

FAMINE IN THE TWENTIETH CENTURY

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SUMMARY

More than 70 million people died in famines during the 20th century. This paper compiles excess mortality estimates from over 30 major famines and assesses the success of some parts of the world - China, the Soviet Union and, more recently, India and Bangladesh - in apparently eradicating mass mortality food crises. This is contrasted with the experience of sub-Saharan Africa, where famines precipitated by adverse synergies between natural triggers (drought) and political crises (civil war) have become endemic since the late 1960s. The paper also examines the evolving discourse around famine causation during the century, and finds that despite a proliferation of demographic, economic and political theories, each embodies the reductionist perspective of disciplinary specialisation. The paper concludes by arguing that if famine is to be completely eradicated during the 21st century this requires not just technical (food production and distribution) capacity but substantially more political will, at national and international levels, than has been evident to date.

INTRODUCTION

Two significant shifts characterised 20th century famines over famines of previous eras. First, in terms of causality they were immensely more complex than ever before: the colonial period and the subsequent emergence worldwide of often weak, malevolent or contested nation-states saw simple interpretations of famines as natural disasters being superseded by complex negative synergies between natural triggers (drought or flood) and political culpability (government policy, war, failures of international response). Second, during the latter part of the century food crises became concentrated in sub-Saharan Africa, where interactions between drought and civil war, in particular, became the dominant causal trigger of famine.

These observations carry three positive corollaries. First, during the century vulnerability to famine appears to have been virtually eradicated from all regions *outside* Africa. The last famine in Europe occurred in the Soviet Union immediately after World War II, the last famine in China was a by-product of the Great Leap Forward of 1958-62, and the last famine in South Asia (to date) occurred in Bangladesh in 1974. Occasionally famines due to exceptional circumstances afflict Southeast Asia (Cambodia in the 1970s, North Korea in the 1990s), but famine as an endemic problem in Asia and Europe seems to have been consigned to history. The grim label 'land of famine' has left China, Russia, India and Bangladesh, and since the 1970s has resided only in Ethiopia and Sudan.

Second, the link from crop failure to famine has been broken. Most recent drought- or flood-triggered food crises have been adequately met by a combination of local and international humanitarian response. The list of averted famines, since the emergence of a global community with the capacity and political will to predict and respond timeously to humanitarian emergencies, is growing: Bangladesh in 1979 and 1984, Botswana and Kenya in 1984, southern Africa in 1991. This is an immensely encouraging development (though offset by some significant response failures, usually for political rather than technical reasons). Third, because vulnerable populations are much smaller in Africa than in Asia and the Soviet Union, the death toll in recent famines is dramatically lower than in earlier famines. If this trend continues, the 20th century should go down as the last during which tens of millions of people died for lack of access to food.

This paper has two distinct objectives. The first is to catalogue the human cost of 20th century famines in terms of how many people died (excess mortality), who died (by gender and age cohorts), and why they died (causes of death). The second objective is to review explanations of why these famines occurred, through a critical interrogation of the academic discourse around famine causation. The paper is structured as follows. A brief discussion of alternative definitions of famine precedes the attempt to quantify loss of life to famine during the 20th century. This is followed by a review of the debates around age- and sex-specific mortality risk, and on the respective roles of starvation and disease. Next, the changing nature of famine during the century is briefly considered ('Famine trajectories'), and the second half of the paper examines three competing paradigms of famine causation: demographics ('neo-malthusianism'), economics ('entitlement failure'), and politics ('complex emergencies'). Since extensive treatments of specific theories and their application to various famines are available elsewhere, the focus here is on the evolution of theorising rather than on the theories themselves. The final section discusses developments in famine prediction and prevention during the century.

DEFINING FAMINE

Until relatively recently, famine was defined by dictionaries and famine analysts rather narrowly, as ‘virulent manifestations of intense starvation causing substantial loss of life’ (Kumar 1990:173). During the 1980s several writers challenged this view of famine as a discrete event that is triggered by food shortage and results in mass death by starvation. These writers argued instead that famine should be perceived as an intensification of ‘normal’ processes rather than an aberrant event (Rangasami 1985); that famines are not always triggered by a decline in food availability (Sen 1981); that people who experience famine do not regard excess mortality as a prerequisite for a famine to have occurred (Iliffe 1979); and that deaths during famine are related more to epidemic diseases than to starvation (de Waal 1989). Mass starvation is only one possible outcome of the famine process; others include fertility decline, economic destitution, community breakdown, distress migration and exposure to new disease vectors. In precolonial Tanzania, two kinds of famines were recognised: ‘ordinary food shortages, and ‘famines that kill’, the ultimate horrors of mass starvation’ (Iliffe 1979:13). De Waal (1989) observed that people in Sudan categorise famines according to their severity: minor famines cause hunger, severe famines cause destitution, and catastrophic famines result in death.

The belated recognition by observers that famines are more complex and open-ended phenomena than they had previously thought generated a new wave of definitions that incorporated multiple impacts, behavioural responses and ‘insider’ perspectives, and avoided taking a simplistic theoretical position.¹ A good ‘behavioural’ definition is provided by Walker (1989:6): ‘Famine is a socio-economic process which causes the accelerated destitution of the most vulnerable, marginal and least powerful groups in the community, to a point where they can no longer, as a group, maintain a sustainable livelihood.’

For purposes of this paper, however, since an attempt is made to quantify the cost of 20th century famines in terms of human lives, only catastrophic food crises that resulted in mass mortality are considered. This is not to deny or ignore the immense suffering and disruption to livelihoods and communities that accompanied numerous other famines which did not result in excess mortality, or where deaths were counted in the hundreds rather than the thousands or millions.

FAMINE MORTALITY

The most extreme and tragic consequence of famine is premature death, yet surprisingly little is known about the scale of excess mortality in most famines, including the recent highly publicised African food crises. Estimates of famine deaths are always approximate and are often politicised by governments wishing to either conceal or exaggerate a food crisis, or by donors and NGOs desperate to mobilise humanitarian support. For valid methodological reasons, demographers and nutritionists favour reporting crude mortality

¹ Alternative definitions of famine are reviewed by de Waal (1989, Chapter 1) and by Devereux (1993, Chapter 2).

rates ('25/1,000') among population subgroups, but the media and public demand aggregate totals ('1.5 million'), which typically are not known with any confidence.²

Problems in estimating famine mortality arise for a number of reasons. Firstly, in the absence of comprehensive records of births and deaths in poor countries, even basic demographic statistics - such as the national population or crude mortality rates in non-famine years - are often unreliable or even unavailable. Yet the methodology for estimating excess mortality during a famine requires scaling up mortality rates in monitored population groups (such as malnourished children in refugee camps) to the national population and comparing these against 'normal' mortality rates. Also, mortality risk varies between different age and sex cohorts and between settled *versus* displaced populations. Children, who are typically monitored most closely, are usually at greatest risk - along with the elderly, who are often left out of nutritional surveillance systems.

The movement of large numbers of displaced people is itself associated with heightened mortality risk, because of loss of access to normal food sources and exposure to hazardous environments - new disease vectors, lack of shelter, use of unsafe water (de Waal 1989; Seaman 1993). Paradoxically, mortality rates are often highest of all in refugee camps, because most people who arrive there are already suffering severe nutritional stress and because many refugee camps are overcrowded and unsanitary environments where communicable diseases spread rapidly. So the contexts within which famine mortality is monitored are artificial, and this might be responsible for the suspicion that estimates of famine mortality are often exaggerated.

On the other hand, it should be noted that mortality does not capture the full demographic impact of famine, which often doubles when lost births due to fertility decline are considered. For example, the demographic impact of the Great Leap Forward famine in China is estimated at over 60 million lives: 30 million directly, through mortality, and 33 million indirectly, through lost or postponed births (Ashton *et al.* 1984:614).³

Table 1 below compiles summary information on 32 twentieth century famines for which mortality estimates are available. There is considerable variation in estimates of excess mortality for almost all famines, which is reflected in the table by the presentation, where discrepancies exist between alternative analysts, of a range of figures rather than a point estimate. For example, Dyson (1993) has challenged Sen's (1981) widely quoted figure of 3 million deaths for the Great Bengal Famine, reducing it by one-third to 2.1 million. Rather than attempt to arbitrate on this controversy, both figures are presented in the table as an upper and lower bound.

Note that only famines for which mortality estimates are available have been included in Table 1. This restriction results in some inevitable omissions, particularly in sub-Saharan Africa, where Watts' observation

² Figures in parentheses come from Bangladesh 1974, the best documented famine to date in terms of demographic impacts (age- and sex-specific death and fertility rates). From 1973-74 to 1974-75 the crude death rate rose by 60%, from 15.6/1,000 to 24.6/1,000 (Watkins and Menken 1985:654), and a total of 1.5 million people died prematurely (Alamgir 1980:143).

³ Between 1958 and 1961, China's crude mortality rate doubled from 20/1,000 to 40/1,000, while the birth rate collapsed from 38/1,000 to 22/1,000 (Caldwell and Caldwell 1992:369).

Table 1. *Estimated mortality in major 20th century famines*

Years	Location (epicentre)	Excess mortality	Causal triggers
1903-06	Nigeria (Hausaland)	5,000	Drought
1906-07	Tanzania (south)	37,500	Conflict
1913-14	West Africa (Sahel)	125,000	Drought
1917-19	Tanzania (central)	30,000	Conflict & Drought
1920-21	China (Gansu, Shaanxi)	500,000	Drought
1921-22	Soviet Union	9,000,000	Drought & Conflict
1927	China (northwest)	3,000,000-6,000,000	Natural disasters
1929	China (Hunan)	2,000,000	Drought & Conflict
1932-34	Soviet Union (Ukraine)	7,000,000-8,000,000	Government policy
1943	China (Henan)	5,000,000	Conflict
1943	India (Bengal)	2,100,000-3,000,000	Conflict
1943-44	Rwanda	300,000	Conflict & Drought
1944	Netherlands	10,000	Conflict
1946-47	Soviet Union	2,000,000	Drought & Government policy
1957-58	Ethiopia (Tigray)	100,000-397,000	Drought & Locusts
1958-62	China	30,000,000-33,000,000	Government policy
1966	Ethiopia (Wollo)	45,000-60,000	Drought
1968-70	Nigeria (Biafra)	1,000,000	Conflict
1969-74	West Africa (Sahel)	101,000	Drought
1972-73	India (Maharashtra)	130,000	Drought
1972-75	Ethiopia (Wollo & Tigray)	200,000-500,000	Drought
1974-75	Somalia	20,000	Drought & Government policy
1974	Bangladesh	1,500,000	Flood & Market failure
1979	Cambodia	1,500,000-2,000,000	Conflict
1980-81	Uganda (Karamoja)	30,000	Conflict & Drought
1982-85	Mozambique	100,000	Conflict & Drought
1983-85	Ethiopia	590,000-1,000,000	Conflict & Drought
1984-85	Sudan (Darfur, Kordofan)	250,000	Drought
1988	Sudan (south)	250,000	Conflict
1991-93	Somalia	300,000-500,000	Conflict & Drought
1995-99	North Korea	2,800,000-3,500,000	Flood & Government policy
1998	Sudan (Bahr el Ghazal)	70,000	Conflict & Drought

Note: Annex 1 lists the sources used in compiling this table, and comments on the credibility of mortality estimates. Famines that killed more than a million people are highlighted. Biafra in the 1960s and Ethiopia in the 1980s are not highlighted because the widely cited figure of one million deaths for each famine should be regarded as an upper limit. 'Conflict' as a causal trigger encompasses a wide range of sociopolitical crises, from international conflicts to civil war, counterinsurgency, warlordism and localised raiding.

in 1983, that the record on 'famine chronologies remains embarrassingly incomplete and often highly ambiguous' (Watts 1983:100), remains true today. Some famines not reported in Table 1 include the southern African drought of 1922, during which one-third of the population are said to have died in parts of Mozambique (Iliffe 1990:69), and the drought famine of 1927 in northern Nigeria, during which 'death rates increased markedly [but] no attempt was made by the colonial administration to estimate either human losses or social costs' (Watts 1983:307). A similar reluctance by the colonial administration to admit the

extent of a famine triggered by drought plus wartime policies meant that ‘mortality statistics are wholly lacking’ for a famine that struck northern Nigeria in 1942-43 (Watts 1983:335). Several more recent famines that are integrally associated with civil war are also omitted because it is virtually impossible to separate mortality due to conflict from mortality due to famine. These ‘war famines’ include: Angola 1974-76 and 1993-94, Zaire 1977-78 and 1997, Liberia 1992-93 and Liberia/Sierra Leone 1995-98 (von Braun, Teklu and Webb 1998:3). Finally, a number of minor famines where mortality was limited to less than one thousand are also excluded, since their impact on global famine mortality totals is trivial - e.g. 47 deaths in Zimbabwe in 1922 (Iliffe 1990:76), 500 in Tanzania in 1929 (Bryceson 1990:69), and 200 in Malawi in 1949 (Vaughan 1987:162).

