

Ó Gráda, Cormac

Working Paper

Famines past, famine's future

UCD Centre for Economic Research Working Paper Series, No. WP10/20

Provided in Cooperation with:

UCD School of Economics, University College Dublin (UCD)

Suggested Citation: Ó Gráda, Cormac (2010) : Famines past, famine's future, UCD Centre for Economic Research Working Paper Series, No. WP10/20, University College Dublin, UCD School of Economics, Dublin,
<https://hdl.handle.net/10197/2654>

This Version is available at:

<https://hdl.handle.net/10419/71308>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

UCD CENTRE FOR ECONOMIC RESEARCH

WORKING PAPER SERIES

2010

Famines Past, Famine's Future

Cormac Ó Gráda, University College Dublin

WP10/20

June 2010

**UCD SCHOOL OF ECONOMICS
UNIVERSITY COLLEGE DUBLIN
BELFIELD DUBLIN 4**

FAMINES PAST, FAMINE'S FUTURE¹

Cormac Ó Gráda

School of Economics

University College Dublin

Dublin 4

[email: cormac.ograda@ucd.ie]

¹ Miegunyah Public Lecture, University of Melbourne, 3 June 2010.

FAMINES PAST, FAMINE'S FUTURE

Words will never fully convey the horrors of famine, although many accounts, such as the following excerpt from Patrick Walker's description of Scotland in the 1690s, have tried hard:

Deaths and burials were so many and common that the living were wearied in the burying of the dead. I have seen corpses drawn in sleds, many got neither coffin nor winding-sheet... I have seen some walking about the sun-setting, and tomorrow about six a-clock in the summer morning found dead in their houses, without making any stir at their death, their lead lying upon their hand, with as great a smell as if they had been four days dead, the mice or rats having eaten a great part of their hands and arms.¹

Walker, a devout Presbyterian who made a living as a pedlar, dwelt on the macabre in order to remind his compatriots of how God punished grievous sin. Other accounts of famine have sought to inspire compassion rather than fear, as in the case of BBC reporter Michael Buerk's famous television news report on the 1984-5 Ethiopian famine. In October 1984 Buerk referred to what he had just seen in Ethiopia as a 'biblical famine, now, in the twentieth century...the closest thing to hell on earth'. But the bible's own depictions of famine are, if anything, more gruesome than the footage shown on the BBC—or, indeed, what Buerk saw in

Ethiopia. Deuteronomy 28: 53-57 describes the effects of a siege in the seventh century BC as follows:

You will then eat your own offspring, the flesh of the sons and daughters that the Lord your God has given you. . . . The man among you who is by nature tender and sensitive will turn against his brother, his beloved wife, and his remaining children. He will withhold from all of them his children's flesh that he is eating (since there is nothing else left). . . . Likewise, the most tender and delicate of your women, who would never think of putting even the sole of her foot on the ground because of her daintiness, will turn against her beloved husband, her sons and daughters, and will secretly eat her newborn children (since she has nothing else). . . .

And it seems almost as if the narrator of the following account of famine in Ukraine in 1932-33 had just been reading the Old Testament:

There were cases when they buried half living people. 'Good people, leave me alone. I am not dead', the people used to cry. 'Go to hell! You want us to come tomorrow again?' was the reply. In the cemetery they took from the dead everything that had some value and then threw them into the pit. Thus it followed every day. Every day there were cases of cannibalism. Mothers killed their children and ate them up. In such villages as Kordyshivka, Soshenske, [and] Pytiiv, cannibalism was

very widespread. It was awfully dangerous for a person who looked good to go there. I don't know why people change so much. Ukrainians are very generous and very kind people, but during that hunger they looked like wolves.²

Today such graphic accounts provoke a variety of responses: disbelief, revulsion, and pity. Famine's symptoms vary—for example, convincing evidence for cannibalism in the Scottish and Ethiopian cases cited above is lacking—but they are always horrific. Are they likely to recur soon? Can the history of past famines help answer this question?

In what follows, I first outline some key findings of recent research into the symptoms and causes of famine. I then discuss two long-term consequences of famine. Finally I turn to the recent history of famine and what it might bode for the next decade or two.

1a. *'Natural Causes' and Human Agency*

Paradoxically, the century that witnessed the greatest famine on record also witnessed the virtual elimination (for now at least) of major famines. The Great Leap Forward famine of 1959-61 was China's last. The era of famines in the former Soviet Union came to an end in 1946-47, while India's last famine was in the state of Maharashtra in 1972-3, and the world's most recent 'biblical' famine was arguably that described by Michael Buerk.

Most historical famines, including that in Maharashtra, would not have occurred but for significant and, more than likely, repeated harvest shortfalls in a context of economic backwardness. But the totalitarianism of Stalin, Mao, and their imitators is blamed for the Chinese and Soviet famines, and many other twentieth century famines.³ The distinction between famines from ‘natural causes’ and other famines is useful: and it seems clear that human agency played a greater role in the major famines of the twentieth century than in earlier famines. But the distinction can be pressed too far. In this respect Ralph Thaxton’s recent compelling and moving account of Do Fo, a village in Henan province, during the the Great Leap Forward famine of 1959-61 has a particular resonance.

By way of context, Thaxton notes that living standards in Da Fo today are ‘on par with those in rural Albania and the Philippines’⁴. A more appropriate comparison is that between living standards in those countries on the eve of the famine. In terms of GDP per head in the mid-1950s, estimates of the Philippines’ advantage over China range from over two to one to about five to one (Table 1). Moreover, Da Fo is located in what was and remains one of China’s poorest regions. Table 2, drawn from the Penn World Tables, offers another perspective on China’s relative position, and shows that in 1957 Da Fo was located in the second poorest country in the world; in both 1952 and 1955 China was the poorest.⁵

Table 1. Real GDP per head in China, Albania, and the Philippines			
Year	Philippines	Albania	China

1950	1070	1001	448
1955	1358	1181	577
2005	2732	3508	5578
Source: www.ggdnc.net/maddison/			
1950	251	n/a	n/a
1955	357	n/a	67
2004	4344	5056	5772
Source : Heston, Summers and Aten, <i>Penn World Table Version 6.2</i>			

Table 2. GDP per capita in the world's four poorest economies, in 1952, 1955, and 1957					
1952		1955		1957	
China	59.2	China	67.3	Ethiopia	78.4
Ethiopia	69.8	Ethiopia	73.9	China	79.6
India	139.0	Malawi	83.8	Malawi	95.1
Nigeria	158.4	India	147.7	India	159.6
N	58		67		67
<i>Source: Heston, Summers and Aten, Penn World Table Version 6.2</i>					

Before the revolution China's extreme economic backwardness had made it extremely vulnerable to harvest shortfalls, man-made and other. This, after all, was the country Walter Mallory had dubbed the 'land of famine' in the 1920s and where in the early 1930s the peasant, in the memorable simile of R. H. Tawney, was like 'a man standing up to the neck in water, so that even a ripple is enough to

drown him'.⁶ China cannot have been *that* different in the 1950s: by the late Angus Maddison's reckoning Chinese GDP per head was no higher than it had been in the late 1920s and early 1930s.⁷ Surely, then, China's underdevelopment cannot be entirely excluded in accounting for the Great Leap famine? Surely too it was easier for a despot like Mao Tse Tung to exercise control and to wreak havoc in such an environment? The irony is that Thaxton's account of an earlier famine in Henan has an exclusively traditional emphasis on 'natural' factors:⁸

In the spring of 1920, a severe drought gripped the lower part of the North China Plain, settling over northern Henan, western Shandong, and southern Hebei provinces. This long drought extended into the spring of 1921. As a result, several million farmers perished in what came to be called the North China Famine of 1921...

