

CONFLICT: A CAUSE AND EFFECT OF HUNGER

By Ellen Messer, Marc J. Cohen, and Thomas Marchione

Abstract

Ensuring food security—especially in Africa—depends on breaking cycles of hunger and conflict. Whether one believes that (a) environmental scarcities (including food insecurity) can cause conflict, or (b) that conflict is primarily caused by political factors, it is indisputable that access to food is always disrupted by conflict. Much has been written about the linkages between environmental scarcities, hunger, and conflict. This article (a) highlights certain gaps in the information about the steps that lead from hunger to conflict, and then (b) suggests policies and actions to break these connections.

In 1999, there were 27 major armed conflicts worldwide and 10 additional minor armed conflicts. All but two were classified as civil wars (see Table 1)¹ (Wallensteen & Sollenberg, 2000), but those in Africa usually involved neighboring countries in flows of arms, relief, and refugees.

Food wars—a concept which includes the use of hunger as a weapon in active conflict and the food insecurity that accompanies and follows as a consequence—had left close to 24 million people in 28 developing countries, transition countries, and territories hungry and in need of humanitarian assistance. Many of these people experiencing conflict-induced hunger were among the world's 35 million refugees and internally displaced persons; others remained trapped in conflict zones (UNHCR, 2000; FAO, 2000a; USCR, 2000; and ACC/SCN, 2000). Women and children accounted for 70 to 80 percent of those uprooted by violence (USCR, n.d.). Even in regions where food might have been available, conflict rendered people food-insecure: they lacked access to sufficient food to sustain healthy and productive lives (see Table 2).

CONFLICT AS A CAUSE OF HUNGER

Over both the short and the long term, populations, households, and individuals of countries in conflict suffer disruptions in livelihoods, assets, nutrition, and health. Combatants frequently use hunger as a weapon: they use siege to cut off food supplies and productive capacities, starve opposing populations into submission, and hijack food aid intended for civilians. They may intentionally or incidentally destroy crops, livestock, land, and water. Deliberate asset-stripping of households in conflict zones may cause those households to lose other sources of livelihood as the ongoing conflict leads to breakdowns in production, trade, and the social fabric. The disruption of markets, schools, and infrastructure removes additional resources required for food production, distribution, safety, and household livelihoods.

In southern Sudan, for example, violence in November 2000 left an estimated 2.6 million people in need of emergency food assistance (FAO/WFP, 2000). Donors (who have been feeding this war-torn region for more than a decade) struggle to deliver the aid essential to (a) save lives, (b) renew the area's

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Table 1. Armed Conflicts in 1999		
<u>Continent</u>	<u>Major Conflicts</u>	<u>Minor Conflicts</u>
Europe	Russia (Chechnya) Yugoslavia (Kosovo)	Russia (Dagestan)
Middle East	West Bank and Gaza Turkey (Kurdistan)	
Asia	Burma (Karen State; Shan State) India (Assam; Kashmir) India-Pakistan Indonesia (Aceh) Philippines (New People's Army) Sri Lanka	India (Jharkand; Manipur; Tripura) Nepal Phillipines (Mindanao)
Africa	Algeria Angola Burundi Congo, Republic of Congo, Democratic Republic of Eritrea-Ethiopia Guinea-Bissau Rwanda Senegal Sierra Leone Sudan Uganda	Chad Ethiopia (Ogaden; Oromiya; Somali)
South America	Colombia Peru	

Source: Wallenstein & Sollenberg (2000)

productive capacities to generate sustainable livelihoods; and (c) administer programs of food and development assistance in ways that do not fuel further conflict, but instead encourage peace negotiations and an end to fighting. In Mozambique, the cumulative loss of output attributable to the 1982-92 civil war exceeded \$20 billion—a figure ten times greater than actual output during the last year of the war. Conflict removed over half of the country's population from customary livelihoods; it also devastated Mozambique's markets, communications, health services, and infrastructure (Green & Mavie, 1994).

National military allocations inevitably draw investments away from sustainable development and redirect people from peaceful to destructive pursuits. Instead of building sustainable development, countries in conflict suffer long-lasting losses, including losses to food production.

Food Production Foregone

In an earlier study, the authors roughly estimated

the extent of food production losses due to conflict by examining trends in war-torn countries of sub-Saharan Africa during 1970-94 (Messer, Cohen, & D'Costa, 1998). That study compared actual mean food production per capita with "peace-adjusted" values for 14 countries and found that, in 13 countries, food production was lower in war years by a mean of 12.3 percent. Declines ranged from 3.4 percent in Kenya to over 44 percent in Angola. The study also calculated the differences in these countries in mean food-production growth during war and non-war years as well as these countries' contributions to regional food production trends. These reductions in food-production growth rates were cumulative, declining from 1.3 to 3.5 percent in the 1980s and from 3.9 to 5.3 percent in the 1990s (see Figure 1).

These declines are significant for more than their impact on food availability in the region. In 13 of the sub-Saharan African countries, a majority of the workforce earns its livelihood from agriculture. In eight of the countries, two-thirds or more of the

workforce is engaged in agricultural activities (World Bank, 2000). This figure is significant because some three-quarters of the world's poor work and live in rural areas (IFAD, 2001). Hence, war-induced reductions in food production mean income losses and reduced access to food for a large portion of the population, with a heavy impact on the poorest households.

The Food and Agriculture Organization of the United Nations (FAO) adopted a similar methodology to calculate conflict-induced losses of agricultural output in the developing world as a whole from 1970

to 1997 (FAO, 2000b). It determined that such losses in real terms totaled \$121 billion (or an average of \$4.3 billion annually). Moreover, losses in the 1980s and 1990s exceeded the level of food aid provided to the world's countries. In sub-Saharan Africa, losses in the affected countries over the entire 28-year period were equivalent to 30 percent of their agricultural output. In the 1980s and 1990s, the losses came to 45 percent of all aid received by conflict countries—far exceeding the level of foreign direct investment (see Table 3).