Given these reservations with respect to both over-estimation and under-reporting of famine mortality, the figures presented in Table 1 should be taken as providing orders of magnitude rather than precise statistics.

The data assembled in Table 1 reveal that more than 70 million people died in famines during the 20th century: the range of estimates is 70.1 million to 80.4 million. Because mortality figures from earlier centuries are scantier and more unreliable, it is difficult to deduce from the available evidence how this total compares with the past except in the vaguest sense. Dando (1980) estimated that ‘at least two million people’ died during famines in the 17th century, 10 million during the 18th century - though this is probably an underestimate - and 25 million in the 19th century. Dando (1980:xii) also predicted that ‘more people will die of famine in the 20th century than in any other century in history’. In fact, this macabre record had certainly been broken by 1962.

Although famine chronologies exist for many parts of the world - China, Ethiopia, India, Russia - dating back thousands of years, credible mortality estimates for specific historical famines are relatively rare. Probably the worst famine in history, in mortality terms, accompanied the Bubonic Plague in 1345-48, when 43 million deaths from disease and starvation were recorded throughout Europe, including two-thirds of the population of present-day Italy (Field 1993:14). The last subsistence crisis in mainland Europe occurred in 1816-17, and caused a ‘true famine with deaths from starvation’ (Post 1977:46) in eastern Switzerland (16,000 excess deaths), Hungary (44,000 reported famine deaths), and northern Italy (more than 120,000 excess deaths). Thirty years later, the ‘Great Famine’ of 1846-48 reduced Ireland’s population by 25% - out of eight million people, approximately one million died and one million emigrated.⁴

Alamgir’s comprehensive survey of *Famine in South Asia* (Alamgir 1980) recorded 22 major famines in British colonial India between 1770 and 1900, mostly triggered by drought, but estimates of deaths are available for less than half of these. Excess mortality in the Bengal famine of 1770 - almost certainly the worst famine worldwide of the 18th century - was estimated at one-third of the population, or about 10 million people (Alamgir 1980:59).⁵ Famines in northern India (1837), Punjab (1860), and Orissa, Bihar and

⁴ Mortality estimates for the Irish Potato Famine range from 860,000 to 1.5 million (Watkins and Menken 1985:650).

⁵ In mortality terms this remains the worst famine ever in Bengal or Bangladesh. The two major twentieth century famines in this territory claimed 1.5-3 million lives (in 1943) and 1.5 million lives (in 1974) - much smaller totals from much larger populations. The fact that famine deaths in 1974 amounted to 1.5% of the population as against

Madras (1866) claimed, according to contemporary estimates, 800,000, 200,000 and 1,585,000 lives respectively (Alamgir 1980:64-68). A terrible drought in 1876 throughout most of India killed 5.25 million people and another drought in 1899-1900 claimed a further half a million lives (Alamgir 1980:68). But the worst famine of the 19th century was almost certainly in northern China between 1876 and 1879, when 9-13 million people died (Mallory 1926:29).

In the Horn of Africa, famines have been recorded since 253BC, and more than forty mass mortality famines are known to have afflicted Ethiopia in the past thousand years (Webb and von Braun 1994:21). In the West African Sahel, famines occurred on average every 7-10 years in the 17th century and every 5 years in the 18th century (Swift 1977, cited in Watts 1983:100). But the scale of mortality in African famines is not known until the late 19th century, when the 'Great Ethiopian Famine' of 1888-92 is said to have killed one-third of the population of Ethiopia and between 40% and 75% of Masai pastoralists in neighbouring northern Tanzania (Iliffe 1979:124). A succession of droughts and plagues of locusts during the late 1890s may have resulted in 'more than 750,000' deaths from famine in Tanzania alone (Iliffe 1979:125), and unknown numbers in Ethiopia and Sudan.

Striking patterns emerge from Table 1 about the pattern of 20th century famine mortality, both geographically and over time. First, famine was steadily rolled back over the decades, from the northern hemisphere and Asia (with occasional exceptions) to sub-Saharan Africa, where it remains firmly entrenched - indeed, since the 1980s, famine appears to have taken up permanent residence in the Horn. Second, this shift has been associated with a dramatic drop in famine mortality. Deaths in the worst African famines are counted in the hundreds of thousands rather than the millions. A rough count from Table 1 yields a headcount of 66 million deaths from nine famines in Russia, China and India before the mid-1960s, and around 10 million deaths from 16 famines, most of these occurring in Africa, since the late 1960s. All 11 of the famines highlighted in Table 1 as claiming more than a million lives occurred in Asia and Europe. The biggest killer of all 20th-century African famines - Ethiopia in the mid-1980s - killed up to but probably less than one million people, and total mortality in all 19 African famines listed in Table 1 amounted to just over 4 million. By contrast, three Soviet Union famines claimed 18-19 million lives and five Chinese famines killed over 40 million. Most sobering, though, is the finding that millions of people have died in famines every decade since at least the 1920s (see Table 2). Famine is not a matter for historians; it has yet to be defeated.

±33% in 1770 must be considered as significant progress, which was followed by outright success in preventing famine during the 1979 and 1984 food crises.

Table 2. Famine mortality by region and decade

Decade	East Asia	Europe	SE Asia	South Asia	Africa	Total
1900s					42,500	42,500
1910s					155,000	155,000
1920s	7,000,000	9,000,000				16,000,000
1930s		7,500,000				7,500,000
1940s	5,000,000	2,010,000		2,550,000	300,000	9,860,000
1950s	15,750,000				248,500	15,998,500
1960s	15,750,000				1,052,500	16,802,500
1970s			1,750,000	1,630,000	471,000	3,851,000
1980s					1,425,000	1,425,000
1990s			3,150,000		470,000	2,470,000
Total:	43,500,000	18,510,000	4,900,000	4,180,000	4,164,500	75,254,500

Note: Where a range of mortality estimates is provided for a specific famine in Table 1, the midpoint of the range is taken for Table 2 and Table 3. Mortality for the Chinese famine of 1958-62 is divided equally between the 1950s and 1960s. All mortality for the Biafra famine is attributed to the 1960s and for the Sahel famine of 1969-74 to the 1970s.

Over 80% of all famine deaths during the twentieth century occurred in China and the Soviet Union, and all of these deaths occurred before 1965. Famine mortality was higher in the second half of the century, mainly because of China's Great Leap Forward famine. Three distinct periods can be identified. In the first two decades of the century mortality was very low and confined to Africa (following the enormous famines in China and India of the late 19th century). Over 85% of famine deaths were clustered in the middle five decades, predominantly in China and the Soviet Union, and a further 12% occurred since the 1970s, all in Africa and South and Southeast Asia. South Asia and sub-Saharan Africa, which have been associated with catastrophic food crises since the Bangladesh, Sahel and Ethiopian famines of the early 1970s, together accounted for just 11% of global famine mortality. Almost three in every five famine deaths occurred in East Asia, one in four occurred in Europe, one in fifteen in Southeast Asia, one in eighteen in South Asia and a further one in eighteen in Africa (Table 3).

Even when famine mortality is high in terms of absolute numbers, as a percentage of national population it rarely exceeds 2-3%. Even in the very worst famines extravagant claims such as 'half the population died' rarely hold up under closer scrutiny. The Great Leap Famine, in absolute terms the biggest famine of the 20th century, killed 4½% of the Chinese population between 1958 and 1962. Proportionately, the worst famine of the century might have occurred as recently as the 1990s, when as many as 12-15% of North Korea's 23 million population may have died. By contrast, the 1.5 million Bangladeshis who died of famine in 1974 constituted 2% of the population, and if one million Ethiopians died in the 1980s famine, this represents 2.2% of the population of 46 million.

Table 3. *Famine mortality by region and time period*

		Mortality	%
Region	East Asia	43,500,000	57.8%
	Europe	18,510,000	24.6%
	Southeast Asia	4,900,000	6.5%
	South Asia	4,180,000	5.6%
	Africa	4,164,500	5.5%
Period	1900-1949	33,557,500	44.6%
	1950-1999	41,697,000	55.4%
Period	1900 - 1919	197,500	0.3%
	1920 - 1969	66,161,000	87.9%
	1970 - 1999	8,896,000	11.8%
Total		75,254,500	100.0%

On the other hand, mortality rates at the epicentre of a famine or among vulnerable socioeconomic groups and demographic cohorts can be considerably higher than the average. A quarter of the population of the Ukraine died during the famine of the early 1930s (Becker 1996:274), but as a proportion of the population of the entire Soviet Union at that time the figure was obviously much lower. During the Bengal famine of 1943 the crude mortality rate doubled from 26/1,000 to 53/1,000, but in some districts it reached 150/1,000 (Caldwell and Caldwell 1992:371). In the five worst affected *awrajas* of Wollo, Ethiopia, Wolde Mariam (1986:57) estimates that 106,000 people died in 1973, or 20% of the population of those five districts. In Darfur, Sudan in 1984-85, age-specific mortality rates for children aged 1-5 years old increased from 16/1,000 to 80/1,000. These disaggregated statistics illustrate how the impact of a food crisis is concentrated on particular groups of people: typically, children and the elderly living in poor rural households far from the capital city.

Disaggregation by age-sex cohorts reveals that patterns of mortality during famines reflect complex interactions between biological and sociocultural vulnerability. Whereas biological vulnerability may be generalisable, sociocultural vulnerability is context-specific, so age- and sex-specific mortality rates are not amenable to easy generalisation either geographically or over time. Intrahousehold mortality patterns during famines reflect local social hierarchies, cultural practices and economic priorities as well as age- and sex-specific biological vulnerability.

As a rule, the pattern of deaths during famine is an exaggeration of the normal profile of mortality in the community. Young children and the elderly are at greatest risk in normal times, and these groups tend to suffer the greatest absolute rise in deaths during food crises. In the 1943 Bengal famine, for instance: 'Excess mortality among the population under 10 and over 50 years was several times that of those of intermediate age' (Caldwell and Caldwell 1992:371). Alamgir (1980:145) found that 'children succumbed more easily than adults' during the Bangladesh famine of 1974. The greatest rises in death rates were recorded for children aged 1-11 months, followed by children aged 5-9 years, then people over 45 years old (Watkins and Menken 1985:654).

From other famines, though, there is evidence that infants (under one year old) are relatively protected compared to young children (one to four years old), and that older children (over five years old) and adolescents - where death rates are very low in normal times - suffer the highest proportionate rises of all (Dyson 1993). During the Darfur mid-1980s famine, death rates among children aged one to four rose sharply by 500%, but infant mortality rates were not noticeably higher than usual, which de Waal (1989:178) attributes to the protection that breastmilk provides against infection.

Available evidence shows no clear pattern in terms of whether males of any age cohort are relatively better protected than females, or *vice versa*. In Chinese famines earlier this century, girl children typically died first, then elderly men and women, then boys (Becker 1996:3). By contrast, data from five major famines in South Asia found that in every case 'male deaths increased proportionately more than female deaths' (Dyson 1993:25), which Dyson attributes to female biological advantages over males and the hazards of migration, which was undertaken mainly by men. Similarly, Seaman (1993:31) notes that in conflict-related famines, adult men are most at risk, though it is difficult to disentangle mortality due to violence from that caused by hunger and disease.

In general, women are more resilient than men because females store more body fat than males, and a statistical effect also favours female survival because famines are associated with fertility declines, so maternal mortality rates fall for the duration of the food crisis. On the other hand, women often face higher 'social vulnerability' than men, in cultural contexts where intrahousehold allocation rules for food, health care and other basic needs favour males over females. The balance of evidence, though, suggests that male mortality rates generally rise proportionately more than female mortality rates. 'Tables of Death' compiled during the Irish Famine of the 1840s 'found that men were somewhat more likely to succumb than women' (Ó Gráda 1998:67). 'During the Dutch Hunger Winter of 1944-45, mortality rose for all ages combined by 73 percent for females, but 169 percent for males' (Watkins and Menken 1985:656). Similarly, in the Karamoja, Uganda famine of 1980-81: 'Mortality was significantly greater for males than for females' (Seaman 1993:30).

On the other hand, the gendered pattern of famine mortality is more complex when disaggregated by age cohorts. In the Ethiopian famine of the early 1970s, for example, male deaths exceeded female deaths and deaths by age cohort followed the standard pattern, being concentrated among the under-fives and, to a lesser extent, among the elderly, with adults in the age range 15-44 years old suffering the smallest increase. However, while male deaths exceeded female deaths overall, there was evidence of intrahousehold gender bias favouring the survival of sons over daughters: girls under five suffered mortality rates up to 50% higher than boys of the same age (Wolde Mariam 1986: 57).