Nor, of course, is it correct either to blame all earlier famines on overpopulation. Many were caused or exacerbated by wars, and much—or at least some—of the excess mortality associated with others might have been avoided by more effective human action—as in, say, Ireland in the 1840s or India in the 1870s. The belief that elites might have done more to avert or mitigate disaster goes back much further than the nineteenth century; and so also does the sense that their legitimacy hinged on the insurance they offered against disaster.⁹

1b. *Causes of Death*

During the twentieth century famine also changed how it kills.

Traditionally, the immediate cause of most famine deaths was infectious diseases rather than literal starvation. The exceptions are few and recent; they relate mainly to wartime famines in relatively advanced economic settings such as in Greece in 1942-43, Leningrad during the blockade, in the Warsaw ghetto before its destruction in April-May 1943, in the western Netherlands in 1944-45. During those famines the main causes of death shifted from typhus, typhoid fever, relapsing fever, dysentery, and malaria to hunger edema, muscular and alimentary dystrophy, and pneumonia. The shift was due to a combination of improved public health and more effective medical knowledge and technology. At the beginning of the Leningrad blockade in 1941, the Germans were terrified that their soldiers would be contaminated by epidemics if the city was occupied.¹⁰ The spring thaw in 1942 presented a grave threat of epidemiological threat to Leningraders, but the public health regime was equal to the threat. By mid-March 'over 100,000 tottering inhabitants, mostly women, were doing several hours of street cleaning a day, and the number continued to rise'.¹¹ However, this was not the case in Bengal in 1943-44, or in sub-Saharan Africa more recently.

A conundrum here for famine specialists is the proximate causes of death during the greatest famine of all, the Chinese famine of 1959-61. In pre-revolutionary China, as might be expected, famine mortality was of the traditional kind and infectious diseases such as cholera and typhus were endemic. But most accounts of the cause of death in 1959-61 imply death by starvation rather than by disease. Most accounts imply starvation, and Ralph Thaxton links most deaths in

Da Fo in 1960 to what he dubs 'edema', and this is also the finding of the most detailed study of this issue to date, that by Yixin Chen based on an analysis of public health gazetteers from Anhui province.¹² Does this mean that the Maoist public health campaigns of the early and mid-1950s influenced the causes of deaths during the Great Leap famine, but not the death toll itself?

2. *Markets and Famines*

Human agency encompasses not just governance and culture but also institutions such as markets. It is a long way from Dublin to Dacca but anyone who studies famines is confronted almost immediately by the Great Bengal Famine of 1943-44, a famine which, thanks to the work of Nobel laureate Amartya Sen, has become almost paradigmatic. In *Poverty and Famines* (1981) and elsewhere Sen proposed and made popular an interpretation of famines that placed the emphasis less on food availability *per se* than on the impact of market malfunction on what he dubbed exchange entitlements, or the purchasing power of those who bought rather than consumed food.

Sen's focus on the distributional aspects of famine suffering was extremely valuable. He drove the point home by describing several instances where—so he claimed—famine occurred despite no 'abnormal' reduction in food output. By implication those famines were zero-sum outcomes, with winners and losers, the winners being mainly those with access to land and credit. This perspective highlighted the scope for redistribution but also intellectualized the populist

conviction throughout history that speculators, hoarders, and profiteers were responsible for turning food shortages into famine.

However, a competing intellectual tradition, dating back to Adam Smith and the French economists, rejects such a possibility. This is from the *locus classicus*:

Without intending the interest of the people, the inland corn dealer is necessarily led, by a regard to his own interest, to treat them, even in years of scarcity, pretty much in the same manner as the prudent master of a vessel is sometimes obliged to treat his crew. When he foresees that provisions are likely to run short, he puts them upon short allowance... The unlimited, unrestrained freedom of the corn trade, as it is the only effectual preventative of the miseries of a famine, so it is the best palliative of the inconveniencies of a *dearth*; for the inconveniencies of a real scarcity cannot be remedied; they can only be palliated. No trade deserves more the full protection of the law, and no trade requires it so much; because no trade is so much exposed to popular odium.¹³

Now, if markets move food from where it is relatively cheap to where it is relatively expensive, they are probably saving lives. But are markets the 'effectual preventative' that Smith claimed? My own research points to instances where markets in the past did not exacerbate famine.¹⁴ In nineteenth century Ireland

and India, where Smith's views held sway and governments did not interfere with trade, the trouble usually was not that markets functioned perversely, but that they worked too slowly. In both cases, the lack of food encouraged some canny merchants to import more and export less food. But existing transport technologies meant that it took months for them to respond, and the uncertainties accompanying that very delay deterred many other merchants from trying their luck.¹⁵ So markets were no panacea either because, to quote economist John Maynard Keynes out of context, 'in the long run we are all dead'.

NGOs and the international media are still prone to blame famine on market malfunction, but evidence that reduced market integration or excessive storage made famines worse in the recent past is weak. Corni and Deotti's study of Niger in 2005 rejects the claim that the rise in consumer prices stemmed from market balkanization during the crisis, while Jenny Aker reckons that grain markets in Niger were *more* integrated than normal during drought years such as 2005. Thus contrary to media claims, markets did not 'fail' in Niger during the 2005 crisis.¹⁶ Today, thanks to huge reductions in the cost of transport and information, markets have the power to work much more effectively than in the past.

3. *Long-run Consequences*

A Kashmiri proverb states that 'famine goes, but the stains remain'. Even where famines are a thing of the past, they often have an after-life. This section focuses briefly on two aspects of the long-run impact of famine.