In the absence of war, therefore, it is very likely that a group of very poor African countries would

Table 2. Estimated Numbers of People in Need of Food and Humanitarian Assistance (as of 15 November 2000)

Asia		Africa		Latin America	
Afghanistan Region (Afghanistan, Iran and Pakistan)	400,000	Angola	2,500,000	Colombia	1,800,000
Armenia	170,000	Burundi	704,000		
Azerbaijan	485,000	Congo, Republic of	120,000		
Georgia	182,000	Congo, Democratic Republic of	6,500,000		
Indonesia (W. Timor, Maluku)	996,000	Eritrea	750,000		
Russia (Chechnya)	267,000	Ethiopia	400,000		
Tajikistan	370,000	Guinea/Cote d'Ivoire (refugees)	534,000		
West Bank and Gaza	360,000	Kenya (refugees)	215,000		
		Liberia	453,000		
		Rwanda	40,000		
		Sierra Leone	1,810,000		
		Somalia	350,000		
		Sudan	2,600,000		
		Tanzania (refugees)	440,000		
		Uganda	900,000		
		Zambia (refugees)	210,000		
Regional Subtotal	3,230,000	Regional Subtotal	18,526,000	Regional Subtotal	1,800,000
Grand Total: 23,556,000					

Source: Author's calculations from FAO (2000a); ACC/SCN (2000); USCR (2000); UNOCHA (2000a); and WFP (2000).

have (a) produced more food, (b) generated more secure livelihoods for the population currently mired in poverty, and (c) had fewer children suffer from malnutrition. More of these countries' resources would have been available for investment in both human development and productivity gains among small farmers.

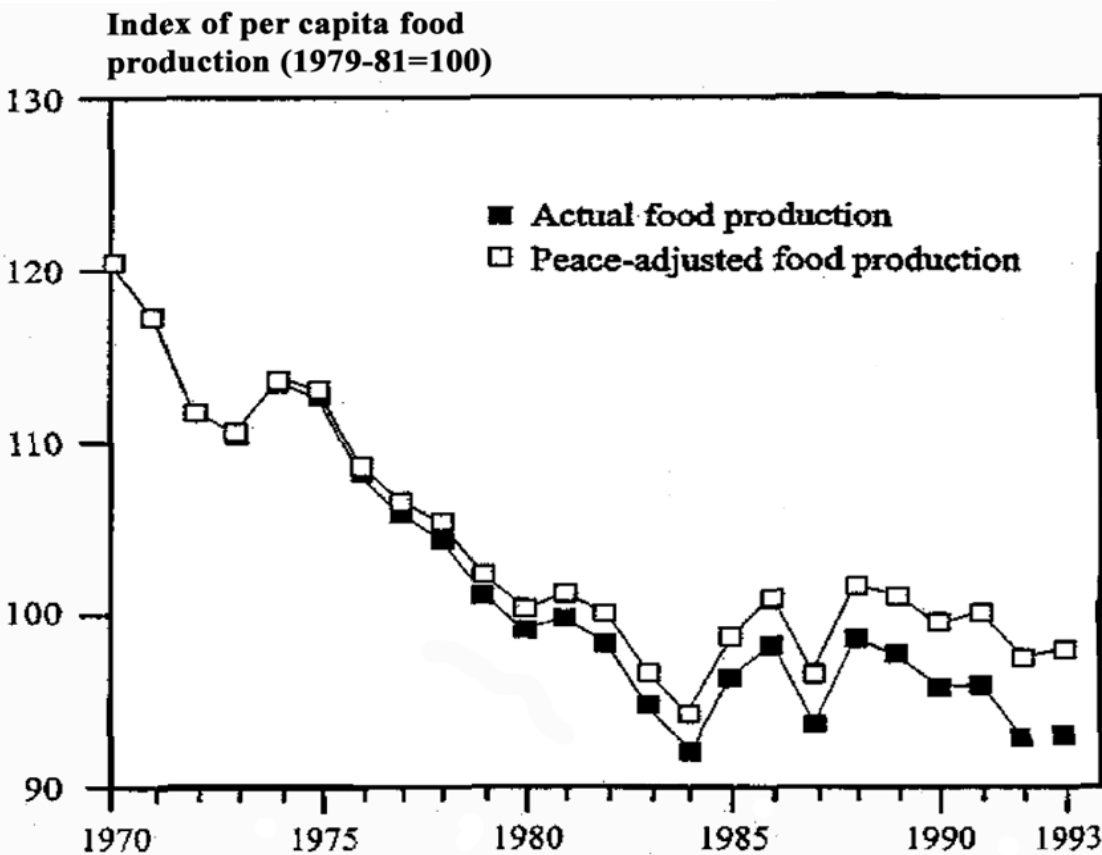
Impact on Vulnerable Groups

Across Africa, displaced and refugee populations in crowded and unhygienic camps prove particularly vulnerable to nutritional deprivation, health problems, and violence. Although civilian women and their dependent children account for 70 to 80 percent of refugees and internally displaced people, men with guns out-compete them for food and sometimes force women to trade sex for rations (Sayagues, 1992).

Children also suffer disproportionately in conflict situations. Not only are conflict and child

malnutrition closely correlated (see Figure 2), but conflict subjects children to physical disabilities, psychological trauma, homelessness, and separation from community ties during critical periods in their human development. After prolonged disruption of schooling, young adults in many African countries that have been at war most of their lifetimes find themselves unprepared for farming or any other vocation except fighting, and anchored in no community other than the one of comrades-in-arms. In addition to diminishing the opportunities for young people to acquire skills that can contribute to elevated and more diversified livelihoods, conflict disrupts the education of females—which has been identified as one of the best levers to improve the nutrition of all household members (Messer & Uvin, 1996). Recent International Food Policy Research Institute (IFPRI) research has found that increases in food availability accounted for 26 percent of the reduction in child

Figure 1. Actual and Peace-Adjusted Food Production Growth in Sub-Saharan Africa, 1970-93



Source: Messer, Cohen & D'Costa (1998).