Thinking on the causes of death in famines has gone through several distinct stages: crudely, 'starvation', 'hunger-related diseases', and 'epidemics'. Since famine is, by definition, a food crisis, the conventional wisdom is that people who die during famines die of starvation. This thinking is prevalent in the non-medical famine literature up to and including *Poverty and Famines* (1981), where Sen writes about people being 'plunged into starvation' when their access to food collapses. It is certainly true that the risk of dying rises steeply as nutrition status declines (Young and Jaspars 1995). But mortality in famines reflects

complex interactions between undernutrition and infection. Medical records rarely give starvation or 'extreme malnutrition' as the cause of death in famines. Instead, deaths are attributed to 'hunger-related diseases' - diarrhoea, gastro-enteritis, dysentery. This empirical fact led to a reformulation of the 'death by starvation' assumption: weakened by lack of food, the argument goes, susceptibility to these illnesses rises and the biological capacity to resist declines.

On the other hand, food crises are often accompanied by epidemics of cholera, malaria, measles, typhus and other diseases that are not necessarily hunger-related. This led de Waal (1989) to argue that, at least in contemporary African famines, people die of disease not because of increased *susceptibility* but because of increased *exposure*. The evidence is particularly strong for refugees. Displaced from their normal environments, weakened by hunger, moving together in large groups and finally crowded together in large numbers in refugee camps which are often set up at short notice and have a poor public health environment - these factors all raise the risk of communicable diseases spreading rapidly among displaced populations.

De Waal calls this the 'health crisis' model of famine mortality, as distinct from the conventional 'food crisis' model. The two pathways are quite different: whereas the food crisis model sees a direct route from crop failure to income collapse to reduced food intake to starvation and death; the health crisis model sees crop failure leading to displacement of people and increased exposure to new disease vectors, which results in epidemics and death. As evidence for this conclusion, de Waal (1989) found no correlation, in Sudanese refugee camps in 1985, between individual wealth and the probability of death. Richer people, who had enough cash to buy the food they needed but were displaced into refugee camps by drought, were as likely as the destitute to catch a communicable disease and die. The 'health crisis model' emphasises that it is the social process of famine that creates the conditions for excess mortality, not lack of food or poverty at the individual level.

This conclusion has been contested and is not generalisable to all famines. Young and Jaspars (1995:105) argue that de Waal's arguments 'underestimate the importance of undernutrition as a contributing factor to excess mortality, and ignore the synergism between malnutrition and morbidity'. Malnourished people are more vulnerable not only to hunger-related diseases but also to other infections because their immune system is weakened. Watkins and Menken (1985:650) adopt an intermediate position: 'Some of the increase in infectious disease may be due to increased susceptibility that is thought to accompany malnutrition and some may be due to the peculiar conditions that accompany scarcity, for example, a breakdown of systems of water supply and waste disposal, an increase in the number of vagrants, or the crowding and dismal conditions of refugee camps.' This seems to constitute a reasonable resolution of the debate: the relative contributions of hunger-related and unrelated diseases to excess mortality will vary from famine to famine, but in all cases both increased exposure and increased susceptibility have their genesis in the food crisis.⁶ From the policy perspective, though, it is vital that humanitarian interventions recognise

⁶ Ravallion (1996:9) suggests that the relationship between food shortage and morbidity or mortality outcomes reflects 'behavioural synergies' (which might include increased exposure due to migration) as well as 'biological synergies' (increased susceptibility to infection).

that a famine might be triggered by food shortage but is likely often to develop into a health and water crisis as well.

FAMINE TRAJECTORIES

Most famines in pre-twentieth century Africa, Asia and Europe were triggered by natural disasters: drought, insects or extreme cold that devastated crops, or livestock disease that decimated herds and flocks. These natural triggers operated in contexts where local economies were weak (subsistence based, imperfectly integrated with wider markets) and the political will or logistical capacity to intervene was lacking. Some writers have highlighted the strength of precapitalist communities in buffering weaker members against livelihood threats (through ‘moral economy’ redistributive mechanisms),⁷ but it is now recognised that these informal insurance mechanisms provided limited resilience against severe covariate shocks, given the narrow economic base of these communities.

During the colonial period natural triggers persisted and political vulnerability to famine initially increased, a result of violent resistance in many countries in response to which the colonisers often used famine as a weapon (e.g. in Namibia and Tanzania). Thereafter, macroeconomic and political vulnerability to famine gradually diminished,⁸ due to the development of communications and transport infrastructure, together with the initiation of early warning systems and relief intervention mechanisms by colonial administrations which recognised the need to ameliorate food crises to achieve some political legitimacy. As a result of this combination of ‘effective government, good transport, wider markets and some increase in average wealth’ (Iliffe 1987:158), the late colonial period in Africa and Asia saw a decline in the number of mass mortality famines and a reduction in the scale of mortality following natural disasters. Before World War II there had been no mass mortality famines in south Asia since 1900, and only one major famine (Rwanda in 1943) is recorded in Table 1 for Africa for the forty years between 1917 and 1957.

The development of transport and communications infrastructure can (and did) do much on its own to reduce vulnerability to famine, even if ‘natural triggers’ such as droughts or floods persist. A case in point is northern China, where 9-13 million people died during a protracted drought in the 1870s. In the early 1920s ‘almost analogous climatic conditions obtained throughout the same territory’ (Mallory 1926:30), but thanks to greatly improved communications and the construction of 6,000 miles of railway in the interim, relief intervention was prompt and mortality was restricted to half a million. Dando (1980:84) attributes the conquest of (non-political) famines in China since the disastrous decade of the 1920s to ‘promising developments in agriculture, education and in transportation-communication’. Similar processes of

⁷ In his epic study of food insecurity and famine in northern Nigeria, Watts (1983:xxii) asserts that ‘in the nineteenth century, the Sokoto Caliphate exhibited a remarkable resiliency to climatic stress. The normal risks of agricultural production could be accommodated through the essential strengths of the social relations of production. Subsistence security resided in a type of moral economy’. Others have criticised this ‘myth of Merrie Africa’ (Iliffe 1987:3), and the evidence now suggests that even poor African communities were highly stratified and not necessarily egalitarian: even in precolonial times, famines had political overtones.

⁸ For present purposes, ‘political vulnerability’ is narrowly defined to mean the extent to which a government lacks either the political will or the capacity to intervene in food emergencies.

infrastructure development are credited with reducing famine mortality rates in India. According to an early 20th century edition of the Imperial Gazetteer of India: 'Railways have revolutionised relief. The final horror of famine, an absolute dearth of food, is not known' (quoted in Becker 1996:14). In the Soviet Union, too, the critical factor that reduced vulnerability to 'natural' famines was probably the integration of historically famine-prone regions of this vast country with the national economy, through the development of communications and transport networks. The Soviet famines of the 20th century were entirely attributable to punitive economic policies (agricultural collectivisation, grain seizures by the state) and Stalin's genocidal policies against the Ukraine.

In Africa the development of transport infrastructure was slower and patchier - indeed, poor roads remain as a contributory factor in several recent famines (exacerbated during conflicts by landmines and attacks on vehicles, including relief convoys). Nonetheless, Iliffe (1990:76) rightly describes the lorry as 'a vital weapon against famine' in Africa, an assertion endorsed by a farmer in Niger who remarked in the early 1970s that 'people no longer die from famines since there are motor cars now' (quoted in Laya 1975:60). Microeconomic vulnerability due to household-level poverty and fragmented markets persisted, however, with a shift in famine causation being attributed to a shift from 'food availability decline' to 'exchange entitlement decline'. One Nigerian farmer contrasted the 1913-14 drought famine with the (less severe) 1927 famine, which was also triggered by drought but exacerbated by grain hoarding, by asserting: 'In 1914 we had money but no grain, in 1927 we had grain but no money' (quoted in Watts 1983:308). Marxist writers of the 1970s pointed to the penetration of capitalism into subsistence-oriented economies during the colonial period (the commodification of food, the expansion of cash cropping) as heightening the vulnerability of peasants to natural disasters or economic shocks,⁹ but with hindsight these vulnerabilities now appear to have been transitional, and the benefits of incorporation into national and global markets are regarded as generally outweighing the risks - at least in terms of reducing vulnerability to famine.¹⁰

After independence, historically famine-prone countries took one of two routes. Some, like India, continued to make progress in reducing vulnerability factors, specifically in the category of political vulnerability. Following the colonial administration's gross failure to prevent the Bengal famine in 1943, India's 'political contract' (discussed below) made the government accountable for famine prevention, while improvements in food production associated with Green Revolution technologies reduced household food insecurity, culminating in the apparent eradication of famine in India by the early 1970s. On the other hand, microeconomic vulnerability to famine associated with the incorporation of the poor into weak markets persisted, and a catastrophic famine triggered by a minor natural disaster (floods) combined with major market failure (speculation in and hoarding of rice) occurred in Bangladesh in 1974.

⁹ This line of argument was applied by radical French writers to the 1970s Sahelian famine - see Meillassoux (1974); Raynaut (1977); also Franke and Chasin's 'Seeds of Famine' (1980), which blamed the famine on the expansion of groundnut cultivation during the colonial period.

¹⁰ The spread of capitalism that accompanied colonialism was no panacea for all the problems of food insecurity and hunger that the poor faced. As Iliffe (1990:81) observes for rural Africa, 'capitalist scarcity replaced pre-capitalist famine'. This is evident in the persistence of 'hidden famines' that are concealed in high rates of malnutrition, low birthweight children and infant mortality rates, not only in famine-prone Africa but also in formerly famine-prone South Asia.

In stark contrast to Asia's success in containing 'famines that kill' during the twentieth century, in many African countries independence was associated with increased political instability and the emergence of famines where militarisation, counter-insurgency and civil war played major roles. These countries saw a rise in political vulnerability and a radical shift in the nature of famine. After a lengthy period of low famine incidence between the 1920s and 1950s, military dictatorships replaced the colonial administration in much of Africa, civil conflicts erupted in many countries, and the modern era of war-triggered famines began, the first significant case being Biafra - a region of Nigeria which had not previously been vulnerable to famine, and has not been since - in the late 1960s. During the 1980s and 1990s a number of African countries that were not historically famine-prone suffered conflict-triggered food crises (Angola and Mozambique, Liberia and Sierra Leone, Zaire), while others that had been susceptible to drought-triggered famines experienced 'complex emergencies' (Ethiopia and Sudan) in which the roles of drought and civil instability were difficult to disentangle. This lethal equation of 'war + drought = famine' remains largely responsible for the recurrent famines that persist in the Horn of Africa today.

THEORISING FAMINE

Although attempts to explain why famines occur go back much further than Malthus in the late 1700s, at the beginning of the 21st century there remains a lack of consensus - indeed, a passionate and often acrimonious debate - among analysts as to why famines happen. One reason for this might be disciplinary specialisation. Theories of famine causation invariably reflect the academic biases of their proponents: William Dando, a geographer, wrote *The Geography of Famine* (1980), Amartya Sen, a liberal economist, focused on the links between *Poverty and Famines* (1981), Martin Ravallion, a World Bank economist, argues for market failure in *Markets and Famines* (1987), Alex de Waal, a human rights activist, blames governments and the international community in *Famine Crimes* (1998). But famines are too complicated to be explained by a single factor or a single academic discipline. As Mortimore (1989:187) observed, one reason for the inability of famine analysts to understand the interactions between the multiple variables that combine to bring about a famine is that the various contributory factors 'transcend the conventional boundary between social and natural sciences'.

A second source of confusion arises from the difficulty of disentangling trigger factors (or conjunctural events) from vulnerability factors (structures and processes).¹¹ Many writers have emphasised 'the necessity of imposing some separation between explanations of shortfalls of food production and explanations of famine' (Vaughan 1987:13), but in practice most analysts tend to focus on one set of factors or the other. Vaughan's own analysis of the 1949 famine in Malawi does not attribute that subsistence crisis to the drought that precipitated it; instead she examines the respective contributions of three underlying factors that increased the vulnerability of the local rural population prior to the drought: population pressure, the expansion of cash cropping, and the role of agricultural marketing boards. Similarly, Watts (1983) rejects

¹¹ Many other terms exist for this fundamental division, including 'underlying' or 'ultimate' causes *versus* 'catalytic' or 'proximate' causes: 'Proximate causes are situational and originate shortly prior to or during an emergency. Ultimate causes can be construed as predisposing conditions transforming proximate causes into famine distresses' (Torry 1986, quoted in Glantz 1987:55).

explanations of subsistence crises in northern Nigeria that look no deeper than the natural disasters which triggered them, favouring instead a more complex argument which recognises the impact of a range of developments in precolonial society and the colonial political economy on livelihood resilience and vulnerability.

