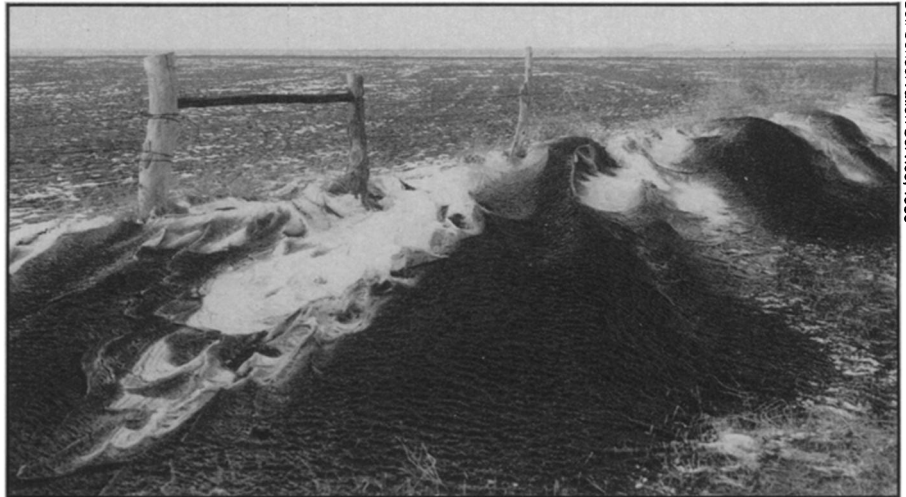


# Soil Losses Eroding Food Security

Soil erosion is a natural physical process. It cannot be prevented. In fact, it is not even cause for much concern unless the rate of soil loss exceeds the rate of new soil formation. But close to half the world's croplands are losing topsoil at rates that undermine their inherent productivity, according to a new study by the Washington, D.C.-based Worldwatch Institute, a think tank focusing on resource conservation issues. The study, the first to attempt quantification of global erosion rates, estimates that cropland losses now exceed new soil formation by 25.4 billion tons per year.

With topsoil being on average only 7 inches deep worldwide, this rate could correspond to mining the resource at a rate of about 7 percent per decade, according to agricultural economist Lester Brown, one of the study's authors. That's almost the same rate by which world oil supplies are currently being depleted, he adds. But in contrast to the concern over oil, he says, world leaders have tended not to worry about quantifying soil depletion, nor have they redirected national policies toward conserving this resource. And that's significant, Brown says, because even though the world has survived a sevenfold increase in oil prices during the last 10 years, it is not well equipped to



Soil Conservation Service, 1955

Besides damaging wheat, March winds seriously eroded topsoil in this Nebraska field.

cope with even a modest rise in food prices. Moreover, he says, with the growing interdependence of world markets today, "excessive loss of topsoil anywhere ultimately affects food prices everywhere."

A leading pressure driving farmers to "mine" their soils in a nonsustainable fashion is the ever growing demand for food. "Each year the world's farmers must now attempt to feed 81 million more people,

good weather or bad," the study notes. To do so, many farmers have abandoned sound soil conservation principles and taken to "intensified cropping patterns" (less rotation of crops, greater reliance on row crops and more plantings between fallow periods) and the plowing of marginal land (often hilly, dry or supporting a fragile, thin topsoil).

In the short term, these measures may generate big gains in productivity, but once the topsoil is reduced to a few inches or disappears, crop productivity will fall precipitously and, for economic purposes, often irretrievably.

Brown and coauthor Edward Wolf anchored their erosion estimate on the "big four" food producers — the United States, the Soviet Union, India and China — using whatever statistical data were available. In fact, good, hard data exist only for the United States. As a result, Brown says, they've probably underestimated the real problem. (For example, Soviet soil losses were extrapolated by applying measured U.S. rates to the Soviets' acreage. However, while the most recent U.S. survey shows that serious erosion — well beyond soil formation rates — is occurring on just a small fraction of U.S. croplands, the study acknowledges that wind erosion takes an estimated 1.2 million Soviet acres out of production annually and that the University of Moscow's Soil Erosion Laboratory has described its nation's erosion problem as severe and worsening.)

Because soil conservation practices may not be profitable for the individual farmer in many cases, the study's authors believe that controlling erosion globally will probably require the involvement of governments. In fact, the study points out, measuring soil loss — necessary for targeting control strategies — is beyond the abilities of most farmers.

—J. Raloff

## Doing a number on mental disorders

Preliminary results from the largest survey of mental disorders ever conducted in the United States indicate that in the course of six months about 19 percent of all adults — over 29 million people — suffer from at least one mental disorder.

Men and women have similar rates of mental disorder, but men are more likely to have alcohol and drug problems and "antisocial personalities," according to the National Institute of Mental Health (NIMH) study. Women are more often depressed or have anxiety disorders such as phobias.

Fewer than 20 percent of those with a mental disorder said they had received any treatment for it in the past six months. Those who were treated were more likely to have seen a general physician than a mental health specialist.

Approximately 8 percent of those surveyed suffered from anxiety disorders, including phobias, panic disorders and obsessive-compulsive disorders. These disturbances range from mild to severe. Abuse or dependence on alcohol and drugs afflict 6 to 7 percent of the population, with the vast majority of these dis-

orders specifically related to alcohol. Severe and moderate depression and mania are found in 5 to 6 percent of adults. Schizophrenia, often the most disabling of mental disorders, and antisocial personality disorders each occur in about 1 percent of the population.

The ongoing survey includes door-to-door interviews of 10,000 people in Baltimore, New Haven, Conn., and St. Louis, along with interviews of 500 residents of mental institutions in each area. Data will eventually cover 20,000 people and two more sites.

The project began in 1980. The first results, which appear in the October ARCHIVES OF GENERAL PSYCHIATRY, represent "a giant leap in our understanding of the scope and distribution of specific mental disorders," says Darrel A. Regier, who oversees the survey at NIMH.

"Overall, 'psychiatric disorder' appears to have a prevalence about that of hypertension," writes psychiatrist Daniel X. Freedman of the University of California at Los Angeles in the same issue. "Significant numbers of people are at risk for mild to severe impairments, but not an entire population." —B. Bower