Figure 2. Food Security, Civil Conflicts, and Child Mortality, 1990-96

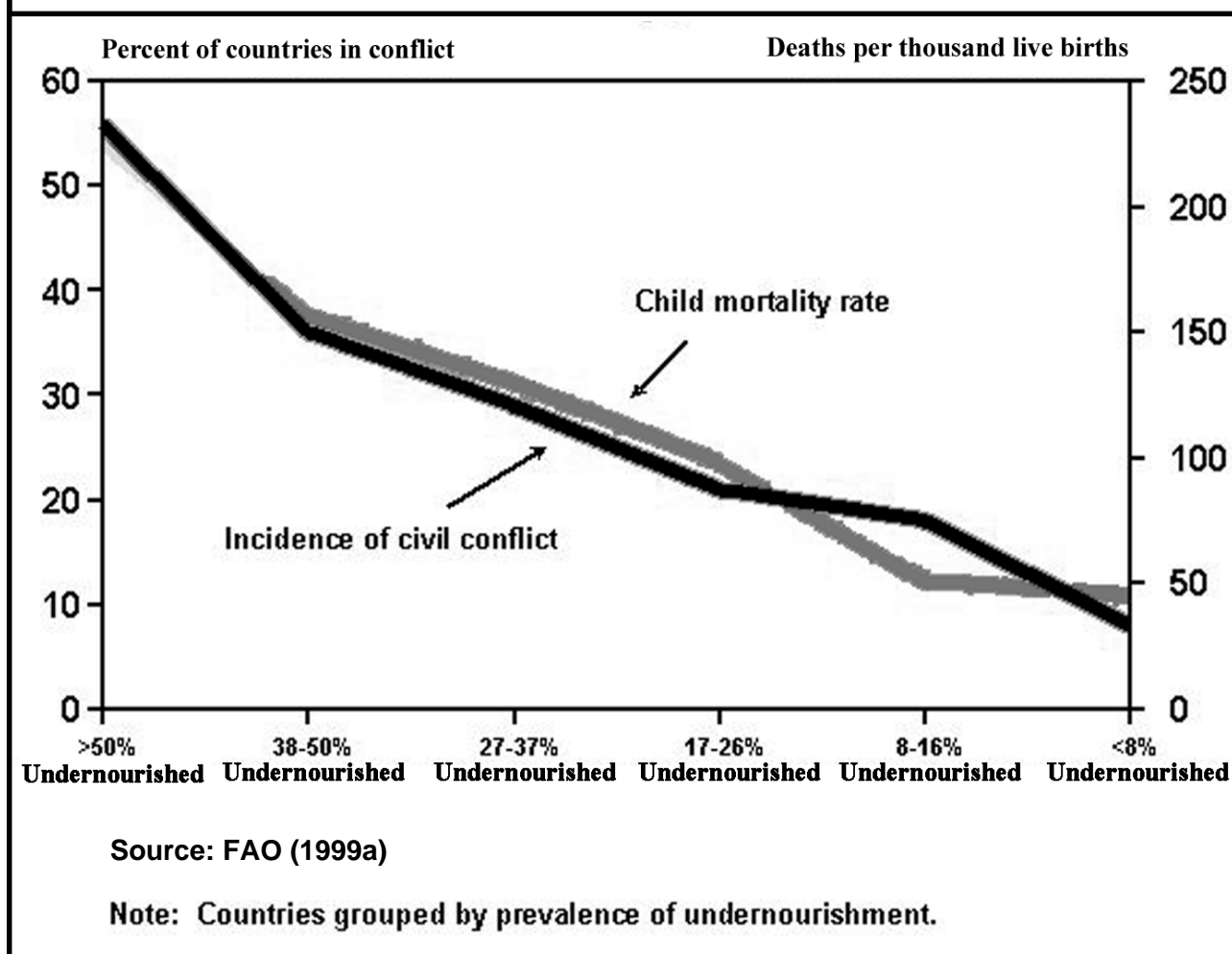


Table 3. Agricultural Losses and Capital Flows in Conflict-Affected sub-Saharan African Countries (\$ billion, current value)

	1980 to 1989	1990 to 1997
Losses	31.2	21.9
Official Development Assistance	50.8	65.7
Foreign Direct Investment	6.0	14.0

malnutrition in developing countries between 1970 and 1995. Increased food availability and female education together accounted for nearly 70 percent of the reduction (Smith & Haddad, 2000). But populations in war-torn countries instead suffer from decreased access to both education and food.

Land Mines

Even after wars have ceased, landmines planted during conflict continue to exact high costs in terms of human life, economic and social development, and agricultural production.² Mines are frequently planted

households with at least one mine-affected member is estimated to be 40 percent higher than in non-affected households. In Sierra Leone and Cambodia, one in 10 people has lost a limb to land mines, with serious implications for food production and income-earning capacity. The price of a landmine may be as low as \$3, but removing a mine costs \$300-\$1,000.

HUNGER AS A CAUSE OF CONFLICT

In sum, conflict has an enormous impact on human (food, economic, health, environmental,

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in rural areas, limiting access to farmland, roads, drinking water, and sources of firewood. Safe removal of 60 to 70 million unexploded landmines from 70 poor countries in which they are buried could greatly expand agricultural lands—by an estimated 88-200 percent in Afghanistan, 11 percent in Bosnia, 135 percent in Cambodia, and 4 percent in Mozambique. In addition to these four countries, those most severely affected by landmines include Angola, Croatia, Eritrea, Iraqi Kurdistan, Namibia, Nicaragua, Somalia, and Sudan. As of 1998, these 12 countries accounted for about 50 percent of the landmines deployed worldwide.