The recognition that all famines have multiple causes is not new. On the contrary, the recent trend towards a 'systems' approach to famine analysis (Cannon 1991; von Braun *et al.* 1998) is in a sense a return to an earlier era, a full circle.¹² Early in the century, before development studies became dominated by 'specialists' rather than 'generalists', it was still possible for observers to write about famines holistically. Mallory's classic study of famine in China (Mallory 1926) had eight chapters, the first four titled 'Economic', 'Natural', 'Political' and 'Social' 'Causes of Famine', the next four offering 'Cures for Famine' in the same categories. Much of Mallory's analysis anticipated development thinking by several decades, and many factors he identified as contributing to China's vulnerability to famine remain relevant to famine-prone countries today. According to Mallory, *economic causes* of famine in China included poverty ('the cost of living'), underproduction of food ('antiquated agricultural methods' and soil fertility decline), population growth ('overcrowding'), unemployment and underemployment ('surplus labour'), lack of access to credit, poor communications and 'inefficient transportation methods'. *Natural causes* included deforestation, drought, flood and locusts. *Political causes* included 'civil strife', weak government, 'abolition of public granaries' in 1912, 'heavy taxation' of farmers, neglect of famine prevention measures, and 'excess troops' who 'live off the country' (Mallory 1926:77). *Social causes* included the 'high birth rate in China' (partly due to 'early marriage' and motivated by parents seeing children as 'old-age insurance'), 'waste due to ceremonies and feasts' (which contemporary development academics might gloss as 'investment in social capital'), and 'conservatism of the people' (which later development economists would reinterpret as 'risk aversion').

Regrettably, the clarity and holism of Mallory's synthetic approach to understanding famine was superseded by decades during which famine became theorised rather than explained. Generations of demographers, geographers, climatologists, economists, sociologists and political scientists offered increasingly sophisticated yet reductionist theoretical frameworks: 'neo-malthusianism' and 'contra-malthusianism', global 'famine belts', 'entitlement failure', 'complex emergencies'. This proliferation of theorising together with the increasing complexity of contemporary famines left our understanding of famine in more of a muddle at the end of the 20th century than at the beginning.

The remainder of this section selectively reviews key contributions to the debate from three disciplinary perspectives: demography, economics, and political science.

• **Demography: 'Neo-Malthusianism'**

Rapid acceleration in the world's population during the twentieth century - from 1.6 billion in 1900 to 6.0 billion in 1999 - provoked apocalyptic predictions about mass starvation as the limits to global food

¹² Von Braun, Teklu and Webb (1998:8) present a useful organising flowchart that relates causal determinants in various domains - policy and institutional failure, poverty and climate shocks, population pressure - and at several levels, from the national context to individual outcomes.

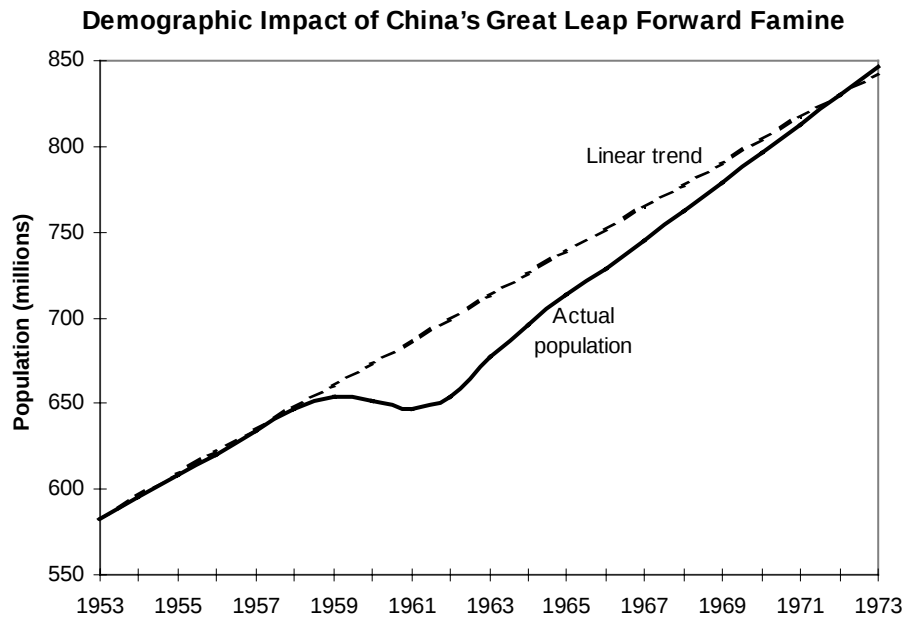
production were reached. These demographic catastrophists drew their inspiration from the Reverend Thomas Malthus' *Essay on the Principle of Population* (1798), which demonstrated, in its simplest form, that population could not continue growing indefinitely in a world of fixed natural resources. Eventually, famine would act as a natural check on population growth, equilibrating the demand for food with food supplies. Crude malthusianism peaked during the 1960s and 1970s with such texts as *Famine - 1975!* (Paddock and Paddock 1967) and Hardin's notorious *Lifeboat Ethics: The case against helping the poor* (Hardin 1977).¹³ During the 'world food crisis' of the early 1970s the popular perception that the world was running out of food was widespread, though with hindsight this alarmism proved to be unfounded.

Nonetheless, this line of argument is still pursued by, among others, the Washington-based Worldwatch Institute, which produces such polemical publications as *Full House: Reassessing the Earth's population carrying capacity* (Brown and Kane 1994) and *Who Will Feed China?* (Brown 1995). Lester Brown and his colleagues argue that productivity gains from agricultural intensification during the 20th century (mechanisation, chemical fertilisers, high-yielding varieties) are tailing off, while the demand for food continues to 'soar'. (Most dramatically, China - effectively self-sufficient at present - is projected to require annual imports of over 200 million tonnes of grain by 2030.) This combination of rising demand and stagnating production 'could eventually overwhelm the export capacity of the United States and other exporting countries' (Brown 1996:13), pushing the world into a 'new era of food scarcity'. But these arguments display the same flaws as those of Malthus himself, two hundred years ago. Just as Malthus failed to foresee the 'fertility transition' to smaller families as living standards rose, so neo-Malthusians fail to factor in current projections that the global population will stabilise at around nine billion people later this century, as the fertility transition spreads throughout the world. Also, just as Malthus failed to foresee the exponential increases in agricultural productivity that would accompany industrialisation and urbanisation in Britain, so current biotechnology research (including, controversially, into genetically modified foods) offers the prospect of a new agricultural revolution that will push the production possibility frontier well beyond the consumption needs of the projected 21st century global population (Ryan *et al.* 1999).

Despite being a (very) slow onset process, the argument about population exceeding natural resources has been invoked to explain 'rapid onset' food crises in Africa and Asia. The 'carrying capacity' debate brought together demographers and environmentalists in a neo-malthusian attempt to blame the persistence of famine on 'overgrazing' in Sahelian Africa and 'overpopulation' in South Asia. (During flood relief programmes in Bangladesh in the 1970s, some women were offered food aid only in exchange for being sterilised.) Ester Boserup (1983) offered a 'contra-malthusian' counter-argument for sub-Saharan Africa where, in her view, excessively *low* population densities *increase* vulnerability to famine by inhibiting investment in basic economic infrastructure and agricultural technologies.

In any event, even the worst famines have conspicuously failed to stop or even slow down population growth in the affected countries. In demographic terms, it would appear that 'famine does not matter much

¹³ The then United States Secretary of Agriculture expressed 'lifeboat ethics' succinctly (and grotesquely) in 1946: 'Some people are going to have to starve... We're in the position of a family that owns a litter of puppies: we've got to decide which ones to drown' (quoted in Devereux 1993:46).



Source: Derived from Field 1993:17

in the long run' (Osmani 1996:619). The failure of mass mortality famines to provide the 'natural check' on population growth that Malthus predicted is largely explained by the demographic profile of famine deaths, as discussed above. Famines generally afflict sexually reproductive cohorts least and children and the elderly most, and most famines are followed by compensatory 'baby booms'. This can be clearly seen in population statistics for China around the Great Leap Forward famine: a period of negative population growth (-1.4% *per annum*) around 1960 due to famine mortality and associated fertility decline was completely recuperated within fifteen years (Figure 1). Bangladesh in 1974 'lost almost one year's natural increase' (Caldwell and Caldwell 1992:370), but the loss of 2% of the population to famine was more than compensated by a return to 3% population growth *per annum* by 1976. Even more undermining of the crude Malthusian argument is the fact that since 1974 the population of Bangladesh has almost doubled, from 70 to 125 million, and there are now more than a billion Chinese, yet Bangladesh and China (notwithstanding Lester Brown's dire predictions) are arguably less vulnerable to famine today than at any time in their history. As Watkins and Menken (1984:665) concluded, 'the only way famines and other mortality crises could have been a major deterrent to long-run population growth ... is if they occurred with a frequency and severity far beyond that recorded for famines in history'.

• Economics: 'Entitlement failure'

As economics came increasingly to dominate development studies during the 1970s and 1980s, so economists came to dominate famine theorising.¹⁴ Two distinct strands can be identified in this literature. One views famine as a product of imperfect markets: food markets malfunction during food crises either

¹⁴ Defining texts on the economics of famine during the 1980s included *Markets and Famines in the Third World* (Seaman and Holt 1980), *Poverty and Famines* (Sen 1981), *Markets and Famines* (Ravallion 1987), and *Hunger and Public Action* (Drèze and Sen 1989).

because they are weak and unintegrated, or because speculative and precautionary hoarding drives food prices up to unaffordable levels.¹⁵ Market segmentation is especially relevant in the Horn of Africa. Seaman and Holt (1980) found evidence of ‘price ripples’ during the 1970s Wollo famine - food price rises were ‘exported’ from famine epicentres, as drought-stricken Ethiopians migrated to neighbouring and then distant markets and drove prices up there, because of a failure of traders to import food to their isolated villages.¹⁶ Similarly, von Braun *et al.* (1998:83) demonstrated econometrically that ‘segmentation was prevalent in many food markets in Ethiopia during the famine years’ of the mid-1980s. Conversely, market failure due to excessive hoarding is a feature of certain South Asian famines such as Bangladesh in 1974, which was triggered by alarmist predictions of flood damage to crops that turned a minor shortfall in rice production into a major shortfall in marketed supplies, so that prices escalated beyond the reach of the market dependent poor (Ravallion 1987).

The second strand emphasises ‘demand failure’ rather than ‘supply failure’. The seminal contribution - indeed, undoubtedly the most influential book of the extensive 20th century famine literature - was Sen’s *Poverty and Famines* (1981), in which Sen applied his then recently developed ‘entitlement approach’ to the reinterpretation of four African and South Asian famines. Sen’s ambitious project was to shift the famine discourse away from its preoccupation with *supply* failure - a catastrophic ‘food availability decline’ - to failures of effective *demand*, or ‘entitlement collapse’ - the inability of identifiable groups of people to command enough food for subsistence, irrespective of the stock of food available at local or national level.

To summarise, the entitlement approach recognises four legal ways of acquiring food: growing it (‘production-based entitlement’), buying it (‘trade-based entitlement’), working for it (‘own-labour entitlement’) and being given it (‘transfer entitlement’).¹⁷ Individuals face starvation if their ‘entitlement set’ does not provide them with adequate food. Famine scales this up: a famine occurs when occupationally or geographically related groups of people experience sharp declines in their entitlements simultaneously. Entitlement failure can be *direct* - a loss of access to production-based entitlement, for instance during a crop- and livestock-destructive drought - or *exchange*-related - a fall in trade- or own-labour-based entitlement due to unfavourable shifts in prices (livestock prices fall, food prices rise) or incomes (nominal or real wages fall, wages are lost due to unemployment). A *direct entitlement decline* is analogous to a ‘food availability decline’ (or ‘FAD’) at the aggregate level; while an *exchange entitlement decline* is purely a reflection of market forces. Thus, as Sen emphasised, people can starve because they lack entitlements to access available food, even if markets are well stocked and prices are low. As many economists have observed, well functioning markets

¹⁵ In economists’ jargon, segmented markets are a failure of ‘spatial arbitrage’ while excessive hoarding is a failure of ‘temporal arbitrage’.

¹⁶ This evidence contradicts Sen’s (1981) assertion that Wollo 1973 was a ‘slump famine’ caused by ‘entitlement failure’ (see below), so traders failed to import food because farmers destituted by drought had no effective demand ‘pull’. Devereux (1988) attempted to reconcile this dispute by arguing that drought-afflicted villagers were not uniformly destitute, and suggesting instead that this was a ‘demand failure’ famine for the absolutely poor majority, who lacked income to attract profit-seeking traders, and a ‘supply failure’ famine for the relatively wealthy few, who were responsible for bidding up prices for scarce food supplies in local markets.

¹⁷ Longer expositions and commentaries can be found *inter alia* in Sen 1981; Drèze and Sen 1989 (Chapter 2), Devereux 1993 (Chapter 6), and Osmani 1995.

respond only to effective demand (purchasing power); there is no technical, moral or legal basis for expecting unregulated markets to meet subsistence needs.

