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**Two Encyclopedia Entries on Famines**

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**DEPARTMENT OF ECONOMICS  
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## TWO ENCYCLOPEDIA ENTRIES ON FAMINES<sup>1</sup>

Cormac Ó Gráda

### (A) FAMINES

Famines usually have demographic causes as well as consequences, and the deaths that result from them offer one ready means of ranking them. Yet defining famine remains a controversial issue. Traditionally famines entailed both a decline in the food supply and excess mortality, but today a looser definition encompassing periods of chronic hunger where neither food availability decline (FAD) nor excess mortality are present holds sway. Even confining our attention to ‘famines that kill’ still leaves room for ambiguity. On the one hand, famines that produce excess mortality usually only represent peaks in a chronic or endemic malnutrition that renders ‘normal’ mortality high. On the other, famine deaths are often difficult to distinguish from deaths due to infectious diseases such as malaria or cholera. It follows that the dividing line between crises which reduce the resistance of the poor to disease, and harvest shortfalls which result in literal starvation, is not so clearcut.

#### *Why famines?*

Throughout history poor harvests resulting from ecological shocks have often been the proximate cause of famines. Well-known examples include the eruptions of the volcanos Laki (Iceland in the 1780s) and Tambora (Indonesia in the 1810s), *phytophthora infestans* or potato blight (Europe in the 1840s), and the El Niño drought (Asia in the late 1870s). Yet such exogenous shocks were neither a necessary nor a sufficient cause of famine. In sufficiently poor economies the yield variation of the staple crop(s) was enough to produce a famine every decade or two. Back-to-back or repeated harvest shortfalls such as in Ireland in the 1840s, in India in the 1890s, or in China in 1958-60 have tended to produce the worst famines. Major famines have rarely been the product of livestock deaths alone. The severity of such crises also depended on other factors such as

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<sup>1</sup>To appear in Paul Demeny and Geoffrey McNicoll (eds.), *Encyclopedia of Population* (revised edition), Macmillan, New York.

the effectiveness of relief, the quality of the bureaucracy, the size of the voluntary sector, and the threat or presence of warfare in the affected area.

Yet for economist T.R. Malthus overpopulation – which may be defined as a state in which a significant proportion of the population is close to the margin of subsistence – was the fundamental reason for famines. When in 1798 he described ‘gigantic inevitable famine’ as nature’s response of last resort, he would influence both the policy and the analytical response to famines for a long time to come (Gray 1998; Davis 2000). The connection between famine and overpopulation may have been looser than Malthus asserted, but there can be little doubt that throughout history overpopulation increased vulnerability to famine. The reason is obvious: those close to subsistence were in no position to save, or to trade down to more economical foods, or to guard against attendant infectious diseases.

Amartya Sen and others claim that this malthusian interpretation carries less conviction for twentieth-century famines. Though far from denying harvest-induced reductions in food availability a role, Sen emphasises the impact of market-induced shifts on the purchasing-power or ‘entitlements’ of certain sectors of the population. Sen first applied such an entitlements approach to the Great Bengali Famine of 1942-3, arguing that hoarding and speculation on the part of producers and merchants at the expense of the landless poor, rather than a significant harvest shortfall *per se*, were responsible for the crisis. In this case misjudgments by producers forced prices higher than justified by food availability, and beyond the reach of the poor. Other studies point to the role of market failure in exacerbating famines in Bangladesh in 1974 and in Sudan and Ethiopia in the 1980s. Research on how markets function during famines remains thin, however (Sen 1981; Drèze and Sen 1989; Bowbrick 1986; Ravallion 1987; Ó Gráda 2001; von Braun, Teklu and Webb 1998; Davis 2000). Meanwhile Sen’s focus on shifting entitlements in the absence of FAD points to the difficulty of imagining *any* famine where bigger transfers of purchasing power from the rich to the poor would not have reduced mortality.