The first concerns collective memory of famine. A key theme of the sesquicentennial commemorations of the Great Irish Famine in the mid-1990s was that the Irish everywhere shared a collective or common memory of that catastrophe. The inclusive, first person plural language of so much of the commemorative rhetoric—‘we are a first world country with a third world memory of famine, dislocation, and exile... Our own famine echoes are constantly with us’, ‘an event which traumatised this country’, ‘this country’, ‘a country with a memory’, ‘our own’, ‘our memory’—suggested collective memory in spades. An event which pitted ‘me’ against ‘you’ was remembered as ‘us’ and ‘we’. But a divisive disaster that pitted not only the poor against the rich, but neighbour against neighbour and young against old, was hardly promising material for a communal, collective memory. It was almost as if the famine caused virtually all those living in Ireland during the famine to die or emigrate, with identical knock-on effects on their traumatised descendants. But how could the memory of such a divisive disaster be truly collective? Surely, only by glossing over and filtering out much of the history of the famine? Collective memory, of course, always tells us more about the present than the past. By contrast, history—and this includes folklore and oral history—is complex and multifaceted, though hardly value-free either.¹⁷

Nowhere today is famine memory more contested than in Ukraine. Former president Viktor Yushchenko championed a collective memory of the famine of 1932-33—what came to be called the Holodomor in the 1980s as genocide—but which his successor Viktor Yanukovich prefers to describe as a ‘tragedy’. Some

bloggers were quick to note that Yanukovich's 'first act' was to remove the Holodomor dedication on the presidential website.¹⁸ In Ukraine memory competes with history, and breeds an embittered victimhood stakes that sometimes places the famine on a par with the Jewish Holocaust.

In neighbouring Moldova too, famine memory is fiercely contested. In late 2006, the Moldovan legislature rejected an attempt to provide 'a political and legal appreciation' of the 1946-1947 Moldovan famine. One opposition deputy claimed that the famine was the 'result of the premeditated policy promoted by the Stalinist regime' while another argued that the refusal of the majority to engage on the issue was 'a blasphemy towards the victims of those years'. A government supporter retorted that while there was no denying that there had been a famine, it had 'a pragmatic explanation historically demonstrated: the difficult post-war period, the poor crops, and the drought'. Stalin shared the blame, but only insofar as he did not react in time.¹⁹

There are times when, as the American writer and activist David Rieff has recently argued, it is better to forget:

The wars of the Yugoslav Succession were inflamed by remembrance—above all the Serb remembrance of the defeat at Kosovo Polje in 1389. In the hills of Bosnia, I learned to hate but above all to fear collective historical memory. In its appropriation of history, which had been my abiding passion and refuge since childhood, collective memory made history itself seem like nothing

so much as an arsenal full of the weapons needed to keep wars going or peace tenuous and cold. What I saw after Bosnia, in Rwanda, in Kosovo, in Israel-Palestine, and in Iraq, gave me no basis for changing my mind.

Over a century ago Irish politician and social reformer Horace Plunkett famously urged that 'Anglo-Irish history is for Englishmen to remember, for Irishmen to forget'.²⁰ For 'history' read 'collective memory', not 'history'.

A second, quite different long-term result of famine is an extension of the 'fetal origins' hypothesis, i.e. the claim that malnutrition in the womb and in early infancy compromises health in adulthood. The earliest famine study to focus on this issue was an analysis of the long-term impact of the Dutch Hungerwinter of 1944-45. Inevitably most famines do not yield the kind of data needed to test for birth-cohort effects; but subsequent studies refer to the Dutch Potato Famine of 1846-47, the Great Finnish Famine of 1867-68, the Leningrad siege-famine of 1941-43, and the Chinese famine of 1959-61. Until very recently such studies were primarily exercises in medical history, published in medical journals. They identified links between being born or being young during or in the wake of a famine, on the one hand, and ailments in later life ranging from heart disease and cancer to mental illness and obesity, on the other. A study based on evidence from Anhui province, for example, finds that children conceived in 1959-61 stood twice as high a risk of becoming schizophrenics as those conceived either before or after the famine, while evidence from St. Petersburg links malnutrition during

puberty with increased incidence of heart disease and increased mortality from strokes.²¹

More recently, economists have made their own distinctive contribution to this literature, by drawing attention to the economic consequences of being born in a famine cohort. Thus, a second study of the Chinese famine finds that for those who were one year old at its onset, exposure on average reduced adult height by 2 per cent, weight by 6 per cent, weight-for-height and upper arm circumference by 4 four per cent, labor supply by 7 per cent, and schooling by 3 per cent. A third study finds that being in the famine cohort increased male illiteracy by 7 per cent, the probability of not being working by 2.4 per cent, and the probability of being disabled by 13 per cent. Men were 3.5 per cent less likely to be married, and 5 per cent more likely to have never married.²² And there is evidence that the damage extends to the third generation: yet another study of the Chinese famine finds that children of a parent born during the famine were smaller and lighter, and that the effect was greater for boys than for girls.²³ Such findings imply that the human cost of famines is greater than previously thought.

4. *Never Say Never!*

A study published a decade ago²⁴ claimed that famine was responsible for 70 million deaths during the twentieth century, or more than either world war. But the previous century was probably worse, at least relatively speaking. Thirty million is a lower-bound estimate of famine mortality in India and China alone

between 1870 and 1902, while a figure of 'fifty million dead might not be unrealistic'.²⁵

Recent famines, by contrast, have been 'small'. Since the high-profile crises of Malawi in 2002 and of Niger in 2005 famine has not been front-page news. The natural disasters that make the headlines nowadays are no longer famines, but earthquakes. The death tolls in Malawi and Niger shrink into insignificance compared to those of earthquakes in Turkey in August 1999, in Java in May 2006, in Sichuan in May 2008, in Haiti in January 2010, or of the Indian Ocean tsunami of December 2004. Moreover, since the 1980s the human cost of famine in Africa has been dwarfed by that of HIV-AIDS. HIV-AIDS kills about two million annually in Africa, more than any African famine on record. In Malawi and in Niger in the mid-2000s the annual death tolls from HIV/AIDS were eighty thousand and seven thousand, respectively.²⁶

So has famine lost its deadly sting? Forecasting future prospects for the eradication of famine is a mug's game. Stanford biologist Paul Ehrlich's notorious doomsday forecasts of the 1960s are the most notorious cases in point. His confident prediction of global famine in the 1970s—'hundreds of millions of people...going to starve to death in spite of any crash programs embarked on now'—got it almost exactly wrong. In 1980 a second expert wrote of a future 'globe-girdling Future Famine Zone', while in 1967 a volume with the disturbing title *Famine 1975! America's Decision: Who Will Survive* defined India, Egypt and Haiti as beyond help and therefore not worth assisting. It was in this gloomy context that ecologist Garrett Hardin in 1974 proposed his 'lifeboat ethics: the

case against helping the poor' whereby the really hopeless cases should be let drown.²⁷

Less famously, perhaps, in 1963 the Indian state of Maharashtra passed a law called 'The Maharashtra Deletion of the Term 'Famine' Act', which removed all references to 'famine' in statutes referring to public relief. The preamble reads:

WHEREAS the agricultural situation in the State is constantly watched by the State Government, and relief measures as warranted by the situation are provided as soon as signs of scarcity conditions are apparent, so that there is no scope for famine conditions to develop:

AND WHEREAS the term 'famine' in the Bombay State Famine Relief Fund Act, 1958 and other laws on the subject in their application to the State has now become obsolete, and requires therefore to be deleted therefrom; It is hereby enacted in the Fourteenth Year of the Republic of India as follows....²⁸

Less than a decade later, Maharashtra was struck by India's last famine (so far), in which 'at very least' seventy thousand people perished.²⁹

With such caveats in mind, is there any point in peering ahead? Yes, insofar as studying the past helps identify what makes famine more likely. What follows,

accordingly, is less a forecast than a review of those factors that would affect the likelihood of famine over the next decade or two.