That the entitlement approach was more than a shift in theoretical emphasis was evident from two related applications - first, to the analysis of 'boom famines' (famines which might occur even while food availability is rising, because of adverse shifts in access to food for specific groups), and second, to argue against what Sen labelled 'Malthusian optimism' (the belief that adequate calories at national level means that there is no risk of famine, which derives from the 'food balance sheet' fallacy that food supplies are evenly distributed among the population).

While the entitlement approach is broad enough to incorporate food availability decline (as 'direct entitlement' collapse), Sen chose instead to undermine the FAD approach by reanalysing food production and availability data from several famines in order to demonstrate that there had been adequate food supplies (or only minor shortfalls) at the aggregate level in the countries concerned at the time. Thus he finds evidence that there was no 'remarkable over-all shortage of foodgrains in Bengal' during the 1943 Bengal famine; that the 1974 Bangladesh famine occurred in a 'local peak year in terms of both total output and *per capita* output of rice'; and even that there was a 'modest increase in agricultural output' in Ethiopia during the 1973 Wollo famine (Sen 1981:63; 92; 137). Sen does concede that there was a drought-induced food supply shock in the Sahelian famine of the early 1970s, but in this as in the other cases he seeks to minimise the extent of the food availability decline in order to argue that it has little explanatory power.

Sen's insistence on contesting the existence or magnitude of food supply shocks during famines provoked critics into challenging his calculations or believing (incorrectly) that Sen was asserting that food availability decline was never a feature in any famine. Publication of *Poverty and Famines* unleashed a barrage of critical debate that persisted for more than a decade. Initial reaction ranged from astounded to scathingly dismissive. One book review opened with the observation: 'Banality becomes Electra. Or does it?' (Mitra 1982:488). During the 1980s and early 1990s the entitlement approach was variously dismissed as a 'failure', 'refuted', 'revisioned', 'reassessed' and 'critiqued'.¹⁸ But it has also been enthusiastically championed (*cf.* Osmani 1995, Ravallion 1996), and there is no doubt that its influence on both thinking and policy has been powerful.¹⁹

Despite its elegance and simplicity, the one thing the entitlement approach did not offer was an explanation. It showed us how people might face starvation during famines: it did not tell us why. By choosing to restrict his analysis of famines to the relationship between people and markets under stress, Sen

¹⁸ *Cf.* Rangasami's 'failure of exchange entitlements' theory of famine' (1985); Bowbrick's 'refutation of Professor Sen's theory' (1986), Devereux's 'entitlements, availability and famine: a revisionist view' (1988), de Waal's 're-assessment of entitlement theory' (1990), and Nolan's 'critique of A.K. Sen' (1993).

¹⁹ An example of the influence of entitlements thinking on policy is that donors and NGOs now seriously consider (and have experimented with) delivering cash transfers rather than food aid during famines, recognising Sen's argument that entitlements to food can be restored through boosting purchasing power instead of handing out food directly (Kumar 1990; Peppiatt 1997). Conceptually, the shift of emphasis from food availability to access to food was endorsed by the World Bank with reference to food security in its influential policy document, *Poverty and Hunger* (World Bank 1986). However, its primary author notes that *Poverty and Hunger* followed a different intellectual trajectory and developed ideas first outlined in *Malnutrition and Poverty* (Reutlinger and Selowsky 1976), which predated Sen's earliest publications on the entitlement approach (S. Reutlinger, *pers. comm.*, July 1999).

perpetuates a technocratic view of famine that excludes politics and intent as causal factors, and *political* action (rather than '*public* action') as an appropriate - even necessary - solution. Famine is seen as a temporary convulsion of the economic system, requiring nothing more than welfarist transfers to vulnerable groups who are temporarily unable to meet their subsistence needs.²⁰ By focusing on conjunctural causes he looks no further than 'technical and managerial solutions' (Edkins 1996:548), rather than to radical measures that might reduce structural vulnerability (e.g. transfers of productive assets: land reform rather than public works plus food aid or cash handouts).²¹

Edkins (1996) draws attention to Sen's exclusion of 'non-entitlement transfers' and of deliberate starvation as two critical weaknesses in the entitlement approach. Moreover, Edkins argues, to the extent that the legal system upholds private ownership rights by force even if this denies subsistence to others, Sen's (1981:49) observation that 'most recent famines seem to have taken place in societies with 'law and order', without anything 'illegal' about the processes leading to starvation' is more problematic for the entitlement approach than he admits. Despite its normative connotation, entitlements belongs squarely in the realm of positivist economics; it 'does not reflect in any sense a concept of the right to food' (Edkins 1996:559). It is because of 'Sen's emphasis on poverty and market forces as the root of famine' that Keen, while acknowledging Sen's success in challenging orthodox analyses of famines as food supply shocks precipitated by natural disasters, perceptively observed that 'Sen's analysis shared important characteristics with the one he was rejecting' (Keen 1994:4-5).

• **Politics: 'Complex emergencies'**

For those who view famine as an 'economic disaster' (Sen 1981:162), it is logical to assign proximate causality to the victims' poverty - people starve because they lack the means to acquire food. For others who view famine as a political phenomenon, famine victims are defined not by economic but by political powerlessness - 'their near-total lack of rights or political muscle within the institutions of the.... state' (Keen 1994:211). Keen further suggests that: 'The real roots of famine may lie less in a lack of purchasing power within the market (although this will be one of the mechanisms of famine) than in a lack of lobbying power within national (and international) institutions' (Keen 1994:213). This is a very different perspective on famine than that offered by the demographers and economists considered above, both of whom neglect to assign *culpability* for famine to anyone other than the victims themselves and the banal mechanics of market forces.

Perhaps to complement his economic entitlement approach, which does not address the political context within which famines occur, Sen turned his attention in the late 1980s to the political conditions that are likely to predispose a country to famine or, conversely, to ensure its eradication. Sen's argument was that

²⁰ Other economists share this view: 'Famines can thus be viewed as a tragic magnification of normal market and governmental failures' (Ravallion 1996:43); see also von Braun, Teklu and Webb (1998), as discussed below.

²¹ There are intriguing parallels between Drèze and Sen's recommended 'public action' during food crises and the World Bank's advocacy, in the 1990 *World Development Report*, of 'transfers and safety nets' - including public works projects - for people who are made acutely vulnerable by processes of economic reform (especially structural adjustment programmes).

‘a political system of adversarial journalism and opposition’ (Drèze and Sen 1989:212) would ensure a government’s commitment to famine prevention, and he contrasts China’s Great Leap Forward famine with India’s success since independence in conquering its historical vulnerability to famine. The two key elements in Sen’s argument are a vigilant press (to disseminate *information* about impending food crises) and free elections (to ensure the government’s *accountability* to its electorate). These elements were both absent in communist China but have been ever-present in democratic India. De Waal (1997:7) agrees: ‘The well-known success of independent India in preventing famines has been due to the vigilance of its political institutions and electors in ensuring an adequate level of government accountability. This is a monumental achievement.’ De Waal argues further that India’s independence movement was fuelled by the colonial blunders that precipitated the Great Bengal Famine of 1943, and that this memory provided the basis of a tacit ‘political contract’ that every post-independence government of India has been compelled to honour.

A ‘political contract’ imposes enforceable obligations on rulers to provide for certain basic needs and human rights of their citizens, specifically, in this context, the basic need for food and the right to freedom from famine.²² ‘In the most effective anti-famine contracts, famine is a political scandal. Famine is *deterred*. The contract is enforced by throwing out a government that allows it to happen or otherwise punishing those in power’ (de Waal 1997:5). Extending this argument, the persistence of famine in other countries might be explained in terms of an absence or failure of such a ‘political contract’. Where respect for basic civil and political rights is lacking, the state faces less compulsion to prioritise the basic needs of its citizens - famines will go unpunished - and this largely explains why famines are more likely to occur under authoritarian regimes (Stalin’s Soviet Union, Mao’s China, Pol Pot’s Cambodia, Mengistu’s Ethiopia) or during civil wars, rather than in stable democracies with an active civil society. Contemporary famines occur, as in the Horn of Africa and North Korea, where democratic institutions are missing or are too weak to allow an anti-famine contract to be agreed and enforced, or where conflict has undermined the contract between the state and (sections of) the population.

This argument extends to the international community as well as national governments. If indeed ‘famine is caused by failures of political accountability’ (de Waal 1997:85), then international governments and humanitarian organisations must share responsibility for famines that occur because of failures to respond adequately and promptly to developing food crises. Not all of these well-chronicled response failures are due to lack of early warning information, or logistical constraints: food aid has always been used as a political weapon. There is strong evidence that the Reagan administration’s deliberately delayed response to the Ethiopian famine of 1984 was prompted by the knowledge that famine had toppled Emperor Haile Selassie ten years earlier, so that withholding food aid might similarly undermine the Marxist Dergue regime (Shepherd 1993).²³ The fact that people died while the Americans played politics with food aid reinforces

²² The right to adequate food is enshrined in the Universal Declaration of Human Rights of 1948 and in the International Covenant on Economic, Social and Cultural Rights of 1966. To date, however, little progress has been made in enforcing this right, notwithstanding commitments made by governments and international organisations at the World Food Conference in 1974 and more recently at the World Food Summit in 1996.

²³ The ‘Reagan doctrine’ of the early 1980s involved cutting American food aid to Soviet-aligned states (including Ethiopia and Nicaragua) and simultaneously increasing military assistance to its ‘anti-communist’ clients. In 1984,

Keen's argument that political powerlessness is a central causal factor in contemporary famines. As Cutler (1993:86) concludes: 'Without effective sponsors, rural famine victims become asset-stripped and starve. Their best hope is to be born in a country with a reasonably free press, a concerned middle class, and a Western-aligned foreign policy.'

The close association between conflict and famine - or between famine, conflict and drought - complicates the analysis of what is already a complex phenomenon, in terms of, *inter alia*, intentionality, mortality causation and relief interventions. First, famine may be either an unintended by-product of conflict, or a deliberate strategy by one protagonist to subdue the opposition. Second, as previously noted, famine deaths and conflict deaths are inextricable. Third, the role of humanitarian interventions in providing relief becomes more problematic - in terms of logistical difficulties and physical danger, and with issues around the violation of national sovereignty arising in many instances. Inevitably, relief interventions also become heavily politicised: some critics argue that withholding food and other aid from conflict zones contributes to genocide, while others take an opposite view, that delivering relief to warring communities actually prolongs or fuels conflicts.²⁴

The emergence since the 1980s of 'complex emergencies' in the Great Lakes and Horn of Africa, set against successful drought and flood relief programmes elsewhere in the continent and in Asia, raises the question as to whether pure 'drought famines' have now passed into history and been superseded by purely 'political' famines. As Wolde Mariam (1986:ix) argues, 'natural phenomena have less to do with famine than society itself and its various institutions'. But is this an entirely new development - were famines not in some sense 'political' throughout the 20th century? In virtually all of the 32 famines listed in Table 1 above - even where drought or flood is given as the causal trigger - war or repressive government policies also played a significant role. The earliest recorded famines of the century were attributed to synergies between drought and British/French colonial policies in West Africa, and German suppression of local uprisings in Tanzania. Many famines that occurred during or immediately after World War I and World War II were products of the requisitioning of crops and livestock, or of blockades that cut off food supplies. All 20th century famines in the Soviet Union, China, Cambodia and North Korea can be explained in terms of inappropriate or genocidal policies, or disastrous experiments in social engineering, by an excessively powerful state. Bengal in 1943, Bangladesh in 1974, Ethiopia in 1984 and Sudan in 1990-91 were all exacerbated by deliberate withholding of relief by the international community.²⁵ The conclusion is inescapable: famines are *always* political.

when the Reagan administration delayed an aid package to Africa in order to support the Contra rebels in Nicaragua, the House Speaker accused his own government of being 'ready to starve Africans so that it can kill Central Americans'.

²⁴ Partly because of the increasingly politicised nature of humanitarian emergencies, and the ambiguous role and mixed success of external agencies in responding to them, the values that inform and motivate 'the disaster relief industry' (de Waal 1997) have recently faced severe and sustained criticism. For 'an anatomy of the attack' on humanitarianism see Macrae (1998).

²⁵ The famine in Darfur, western Sudan of 1990-91 is not recorded in Table 1 above because mortality is unknown. The donor community was slow to respond partly because the Islamic fundamentalist government in Khartoum supported Saddam Hussein in the Gulf War that the West was prosecuting against Iraq at the same time.

