emerges from this experience," Eicher says in the OTA report. "African states should overhaul the incentive structure for farmers and livestock owners and adopt increased farm income as an important goal of social policy in the 1980s." The World Bank agrees. Says Clausen, "We have seen that peasant farmers will indeed

expand their production if they have the means and incentives to do so. The means include improved seeds, a good extension service and public investments in rural roads and irrigation. The incentives must include realistic prices for what they produce."

Unfortunately, the OTA study says, neither those means nor those incentives exist in Africa today. And it's not for lack of trying. The World Bank has targeted much of its development assistance into those types of programs. However, Clausen says, "We have had more project failures in agriculture than in any other sector, and the failures have been concentrated in Africa."

One of the failings of past U.S. efforts to improve Africa's food production has been the tendency to promote Western agricultural practices, OTA finds. Tractors and other mechanized farm machinery, for example, are generally "not suitable for direct transfer overseas," OTA says. Not only will they require hard-to-get spare parts and petroleum-based fuels, but they were developed for different soils and cropping patterns. Moreover, the traditional U.S. strategies of machine cultivation/harvesting and heavy reliance on commercial fertilizers, pesticides, soil amendments and water are too costly for use by farmers in agrarian Africa. Finally, OTA notes that African food staples like millet, cassava, yams, cowpeas and open-pollinated corn have not received serious attention from the world's plant breeders and food scientists. In fact, the United Nations Food and Agricultural Organization reports that "the scale of worldwide research on individual staple food crops has been in inverse ratio to their importance in Africa."

It would be far more realistic, OTA says, for Western aid to concentrate on transferring technologies that are resource conserving, small in scale, low in cost, locally producible (and repairable), adapted to local labor availability and consistent with the region's traditional agricultural methods. "The best hope of increasing food production," it says, "lies with improving opportunities for the low-resource [subsistence-level farmers] — they provide an overwhelming proportion of the region's food supplies and yet have been largely ignored."

To reach this sector, OTA advises, U.S. assistance strategies must recognize the role of women in African agriculture. Not only do women contribute up to 80 percent of all farm labor, but they also manage one-third of the farms and tend virtually all family food gardens. However, OTA

notes, women have been excluded directly and indirectly from community agricultural meetings, extension services and access to credit. OTA suggests that directing aid expressly at women "may be inappropriate." Instead, it recommends that women be integrated in development planning, as partners, from the grass-roots level up.

**A**nd an important goal of any program aimed at Africa's low-resource farmers should be improving crop yields, Eicher maintains. He believes a major cause of sub-Saharan Africa's poverty stems from the fact that 60 to 80 percent of its agricultural labor force is producing food staples very inefficiently — in part because of unreliable rains and poor soils.

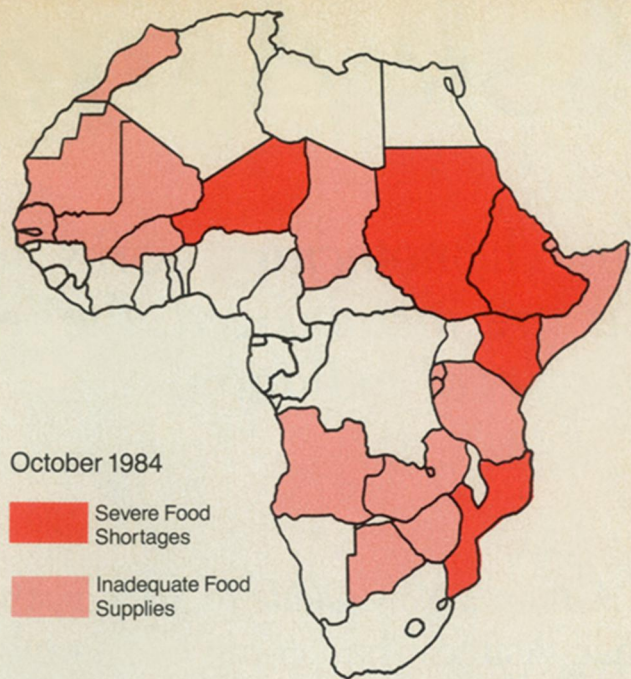
Regarding the latter, OTA notes that because the continent did not experience the glaciation that created robust soils elsewhere, African soils tend to be highly weathered, low in humus (important for providing nutrients and retaining moisture) and very susceptible to damaging environmental processes like erosion and mineral leaching. In fact, the OTA report says, as a result of the current drought and devegetating land-use practices, erosion could foster a further 15 percent decline in the continent's rain-fed crop production over the next 20 years. Even without the economic crisis and rainfall deficit plaguing most of the sub-Sahara, these soil and erosion factors would present a stiff challenge to researchers set on increasing crop yields.



