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FUTURE DEMAND FOR LAND

The future demand for land was recently discussed by Harry A. Steele and Norman E. Landgren of the United States Department of Agriculture. As a basis for their discussion, the economists used projections which were prepared for a recent USDA report on land and water resources. The report projected requirements for all land uses, including nonagricultural purposes, from 1959 to 1980.

According to Messrs. Steele and Landgren, the principal factors that will affect the future demand for products of land are: (1) the rate of population growth, (2) the level of economic activity, (3) consumer expenditure patterns, and (4) the composition and level of exports and imports. Moreover, the availability and adoption of technology, as reflected through yields and feeding efficiencies, will affect the future requirements for land.

The rate of population growth is the most important factor affecting future demand for the products of land. The population of the United States in 1980 is projected at 261 million, representing a 48-percent increase over the 1959 figure. This projection is in accordance with recent trends in population growth.

Demand for the products of land also will be affected by consumer income, which is influenced by the level of economic activity in the Nation. Measured in constant dollars so that the increases represent real gains, total disposable personal income in 1980 is expected to be 132 percent above that in 1959. This figure represents an increase of about 57 percent in disposable personal income per capita.

Despite this substantial gain in per capita personal income, the consumption of all farm products per person is expected to increase only 2 percent by 1980 as compared with 1959. Per capita food consumption is estimated to rise 4 percent, but per capita consumption of nonfood agricultural products may decrease 19 percent. These projected consumption estimates reflect anticipated upgrading of diets, which normally accompanies increased consumer income. The estimates also take into account an expected continued increase in the use of such products as synthetic fibers and detergents, although the rate of gain may be smaller than during the past decade.

The 1980 export goal for farm products is set at 30 to 35 percent above 1960 exports. This goal would include exports of 750 million to 800 million bushels of wheat, 7.5 million to 8.0 million bales of cotton, and 15 million to 17 million tons of feed grains.

The total national cropland required in 1980 to meet projected demands is estimated at 407 million acres, or 11 percent below the 1959 acreage. If projected cropland needs are compared with 1961 (when the feed grain and Conservation Reserve programs were in effect), the downward adjustment in cropland requirements is smaller than when compared with 1959. The 1961 cropland diversion programs reduced the amount of cropland harvested to within 6 million acres of projected requirements for 1980.

FEDERAL RESERVE BANK OF DALLAS

DALLAS, TEXAS

An additional 22 million acres of pastureland are expected to be needed by 1980 because of an increase in demand for livestock products. This increased pastureland probably would come from shifting cropland into pastureland uses. Projections of acreage devoted to forests between 1959 and 1980 show little change, although the timber needs are expected to increase by 44 percent.

The greatest increase in requirements for land in the United States during the next two decades is expected to come from nonagricultural uses, according to Messrs. Steele and Landgren. Requirements by 1980 for special-purpose uses — such as urbanization, recreation or wildlife, and public installations and facilities — are projected at 196 million acres, or one-third above the 1959 figure. Miscellaneous other lands — which include desert, bare rock, swamp, and similar types of land — will supply part of the requirements for urban and other nonagricultural uses.

Relaxed Chickens More Profitable

Many complex methods have been devised for increasing egg and meat production in poultry flocks, but a new and unusual one is recommended by Joe Wakefield of the Poultry Science Department at Texas A. & M. College. He says that reduction of tension in the flock will result in more efficient production of the birds.

Chickens are governed by a type of psychology similar to that of the human race, and a peck order (pattern of social habits of the birds) determines the behavior of the entire flock. Some chickens are leaders and others are followers, and a bird is in for a fight if it violates its place in the order. The peck order influences the feed consumption, sexual behavior, and eventually the flock's production efficiency, says the poultry specialist.

Chickens habitually peck their inferiors and avoid their superiors, but in a large flock, they may get the two mixed. Since it could increase tensions if a social superior were attacked, chickens should not have to travel into strange areas of the pen to water, feed, nest, or roost.

When birds do not have to travel more than 10 to 15 feet, there is less danger of encountering social superiors; thus, tension and stress in the flock are reduced. The pen can be divided into many regional peck orders, and the birds will not have to leave their own small region, says Mr. Wakefield.

Tension in the flock also can be decreased by avoiding the introduction of new birds into established flocks and by not mixing birds of different ages. The establishment of normal social patterns among chickens can reduce tension, and flocks will settle down to efficient production, points out the poultry specialist.

Screwworm Eradication Program

Officials of the screwworm eradication program are hopeful that the recent absence of screwworm cases in certain counties within the sterile fly release area reflects the effectiveness of the program, according to the Texas Agricultural Extension Service. In early July, all counties within the sterile fly release area (which includes more than 60 counties in southern Texas) reported screwworm cases. The number of counties in the release area reporting no screwworms had increased to over 20 counties at the beginning of September.

The officials are hesitant to give complete credit to the fly release, since there normally are fewer screwworm cases during the July-August period of hot weather. However, they are watching the situation very closely to see if it does represent a definite trend.

The eradication program entails the production and sterilization of screwworm flies at a plant near Mission, Texas, and their release over infested areas. The mating of sterile male flies with fertile females results in infertile eggs.

Sterile flies are being dispersed from airplanes in the sterile fly release area at rates of 800 to 1,200 flies per square mile. Officials hope to eradicate the screwworm within this southern area while depending upon winter weather to kill the pests in northern regions. A 100-mile-wide barrier zone will be established on the

Mexico-United States border, where sterile flies will be air-dropped to prevent the northward migration of fertile flies into the United States.