THE STATE OF THE DEBATE

Explaining the persistence of famine long after it ought to have been eradicated is, depressingly, a growth industry. Two strands in this literature are currently competing for paradigm dominance. One views famine as a natural disaster or economic crisis which results in food shortages that are unameliorated because of failures of policy, early warning, markets or relief interventions. The second views famine as a political pathology which should be analysed in terms of local power struggles, state repression of afflicted population groups - famine as policy success rather than policy failure - and a refusal by the international humanitarian community to enforce the fundamental human right to food. This is the ancient 'act of God or act of man?' debate in modern guise. The older school remains hegemonic because it is the preserve of economists - Drèze, Ravallion, Sen - and economics is still the dominant discipline in development studies. The opposing school of thought is dominated by political scientists and human rights activists - de Waal, Duffield, Keen - who are referenced uneasily by the orthodox economists, who find their views too radical to assimilate but too challenging to ignore.

The orthodox tradition is well represented by a recent book titled *Famine in Africa* by three former IFPRI economists (von Braun, Teklu and Webb 1998), and by a World Bank research paper titled *Famines and Economics* (Ravallion 1996). Von Braun *et al.*'s technocratic bias is evident from the opening sentence of their Introduction, which offers the following definition: 'A famine is a catastrophic disruption of the social, economic, and institutional systems that provide for food production, distribution, and consumption' (von Braun *et al.* 1998:1). In terms of what is excluded from this perspective, famine is not a political issue; it is not a violation of human rights; it is not about destitution, displacement and death. This view impersonalises and depoliticises famine. Once famine is defined as a failure of food systems it is legitimate to analyse it as a technical problem, and to seek solutions in terms of technical tinkering: liberalised agricultural policies, better information systems, integrated markets.

One of the book's 'main premises' is that: 'Famine is largely a function of institutional, organisational, and policy failure' (von Braun *et al.* 1998:2). In other words, famine is a particularly acute symptom of Africa's development crisis: the diagnosis and prescriptions are identical. The authors' conceptual framework conflates the causes of low agricultural productivity and chronic malnutrition with the causes of food crises, as though one set of causal factors leads seamlessly into the next, producing outcomes which differ only in intensity from moderate undernutrition to mass mortality. But are the causal processes really so neat, so linear? Certainly 'famine-prone countries' tend to have poorly performing economies and 'weak' states, but while poverty is clearly a predisposing condition for both undernutrition and famine, it is not a sufficient condition. Many very poor countries are not famine prone, and famines occasionally occur (as in the Netherlands in 1944) in extremely wealthy societies.

Just as it was fashionable twenty years ago to attribute famine to underproduction and overpopulation, nowadays it is fashionable to blame poverty and vulnerability. 'Droughts, conflicts, or other short-term disasters are generally blamed for famines, but in truth, the fault lies mainly with enduring poverty' (von Braun *et al.* 1998:xiii). But not entirely. As Sen (1981:37) observed, 'starvation implies poverty, but not *vice versa*'. Poverty can set people up for triggers like drought or conflict, but it is the interaction between

underlying processes and shock events that produces famine - predisposing plus trigger factors, not one or the other. Reducing famine to a virulent attack of poverty is to decontextualise it, to shift the blame entirely onto the poor or their 'incompetent' governments - even, most insidiously, to suggest that the solution lies in following the neoliberal policy prescriptions of the World Bank and IMF ('there are few examples of famines in Africa *post*-macroeconomic reforms' (von Braun *et al.* 1998:25)), notwithstanding the evidence that these policies increase the vulnerability and marginalisation of the already poor. Zimbabwe, often held up as an exemplar of averted famine, came to the brink of famine in 1992 partly because structural adjustment conditionality required the national grain reserve to be run down and food stocks exported for foreign exchange.

But these arguments are out of date, because famines in Africa are no longer amenable to purely technocratic analyses (if they ever were). Contemporary African famines are invariably and intensely political. Virtually every country that has suffered famine in the past twenty years has suffered from conflict (usually a civil war) at the same time. Von Braun *et al.* (1998:3) lists eight famines in Africa during the 1990s, all but one of which were associated more directly with civil war than with drought or questionable agricultural policies - in Angola, Ethiopia, Liberia, Sierra Leone, Somalia, Sudan (twice) and Zaire. To gloss this startling shift in the character of famine with discussions of averted 'drought famines' in Botswana, Kenya and Zimbabwe is to miss this highly significant point - that most drought-triggered food crises no longer become famines precisely because the technical solutions have been found and the logistical capacity exists (where local coping mechanisms are inadequate) to intervene. As Cutler (1993:78) has pointed out, countries like Botswana and Kenya 'are not typical of famine-prone nations. They are peaceful, Western-aligned, and relatively prosperous. They have degrees of democracy and freedom of information unheard of in countries undergoing civil war'. Diametrically opposite conditions apply in countries such as Ethiopia during the 1980s and Sudan during the 1990s, where famines were not averted partly because of western indifference or hostility and partly because the governments concerned were prosecuting genocidal campaigns against their drought-affected populations at the time.

Where conflict and militarisation are discussed, technocrats do so under the rubric of 'policy failure' and in terms of costs to the economy. Armed disputes are a 'drain on national resources. Production and employment opportunities are lost' (von Braun *et al.* 1998:10); 'Arms imports represent a heavy drain on foreign exchange reserves and compete with development-enhancing imports' (von Braun *et al.* 1998:22). This repeats the intuitively appealing but fallacious logic of Oxfam's 'Bread Not Bombs' campaign of the mid-1980s: that there is a direct trade-off between bad government spending and good government spending; that foreign exchange spent by Mengistu's Dergue on weapons to repress the Eritreans and Tigrayans would otherwise have gone on importing fertiliser to raise their farm yields. It is worth recalling that the Dergue appealed for and then appropriated food aid, which it used to support policies such as forced relocation which exacerbated the famine.

Political famines do not operate according to the economic rules of supply and demand: a different analytical framework is required. Those who favour a 'complex emergency' view of recent African famines would take strong exception to the assertion by von Braun *et al.* (1998:xiii) that: 'although political and

military conflict and drought contribute to famine, they do so mainly where people are vulnerable and where resilience to external shocks has already worn thin'.²⁶ In political famines - those precipitated either by government policies or by conflict and civil insecurity - the link between individual wealth and access to food is broken. The rich can be as vulnerable as the poor, sometimes more so. Keen's (1994) analysis of the 'winners' and 'losers' in the Sudan famines of the 1980s, for example, established that the *wealth* of Dinka pastoralists made them acutely vulnerable to cattle raiding by government militia and neighbouring groups, until their livelihoods were so weakened that they succumbed repeatedly to famine. The emergence and perpetuation of this 'asset transfer economy' (Duffield 1993) in south Sudan (*contra* the technocratic depiction of famine as a temporary disruption from a normal state) was facilitated and legitimised by the indifference or hostility of the government in Khartoum towards the Dinka people (Deng 1999).

Of course there remains a role for the analysis of famines in terms of rainfall variability, food price movements, government agricultural policies and related preoccupations of economists. But to consider only these symptoms and proximate causes of food crises, or to attribute causality entirely to weak economies and bad weather, is inadequate. On the other hand, although all famines have a more significant political dimension than most economists acknowledge, not all recent famines can be described as products of 'complex emergencies' involving armed conflict - North Korea being a case in point.

One reconciliation of this debate might be to advocate a taxonomic approach to famine analysis: not to deny the complex interactions between multiple contributory factors, but recognising that different elements play dominant roles in different contexts. For instance, South Asian famines that are characterised by adverse price movements, and where vulnerable groups such as landless labourers are market dependent for their food, might be categorised as 'market failure' famines (e.g. Bangladesh 1974). Earlier 20th century famines in China and the Soviet Union, and the recent North Korean famine, could be described as 'state failure' famines. By contrast, most 20th century African famines divide into two broad categories: 'production failure famines', in which food supplies decline sharply in contexts where farmers and pastoralists depend on food and livestock production (e.g. the Sahel 1969-74); and 'conflict famines', where war simultaneously undermines food production, trade and aid inflows (e.g. south Sudan in 1988 and 1998).

One argument against a taxonomic approach is that the identification of a dominant explanatory variable implies reverting to the reductionism of monocausal theories. It also blurs the important distinction between conjunctural factors ('triggers') and structural vulnerabilities, both of which are needed for a holistic analysis. An alternative (empiricist rather than theoretical) approach would be to examine each famine individually in terms of Mallory's (1926) four categories as discussed above - economic, natural, political and social - and to assign causality to a proximate trigger in one category exacerbated by structural vulnerabilities in one or more of the four categories.

²⁶ In an earlier book on *Famine and Food Security in Ethiopia*, Webb and von Braun (1994:8) dismiss political analyses of the 1980s Ethiopian famine as 'clouded by... the too obvious biases of more recent commentators'. In a typically robust response, de Waal (1997:121) complains that Webb and von Braun 'appear to believe that excluding politics and war from their analysis ensures their objectivity, and dismiss as biased those (including the present author) who have documented the political and military causes of the famine. [This] smacks of serious lack of scholarly responsibility.'

FAMINE PREDICTION AND PREVENTION

In terms of famine prediction and prevention, the twentieth century began with the incomparably successful Indian Famine Codes and ended with a book on famine early warning systems in Africa in which the authors applaud recent technological advances - such as remote sensing - in information gathering, but identify the weakness of national and international institutions as a 'missing link' creating potentially fatal delays between early warning and timely response (Buchanan-Smith and Davies 1995). In between, more than 70 million people died in dozens of famines that were sometimes predicted but never prevented. As in other areas of human endeavour, the twentieth century in this respect was characterised by immense technological advancement, accompanied by institutional and political stagnation or even regression.

The Indian Famine Codes, first drafted in 1880, have been widely applauded as the most comprehensive and successful famine prediction mechanism yet devised. The Codes identified early warning indicators of imminent food crisis - crop failure, food price rises, sales of land and distress migration - to trigger public interventions, which included employment creation (public works) plus free food distribution. The Codes are credited with averting famines in 1906-07 and 1907-08, and with minimising mortality in several other food crises.²⁷ Since Independence in 1947, India has been threatened with famine in 1966, 1972, 1979 and 1985. According to Drèze (1990), famine was successfully averted in Maharashtra state in 1972-73, when five million people were employed on public works at one time, and a comparable public intervention prevented a famine in 1979-80. On the other hand, Drèze (1990:59) argues against the consensus view that public action successfully averted a famine in Bihar in 1966-67, concluding instead that late intervention was responsible for 'numerous 'starvation deaths''.²⁸

Famines occur because they are not prevented: they are allowed to happen. Most food crises have a long gestation period - not days or weeks, but months or years - so failures of public action must be incorporated into the causal analysis of all famines. Inadequate information is one possible reason for response failure - others include bureaucratic inertia, lack of capacity to intervene effectively, and lack of political will. Early warning systems address only the possibility that public action is constrained by insufficient information. The assumption is that better prediction ensures more timely intervention, and good information is certainly a precondition for famine prevention. To take just one example, inaccurate information at the centre about food conditions in rural communities contributed greatly to China's Great Leap Forward famine in the late 1950s.

After the 1974 World Food Conference, FAO's 'Global Information and Early Warning System' (GIEWS) was established, with the objectives of monitoring food supplies and demand at global and national levels, and of assessing emergency food needs in areas facing critical food shortages. But GIEWS did not prevent the African famines of the mid-1980s, and a more intensive effort at improving food

²⁷ The Famine Codes failed to prevent famines in 1896-97 and 1899-1900, partly because of poor application of the Codes' principles - e.g. they were not directly linked to response mechanisms - and partly because of additional factors not directly related to food shortage, such as contaminated water and disease epidemics (Drèze 1990:34).

²⁸ Dyson (1993) disagrees with Drèze on both counts, arguing that there is no evidence for any excess deaths in Bihar in 1966-67, but that significant numbers of people ($\pm 130,000$) died in the Maharashtra drought of 1972-73 (see Annex 1, note 19).

information systems followed: eight new early warning systems were set up in the Sahel and Horn of Africa between 1985 and 1990. Conventional early warning systems have their weaknesses - an apparent inability to correctly forecast El Niño events, for instance - but meteorological monitoring plus post-harvest assessments are generally sufficient to trigger responses to crop failures, when necessary. Nonetheless, many national and regional systems unravelled throughout the 1990s, as donor project cycles came to an end and African governments failed to take over responsibility for maintaining and funding them (Devereux 1998). Also, the prediction of food crises triggered by civil insecurity is substantially more difficult than the prediction of 'slow onset' disasters like drought, and sporadic efforts to design and institutionalise 'political early warning systems' have failed.

Better information makes famines easier to predict; but better institutions are needed before famines become easier to prevent. Contemporary famines, as we have seen, follow from failures of political accountability by both domestic governments and the international community. As with the debates around famine causation discussed above, famine prediction and prevention is no longer a purely technocratic issue: it is political. As Buchanan-Smith and Davies (1995:2) observed, 'it is not the severity of the crisis, but relations between international donors and national governments which tends to be the single most important determinant of the timing and scale of the international response'.