*The demographic impact:*

Since famines have nearly always affected backward economies, their human toll is often difficult to measure. In the absence of civil registration, as in Ireland in the nineteenth century and in the Ukraine and in China in the twentieth, the highest and lowest estimates of mortality are sometimes set by ideologues. Estimates of excess mortality in the Ukraine in the 1931-2 range from 2 to 8 million, while those of deaths from the Chinese Great Leap Forward famine range from 15 to 43 million. Claims that the Great Leap famine was the greatest in history gloss over uncertainties about its true toll, and ignore estimates of 20-30 million deaths from famine in China between 1876 and 1900 and a further 12-20 million in India over the same period (Davis 2000).

Though as many as seventy million people died of famine during the twentieth century (Devereux 2000), in relative terms famine-related mortality was less than in previous centuries. In Europe the retreat of famine has been a long-drawn out process. Famine has not been a significant factor demographically in England since the sixteenth century, or in France since the early eighteenth century, but much of Europe was subjected to famine in 1740-1 and 1817-9. In Ireland the famine of 1740-1 killed proportionately more people than the more famous potato famine of the 1840s. Europe's last major subsistence crisis was the Finnish famine of 1868 (Pitkänen 1993). Today, for the first time in history, only pockets of the globe such as parts of Africa, Afghanistan, and North Korea remain really vulnerable to the threat of famine. And for all the publicity attending modern famines (useful from a humanitarian aid standpoint) their demographic impact is minor. Though it would be naive to rule out more 'political' famines in the future, there is little likelihood of population outstripping global food producing capacity in the next generation or two (Lomborg 2001).

Famines that kill more than a few per cent of a country's population are unusual. Exceptions include the 'haze famine' which killed one-fourth of Iceland's population in the wake of the eruption of Laki in June 1783, and another which killed the same proportion of the population of Cape Verde in the mid-1850s. But these famines occurred in very small places. The Chinese famine of 1958-60, so atrocious in absolute terms, killed at most 2-3 per cent of the total population of China.

Throughout history most famine victims succumbed not to literal starvation but to

infectious diseases. In Ireland in the 1840s, for example, only about one victim in ten died of starvation, broadly defined. Suppression of the immune system from malnutrition increased vulnerability to infectious diseases such as typhoid fever, cholera, and dysentery/diarrhoea. Other deaths were attributable to a wide range of partially hunger-sensitive diseases. Famines kill the very young and the very old disproportionately, but these groups are also the most vulnerable in normal times. Women tend to be better at resisting malnutrition, mainly for physiological reasons. Births decline, due to reductions in sexual activity and in women's capacity to bear children. When the worst of the crisis is over deaths typically fall below trend for a year or two and births rise above it. This raises the conundrum whether estimates of the demographic toll of famines which include averted births during famines should also include deaths averted and births induced in its wake. Migration may exacerbate famine by spreading infection (as in Finland in 1868); alternatively it may act as a form of disaster relief by reducing the pressure on resources (as in Ireland in the 1840s).

The changing role of medical science in reducing mortality from infectious diseases is an interesting issue. Long before the discoveries of Robert Koch and Louis Pasteur the risks associated with being near fever victims was well understood, though the mechanisms of contamination were not. Moreover, there was a long lag between scientific diagnosis and remedies such as penicillin and electrolytes. In the twentieth century there have been famines where infectious diseases were the main killers (e.g. in Bengal in the 1940s, or in Ethiopia in the 1970s) and famines where they killed few (e.g. on Mykonos in 1942/3, in the western Netherlands during the 'Hungerwinter' of 1944/5). The key seems to be whether infectious diseases are endemic in normal times: if they are, they bulk large when famine strikes (Hionidou 2002; Mokyr and Ó Gráda 2002).

