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the perceived problem is a need for more production, the curve quickly bends forward instead of backward, and farmers argue that a higher price is needed to help increase production. In the farmer's view, a higher price will accomplish whatever is socially desirable; either less or more production.

Economists thought the problem was overcome when they made their studies and determined the directional slope of the supply curve. But the backward-bending supply curve phantom is like the Little Man Who Wasn't There: "He wasn't there again today. I really wish he'd go away."

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Hungry People:

Their Numbers and How We Know

— By Leroy Quance

Hunger, long the forgotten issue on the world agenda, blazed briefly in the Western public's consciousness during the African famine of 1985 and abruptly faded from attention again. But even if hunger has vanished from public debate, the gnawing problem continues and grows. Half a billion people endure numbing malnutrition each day, often too weak to work or too debilitated even to produce the food they need to energize themselves.

— Orville L. Freeman (as reported in the *International Herald Tribune*, November 16, 1987).

How do we know there are half a billion hungry people in the world? How does Orville Freeman, a former U.S. Secretary of Agriculture, or anyone for that matter, know that "this gnawing problem continues and grows?" The most authoritative source of estimates of the number of hungry people in the world is the "World Food Survey" published periodically by the Food and Agricultural Organization of the United Nations (FAO).

The first thing to note is that the World Food Surveys published in 1946, 1952, 1963, 1977, and 1985 respectively, were not global in the estimates of the hungry nor were they surveys, in the statistical sense of a probability sample and formal questionnaire. Each of these surveys rigorously attempted to do the following: (1) muster all available information relevant to total and per capita food supplies (not necessarily consumption); (2) compare these estimates of per capita food supplies with an educated guess of per capita food/nutritional requirements in the developing market economies; and (3) use the gap between supplies and requirements, as a basis in estimating the number of people at risk of malnutrition due to inadequate food supplies.

Here's how it was done. Household survey data was used to estimate the per capita consumption of food—dietary-energy—by different income groups within each country or group of countries. Unfortunately, available household surveys differ greatly in the information they provide. Some provide household-level information on dietary-energy intake, others provide only average intakes for broad income groups, and still others include no intake data at all. Many are limited to data on income and food expenditures.

Leroy Quance is a Senior Economist with the Economic Research Service, USDA. He was the Director of the FAO Statistics Division during the preparation of the Fifth World Food Survey which estimates that there are at least 335 and probably more than 494 million people in the world at risk of undernutrition due to inadequate food supplies.

Consequently, a theoretical distribution of dietary-energy intake was assumed. Then available data were used to estimate the distribution parameters for each country. This theoretical model approach was used to check the validity of available intake data for different income groups. The approach also made it possible to estimate an intake distribution where there were gaps in the data.

While the lack of reliable data was the biggest problem in estimating food consumption, determining the amount of food necessary to avoid being hungry was even more difficult. Nutritional research is not adequate to answer this question, and nutritionists do not agree on the causes of variations in dietary-energy requirements among people of different size, age, sex, and living conditions.

In the end, the Fifth WFS is based on the report of a 1981 FAO/WHO/UNU ad-hoc Expert Consultation on Energy and Protein Requirements Committee. This report includes estimates of the minimal energy intake level or "cut-off point" that would be necessary to allow for activities associated with eating, washing, dressing, etc., as well as minimum movement and other activity needed for communication. The expert group decided that this level is 1.4 times the basal metabolic rate (1.4 BMR).

In preparing the fifth WFS, it was decided that the factor 1.4 BMR may be too high because individual energy maintenance requirements vary greatly. In turn, a second lower cut-off point of 1.2 BMR was also used.

These basic factors of 1.4 and 1.2 BMR's were then used to specify the minimum caloric requirement for different groups of people, that were necessary if they were not to go hungry. However, the BMR factors were not used for children under 10 years of age. Instead, the caloric requirements based on body weight that had been developed by the expert group were used. Also adjustments were made for pregnancy and lactation.

Here are some of the minimum calorie cutoffs that were used to estimate the number of malnourished adult people.

Country	1.2 BMR	1.4 BMR (Kcal/day)
India	1,447	1,608
Sudan	1,491	1,648
Brazil	1,518	1,683

The resulting estimates show a slight rise during the 1970's in the absolute number of undernourished people. Under the more conservative Alternative A (dietary-energy requirements: 1.2 BMR), the number of undernourished increased from 325 million in 1969-71 to 335 million in 1979-81. Under Alternative B (dietary-energy requirements: 1.4 BMR), the number increased from 472 to 494 million.