A notorious case in point is the Ethiopian famine of 1984-85, which was precipitated by a sequence of droughts that started as early as 1979. By 1981 the government, NGOs and FAO's GIEWS were predicting famine and calling for relief aid, and by late 1982 'distress migration' was occurring out of drought epicentres. But the West was hostile to Ethiopia's Marxist government, donors did not believe the government's early warning data, and paltry amounts of food aid were delivered until Michael Buerk and Mohammed Amin's televised reports from Korem galvanised public action - but too late to prevent between half a million and one million deaths.

To minimise such fatal conflicts over information in future food crises, Buchanan-Smith and Davies advocate joint ownership of early warning systems by governments and donors in order to maximise transparency, credibility and timely utilisation of information by policymakers responsible for famine prevention. But joint ownership will not be enough - indeed, will not be feasible - if one or other of these stakeholders does not have the prevention of famine as an explicit policy goal. The case of Sudan is instructive: 'There have been technical advances, but these have proved largely meaningless without political commitment to fight famine. The near-perfect operation of the famine early warning system in 1990 is a sad monument to irrelevance' (de Waal 1997:105).

CONCLUSION

Notwithstanding some notable successes in eradicating famine from certain parts of the world, the record of the 20th century in terms of predicting and preventing famines is one of terrible and inexcusable failure. From Nigeria in 1903 to North Korea in the late 1990s, 70 million people or more died of starvation, hunger-related disease or diseases to which they were exposed as a result of the famine process. This gruesome statistic is a double indictment. Not only is it the highest total for any century in history, it occurred at the precise historical moment that the capacity to abolish famine - both technical (food production) and logistical (food distribution) - was first achieved.

How is this failure to be explained? Bad theory is partly to blame. Orthodox disciplinary-based theories of famine - malthusian demographics, climatic shocks and environmental processes, the entitlement approach - focus on mismatches between food supplies and effective demand: the impersonal mechanics of crop failures and market forces. More recently, radical critics have emphasised human culpability: intentionality or indifference by governments and the international community in the face of suffering but powerless 'others'. This evolution in the discourse suggests an evolution in the nature of famines that is only partly accurate. Famines of the 1990s are not very different to famines of the 1920s, yet new analytical frameworks continue to emerge in aggressive opposition to their predecessors, as though a single framework exists within which all famines can be comprehensively understood. In fact, while most theories shed some light on the complex phenomena of contemporary famines, all are guilty of simplifying complexity and of fudging the relative explanatory roles of trigger factors and underlying vulnerabilities. Instead of selecting one approach and discarding all others, a more constructive way forward is to recognise the uniqueness of each specific famine and to apply the full range of analytical tools to every case - 'food availability decline', 'market failure', 'exchange entitlement collapse', 'complex emergencies' - as appropriate.

What is uncontroversial is that the capacity to feed the world is not enough. Political will is also needed. As the balance of famine causality shifted decisively away from 'natural' factors, so the responsibility for both creating and preventing famines became intensely politicised. In most 20th century famines, political will was either lacking at national and/or transnational levels or was exercised malevolently, against famine-afflicted people. The achievement of a global capacity to guarantee food security was accompanied by a simultaneous expansion of the capacity of governments to inflict lethal policies, including genocidal policies often involving the extraction of food from the poor and denial of food to the starving, that affected populations larger by several orders of magnitude than in the past.

If famine is to be eradicated completely, an 'anti-famine contract' must be established at the global level, and it must be enforced, if necessary by 'duty-bearers' from beyond the national state. It is the urgent responsibility of the present generation of national and international policymakers to translate one of the most remarkable achievements of the 20th century - the potential to guarantee food security, the right to food and freedom from hunger for all of the world's population - into a 21st century reality.

ANNEX 1. NOTES ON FAMINE MORTALITY DATA

1. **Sources for Table 1:** Nigeria 1903-06 (Watts 1983:276); Tanzania 1906-07 (Iliffe 1979:200); Sahel 1913-14 (Watts 1983:291-292); Tanzania 1917-19 (Iliffe 1979:269); China 1920-21 (Mallory 1926:2); Soviet Union 1921-22 (Dando 1980:87); China 1927 (Becker 1996:14); China 1929 (Dando 1980:84); Soviet Union 1932-34 (Becker 1996:46); China 1943 (Becker 1996:22); Bengal 1943 (Sen 1981:202; Dyson 1993:21); Rwanda 1943-44 (Iliffe 1987:157); Netherlands 1944 (Stein *et al.* 1975); Soviet Union 1946-47 (Dando 1980:87); Ethiopia 1957-58 (Degefu 1987:30, Wolde Mariam 1986:57); China 1958-62 (Ashton *et al.* 1984:614; Becker 1996:272); Ethiopia 1966 (Wolde Mariam 1986:57); Nigeria 1968-70 (Iliffe 1987:251; Webb and von Braun 1994:18); West Africa 1969-74 (Caldwell & Caldwell 1992:367); India 1972-73 (Dyson 1993:24); Ethiopia 1972-75 (Seaman 1993:29; Degefu 1987:31); Somalia 1974-75 (Ahmed and Green 1999:117); Bangladesh 1974 (Alamgir 1980:143); Cambodia 1979 (Charny 1993:153); Uganda 1980-81 (Iliffe 1987:253); Mozambique 1982-85 (Bush 1985:10); Ethiopia 1983-85 (Africa Watch 1991:175; Kumar 1990:203); Sudan 1984-85 (de Waal 1997:91); Sudan 1988 (Harden 1993:169); Somalia 1991-93 (Ahmed and Green 1999:120; Webb and von Braun 1994:18); North Korea 1995-99 (Noland, Robinson and Wang 1999:1); Sudan 1998 (Deng 1999:17). Some publications cited in compiling this table are secondary, since the original sources of mortality estimates are often difficult to locate.
2. There are tendencies to both under-reporting and exaggerating famine mortality, which makes many of these figures speculative. Under-reporting arises from two sources. First, as noted in the text, only famines for which mortality estimates are available are included in Table 1. Second, lack of adequate records means that reported mortality often understates the full extent of the tragedy - the Sahelian droughts of 1902-08 and 1913-14 are two cases in point (see below). Estimates are also often contested and subject to revision decades after the event. Examples include Dyson's downscaling of Sen's estimate for the 1943 Bengal famine (see note 11 below) and his evidence for substantial excess mortality during the Maharashtra drought of 1972-73 (see footnote 29, and note 19 below). Mortality estimates for China's Great Leap Forward famine - which was not even admitted by the Chinese government until years later - have steadily risen, from 16 to 23 million, then to 30-33 million, with some speculation that the true figure may be as high as 50-60 million (see note 15 below).
3. Nigeria 1903-06: This protracted drought killed several thousand people in northern Nigeria (probably many more than 5,000), and an unknown number in other Sahelian countries. The figure of 5,000 deaths is constructed from remarks by Watts (1983:276): 'One hundred deaths were reported in Bauchi township alone [in 1903], largely due to the consumption of poisonous roots'; 'a great number of people died' in 1905; 'the town of Banjeram, which had a population of some 4,000 in 1904, had slumped to a paltry forty-three souls in 1906'.
4. Tanzania 1906-07: The 'official figure' of 75,000 deaths during the Maji Maji rebellion is here attributed half to conflict and half to famine ('Famine covered the land, a famine that killed' (Iliffe 1979:199). This figure might be too low: Iliffe cites a contemporary estimate of 250,000-300,000 total deaths by one Dr Gwassa, 'and he may be right'.
5. Sahel 1913-14: The figure of 125,000 is a conservative and partial estimate; the total was almost certainly much higher. It is compiled from Watts' estimate of 80,000 famine deaths in the French West African colonies plus 55,000 recorded in the Kano Province Annual Report. No figures are available for other provinces of northern Nigeria such as Bornu, which saw its population fall from 672,000 in 1912 to 482,000 in 1914 due to a

combination of outmigration and famine mortality (Watts 1983:291), nor for other famine-affected countries such as Ghana, which suffered sizeable human and livestock mortality (Caldwell and Caldwell 1992:367).

6. Tanzania 1917-19: 'One estimate put deaths in Dodoma district alone at 30,000, or about one person in five' (Iliffe 1979:269). The famine was triggered by drought but preceded by three years of requisitioning by British and German soldiers of local grain reserves and livestock.
7. China 1920s: The 1920s was a terrible decade of famine in China, with mass mortality crises occurring in 1921, 1924, 1927 and 1929. The first of these was a 'great drought that occurred in North China in 1920-1921, during which, according to the best obtainable information, 500,000 of the natives perished' (Mallory 1926:2). No mortality estimates are available for the 1924 famine, but a Western traveller in Guizhou wrote: 'The famine conditions in this province are heartrending. ... Skeletons in thousands to be seen everywhere' (quoted in Becker 1996:13). The - unverified - estimate of 3-6 million deaths for the 1927 famine in northwest China was made by Edgar Snow, an American journalist who also recorded famine responses that included the selling of women and children, cannibalism and trading in human flesh. Finally, according to Dando (1980:84): 'At least 2 million lives were lost in the Hunan famine of 1929', which was precipitated by drought but exacerbated by the 'crushing exactions of the warlords, the depredations of bandits and the enforced payment of confiscatory taxation' (American Red Cross 1929, quoted in Becker 1996:19).
8. Soviet Union 1921-22: As Dando (1980:85-87) states: 'the Soviet period, after the October Revolution in 1917, was the era of the great famines. In 1921-22, approximately 9 million starved to death'.
9. Soviet Union 1932-34: Mace (1983:34) offered 'a conservative estimate' of 5-7 million deaths for 'Stalin's famine' in the Ukraine, which was caused principally by the state's confiscation of grain from Ukrainian farmers. In 1989, Ellman (cited in Becker 1996:46) analysed then recently released 1937 Census data and produced an estimate of 7.2-8.1 million excess deaths - about one third of the Ukraine's population of 20-25 million farmers at the time.
10. China 1943: 'In all at least 5 million are thought to have perished although even today no one knows the precise figure' (Becker 1996:22). This famine was caused by a combination of the Japanese invasion and grain seizure by Chinese troops to feed the army and finance the war.
11. Bengal 1943: Sen's calculation of 3 million deaths for the Great Bengal Famine may 'have the merit of being a 'round' number' (Sen 1981:202), but it relies on an assumption of an extended period of elevated mortality lasting several years after the 1943 food crisis, which according to Dyson is based on a questionable data source. Dyson's recalculations, drawing on detailed monthly demographic data from Bengal, produces a lower estimate of 2.1 million deaths.
12. Rwanda 1943-44: 'there was widespread famine during or immediately after the Second World War, when drought combined with wartime exactions and a breakdown of administrative capacity, perhaps especially in Rwanda, where 300,000 people are alleged to have died' (Iliffe 1987:157). Here as in other cases Iliffe's famine mortality estimates tend to be high, rounded and unconfirmed, even speculative.
13. Soviet Union 1946-47: The last famine in Russia/USSR 'claimed the lives of 2 million people' (Dando 1980:87) in Ukraine and Belorussia, and was 'political' in that it followed a combination of drought and the re-enforcement of agricultural collectivisation policies after World War II.
14. Ethiopia 1957-58: Degefu (1987:30) gives the open-ended lower figure: 'More than 100,000 people died'. The upper estimate - probably too high - was calculated by Wolde Mariam (1986:57) on his assumption that 20% of

the population of Tigray (then 1,961,000) died, since this was the death rate in five districts of Wollo in 1973, and '[t]he Tigray Famine of 1958-1960 ... was in no way less than the Wello Famine of 1973'.