According to the International Committee of the Red Cross, approximately 26,000 civilians are killed annually or injured by landmines. Landmines and unexploded ordnance (a) reduce productivity of those maimed, (b) reduce agricultural production by making land unsafe to farm and by killing and injuring farmers, (c) limit market transactions because of impassable roads, (d) hamper the reintegration of uprooted people, (e) prevent investment in mine-infested areas, (f) cut off access to water and electricity, and (g) impede access of mobile health care providers. For the estimated 250,000 to 300,000 worldwide survivors of landmine explosions, the costs for adequate medical treatment to return them to full functionality would amount to \$2 to 3 billion. Often, it is the most able-bodied members of society—the "breadwinners"—who fall victim to violent conflict and landmines. For Afghanistan, Bosnia, Cambodia, and Mozambique, the probability of food security problems in

personal, community, and political) security (UNDP, 1994)—an impact well beyond the immediate conflicts and combatants. Food insecurity can also contribute to the outbreak of conflict. In the Horn of Africa in the 1970s, 1980s, and 1990s, droughts devastated already food-insecure, politically-oppressed populations, triggering chronic famines and civil wars. Ethiopia is a case in point: in the 1970s the failure of Emperor Haile Selassie's government to respond to food shortages touched off his overthrow. Famines in the Sahelian nations of Upper Volta and Niger in the 1970s also triggered coups when governments proved unwilling or incapable of responding to these conditions or made only selective responses.

The international community responded to these calamitous conditions through the UN system by strengthening the FAO's Global Information and Early Warning System on Food and Agriculture (GIEWS). It also strengthened alternatives to GIEWS—such as the U.S. Famine Early Warning System (FEWS)—by establishing grain reserves and minimal food-aid obligations for donor nations. The capacities of the World Food Programme and bilateral agencies' capacities to deliver food and development assistance were also expanded. Improved early warning and response (with more technically-advanced use of geographic information systems and satellites plus on-the-ground informants) became part of a deliberate international political strategy to prevent food insecurity and prevent famine or civil disruption. And this strategy was largely successful in preventing drought-induced famines in the 1980s and 1990s.

But the famine experience of Ethiopia in the 1980s demonstrated that improvements in famine early warning are not sufficient to ensure the successful prevention or mitigation of both famines and the possibility that denial of access to food will ignite conflict. Governments must be both capable and politically willing (a) to monitor and assess the resulting information and then intervene, (b) to identify regions and localities where food is lacking, (c) to import food in the form of aid or trade, and (d) to administer programs of relief where food access is severely restricted. This need for responsible political action was raised as well in reviews of famine vulnerability in Africa during the 1980s, which demonstrated convincingly that both the political will to protect food security as well as good governance were necessary for early warning and response to potential famine (Curtis, Hubbard, & Shepherd, 1988, pages 11-27; Berry & Downing, 1994).

For example, food flowed effectively to drought-stricken populations in Botswana, which had political will and sufficient infrastructure to respond. But such factors were missing in Ethiopia, and food flow to famine victims suffered accordingly. Moreover, in the Ethiopian famines of the 1980s, the food insecurity of the victims was not only a consequence of drought and of political oppression. Control over food was part of a deliberate Ethiopian state policy of forced resettlement of the opposition. The government used food aid selectively as a political tool to reward followers and let others starve (J. Clay et al., 1988; Von Braun, Teklu, & Webb, 1998).

Denial of essential food has been recognized as a category of human rights violation and is well established in humanitarian law. Through various UN conferences (such as the 1992 International Conference on Nutrition), the international community has affirmed that it is a basic human right not to starve; and it increasingly tries to intervene to feed the hungry in conflict situations. Beginning in 1991, the United Nations authorized military-humanitarian interventions in war-torn Iraqi Kurdistan, Somalia, Bosnia, and Rwanda (Minear & Weiss, 1993; Messer, Cohen, & D'Costa, 1998). But such interventions carry great risk, as they may further complicate the peace process; when combatants control the flow of emergency food and are being fed, they lose incentives to settle conflict quickly.

The complexities in this and other African cases of protracted civil war (such as Sudan's) suggest that conflict is not an inevitable outcome of environmental

scarcities and food insecurity. For conflict to occur, there must be present additional forces: (a) human rights violations; (b) oppressive social inequalities; and (c) cultural values that legitimate violent resistance as an appropriate response to unjust or intolerable conditions, especially those that deny affected populations access to food. Studies such as Uvin's (1996b), which analyzes the steps leading to continuing conflicts in Rwanda, suggest conflict arises as much from perceptions of unfairness as from absolute shortages. This point is also made in historical cases (e.g., Homer-Dixon, 1999; Scott, 1976; Gurr, 1970; and Wolf, 1969). In situations in which economic conditions have deteriorated, people may feel that they have nothing more to lose and so are willing to fight for resources, political power, and cultural respect—i.e., human rights (De Waal, 1997). The trigger condition for violent conflict may be: (a) *natural*, such as a prolonged drought; (b) *economic*, such as a change in price of the principal food (rice in Indonesia) or cash crop (coffee in Rwanda), depriving the rebelling population of its perceived just standard of living; or (c) *political*, such as the denial of access to land or social welfare programs in Central America (Barraclough, 1989; Collier & Quaratiello, 1994).