Under both alternatives, however, the proportion of the total population undernourished declined over the decade from 19 to 15 percent according to the more conservative estimate and from 28 to 23 percent according to the higher estimate. Given an increase in the population of the developing market economies equal to 470 million, both estimates imply that employment and income growth was sufficient for the vast majority, but not all of these people, to obtain at least minimum food intake during the 1970's.

The number of undernourished people rose slightly during the 1970's in all developing regions except the Near East. The largest increase in the undernourished was in Africa. It now surpasses the Far East as the region with the greatest proportion of undernourished people. Because of the very large populations in countries like India, the Far East still has the greatest number.

The Fifth World Food Survey also contains a detailed analysis of changes in per capita food supplies during the 1970's and provides important insights about the multidimensional aspects of malnutrition and related policy implications. These contributions are, in fact, more useful than the estimates of the

Number of People Undernourished

Regions	Total Population	Millions Undernourished
	1980	1979-81
Africa	376	70 to 99
Far East	1,232	210 to 313
Latin America	357	38 to 56
Near East	210	16 to 25
Total developing market economies (98 countries)	2,179	335 to 494

number of undernourished people, especially given the lack of adequate food consumption data and the lack of a consensus on how to estimate minimal energy requirements. Nonetheless, statistics on or estimates of the "number of hungry people" receives the most attention because they are most effective in rallying public opinion in support of the needed efforts to eradicate hunger and poverty from the developing world.

For More Information:

A limited number of copies of the *Fifth World Food Survey* are available by writing to Dennis Bridges, Executive Officer, North American Liaison Office, 1001 22nd Street NW, Suite 300, Washington, DC 20437.

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RAPPING The Farm Credit System: Spreading Costs to the Future

By Delmar K. Banner
and Peter J. Barry

Loan losses, high interest rates on bonds, and the flight of high-quality borrowers have pushed farm credit banks toward insolvency. Even as Congress scrambled to enact legislation in 1987, several of these banks already would have failed without the benefit of emergency legislation passed late in 1986. The 1986 legislation allowed those banks to keep the doors open through "regulatory accounting practices" (RAP).

Called "Magical Accounting" by some observers and "Blue Smoke and Mirrors" by others, RAP is used to escape the effects of regulations that otherwise would force system institutions into insolvency and receivership. RAP is *not* to prepare financial reports that go to farmer stockholders or to the investing public.

RAP has two major provisions. Under the first, banks may amortize for up to 20 years the additions to their loss reserves — money set aside now to cover expected loan losses in the future. Under the second provision, the banks may likewise capitalize and amortize current interest expenses in excess of

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the "current cost" of borrowing by the farm credit banks. For purposes of RAP, "current cost" was pegged on October 21, 1986, the date of enactment of the 1986 law. The second provision is available only after the first is fully utilized.

Originally set to expire at the end of 1988, RAP was extended by assistance legislation enacted late in 1987. RAP will now remain available to Farm Credit banks and associations through 1992 as long as book value of their stock is worth at least 75 percent of par. Failing that, those institutions must then turn to a newly created Assistance Board for financial assistance under the 1987 law.

RAP can have a substantial effect on a bank's income and net worth as considered for some regulatory purposes, but not for financial reporting to stockholders or the investing public. The easiest way to visualize the effect of the RAP provisions is to work through an example.

Suppose a farm credit bank has \$600 million of loans outstanding. In addition to stock valued at par, the bank's capital includes \$3 million of surplus (earnings saved from previous years) at the beginning of the year. During the year the bank receives interest income from its borrowers of \$70 million, and pays interest expenses to bond holders of \$65 million as shown in the table.

The critical number in the first column of the table is the \$20 million provision for loan losses. This is the reduction in loan assets that the bank feels it needs to reflect accurately its anticipated loan losses. This amount is shown on the bank's earnings statements as a charge against current earnings.

We assume other income is \$1 million and other expenses \$8 million, giving a net income of negative \$22 million and an ending surplus of negative \$19 million. Said differently, the aggregate book value of the borrowers' stock would be worth \$19 million less than par. Without the provisions of RAP, the institution would be unable to retire borrower stock at par, and the bank would be placed in receivership under regulations of the Farm Credit Administration (FCA).

To avoid this result, the bank can refigure its bottom line, "ending net worth," if FCA approves the use of RAP. Applying the first provision of RAP, only \$3 million (0.5 percent of loan volume) in provision for losses is charged against current year earnings. This is shown in the middle column of the table. The remaining \$17 million is spread over the next 19 years. Applying the RAP loss deferral provision, ending "regulatory net worth" is improved from the actual negative \$19 million. But



"Farmers used to live poor and die rich...
That's sure been fixed!" Cartoon courtesy of Robert Aukes