4.1. *First Some Bad News*

It is not easy to conjure exceptions to Amartya Sen's 'law' that democracy and famine don't mix.³⁰ Malawi in 2002 might seem to be one—a Malawian member of parliament declared at the height of the crisis that 'if we don't handle the food crisis well, it will be difficult to convince people to vote for us'—although that would be stretching the definitions of both democracy and famine.³¹ Maharashtra in 1972-73 offers another partial exception, although accounts of that famine stress how much worse it might have been but for the relief efforts of the authorities.³² Recent evidence from famine's last redoubts suggests that change is in the right direction but very slow. The problem is that while democracy may prevent famine, democracy is also less likely, and less likely to last, in environments where famine is a risk. Table 3 offers one crude measure of the link between the quality of governance and economic development. The correlation between GDP per head and life expectancy at birth, on the one hand, and measures of good governance, on the other, is clear. Thus, for example, the correlation between corruption and life expectancy across Asian countries is -0.734, while that between democracy and GDP per head globally is +0.627.

TABLE 3. Governance, GDP, and Life Expectancy

<i>A. Correlations with In GDP per capita</i>					
Index	World	Africa	Asia	L America	Other
Corruption	-.734	-.358	-.820	-.566	-.760
Democracy	+.627	+.096	+.566	+.412	+.737
Press Freedom	+.503	-.013	+.265	+.196	+.737
<i>B. Correlations with e[0]</i>					
Index	World	Africa	Asia	L America	Other
Corruption	-.632	-.275	-.734	-.572	-.804
Democracy	+.716	-.151	+.510	+.273	+.790
Press Freedom	+.393	-.283	+.248	-.029	+.748
Sources: UNDP; http://www.worldaudit.org/democracy.htm					

The second piece of bad news concerns climate change. The link between adverse climate change and increased vulnerability to drought and famine is obvious and much commented on. There are doubts about the ability of politics to deliver on this issue. What of economics? Two centuries ago economics was known as the dismal science; today, if anything, it leans in the other direction. In the spirit of the celebrated wager pitting economist Julian Simon against geographer Paul Ehrlich a generation ago, economists are more inclined to rely on human resilience and market forces in the struggle against climate change than are meteorologists or environmentalists. In 1980 Ehrlich predicted that the real price of five commodity metals selected by him would rise during the following decade, reflecting increasing pressure on resources. He lost the bet. A recent exercise replicating the original Simon-Ehrlich wager for 1990-2005 produces the same outcome.³³ Simon attributed his win to the ability of human agents to economize on the metals through substitutes, and their discovery of new ways of producing

them. The question is not how climate change would affect our environment, other things being equal, but how well mankind can adapt to the challenge. 'Greener' technologies would be part of the solution, but so too would inventing more heat-resistant technologies.

Here history contains some clues. A noteworthy example is the research of economic historians Alan Olmstead and Paul Rhode on how nineteenth- and early twentieth-century American agronomists and farmers adapted wheat production to the harsher climate of the midwestern United States. Olmstead and Rhode argue that the new hard red varieties developed and diffused in this period coped well with temperature changes of 2 to 5 degrees centigrade.³⁴ Now, Africa is not North America, and adapting to colder climates may be technologically easier than adapting to global warming. But the Olmstead-Rhode study hints at possibilities that should not be ruled out.

The third piece of bad news is war. Throughout history wars have caused or exacerbated famine, and the experience of World War II highlights the vulnerability of even relatively wealthy economies to total war. Today famine is a serious threat only in places seriously threatened by war or autarky. In recent years the FAO has produced an annual list of countries requiring external food assistance, and giving the reasons why. It divides countries at risk into three categories: those facing exceptional shortfalls in aggregate production/supplies; those suffering 'widespread lack of access', and those faced by 'severe localized food insecurity'. As the data in Table 4, which refer to 2009, make clear, more often than not, the main reason given for food insecurity were civil conflict, poor

governance, or the burden placed by HIV/AIDS, rather than adverse weather or poor crops per se.

TABLE 4. COUNTRIES IN CRISIS REQUIRING EXTERNAL ASSISTANCE			
Nature of Food Insecurity	Main Reasons	HDI Ranking	TFR 2009
<i>Exceptional shortfall in aggregate food production/supplies</i>			
Kenya	Adverse weather, <i>lingering effects of civil strife</i>	144	4.56
Lesotho	Low productivity, <i>HIV/AIDS pandemic</i>	155	3.06
Somalia	<i>Conflict, economic crisis</i> , adverse weather	--	6.04
Swaziland	Low productivity, <i>HIV/AIDS pandemic</i>	141	3.45
Zimbabwe	<i>Problems of economic transition</i>	--	3.19
Iraq	<i>Conflict</i> and inadequate rainfall	--	4.26
<i>Widespread lack of access</i>			
Eritrea	Adverse weather, <i>IDPs, economic constraints</i>	164	4.72
Liberia	<i>War related damage</i>	176	6.77
Mauritania	Several years of drought	140	4.37
Sierra Leone	<i>War related damage</i>	179	5.00
Afghanistan	<i>Conflict and insecurity</i> , inadequate rainfall	181	7.07
North Korea	<i>Economic constraints</i>	--	1.85

TABLE 4, cont.			
Nature of Food Insecurity	Main Reasons	HDI Ranking	TFR 2009
<i>Severe localized food insecurity</i>			
Burundi	<i>Civil strife, IDPs and returnees</i>	174	6.80
CAR	<i>Refugees, insecurity in parts</i>	179	4.58
Chad	<i>Refugees, conflict</i>	175	5.31
Congo	<i>IDPs</i>	136	4.49
Côte d'Ivoire	<i>Conflict related damage</i>	163	4.46
DR Congo	<i>Civil strife, returnees</i>	176	6.20
Ethiopia	Adverse weather, <i>Insecurity in parts</i>	171	6.12
Guinea	<i>Refugees, conflict related damage</i>	170	5.20
Guinea-Bissau	<i>Localized insecurity</i>	173	4.65
Sudan	<i>Civil strife (Darfur), insecurity (southern Sudan), localized crop failure</i>	150	4.23
Uganda	Localized crop failure, <i>insecurity</i>	157	6.77
Bangladesh	Cyclones	146	2.74
Iran	Past drought	88	2.04
Myanmar	Past cyclone	138	2.07
Nepal	Poor market access and drought	144	2.64
Pakistan	<i>Conflict</i>	141	3.52
Sri Lanka	<i>Conflict, IDPs</i>	102	1.99
Timor-Leste	<i>IDPs</i>	162	6.53
Source: http://www.fao.org/docrep/012/ai484e/ai484e02.htm ; CIA ; UNDP			