In addition, riots and rebellions (many of which may not rise to the conflict-fatality threshold used here, but which nonetheless involve a resort to violence) have long occurred in towns and cities subject to food shortages (Crossgrove et al., 1990). Discontent among Parisians and other urban folk over rising food prices and the inadequate government response played a major role in sparking the French Revolution (Lefebvre, 1962). Government efforts to eliminate food subsidies for urban consumers in connection with structural adjustment caused riots and government collapse in Zambia in 1990 (Rakner and Skalmes, 1996). In Indonesia in 1998, the Asian financial crisis triggered a currency collapse that led to urban unemployment, skyrocketing food prices, and protests in urban and rural areas alike. The violence contributed to ending the 30-year reign of President Suharto (Richburg, 1998).

Econometric studies provide additional empirical evidence of a link between food insecurity and violent conflict. These studies find a strong relationship between indicators of deprivation (such as low per capita income, economic stagnation and decline, high income inequality, and slow growth in food production per capita) and violent civil strife (Nafziger & Auvinen, 1997; Collier & Hoeffler, 1998).

Mathematical models developed for a U.S. government study identified high infant mortality—the variable that most efficiently reflects a country's overall quality of material life—as the single most efficient variable for explaining conflicts between 1955 and 1994. Along with trade openness and regime type, infant mortality was one of three variables best correlated with the historical cases studied. It often interacts with lack of trade openness and repressive regimes to trigger state failure (Esty et al., 1995; 1998).

In sum, political and institutional factors in interaction with environmental factors (such as drought and deforestation) are key indicators of potential conflict in Africa: well-being is affected not just by natural disasters, but also by how effectively a regime responds to them. Ineffective responses include inappropriate policies, such as those used by some Sahelian countries in the 1960s and 1970s: they both neglected agriculture and subjected it to disproportionate taxation relative to the allocation of public expenditure received. These policies greatly intensified the impact of the severe 1972-75 drought in the region (Christensen et al., 1981). Other ineffective responses include *unwillingness to respond to disaster*, as in Ethiopia in 1974 or Rwanda in 1993 (J. Clay et al., 1988; Uvin, 1996b), and *deliberate use of food and hunger as weapons*, as in the Horn of Africa in the 1980s and 1990s (Messer, Cohen, & D'Costa, 1998). These examples demonstrate that famine is a result of political choices as well as capabilities (Drèze & Sen, 1989).

Ethnic and Political Rivalries, Hunger, and Conflict

There is a high correlation between a country's involvement in conflict and its classification by FAO as a "low-income food deficit" country. Such countries have high proportions of food-insecure households. And, as already noted, conflict is also highly correlated with high rates of child mortality (see Figure 2), which is a common index for food insecurity.

Nevertheless, a number of analysts have challenged the notion that food insecurity is a causal factor in conflict. Paarlberg, for instance, argues that environmental scarcities such as land shortage, land degradation, and rapid population growth—what he refers to as "eco-Malthusian emiseration"—are not generally a factor in African conflicts. Rather, Paarlberg notes, the level of conflict in Africa has been relatively stable since the end of the colonial era. In his view, "[a] far more convincing explanation for

violent conflict in sub-Saharan Africa starts with the serious geographical mismatch, long noticed on the continent, between post-colonial national boundaries and ethnic boundaries." (Paarlberg, 1999, page 1) More generally, Gleditsch (1998) has pointed out that most conflicts can be sufficiently explained as a result of political, economic, and cultural factors, without reference to environmental scarcities.

In fact, neither viewpoint precludes a food-security connection. Even Homer-Dixon (1999), a leading figure in the environmental security field, concedes that environmental scarcity alone does not inevitably result in conflict. Instead, he stresses that resource constraints can have a profound influence on the social factors that eventually lead to conflict—as when elites monopolize control over scarce resources (such as water, cropland, or forests) and non-elites perceive themselves as unfairly deprived.

As an example of how this works in practice, Uvin (1996b) argues persuasively that environmental factors in general—and food insecurity in particular—critically contributed to triggering the 1994 genocide in Rwanda. Per capita food production and availability had declined dramatically in Rwanda over the preceding decade. The collapse of the world price of coffee in 1985 greatly reduced local and national government revenues and sapped rural households' purchasing power, even as urban job opportunities grew scarce and food prices rose. Deteriorating living conditions made many Rwandans into a ready audience for government appeals to ethnic hatred.

The basic, underlying, and trigger causes of conflict are not exclusively environmental, ethnic, or political-economic, but interactive. For policymakers, the relevant questions are: What finally triggers conflict? And at which points might international diplomats most effectively intervene? Unfortunately, even cutting-edge studies on conflict prevention in Africa focus almost exclusively on the immediate question of where engagement or diplomacy failed (e.g., Zartman, 2001). These studies explicitly do not address the underlying structural causes and thus ignore the crucial politics of food. In contrast to the 1970s, when foundations such as the Carnegie Corporation addressed concerns that the world was entering a neo-Malthusian crisis, today's institutional funders avoid the food-security connection to conflict. Yet the structural conditions of inequality and hunger that were present then persist today and contribute to the underlying causes of conflict. These underlying causal steps connecting food insecurity and conflict

demand more attention.

Moreover, microsimulation studies of the factors and clusters of factors linked to conflict (e.g., Esty et al., 1998) suggest that it should be possible to learn from peaceful cases in which environmental scarcities and food shortages did not spark or incite violence. Some agricultural specialists suggest that the critical factor in this regard is the ability of local people in resource-poor areas to intensify agricultural production or otherwise diversify livelihoods without degrading the environment. Social, cultural, and economic variables (such as proximity to markets or alternative

offer policymakers a better understanding about the resources on which people survive in good years and bad—resources which potentially act as brakes to cycles of hunger and conflict (e.g., Pottier, 1999).

