

BOOK REVIEWS

The World Food Problem 1950-1980. By DAVID GRIGG. Oxford, UK: Basil Blackwell, 1985.

Over the three decades of my professional life, four great problems have dominated popular and scientific concerns with nature and society: population, food, resources, and environment. Underlying these have been a recurrent Malthusian concern with the excess of population, the availability of food, the adequacy of resources, and the degradation of the environment.

In turn, these concerns have generated a revisionist, anti-Malthusian countercurrent, and within the last three decades, one can observe two full cycles of recurrent concern countered by technological optimism. Indeed, Ian Burton and I reviewed the first of these cycles under the title of "Slaying the Malthusian Dragon," in this space twenty-three years ago (Vol. XL, pp. 82-89).

That this debate should persist over the last 189 years since the publication of Malthus' *Essay on Population* is evidence of the strength of the Malthusian hypothesis, its renewal by a process of redefinition, and the thoughtful, and sometimes scientific, arguments used to bolster the positions of each new generation. Nonetheless, if one is not wedded to one or another of the contending poles, one might wish for some crucial experiment or new data set that might truly inform the debate.

Unplanned experiments, so-called "natural" experiments, are the essence of social science. Methodologically, the challenge is to take real world occurrences and to examine them in some comparative mode—before and after, with or without, case and control. Surprisingly, this is not done often, and rarely is it done well.

Each of the four great problems offer such an opportunity. The post-WWII history of the world provides a natural experiment for each problem, beginning with a dire forecast or sudden shock. Thus it was with food and population in the 1950s, with pollution of the environment in the 1960s, and with energy resources in the 1970s. Yet one looks in vain for comprehensive, balanced syntheses of how food availability outdistanced population, how the rate of population growth turned downward, how it came to pass that 1-2% of national income now has gone routinely into environmental protection, and how we coped with the energy crisis.

Thus, Grigg's study is surely to be welcomed, as it is the first of the comprehensive reviews that attempts to explain what actually happened to reduce the fears of the late '40s, that in the face of growing population, the world would run out of food.

Although not organized as such, the book can be described in four parts: (1) an exposition of the prevalence and history of hunger and its major hypothesized causes—population and poverty; (2) a set of chapters on the growth of world food output, arable land, agricultural development, and trade and aid; (3) a regional analysis of what occurred in tropical Africa, Latin America, and Asia; and (4) a set of summaries and conclusions at the end of each chapter and in a final chapter.

The essence of the first three chapters can be succinctly summarized. It is difficult and frustrating to try and estimate the number of hungry in the world. Beginning with Lord Boyd-Orr's oft-quoted claim in 1950 "that a lifetime of malnutrition and actual hunger is the lot of at least two-thirds of mankind," the estimates of the proportion of hungry in the world are steadily diminished over the three decades of study. Nonetheless, credible estimates by the United Nations Food and Agricultural Organization (FAO) and the World Bank (WB) ranged from 450 (FAO) to 1300 (WB) million (excluding China) in the 1970s. These have been recently updated to either 335 or 494 million (FAO) and 340 or 730 million (WB) in 1979-1981 depending on the hunger criterion employed and still excluding China and limited to the developing market economies. As proportions of the world population, the hungry, in Grigg's estimate, was reduced from 34% in 1950 to 17% in 1980. In the World Hunger Program, at Brown University, we are content to speak of a billion people worldwide who experience hunger sometime during the year or about 20% of the world's population.

The short history of hunger (Chapter 3) is basically the history of hunger in Europe over the last 200 years and of the world for the last 50 years. Of course, the history of hunger is as old as clay tablets, nonetheless, this bit is still instructive. Absolute shortage of food was endemic in Europe as Malthus wrote his *Essay*. But by 1850, Europe had coped successfully with famine and had enough food everywhere to feed all of its people. Yet it would take another century, until after WWII, for the available food in Europe to be reasonably well-distributed. Grigg identifies poverty

as the reason for this extraordinary delay and in the following chapter clearly chooses poverty over the causal mechanism of population for the current hunger in the world.

In the second, and least interesting part of the book, Grigg records in maps, tables, and detail how world food output doubled since 1950, especially in the developed countries; how arable land expanded not only through newly cultivated land but through the reduction of fallow and the increase in multiple cropping; and how the world grain trade expanded and how developing countries have become increasingly dependent on imported food and on the ways to pay for it.

In the regional chapters, a basic picture of food keeping up with population, and even improving a bit, emerges for Latin America and Asia, but not for Africa. In Asia, production increases by intensification, in Latin America by the expansion of cultivable land and the use of modern inputs, and in Africa by expansion of cultivated land but primarily through the reduction of fallow. The green revolution bypasses Africa, and per capita production actually drops over the last decade.

His own conclusion is well-stated:

Looking back over the period 1950–1980 it can be argued that too many of the world's population remain impoverished and undernourished, and that too many farmers remain inefficient and unproductive, too many have too little land and unjust land tenure systems, and too many are subject to the depredations of their own governments or foreign capital. But it is as well to remember that the catastrophes predicted in the 1940s and 1950s have not occurred, however horrifying local famines have been. In an age of unprecedented population growth, food output has also increased at hitherto unknown rates, and the proportion of those undernourished has declined. This may not be good enough, but it is a considerable achievement (p. 268).

While hunger persists in a world of plenty, its alleviation is surely not good enough, yet it is surely a considerable achievement. As one anticipates the more crowded world of between 8–12 billion people, that the demographers project for sometime in the next century, the remaining task looms large. As famine diminishes in the world, the plight of the chronic hungry emerges as the central need. In India, where the mortality from famine has been controlled for a century (with the exception of Bengal in 1943), chronic hunger persists for perhaps 40% of the population. In Africa, the effort to control famine is just underway,

and chronic hunger will grow before it diminishes. The hungry billion of this world could become two billion.

While the new gene-green revolution of biotechnology will surely increase the world's agricultural production, it will not necessarily decrease the numbers of hungry, and depending on its organization, it could actually increase their number. To feed the hungry and to move upscale on the food chain, a doubling of world population will probably require a three- to four-fold increase in agriculture. This growth along with its fertilizers, pesticides, erosion, and deforestation will put an enormous burden on the sustainability of the resource base, already potentially stressed by the global biospheric changes currently underway.

Thus, as in all cases of the continuing cycles of Malthusian concern and technological optimism, there is cause for hope, but concern does not vanish. Even this finely detailed case study of a natural experiment, encouraging as it is, serves but as prologue to a new, but redefined, set of concerns. And as for the great human tragedy, the reality of hunger that underlies the tables and maps, Grigg shows us that the task of keeping up is well underway, but the task of ending hunger may have just begun.

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Peasants, Subsistence Ecology, and Development in the Highlands of Papua New Guinea. By LAWRENCE S. GROSSMAN. Princeton: Princeton University Press, 1984.

The Highlands of Papua New Guinea have long provided fertile intellectual terrain for small-scale studies of the complex relations between human populations, subsistence, and socio-political organization. A substantial literature, including classic monographs by H. Brookfield, W. Clarke, R. Rappaport, A. Vayda, and E. Waddell, has focussed on traditional Highlands communities from a cultural ecological perspective. In most of these studies the emphasis was on *traditional* subsistence production, reflecting the very late incorporation of the Highlands Region into the modern world system (significant contacts with the outside world did not begin until about the 1950s). Over the past three decades,