15. China 1958-62: See Becker (1996, Chapter 18: 'How Many Died?') for a discussion of various mortality estimates for the Great Leap Forward famine. The figure of 30-33 million is based on careful examination by demographers of initially suppressed demographic data (Ashton *et al.* 1984), and cannot be dismissed as exaggerated speculation. Becker (1996:272) notes that in 1979 a team of 200 Chinese Party officials toured the country checking records and produced an estimate of 43 to 46 million, while some senior Party members apparently believed the death toll was as high as 50 or even 60 million.
16. Ethiopia 1966: Wolde Mariam's figure of 45,000-60,000 is for Wag *awraja* alone, one of the two worst affected districts in Wollo. No mortality estimates are available for Lasta *awraja*, nor for the ten other districts of Wollo.
17. Biafra 1968-70: One million deaths due to famine is probably an exaggeration: 'kwashiorkor killed tens of thousands of children between May and November 1968... Several thousand people were dying each day when the war ended in January 1970. Nearly 1,000,000 may have died altogether, but there was no mass starvation after the war' (Iliffe 1987:251). Webb and von Braun (1994:18), drawing on other sources, confirm the crudeness of this estimate: 'the conflict-related famine in Biafra (Nigeria) between 1968 and 1970 is thought to have been responsible for roughly 1 million deaths'.
18. Sahel 1969-74: The Sahelian drought famine of the early 1970s affected four countries most severely - Mauritania, Mali, Niger and Burkina Faso - and the mortality estimate provided here is for these four countries combined. The evidence on mortality is highly contested: in typically polemical style, de Waal (1989:26) goes so far as to assert that 'there is no evidence that the figure of 100,000 starvation deaths is anything except fiction'.
19. Maharashtra 1972-73: Although Drèze (1990:46) describes the 1972-73 Maharashtra drought as 'India's great 'success story' of famine prevention', Dyson's (1993) analysis of demographic data produces an estimated 130,000 excess deaths during and immediately after the drought. Earlier analysts had found no evidence in official Government of India statistics for a rise in death rates in Maharashtra during the early 1970s.
20. Ethiopia 1972-75: 'RRC [Relief and Rehabilitation Commission] in its publication of December 1982 gives the number of dead to be about 200,000 for Tigray, Wollo, and northern Shoa. Other estimates give 400,000 to 1 million for Tigray and more than 100,000 for Wollo' (Degefu 1987:31).
21. Somalia 1974-75: According to Ahmed and Green (1999:117), a combination of Said Barré's 'Scientific Socialism' experiment - especially its disruptive impact on internal and cross-border trade and the failure of the government's food rationing system - plus hostility to opponents of his regime, 'turned the 1974-75 drought into a major famine in the north, resulting in over 20,000 deaths, forcing 10% to 15% of the entire pastoral population to register in relief camps'.
22. Cambodia 1979: 'The 1979 famine in Cambodia was man-made, the final consequence of a decade of destruction inflicted upon Cambodian society, first during the civil war from 1970 to 1975, then during the brutal rule of the Khmer Rouge from 1975 to late 1978, and finally in the immediate aftermath of the Vietnamese invasion of the country, which ended Khmer Rouge rule in 1979. These events inflicted tremendous stress upon the people of Cambodia, resulting in perhaps 1.5-2 million deaths' (Charny 1993:153).
23. Uganda 1980-81: 'Kenya and Tanzania experienced regional food shortages in 1980-1 and 1984, but numerous deaths - one estimate was 30,000 - occurred only in northern Uganda during 1980-1, when drought coincided with violence following General Amin's overthrow' (Iliffe 1987:253).

24. Mozambique 1982-85: This famine was triggered by drought but exacerbated by the conflict between the Frelimo government and the South African-backed Renamo, which deliberately cut off drought-afflicted communities from food supplies by attacking convoys carrying food aid. Bush (1985:10) argued that South Africa and Renamo were 'guilty of more than 100,000 deaths caused through the disruption of famine relief', though the basis for this figure is unclear.
25. Ethiopia 1983-85: The United Nations put the death toll for this famine at one million. Kumar (1990:203) confidently claimed that 'the estimate of one million deaths would constitute an absolute minimum for the entire famine period and the actual figure could turn out to be more than 1½ million'. But Africa Watch (1991:173) dismissed the widely quoted figure of one million as 'no more than a guess', and calculated a much lower estimate of 590,000 from the limited empirical evidence available.
26. Sudan 1984-85: Unusually, this drought-triggered famine had no other cause except the Nimeiri government's failure to acknowledge a crisis: 'The drought and famine were an embarrassment and a distraction. ... Nimeiri's anti-famine strategy was simple: he denied that the problem existed. ... an entirely preventable tragedy cost an estimated 250,000 lives' (de Waal 1997:91).
27. Sudan 1988: Harden (1993:169) reports that: 'An estimated quarter million southerners died in 1988 alone of war-related famine', but this figure is difficult to verify. Keen's definitive study of this famine avoids aggregates, but notes that: 'At the peak of the suffering, in 1988, death rates among southern Sudanese famine victims were among the highest ever recorded anywhere in the world. In the camp at Meiram, in southern Kordofan ... from the end of June to mid-August, some 7.1 percent of the camp population were dying *every week*' (Keen 1994:76).
28. Somalia 1991-93: 'At the height of the civil war in 1991-92 a major drought hit the area, leading to a devastating famine which killed between 300,000 and 500,000 and affected as many as three million. The large number of deaths resulted from the outbreak of infectious diseases as thousands of people gathered in relief camps' (Ahmed and Green 1999:120).
29. North Korea 1995-99: As with China's Great Leap Forward famine, the closed nature of North Korean society is partly responsible for this famine and at the same time limits the information about it that reaches the outside world. A US Congress delegation to North Korea in August 1998 concluded that 'from 1995 to 1998 between 900,000 and 2.4 million people had died from starvation or hunger-related illnesses' (Noland *et al.* 1999:1). By mid-1999, NGOs had produced higher estimates of 2.8 to 3.5 million deaths.

ANNEX 2. FIGURES ON TWENTIETH CENTURY FAMINE MORTALITY

Figure 1. 20th Century Famine Mortality by Decade

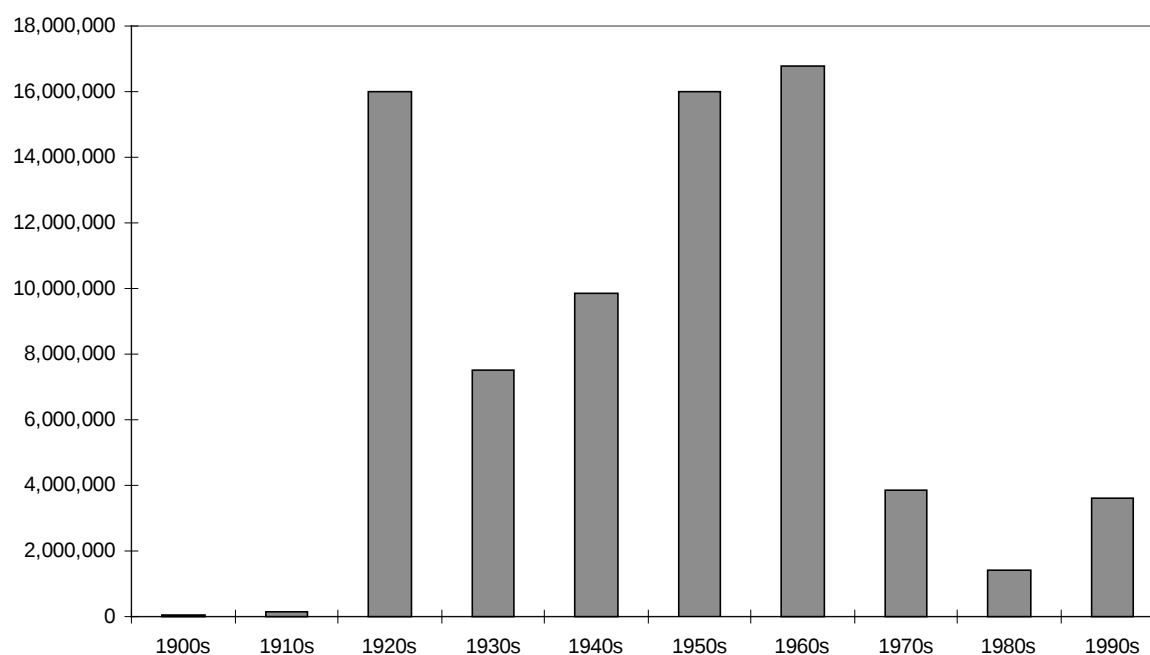


Figure 2. 20th Century Famine Mortality by Region

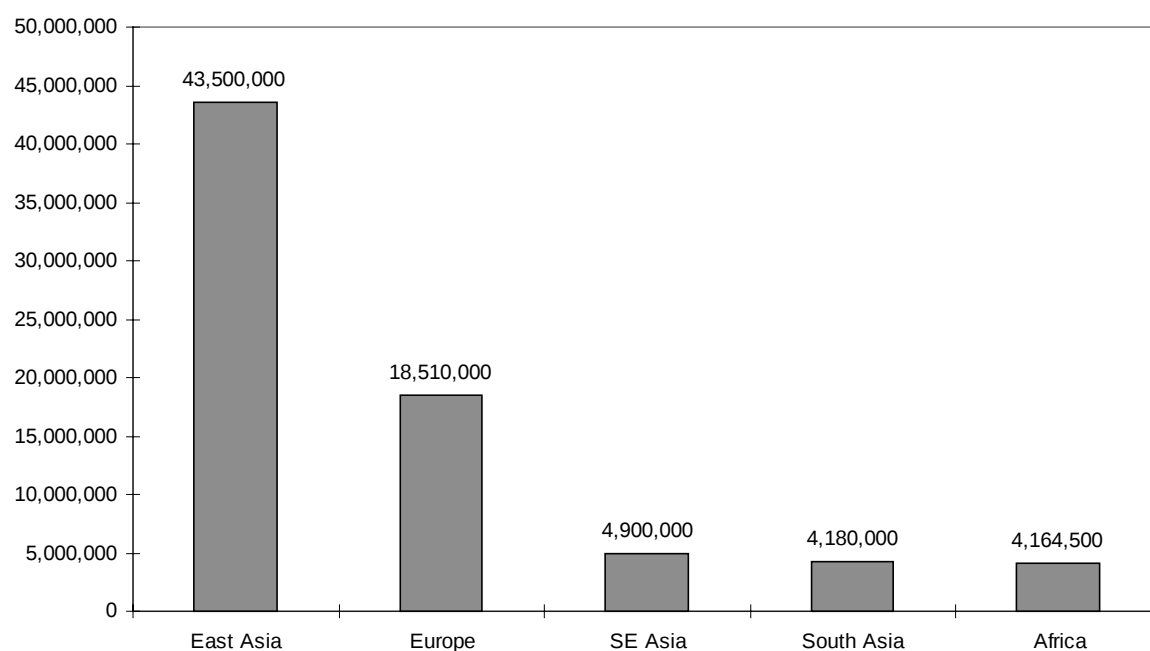
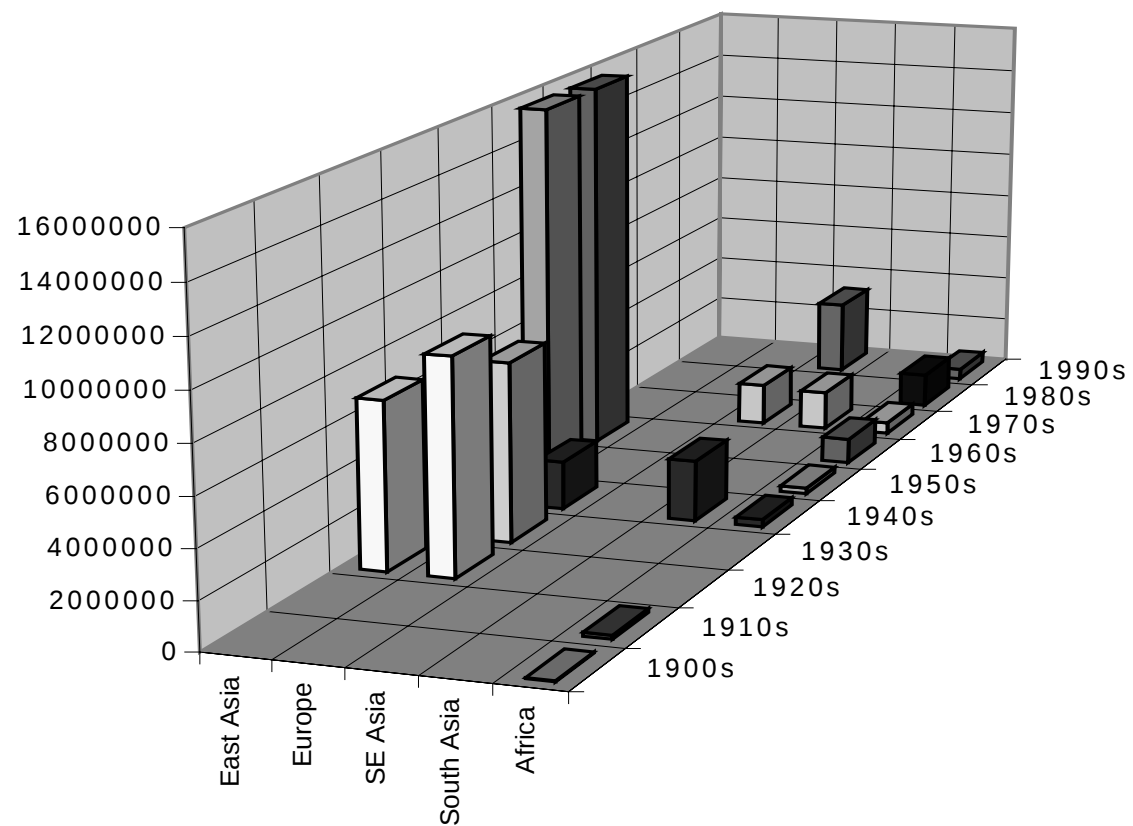


Figure 3. Famine Mortality by Region and Decade



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