POLICIES TO BREAK CYCLES OF HUNGER AND CONFLICT

Agricultural experts insist that sustainable agriculture and rural development efforts (with an emphasis on small farmers) should be able to help prevent conflict in resource-poor areas and countries

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employment opportunities) may also be relevant (Pender & Hazell, 2000). Since the 1960s and especially since the 1980s, food and nutrition policymakers have favored plans and programs that encourage participation by community-based organizations (Marchione, 1999). But there still are few case studies that show how peaceful development activities are mobilized at the community level. Nor are there many studies of how such community organizations can scale-up their activities to widen (a) the numbers of participants; (b) the functional areas they address (e.g., health and nutrition, water, education); and (c) the breadth and strength of their contacts with governments, NGOs, UN agencies, or other sources of technical or financial assistance.

Analysis of community-based organizations can also offer policymakers important insights on local cultures of cooperation, including on mechanisms of conflict prevention (Uvin, 1996a). Such inquiries can expand existing understandings of the causes of conflict or even use the findings of existing studies such as those of Esty et al. (1998) to focus on the role food security has played in cases for which analysis had predicted conflict but peace prevailed. What were the circumstances promoting peace in these "false positive" cases?

Conversely, it would be useful to understand situations in which warfare and violence did not produce food insecurity (for example, after the Rwanda genocide of 1994) even after such an outcome had been predicted. In these cases, ethnographic reports on food-security conditions promise to be useful because they

(Pender & Hazell, 2000). As mentioned above, about 75 percent of poor people in developing countries still live in rural areas, where agriculture is critical to incomes and food security (IFAD, 2001). Broad-based development, which includes both (a) economic growth, and (b) improvement in quality of and access to social and health services, offers the only real antidote to the hopelessness and despair of rural impoverishment. It is also the only real prospect to reverse the injustice and inequality that often leads to violence.

Yet worldwide official development assistance from the principal developed-country donors dropped 21 percent over 1992-97. Aid to sub-Saharan Africa fell 13 percent during 1994-97, and global aid to agriculture plummeted almost 50 percent in real terms over 1986-97 (see Figure 3). While agriculture aid rose in 1998 and 1999, it remained well below levels of the mid-1980s (FAO 1999, 2000b; OECD, 1998-2000).

In addition, global food aid levels fluctuated dramatically in the 1990s (see Figure 4). These levels hit their lows in 1994-96, a period which includes the Rwandan genocide, the beginning of the international war in the Congo, and high global grain prices at the beginning of the implementation of the Uruguay Round Agreement on Agriculture. Subsequent elevated levels from 1998-2000 resulted mainly from domestic market conditions in the United States (the largest donor of food aid), which ties its foreign agricultural assistance to U.S.-produced commodities (Cohen, 2000; Clay & Stokke, 2000).

But even as total international aid has shrunk,

emergency needs have claimed ever-larger slices of this aid because of the proliferation of crises. In 1996, emergency assistance came to 9.5 percent of all worldwide development aid, compared to 3.5 percent in 1987. Forty-one percent of food aid tonnage in 1996 was devoted to emergency relief, as opposed to 10 percent in the 1970s (OECD, 1998-2000; WFP, 2000). Emergency aid is usually necessary to save lives once a crisis occurs. But the relative and absolute reduction in resources available for long-term development assistance signifies lower investments in the kinds of food security, social services, and sustainable livelihood activities that might prevent the outbreak of conflict in the first place. The scarcity of development funds also limits opportunities to link relief and development and move crisis-affected communities beyond reliance on relief aid.

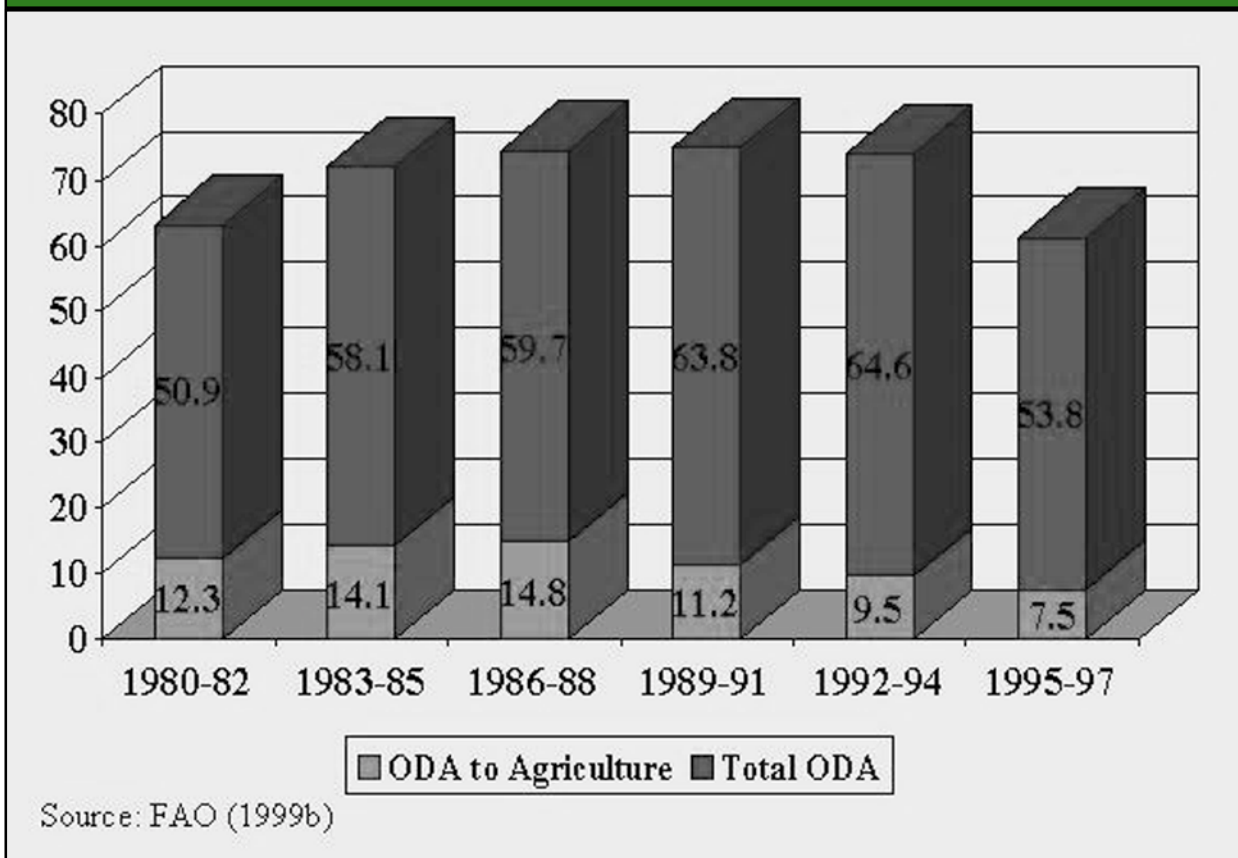
In addition, most war-torn countries have had to deal with the legacy of debt and the burdens of its repayment in the context of structural adjustment. At the macroeconomic level, (a) structural and financial adjustments, (b) debt relief, and (c) the details of balance of payments and negotiations in liberalized