*Though women contribute up to 80 percent of all farm labor in Africa, until recently their role in agriculture was largely ignored.*

Like the authors of the OTA report, Eicher believes "a long-range solution to [Africa's] food and hunger problems will depend, to a large degree, on achievements in agricultural research." And the best way to encourage the development of that research, according to Eicher and OTA, is to foster African agricultural re-

*The chain of countries suffering from inadequate food supplies or famine falls pretty much within the drought stricken regions of Africa. Countries with the most severe food shortages (darker shading) include: Niger, Sudan, Ethiopia, Kenya and Mozambique.*



search at centers in Africa, not in the United States and Europe. In Africa the feedback from local farmers will be more immediate, and field trials will permit tests under realistic conditions.

A few such research centers already exist. The International Livestock Center for Africa in Addis Ababa, Ethiopia, is among them. One of its goals is to raise livestock productivity without damaging the environment. The International Institute of Tropical Agriculture in Nigeria is another. Under a Ford Foundation grant, it is developing new soil-management and cropping patterns, and conducting studies to identify and alleviate agronomic, marketing, labor and other constraints to small-farm productivity.

Numerous other small-scale resource-conserving projects are catching on slowly — such as the planting of trees to halt soil erosion and the building of rock walls across dry watercourses to slow the water flow enough that some will seep into the ground when it rains.

**T**hough Eicher believes the goals of these programs are laudable, he criticizes their emphasis on applied research. He notes, for example, that only one of Africa's 13 international agricultural research institutes — the International Laboratory for Livestock Diseases — is committed to basic science research. Focusing on two diseases affecting African cattle — trypanosomiasis and theileriasis (East Coast fever)—the researchers there hope to learn enough to control or cure these scourges in 20 to 25 years.

Most other institutions, Eicher says, aim at research with a much quicker payback and broader scope. This approach, Eicher says, "assumes that technology transfer and applied research are adequate to

solve the problems of African agriculture" — a position to which he does not subscribe.

For starters, Eicher says, too few African researchers are experienced enough even to sift through and evaluate the appropriateness of technologies offered for transfer. Adding to this problem, he says, is the fact that many of the social and physical constraints to improving Africa's food production have not yet been characterized. For example, he says there has been little or no research on the issue of agricultural credit. Similarly, there's been almost no research on soil, even though 10 to 15 years of basic research in this area may be necessary to overcome the continent's low soil fertility and problems such as striga (a parasite that attaches itself to the roots of millet and sorghum, greatly reducing yields).

At least as important, Eicher believes, "the time has come to shift the center of gravity for training in agriculture from industrialized countries to [master's-level] and Ph.D.-level training in Africa." That won't be easy, he points out, since the shortage of African scientists, managers and academic staff in schools of agriculture "is acute."

The 17-year drought in Africa has focused attention on Africa's serious and growing food crisis. Current expectations are that the continent's agricultural production must be doubled within the next 15 to 20 years—independent of any climatic obstacles, such as continuing drought. That sets up Africa's science challenge, Eicher says, because "no amount of political will and policy reform can double the current 2 percent rate of growth of agricultural output and sustain it, unless scientific and technical advances [can be] generated through agricultural research." □