4.2. Malawi and Niger

The recent crises in Malawi and Niger contain some lessons about the history and, hopefully, the future of famine. Malawi was the epicentre of a broader food crisis threatening southern Africa in 2001-02. In April 2002 Malawi's president declared a state of emergency and asked for \$21 million to deal with a crisis that

had put three-quarters of the population at risk. UN agencies and NGOs set about addressing Malawi's 'worst food crisis in half a century'.³⁵ Reports followed of people resorting to substitute foods such as banana roots, boiled maize husks, and pumpkin leaves, of an alarming increase in the number of tuberculosis cases, and one of Malawi's 'worst ever' cholera epidemics.³⁶

Yet the resultant death toll was miniscule. In March 2002 an official source reported that around one hundred Malawians had died from hunger-related illnesses since the beginning of the year, while NGO sources informed the BBC that 'more than 300 people ha[d] died of hunger' in the previous last two months.³⁷ In May the BBC reported that 'officially more than 100 people starved to death by March in Kasungu', the worst affected district, in Malawi's 'worst-ever' famine. The higher estimates of 'at least 500-1,000' and '1,000-3,000' proposed by Stephen Devereux³⁸ imply is an increase of about one per cent above the normal death rate.

In late 2005 Malawi was in trouble again, with aid agencies claiming that 'at least five million people face starvation this winter', the World Food Programme declaring a funding shortfall of 'at least \$70 million', and the government warning that without outside help 'hundreds of thousands of Malawians will die'.³⁹ Happily, no crisis materialized. Since 2005 a series of favourable seasons and generous subsidies through cheap fertilizers have increased maize output substantially.⁴⁰ By 2008/9 Malawi was a net exporter of maize, and it was almost as if its food supply problems were in the past. But if Malawi's recent famines or near-famines have been exaggerated, predicting the future on the basis of a few good years in

succession is equally foolhardy. Whether seed and fertilizer subsidies offer an enduring and sustainable cure for economic backwardness remains moot. The trouble is that subsidies are of least assistance to poor farmers dependent on marginal soils and that the long-term viability of a programme that subsidizes two million cultivators out of the public purse is questionable.

Niger is a landlocked country constrained by an ecologically fragile resource base, and with a rate of population growth that leaves the margin over subsistence worryingly tight. Robert Malthus, a technological pessimist, would have been dumbfounded at the ability of Niger's farm sector to keep pace with a population that was increasing at 3-4 per cent annually. Its ability to do so implies significant productivity gains in order to stand still—and considerable resilience in a context of threatened soil erosion and, indeed, desertification. In semi-technical jargon, keeping food supplies per head constant when population is growing at such a pace requires greater efficiency and productivity gains than those achieved by European agriculture before World War 2.⁴¹

Niger's crisis was one of the biggest news stories of the summer of 2005. Once again it was the BBC who broke the story. 'We are going to lose many, many thousands of lives', predicted John O'Shea of the Irish NGO GOAL two days after Hilary Andersson's report from Zinder province.⁴² On the same day, UN spokesman Jan Egeland accused the international community of reacting slowly to the crisis: later he declared that more donations were received in the week following the BBC broadcast than in the previous six months. The same broadcast prompted the

boast from O'Shea claimed that GOAL had 'fed more people in its first week in Niger than the UN had this year'.⁴³

Graphic and apocalyptic accounts of the disaster in Niger followed. There were reports of rocketing prices, poor harvests, severe drought, and locust infestations. Estimates of 3.5 or 3.6 million people at imminent risk of starvation—almost invariably including 0.8 million children—were much recycled. According to Oxfam's regional director in West Africa, 'families [we]re feeding their children grass and leaves from the trees to keep them alive.' After briefing from *Médicins sans frontières* Hilary Andersson reported from Zinder province, the epicentre of the crisis, on September 15th: 'This is the only part of Niger where anyone has even tried to estimate how many people have starved to death. And the indications are that just in this town and the villages immediately surrounding it, thousands of people have died in the last few months.'

In reality crisis-induced excess mortality in Niger was almost certainly minimal. A scholarly study published in 2008 attempted to estimate mortality on the basis of a sample survey carried out in the wake of the crisis.⁴⁴ The highest daily mortality rate found was 0.7 per 10,000 in Zinder province; the estimate for Niger as a whole was 0.4 per 10,000. The authors conclude that Niger constituted a 'food crisis' but not a 'famine'. Indeed, had the aggregate daily rate lasted a year, it would convert to an annual rate less than 15 per thousand, or considerably less than the annual death rate reported by international agencies for Niger in the early 2000s.

The 2005 crisis is worth comparing with that of 1931, when drought and locusts destroyed most of the staple millet crop, because the comparison offers evidence of progress made in the interim. First, the 1931 famine's toll in terms of deaths and emigration exceeded 150,000, with excess mortality in the tens of thousands.⁴⁵ Second, colonial tax exactions were a factor, as was the paucity of aid from the colonial power. During 1931 food aid totalled 140 tons for the 0.5 million living in the three worst-hit districts of Niamey, Dosso, and Tillabery, and much of that aid was in the form of loans. In the following year the authorities took their responsibilities more seriously, but food ordered for Niamey and Tillabery in late 1931 had yet to arrive in July 1932. Relief was therefore both inadequate and slow.⁴⁶ Third, the price of millet more than quintupled at its peak during the third quarter of 1931, whereas in 2005 the price at most doubled. Most vulnerable in 1931 were those nomadic pastoralists who relied on the market for their food, and who saw their entitlements dwindle to almost nothing as livestock prices plummeted and food prices soared. Only the need to fund their tax burdens drove farmers to the market. In sum, the contrast between 1931 and 2005 could not be starker. Today the main burden facing Niger is its fertility rate, apparently the highest in the world (see Table 5).⁴⁷ It has been largely spared the catastrophe of HIV/AIDS, an affliction largely absent in the Muslim countries of north and western Africa.

	NIGER			MALAWI		
	1990	2000	2007	1990	2000	2007
<5 MR	303.5	229.5	175.5	209.4	169.5	110.5
TFR	7.88	7.55	6.95	6.92	6.20	5.59
e(0)	46.51	53.3	56.9	48.6	46.0	48.3
HIV/AIDS [% adults aged 15-49]			0.8			11.9
Source: http://datafinder.worldbank.org/ ; CIA <i>World Factbook</i>						

One reason why natural disasters pose less of a threat today is the globalization of relief and the ubiquity of NGOs that specialize in disaster relief. Today in Ireland alone there are over 120-140 NGOs with a 'development' remit, while globally the number of aid workers has grown from an estimated 136,000 in 1997 to an estimated 242,000 in 2005 and 290,000 in 2008.⁴⁸ Haiti in 2010 and the Indian Ocean tsunami in late 2006 testify to their efficacy in soliciting and distributing relief.