trade certainly influence peace as well as poverty (Smith, 1994; Stewart, 1993). The year 2000 International Jubilee Campaign for debt relief took an important step in the direction of forgiving debt, thereby freeing more funds for economic and social programs.

Rethinking Program Implementation

Appropriate project administration—particularly implementation that is conscious of the risk of conflict and that seeks to promote peace—can deter violence (Messer, Cohen, & D'Costa, 1998). But peaceful outcomes require that agricultural investment be carried out in ways that promote peace and not intercommunity or intergroup rivalry over access to new resources. As shown in the case of Rwanda, inappropriately administered aid can exacerbate tensions when would-be beneficiaries perceive unfairness in the distribution of agricultural program assistance (Uvin, 1996b). Non-conflictual outcomes in agricultural programs (as shown in selected case studies in India) usually depend not just on the introduction of new agricultural technologies that

Figure 3. Trends in Aid Funding, 1980-82 to 1995-97 (millions of 1995 US \$)



favor growth but also on the construction of social contexts that promote social justice (De Soysa & Gleditsch, 1999; Kerr & Kolavilli, 1999).

It has been argued that Green Revolution technologies, which tended to benefit first the better-off farmers in many Asian communities, also benefited many rural poor people through lower food prices and increased employment opportunities on and off the farm (Kerr & Kolavilli, 1999). In the Indian states of Kerala and Tamil Nadu, agricultural and rural development programs have been coupled with extensive social programs and investment in human resources. In Maharashtra, social programs include state-funded public works employment-programs implemented whenever the danger of famine arises. Such interventions that do not privilege the already-privileged can reduce tensions and arguably have forestalled the types of food riots still prevalent in India as late as 1974. And as an alternative to such Green

that put extra pressure on water resources that may already be a source of tension. Trawick's forthcoming analysis of social conflict over access to water in Peruvian highland communities overrun by the revolutionary movement Sendero Luminoso (Shining Path) shows how higher-level official misunderstanding of local water organizations and competition over access to water pre-disposed certain communities (who were already perceiving unfair distribution) toward violence (Twawick, in press).

Institutional approaches to land and resource distribution are also relevant to peaceful or more conflictual outcomes. In El Salvador, the government's unwillingness to institute and carry out peaceful transfers of land from large to small holders in the 1980s contributed substantially to the level of violence (Barracough, 1989). In both these cases, violations of land and water rights were closely linked to the violation of the right to food, pushing people toward

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Revolution or bio-revolution agricultural development strategies, some agroecologists (including those working in conflict-prone areas) are supporting farmer-led efforts to replace chemical-intensive with alternative agroecological farming methods. Ecological, economic, and sociocultural factors are combined in this holistic approach (Thrupp, 1998; Thrupp, 2000; and Altieri, 1995).

When international, national, and local government or non-government policies and projects make equity an important consideration in rural development or relief activities, it can make an enormous difference in the effectiveness of such activities (De Soysa & Gleditsch, 1999; Drèze & Sen, 1989). In the case of relief-to-development activities in conflict-prone situations, policymakers can also promote agricultural and other programs that foster or demand cooperation among rival communities or community groups—thus avoiding the kinds of negative competition for development aid that analysts have cited as one of the causes leading to violence in pre-1994 Rwanda (Anderson, 1999). In situations where social infrastructure is fragile or water availability is low, project design can take such limitations into account, and avoid reorganization or delivery-of-resource proposals that demand highly-orchestrated community management structures or

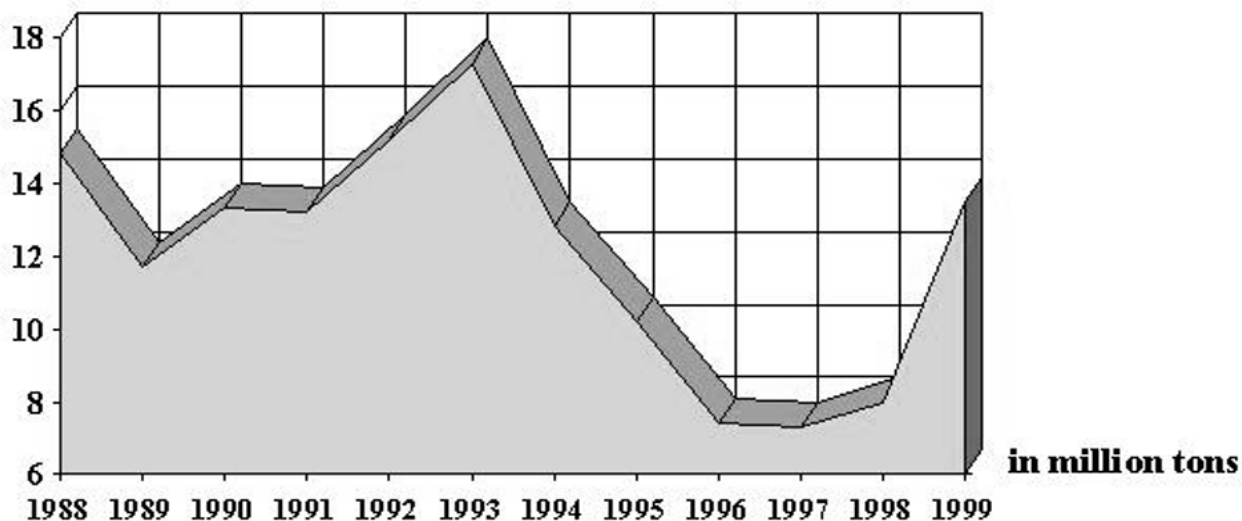
violent conflict and enmeshing them in ongoing cycles of hunger and conflict.

