

# Farmers face squeeze on available cropland

WASHINGTON, D.C. — U.S. farmers' unmatched productivity will be put to the test over the next 20 years, as they try to coax enough out of the nation's limited supply of cropland to meet sharply rising demand for their products.

According to one recent report, the National Agricultural Lands Study, urban encroachment and rural development have turned some of our most productive farmland into airports, shopping centers, industrial sites, housing developments, highways, and reservoirs.

The study estimates that non-federal rural land was converted to non-agricultural uses at the rate of about 3 million acres a year between 1967 and 1975. Over two-thirds of the conversions were to urban use or to rural residential, commercial, industrial, and transportation uses. The remainder of the land was turned into reservoirs and lakes.

Of course, only a portion of the converted rural land was cropland. According to the Soil Conservation Service, about 672,000 acres of cropland were converted to urban uses annually in the 1967-75 period. Possibly an additional 200,000 acres of potential cropland were also converted.

Looking into the future, the lands study puts the projected loss of current and potential cropland at up to 20 million acres in the next two decades if present trends continue.

Such figures deserve attention. Although there are several hundred million acres of cropland in the U.S., we're drawing from a limited resource.

Also, most of the readily available land is already in production and any conversions reduce the base for further expansion.

Soil Conservation Service surveys indicated a cropland base of 413 million acres in 1977. An additional 127 million acres were estimated to have "high" or "medium" economic potential for crop use.

Mel Cotner, who directs the natural resource economics unit within USDA, agrees that farm-land conversion may be cause for concern. He's convinced that American agriculture is capable of meeting the increased demand it will face by the turn of the century, but this assessment hinges on a number of factors, including steps taken to protect the nation's cropland base.

Market forces will also play a role in restraining the need for additional land, according to economist Robert Boxley. For example, the lands study calculates that most, if not all, of the nation's cropland base may have to be brought into cultivation to meet projected demand over the next 20 years.

However, Boxley points out that this conclusion assumes that growth in world food demand is unencumbered by major changes in present consumption habits, world production and trade patterns, and price relationships.

In all likelihood, an actual increase in cropland use of this magnitude could occur only if commodity prices were high enough to cover the production costs associated with bringing this much acreage of less productive land into cultivation. At such prices for U.S. commodities, world demand for U.S. production would probably be less than projected by the lands study.

Population growth remains one of the most significant pressures. More people than ever are moving to rural areas, where the population grew faster than in cities in the 1970's. Suburban population is expected to grow by 62.75 percent by the year 2000, adding to the ongoing expansion of urban areas into surrounding counties.

As demands increase for housing, commercial development, recreational facilities, roads, and schools, the immediate result is loss of farmland.

Some farmers sell their land rather than trying to cope with the tensions arising from increasing number of nonfarm people living close to their farms. Also, ordinances may be passed that restrict some of their normal farming practices, and they may be discouraged by vandalism of their crops and machinery, lawsuits over crop dusting, and declining political power locally.

The new residents' demands for improved services and facilities may also mean higher property taxes, and it is often the original residents — with their larger landholdings — who end up bearing most of the burden.

Economic growth is drawing people to rural areas. Jobs in virtually every industry grew at a faster rate in non-metropolitan areas than in urban areas in the 1970's. This leads to more industrial construction and, frequently, farmland conversion. However, it also provides in-

creased opportunities to farm families who depend on off-farm jobs.

Some researchers hold that the "impermanence syndrome" can speed the abandonment of farm-land. According to this concept, farmers look at what is happening around them and conclude, rightly or wrongly, that agriculture can't last much longer in their area.

They may stop making capital investments or adopting conservation measures that require years of farming to pay off.

Other analysts, though, insist that this practice doesn't necessarily lead to the actual conversion of farmland. In many cases, abandoned farmland is eventually brought back into cultivation by new farmers.

According to the lands study, the government contributes, sometimes inadvertently, to the conversion of farmland. The report noted a number of federal programs with the primary purpose of encouraging or aiding rural development, which may consequently result in the conversion of farmland to other purposes.

All this pressure on farmland wouldn't be so bad if annual farm productivity weren't also growing at a slower rate. In the 1960's, U.S. production increased enough to meet rising demand, even with a drop in the acreage planted, because the crop yield per acre increased by about 1.6 percent annually.

But in the 1970's the growth rate dropped, and three-fourths of the production increase had to come from increased acreage. From 1969 to 1980, acreage planted jumped from 299 million acres to 360 million acres, an increase of 20 percent.

Without a major technological breakthrough, the future crop yield growth rate could be as low or lower than that of the 1970's, according to the lands study.

One possible explanation for this drop in yield growth is that the land brought into cultivation in the 1970's was less productive. Also, the sharply rising cost of farm production inputs — especially energy-based inputs — encouraged some farmers to reduce their use

or to substitute additional land for purchased inputs.

As rising natural gas costs make irrigation pumps more expensive to operate, some land could be taken out of irrigated agriculture. At the same time, salinization of some western soils, caused in part by overirrigation, has reduced soil fertility.

While irrigation costs are rising, the available groundwater supplies are falling in many areas of the country, making it still more difficult to sustain the past output increases from irrigated agriculture.

These limitations also affect the amount of potential cropland that can be converted to crop use, while overgrazing of rangeland would lower its potential as cropland by increasing erosion.

Because of the uncertain prospects for improved yields, farmers may have to rely on increased acreage to meet demand in the next 20 years. But there is some uncertainty as to how rapidly or easily potential cropland can actually be converted to crop use.

Higher per-unit crop production costs will likely result, as potential cropland is generally poorer land, less stable in terms of crop yield. Longer-term problems may also come with use of potential cropland. It is generally more susceptible to soil erosion and environmental problems from pesticide and fertilizer runoff.

The problems stemming from the loss of cropland point to the wisdom or more carefully balancing farmland conversion decisions as one way to hold down production and food costs in the future. Mel Cotner also identifies other important issues:

- Meeting demand without long-term damage to our agricultural land base.

- Allocating agricultural research to assure future productivity growth.

- Emphasizing land-conserving techniques in farm management and conservation assistance programs.

**Protecting the Land**  
How much is being done to slow the disappearance of cropland? According to the lands study, the

"land ethic" preached by resource conservationists seems to be taking hold among at least some communities concerned about the loss of farmland in their areas. A key factor for success appears to be farmland preservation programs that are tied in with a community's comprehensive growth management plan.

Zoning is one of the most popular approaches to the problem. This is normally done at the local rather than the state level. In the last decade, 104 counties and 166 municipalities have gone this route, although, until recently, many zoning programs weren't stringent enough to effectively protect farmland, allowing small minimum lot sizes and open-ended lists of nonfarm uses.

New zoning ordinances have greatly decreased the allowed residential densities in agricultural areas or increased the minimum lot size. Rezoning is granted only to those lands no longer suited to agricultural use.

"Sliding scale" zoning is a recent experiment where the number of dwelling units permitted is based on the size of the parcel of land, with density per acre decreasing as the parcel size increases. For instance, a developer may be allowed to build four units on a 100-acre parcel, but only 10 units on a 500-acre parcel.

The purchase of development rights from farmers is another approach being tried in a few local programs. The community pays the farmer the difference between the value of the land for agriculture and its value as development property, thus compensating the farmer and keeping the land in agriculture. These programs, though, tend to be costly.

State governments have also taken action. In Illinois, the Agricultural Areas Act works in conjunction with county zoning laws to protect farmland. Agricultural districting designates legally-recognized areas for long-term agricultural use. In some cases, these areas are suggested by local farmers and approved at the state level.

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