Some of the best-known NGOs have their origins in the relief of particular famines. Africa Concern—now Concern Worldwide—and *Médecins sans frontières* were born in the wake of the Biafran secession in the late 1960s whereas Oxfam began as the Oxford Committee for Famine Relief, a group campaigning for the relief of wartime Greece. What sometimes begins as famine relief culminates in development aid. The crisis of 2005 drew the Irish charity GOAL to Niger, just as the Ethiopian famine of 1984 had drawn it to Ethiopia and the crisis of 2002 had drawn it to Malawi. It remained on in all three places, to embark on 'sustainable development programmes' paid for in large part out of public funds.⁴⁹

As bureaucracies NGOs are arguably better geared to addressing structural problems such as ill-health and illiteracy than once-off disasters. But in financial terms they require disasters in order to sustain their other activities. In Ireland, for example, GOAL and Concern used Niger in 2005 to launch campaigns focusing on the 3.5 million who were starving (GOAL) or the 'over 3.6 million [who] need food now' (Concern). Trócaire attempted a different tactic, using the crisis as an opportunity to launch an 'Africa Crisis Appeal' in aid of 'up to 20 million people...now at risk and urgently requir[ing] help'.

The tension between the public's relative lack of interest in development programmes and the bureaucratic need of the NGO to survive between disasters is a problem for NGOs. The problem was highlighted in a recent controversy about the role of NGOs in Niger. The prize-winning Norwegian documentary, *Sultbløffen* ['The Famine Scam'], attacked Hilary Andersson and *Médecins san frontières*, her main source of information, for misrepresenting the Niger crisis. For MSF, 'all the signs were blinking red', but for its Norwegian critics, with well-placed informants *in situ*, those signs spelled malnutrition, which was endemic, not impending famine. MSF based its claims on an increase in the number of visitors its ongoing nutritional programmes, rather lamely arguing:

This motivation has nothing to do with raising more funds, but simply with raising awareness for a forgotten crisis that causes many unnecessary deaths, but that has been considered to be

normal because we got used to a under-five-mortality rate of 200 children out of every 1,000 newborn.⁵⁰

It would seem that MSF had, in effect, cried wolf in Niger. As Alex de Waal put it, 'the Niger crisis is an example of how a crisis in an African country is portrayed according to a particular script which doesn't actually necessarily fit the reality of that crisis'.⁵¹ Both the Niger and Malawi examples should be set against the historical lesson that even in very poor countries once-off harvest failures and attendant price spikes do not necessarily produce famine in peacetime. Such events were common enough for people to insure against them: to deny this is to deny the prudence and resilience of the very poor.

If the news from Niger and Malawi offers some cause for tempered optimism, are there other hopeful signs? One is the huge increase in global productivity. Angus Maddison's estimates imply that global GDP per head of population rose fivefold during the twentieth century, and has almost quadrupled since mid-century (Table 6). And there are reasons to believe that such calculations underestimate the true increase in global living standards.⁵² A by-product of this growth has been a vastly improved capacity to store food and to ship it long distances at short notice.

Naturally, the growth in food output has not been commensurate. FAO data suggest that world food output (in kcals rather than in dollars) has risen by nearly four-fifths since 1980, or considerably faster than population (which has increased by half). So, in global terms, the margin over subsistence is now much wider than

it was a generation ago. This also holds for former famine zones such as India and Bangladesh, whereas China, once the 'land of famine', nowadays faces a growing problem of childhood obesity. In Africa, where malnutrition and destitution is greatest, the recent record is mixed, however, and leaves no room for complacency. Figure 1 shows Africa as a whole performing better than Southern Africa, and food outstripping population in both Niger and Malawi in the recent past. The future course of population growth is crucial; and science writer Fred Pearce may well be right that current UN population projections underestimate the prospects for 'softer' demographic adjustment through fertility decline in the world's poorest regions.⁵³

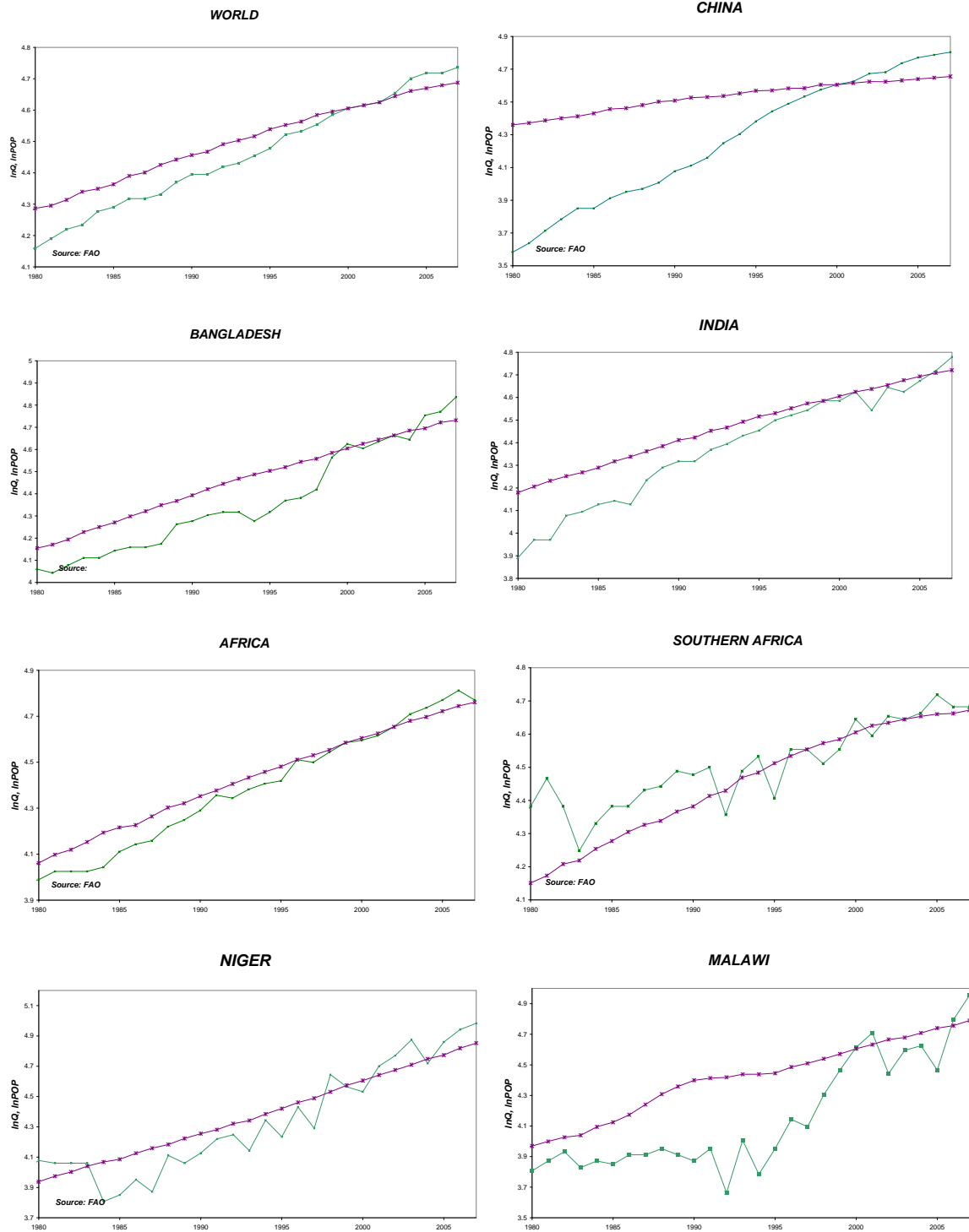
The productivity gap between Sub-Saharan Africa and the rest of the world has been widening.⁵⁴ In the 1970s GDP per head in China was not much higher than in Malawi or Niger; today it is ten to twelve times as high. There are no easy solutions to bridging that gap. Yet given the productive capacity of humankind in the modern era, famines in even the poorest economies are avoidable scandals. It is time to make them history.