#### *Public Action:*

Threatened with famine, in the past the poor relied on compassion on the part of ruling class, and the fear of infection and social unrest. Rarely have such sentiments been enough. In the ancient world, capital cities tended to be best organized for famine relief (Garnsey 1988). Christian ideology may also have helped marginally, since it expected the

rich to be charitable. Though Malthus denied the right of the hungry citizen to subsistence, rulers have long implicitly acknowledged a responsibility to help. They employed a variety of strategies: the maintenance of public granaries, institutionalized care through poor laws, workfare, improvised soup-kitchens, migration schemes. Private charity has rarely been enough in times of severe harvest failure. The record suggests that particularly when a crisis persists, compassion fatigue sets in. Today international relief, both governmental and non-governmental, supplements local effort, but with the attendant danger that it shifts responsibility from local elites and oligarchs.

For those early disciples of Malthus who regarded famines as a providential response to overpopulation, public intervention risked leading to even worse famines later. In Ireland and in the Netherlands in the 1840s as in India in the late 1870s there was thus a tension between malthusian ideology and measures that would minimize mortality. In practice public action was, and is, often complicated by the problem of agency. Anti-social behavior is an inevitable concomitant of famine: theft increases and hospitality diminishes. Informal systems of mutual help may work at first, but their effectiveness does not last. Concern with cheating bulks large in controversies about relief policy. The Irish experience in the 1840s is illustrative in this respect. Relief through a system of workfare was initially seen as the best way around such problems. But this was ill-g geared to help the physically weak, and exacerbated the spread of infectious diseases. When replaced by food aid, the food was distributed in non-resaleable form in order to minimize abuse. Once the authorities deemed the crisis over, the onus shifted back to reliance on the workhouses established under the Irish poor law of 1838. In Ireland as elsewhere, worries about free riders ended up hurting the vulnerable. Today the choice between public works schemes and soup kitchens is still a matter of debate (Drèze and Sen 1989).

#### *Post-famine adjustment:*

Malthus saw famine as a harsh remedy that ‘with one mighty blow level[led] the population with the food of the world’. There is no doubting that in the short run at least famines result in higher living standards for the majority of survivors. To the extent that famines reduce population, but leave largely intact the land endowment and physical

capital, famines entail an improvement in the lot of surviving workers relative to farmers and landowners. The impact on landowners might be intensified by the burden of relief spending. However, if the chaotic conditions that often precede famines prevent landowners from enforcing their property rights they too may find their incomes rising once normality has been restored.

But are these 'benefits' lasting? One consideration is that the gains in terms of higher wages and a higher land-labour ratio may be mitigated by the the long-run impact of famine on the health of affected survivors (e.g. Lumey 1998). Another is whether population growth tends to fill the demographic vacuum left by famine (Watkins and Menken 1985). Good examples are Finland in 1868 and France in the 1690s and 1700s, where the demographic dents made by major famines were repaired within a few years (Lachiver 1991; Pitkänen 1993). The evidence is not all one way, though: in pre-Black Death England in the wake of the agrarian crisis of the 1310s, in post-famine Ireland, and in Tokugawa Japan the demographic damage done by famine persisted. In Ireland the lack of a demographic 'rebound' was due at least in part to an increasing resort to the preventive check through later and fewer marriages.

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## (B) THE GREAT IRISH FAMINE:

The proximate cause of the Great Irish Famine (1846-52) was the fungus *phythophthora infestans* (or potato blight), which reached Ireland in the fall of 1845. It destroyed about one-third of that year's crop, and nearly all that of 1846. After a season's remission, it also ruined the harvest of 1848. These repeated shortfalls made the Irish famine more protracted than most. Partial failures of the potato crop were nothing new in Ireland before 1845, but damage on the scale wrought by the blight was utterly unprecedented (Solar 1989). However, the famine would not have been so lethal had dependence on the potato been less. Poverty had reduced one-third of the population to almost exclusive dependence on the potato for food. That, coupled with an inadequate policy response from the authorities, made the consequences of repeated failures devastating (Bourke 1993).