Advocates for the human right to food or subsistence rights as a basic human right are quick to point out the close linkage between food insecurity, human rights abuses, and conflict (e.g., Messer, 1996b). And even some who do not accept the equality of such economic rights with traditional civil-political rights can be interpreted as accepting (a) the principle that everyone has a basic human right to adequate food and nutrition with dignity, and (b) the connection between abuse of civil-political rights and vulnerability to hunger (e.g., Marchione, 1996; De Waal, 1997; and Sen, 2000). The umbrella of human rights thus provides an overarching framework for planning and evaluating development, particularly agricultural policies and programs.

CONCLUSION

Linkages between conflict and food insecurity have become increasingly evident in the post-Cold War era and are being addressed by peace and food-security advocates both inside and outside of government and international agencies. The 2001 reorganization of USAID into interactive "pillars" that focus on "economic growth and agriculture" as well as on

Figure 4. Global Food Aid Deliveries



Source: www.wfp.org/reports/faf/98 (Data for 1999 are estimated).

"conflict prevention" suggests that the United States may be widening its scope of action to address complex food-security problems. In addition, conflict's explicit link to the human right to adequate food and nutrition with dignity has received additional credence since the World Food Summit (1996) made implementation of this right one of its priority objectives.³ Research and activities supporting both the "development" and "human rights" approaches can also be found in increasing numbers of U.S., bilateral, and international agency products and activities:

- The US National Intelligence Council's *Global Trends 2015: A Dialogue About the Future with Nongovernment Experts* (NIC, 2000-02, page 26) highlights the numbers of chronically malnourished people that will increase in conflict-ridden sub-Saharan Africa as well as the potential for famine where conditions of political repression and internal conflict coincide with natural disasters.
- USAID has focused on promoting food security and peace in the Greater Horn of Africa (USDA, 2000).
- As a result of the World Food Summit and in collaboration with donor government aid agencies, NGOs, and International Agricultural Research Centers (IARCs), United Nations agencies have launched the Food Insecurity and Vulnerability

Information and Mapping System. This project has the goal of contributing to famine prevention and long-term food security through improved data quality and analysis (FAO, 2000c).

- The UN Administrative Committee on Coordination/Subcommittee on Nutrition has enhanced its efforts to monitor the nutrition status of conflict-affected people (ACC/SCN, 2000).
- The World Institute for Development Economics Research of the UN University has conducted extensive research on the causes of famine and conflict (Drèze & Sen, 1989; Nafziger & Auvinen, 1997).
- IARCs have provided seeds from their extensive germ plasm collections to assist reconstruction efforts in post-conflict situations (Pinstrip-Andersen, 1998).
- The U.K. Department for International Development has put emphasis on assuring secure livelihoods in both development assistance and conflict aid (DfID, 1997).
- The European Union has increasingly made use of developing-country food in its food aid programs to enhance the linkages between food aid and local, regional, and national food security (Clay & Stokke, 2000).

Donor agencies, academic institutions, and NGOs involved in relief and development have also been

examining how better to link emergency aid programs to longer-term development efforts. Many developing country governments have enhanced their emergency response capabilities. The participation of civil society—and especially of the affected communities in such activities—is critical. More positive scenarios for food, agriculture, and the environment are possible if peace can be (a) protected where conflict is imminent, (b) achieved where conflict is active, and (c) sustained where conflict has ceased. Food security and development programs must include conflict prevention and mitigation components so that considerable agricultural and rural development aid is not consumed in conflict (as it was in Somalia, Rwanda, Ethiopia, Indonesia, and Colombia). Savings from conflict avoidance might be calculated as returns to aid.

Reciprocally, relief and post-conflict

reconstruction programs need to have food security and agricultural and rural development components if they are to help break the cycle of hunger and conflict. Such a transformation of development and relief efforts requires new policies and programs. Government planning and aid programs should include "peace" considerations and conditions, assessing the likely impact of policies on food security, equity, and poverty alleviation. Such planning and programs must be grounded in democratic processes, the participation of civil society, and the rule of law. When development agendas combine peace and food-security objectives, they will move beyond encouraging economic growth and good governance. They will then be able to assist in the building of states that are also capable of responding to emergency situations while ensuring everyone's access to adequate food. **W**

ENDNOTES

¹ Following the Conflict Data Project at Uppsala University in Sweden, minor conflicts are those which result in at least 25 battle-related deaths per year, but fewer than 1,000 deaths during the course of the conflict. Major conflicts result in at least 1,000 total deaths (Wallenstein & Sollenberg, 2000). Our earlier work on food wars (Messer, 1996) followed

Sivard's (1996) definition of war, which focused solely on conflicts involving more than 1,000 deaths.

² This section draws on Cohen & Feldbrügge (2000) and U.S. Department of State (1998).

³ See Ziegler (2001), especially paragraphs 27 and 74.

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