Table 6. GDP per head 1820-2008 [in 1990 PPP-adjusted dollars]

Year	World	W Europe	USA	Africa
1820	666	1194	1257	420
1900	1261	2885	4091	601
1950	2111	4569	9561	889
1975	4087	11493	16284	1395
2008	7614	21672	31178	1447

Source: <http://www.ggd.c.net/maddison/>

FIGURE 1. POPULATION AND FOOD OUTPUT, 1980-2008



ENDNOTES

¹ As cited in Karen J. Cullen, *Famine in Scotland: the 'Ill Years' of the 1690s* (Edinburgh, 2010), p. 123.

² Harvard Project on the Soviet Social System, Case 333 [available at: <http://pds.lib.harvard.edu/pds/view/5608007?n=25>].

³ Michael Ellman, 'The 1947 Soviet famine and the entitlement approach to famines'. *Cambridge Journal of Economics*, 24 [2000]: 603-30; Wheatcroft.

⁴ Ralph Thaxton, *Catastrophe and Contention in Rural China: Mao's Great Leap Forward and the Origins of Righteous Resistance in Da Fo Village* (Cambridge, 2008), p. 7.

⁵ Angus Maddison, 'Historical Statistics of the World Economy: 1-2008 AD'; Alan Heston, Robert Summers and Bettina Aten, *Penn World Table Version 6.2* (Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, 2006). These sources are available at: www.ggdcc.net/maddison/pwt.econ.penn.edu.

⁶ C. Ó Gráda, 'The ripple that drowns? Twentieth century famines as economic history', *Economic History Review*, 61(S1), 5-37.

⁷ www.ggdcc.net/maddison/

⁸ Thaxton, *Catastrophe and Contention*, p. 26; Walter H. Mallory, *China: Land of Famine* (New York, 1926); R. H. Tawney, *Land and Labour in China* (New York 1964, originally published in 1932), p. 77.

⁹ C. Ó Gráda, *Famine: A Short History* (Princeton, 2009), pp. 196-98.

¹⁰ Michael Jones, *Leningrad: State of Siege* (London, 2008), p. 41.

¹¹ Jones, *Leningrad*, p. 244.

¹² Ó Gráda, *Famine: A Short History* (Princeton, 2009), p. 121; Thaxton, *Catastrophe and Contention*, pp. 209, 253; Yixin Chen, 'Famine, diseases, and

public health during China's Great Leap Forward', paper presented at the workshop on Chinese and Soviet famines, Melbourne University, June 2010.

¹³ Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (London, 1776), Book 4, Chapter V.

¹⁴ C. Ó Gráda, 'Market and famine in pre-industrial Europe'. *Journal of Interdisciplinary History*, 36(2) (2005): 143-166.

¹⁵ Martin Ravallion, 'Trade and stabilization: Another look at British India's controversial foodgrain exports', *Explorations in Economic History*, 24(4) (1987), 354-370; C. Ó Gráda, *Black '47 and Beyond: The Great Irish Famine in History, Economy, and Memory* (Princeton, 1999), ch. 4.

¹⁶ Giovanni Andrea Corni and Laura Deotti, 'Niger's 2005 food crisis: extent, causes and nutritional impact' EUDN (European Development Research Network) Working Paper 2008-15; Jenny C. Aker, 'Droughts, grain markets and food crisis in Niger' (unpublished 2008); see also idem, 'How can we avoid another food crisis in Niger?', Center for Global Development Essay, Sept. 2008 (available at: <http://www.cgdev.org/content/publications/detail/16679>).

¹⁷ C. Ó Gráda, *Ireland's Great Famine: Interdisciplinary Perspectives* (Dublin, 2006), ch. 12.

¹⁸ Be that as it may, the website of the Ukrainian embassy in Dublin still contains a statement declaring that the famine was a genocide that caused the deaths of 'up to 10 million people' (<http://www.mfa.gov.ua/uk/en/2561.htm#top>, accessed 8th April 2010).

¹⁹ For contrasting perspectives on this famine see V. F. Zima, *The Famine of 1946-1947 in the USSR: Its Origins and Consequences* (Ceredigion, UK, 1999); S. G. Wheatcroft, 'Famine and Food Problems in non-occupied USSR, 1941-1947', paper presented at IEHA Conference, Utrecht, August 2009.

²⁰ Horace Plunkett, *Ireland in the New Century* (London, 1904).

²¹ Yonghong Wang, Xiaolin Wang, Yuhang Kong, John H. Zhang, and Qing Zeng, 'The Great Chinese Famine Leads to Shorter and Overweight Females in Chongqing Chinese Population After 50 Years'. *Obesity* 18(3) (2010): 588-592; Pär Sparén, Denny Vågerö, Dmitri B. Shestov, Svetlana Plavinskaja, Nina Parfenova, Valeri Hoptiar, Dominique Paturot, and Maria Rosaria Galanti, 'Long term mortality after severe starvation during the siege of Leningrad: prospective cohort study', *British Medical Journal*, 328(7430)(Jan 3 2004): 11.

²² Xin Meng and Nancy Qian, 'The long run health and economic consequences of famine on survivors: evidence from China's Great Famine', IZA WP No. 2471, November 2006; Douglas Almond, Lena Edlund, Hongbin Li, and Junsen Zhang, 'Long-term effects of the 1959-1961 China famine: mainland China and Hong Kong', NBER Working Paper No. 13384, September 2007.