The debate about relief measures in the press and in parliament in the 1840s has a modern resonance. At first the government opted for reliance on the provision of employment through public works schemes. At their height in the spring of 1847 the works employed seven hundred thousand people or one-in-twelve of the entire population. They did not contain the famine, partly because they did not target some of the most needy, partly because the average wage was too low, and partly because they entailed exposing malnourished people (mostly men) to the elements during the worst months of the year. At their peak in early July 1847 the publicly-financed soup kitchens which succeeded the public works reached three million people daily. Mortality seemed to fall while they operated, though doubts remain about the effectiveness of a diet of meal-based gruel on weakened stomachs. The drop in food prices during the summer of 1847 prompted the authorities to treat the famine henceforth as a manageable, local problem. The main burden of relieving the poor was placed on the workhouses established under the Irish poor law of 1838. Most of the workhouses were ill-equipped to meet the demands placed on them, and in the event about one-quarter of all famine mortality occurred in them. Local histories highlight mismanagement and the impossible burden placed on local taxpayers; and the high overall proportion of workhouse deaths due to contagious disease is an indictment of this form of relief. The very high mortality in some workhouses in 1850 and even 1851 is evidence of the long-lasting character of

the famine in some western areas. The aggregate sum spent on relief (about £9 million) was also too small to make any significant dent into mortality (Donnelly 2001).

Traditional accounts of the famine pit the more humane policies of Sir Robert Peel's Tories against the dogmatic stance of Sir John Russell's Whig administration, which took office in July 1846. The contrast oversimplifies. Though Peel was more familiar with Ireland's problems than Whig ideologues such as Charles Wood, the crisis confronting him in 1845-6 was mild compared to what was to follow. Moreover, Peel broadly supported the Whig line in opposition. At the height of the crisis the policy stance adopted by the Whigs was influenced by malthusian providentialism, i.e. the conviction that the potato blight was a divinely-ordained remedy for Irish overpopulation. The fear that too much kindness would entail a malthusian lesson not learnt also conditioned both the nature and extent of intervention (Gray 1999).

The Irish famine killed about one million people, making it a major famine, relatively speaking, by world-historical standards. The death toll is approximate, since in the absence of civil registration excess mortality cannot be calculated directly. The estimate does not include averted births, nor does it allow for famine-related deaths in Britain and further afield. Mortality was regionally very uneven. No part of Ireland escaped entirely, but the toll ranged from one-quarter of the population of some western counties to negligible fractions in Down and Wexford on the east coast. The timing of mortality varied too, even in some of the worst-hit areas. In west Cork the worst was over by late 1847, but the effects of the famine raged in Clare until 1850 or even 1851. Infectious diseases rather than literal starvation were responsible for the bulk of the mortality. As in most famines, the elderly and the young were most likely to die, but women proved more marginally more resilient than men.

Like all famines, the Irish famine produced its hierarchy of suffering. The rural poor, landless or near-landless, were most likely to perish. Farmers faced an effective land endowment reduced by the potato blight and increased labor costs, forcing them to reduce their concentration on tillage. Landlords' rental income plummeted by as much as a third. Many medical practitioners and clergymen died of infectious diseases. Pawnbrokers found their pledges being unredeemed as the crisis worsened. Least affected were those firms and their workforces who relied on foreign markets for their

raw materials and their sales. It is difficult to identify any significant class of ‘winners’, unless they be those grain merchants who grasped the opportunities offered by the trade in Indian meal when prices were still rising in the autumn of 1846 and in early 1847, lawyers who benefitted from the deregulation of land transfers, and pastorally oriented farmers.

The Great Irish Famine was not just a watershed in Irish history but also a major event in global history, with far-reaching and enduring economic and political consequences. In Ireland it brought the era of famines to a brutal end. Serious failures of the potato in the early 1860s and late 1870s brought privation, but no significant excess mortality. The famine also resulted in a higher living standard for survivors. Higher emigration was another by-product of the famine, as the huge outflow of the crisis years generated its own ‘friends and neighbors’ dynamic. Only in a few remote and tiny pockets in the west did population fill the vacuum left by the ‘Great Hunger’, and then only very briefly. Whether by reducing the domestic market the famine led to the decline of certain industries remains to be established. Finally, though the introduction of new potato varieties offered some respite against *phythophtera infestans* thereafter, no reliable defense would be found against it until the 1890s.

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