²³ Winnie Fung and Wei Ma, 'Intergenerational effects of the 1959-61 China famine', in Ricardo Fuentes-Nieva and Papa A. Seck, eds., *Risk, Shocks and Human Development: On the Brink* (London, 2009), pp. 222-54.

²⁴ Stephen Devereux, 'Famine in the twentieth century', Institute of Development Studies, Working Paper 105 (University of Sussex, 2000). According to Wikipedia World Wars 1 and 2 exacted tolls of 37 million and 60 million, respectively.

²⁵ Mike Davis, *Late Victorian Holocausts* (London, 2001), p. 7.

²⁶ WHO data. GDP per head is a good predictor of the countries at risk from famine within Africa, but not of the death rate from HIV/AIDS.

²⁷ Ó Gráda, *Famine*, pp. 260-61; William Dando, *The Geography of Famine* (New York, 1980), pp. 260-61; William and Paul Paddock, *Famine 1975! America's Decision: Who Will Survive?* (Boston, 1967); Garret Hardin, 'Living on a lifeboat', *Bioscience* 24 (10) (1974), 561-568.

²⁸ <http://bombayhighcourt.nic.in/libweb/acts/1963.40.html> [downloaded April 10, 2010].

²⁹ Tim Dyson and Arup Maharatna, 'Bihar famine, 1966-67 and Maharashtra drought, 1970-73'. *Economic & Political Weekly*, Jun 27 1992, p. 1331.

³⁰ A. Sen, *Development as Freedom* (Oxford, 1999).

³¹ Cited in K. E. Nnoaham, 'Pathology of a famine: the Malawi example'. *The Internet Journal of Rescue and Disaster Medicine*. 7(2) 2008. More generally, see N. J. Hall-Matthews, 'Inaccurate conceptions: disputed measures of nutritional needs and famine deaths in colonial India'. *Modern Asian Studies* 42(6) (2008): 1187-1210.

³² Jean Drèze and Amartya Sen, *Hunger and Public Action* (Oxford, 1989), pp. 126-33.

³³ Thomas M. Fitzpatrick and Karen Spohn, 'A 25th anniversary redux of the Simon and Ehrlich global sustainability wager', *Journal of International Business and Cultural Studies*, 1 (February 2009).

³⁴ Alan L. Olmstead and Paul W. Rhode, 'The Red Queen and the hard reds: productivity growth in American wheat, 1800 1940', *Journal of Economic History*, 62(4) (2002): 929-966.

³⁵ AFP/ReliefWeb, April 9.

³⁶ 'Malawi's "worst ever" famine' [<http://news.bbc.co.uk/2/hi/1985765.stm>]; 'Public Health Services need urgent help to combat humanitarian crisis in Southern Africa, World Health Organization tells donors' [<http://www.who.int/mediacentre/news/releases/pr77/en/index.html>].

³⁷ IRI Climate Digest April 2002: Climate Impacts - March: <http://iri.columbia.edu/climate/cid/Apr2002/impacts.html>; 'South Africa threatened by famine': <http://news.bbc.co.uk/2/hi/africa/1858880.stm>

³⁸ Stephen Devereux, *State of disaster: The causes, consequences and policy lessons from Malawi* (available at: www.actionaid.org/newsandmedia/the_malawi_famine_of_2002.pdf);

'The Malawi famine of 2002'. *Institute of Development Studies Bulletin*, 33(4) (2002): 70-78..

³⁹ Bill Corcoran, 'Five million face starvation in Malawi', *Observer*, 2 October 2005; Patrick Barkham, 'Silently, Malawi begins to starve', *Guardian*, 19 October 2005. Both reports were filed in Nsanje district in southern Malawi.

⁴⁰ WFP, *Country Portfolio Evaluation of WFP Assistance to Malawi: Final Report, September 17 2009*, available at:
<http://www.scanteam.no/filestore/wfp207899.pdf>.

⁴¹ Federico, *Feeding the World*, pp. 240-41.

⁴² July 20 2005, on RTÉ.

⁴³ *Irish Times*, 15 August 2005.

⁴⁴ Aved Reza, Basia Tomczyk, Victor M. Aguayo, Noel M. Zagré, Kadadé Goumbi, Curtis Blanton, and Leisel Talley, 'Retrospective determination of whether famine existed in Niger, 2005: two stage cluster survey', *British Medical Journal*, 337 (2008), a1622. Reza *et al.* applied a methodology proposed by Howe and Devereux to assess the gravity of the famine. For Howe and Devereux, famine entails a crude mortality rate of more than 1 in 10,000 per diem, a wasting rate of over 40 per cent, and the presence of hunger oedema. 'Wasting' is defined as weighing more than two standard deviations below the accepted body weight for children aged 6 to 59 months. See Paul Howe and Stephen Devereux, 'Famine Intensity and Magnitude Scales: A Proposal for an Instrumental Definition of Famine', *Disasters*, 28(4) (2004): 353-372.

⁴⁵ J. Egg, F. Lerin, and M. Venin, *Analyse descriptive de la famine des années 1931 au Niger, et implications méthodologiques* (Paris. INRA : Groupe d'étude des relations économiques Internationales, 1975), p. 18.

⁴⁶ Egg *et al.*, *Analyse descriptive*, pp. 45-47; see also Finn Fuglestad, 'La grande famine de 1931 dans l'ouest nigérien: réflexions autour d'une catastrophe naturelle', *Revue française d'histoire d'outre-mer*, 61(222) (1974): 18-33.

⁴⁷ United Nations Population Division, *World Population Prospects: the 2006 Revision* (available at: http://www.un.org/esa/population/publications/wpp2006/WPP2006_Highlights_revision.pdf)

⁴⁸ I am grateful to Hans Zomer of Dóchas for information on Irish NGOs. On the numbers worldwide see:

<http://www.theglobalist.com/StoryId.aspx?StoryId=5893>;

<http://www.odi.org.uk/resources/download/3250.pdf>.

⁴⁹ *GOAL 2007 Annual Report*, p. 20: available at <http://www.goal.ie/AR07.pdf>.

⁵⁰ 'Nutrition in a nutshell? Interview with Huub Verhagen of Médecins sans Frontières', available at: <http://www.divainternational.ch/spip.php?article474>; Eden Foundation, 'When endemic malnutrition is labeled as famine', May 2006, available at: http://www.eden-foundation.org/project/articles_niger_crisis_2005.html.

⁵¹ As cited in 'STV criticizes BBC Africa report', 19 November 2008: available at <http://www.thelocal.se/15798/20081119/>

⁵² For example, they do not factor in the accompanying increase in life expectancy or the role of new goods.

⁵³ This is the message of Pearce's polemical *Peoplequake* (London, 2010).

⁵⁴ Paul Collier, *The Bottom Billion* (Oxford, 2008), pp. 3-13.