Improving Pasture Regrowth

Improved shoots of a single orchard grass plant which are cut back by grazing can "borrow" from ungrazed parts of the plant to speed regrowth, according to United States Department of Agriculture scientists. This finding can help improve grazing management in areas where orchard grass and Ladino clovers are the foundation of many pastures. The new knowledge about orchard grass regrowth enables livestock producers to adjust stocking rates and to determine grazing rotations more accurately than was formerly possible.

In experiments conducted during 1959-61, the USDA scientists found that individual orchard grass shoots which have been cut back through grazing accomplish regrowth partly by drawing upon nutrients from ungrazed portions of the plant. The quantity of nutrients available to draw upon depends upon the proportion of the plant that is left after grazing.

Orchard grass is a bunch species — a tufted plant that frequently has around 100 individual shoots supported by its root system. The fact that grazed shoots regrow more quickly when a substantial number of the remaining shoots are left ungrazed implies an important crossflow of metabolic products within the plant.

This crossflow is of significance to the livestock producer because pasture yield will be improved if cows are rotated so that grazing occurs as quickly as possible. This can be accomplished best by first stocking the pasture to capacity and then removing the animals before regrowth begins.

Usually, not all parts of each plant are cropped close to the ground, since animals normally graze unevenly. Consequently, enough shoots are left on grazed plants to assist in regrowth.

The USDA scientists say that serious overgrazing will occur if early regrowth is cropped repeatedly. Undergrazing, of course, allows plants to reestablish themselves quickly but is impractical, as the available forage is not efficiently utilized.

Extra Profit Possibilities for Dairymen

Recent United States Department of Agriculture figures show that purebred, registered dairy cows have greater profit-making potential than do grade cows, points out A. M. Meekma, Dairy Specialist with the Texas Agricultural Extension Service. The data refute claims that there is little or no difference between the production of grade cows and that of registered cows of the five major breeds.

The USDA report — which is based on more than 600,000 Dairy Herd Improvement Association records — shows that, in milk sales alone, the output of the average registered cow brought $35 more than that of the average grade cow during a 305-day testing period. For a fairly typical 30-cow farm, this would amount to more than $1,000 extra gross income per year. Mr. Meekma says that this extra income is a substantial dividend for registering from 10 to 12 heifer calves each year. The production differences between registered and grade half sisters of various dairy breeds range from 238 pounds to 1,088 pounds of milk.

The registered cows outproduced the grade cows in each year of the study. Moreover, a much higher percentage of registered animals were production tested. The dairy specialist points out, however, that exceptions can be found and that the mere possession of a registry certificate does not insure the dairyman extra dollars' worth of production.

Predicting Leanness in Swine

In a recent study by the Oklahoma Agricultural Experiment Station, carcasses of 42 barrows of similar weight and breeding were cut and measured in order to determine the best measures for predicting lean in the carcass. Results of the study indicate that the best predictor of lean in the carcass is the weight of lean and fat in the ham. The areas of lean and fat determined from tracings of the cross sec-

tion of the entire carcass at the third lumbar vertebra are the second best predictor.

Other measures of leanness in swine include weight of lean of the ham, specific gravity of the ham, and combination measures of loin eye area, carcass back fat, and specific gravity of the ham, as well as loin eye area and backfat thickness. Indications are that carcass length is of little value in predicting leanness.

Artificial Drying of Peanuts

Curing peanuts by artificial means in order to prevent quality damage requires careful procedures on the part of the dryer operator, says W. S. Allen, Agricultural Engineer with the Texas Agricultural Extension Service. He points out that the proper use of heat is one of the most important factors in the drying procedure. If the peanuts are cured too rapidly, their milling quality will be reduced; and if they are exposed to excessively high temperatures, off-flavor may occur.

Research engineers recommend that the air entering the peanut drying bin not exceed a temperature of 95° Fahrenheit, with the relative humidity not less than 55 percent. In order to avoid overdrying, only enough heat should be added to the curing air to reduce the relative humidity to a minimum of 55 percent, according to Mr. Allen.

The fan should be started as soon as the air distribution system is uniformly covered with peanuts. The air should be moved up through the peanuts until the moisture content of the kernels in the top layer (6 inches) of peanuts is reduced to a level of 10 to 12 percent.

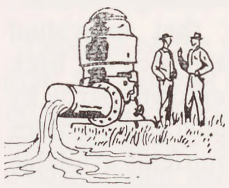
After the moisture is reduced to this level, the heat should be turned off, but the fan should continue to run until all the peanuts are cool.

Computers Aid in Beef Cattle Selection

Electronic computers are playing an important role in the improvement of beef cattle herds in Oklahoma as a result of recent studies by the State Agricultural Experiment Station. A program using electronic computers has been set up for maintaining and processing records on individual cows and calves, thereby enabling their owners to make more efficient selections.

Production records on approximately 20,000 cows and postweaning records on about 2,000 bulls are being kept in the Oklahoma studies. These records include such important economic traits as weaning weights, quality grades, and postweaning rates of gain on standard feeding tests. The information provided will enable cattlemen to select and retain the best individuals, which will promote permanent improvement in the hereditary capacity of their herds for these traits, according to the experiment station.

New Device for Measuring Irrigation Water



A 90-degree cast-iron pipe elbow is the principal component of an experimental water meter being developed by the United States Department of Agriculture. The device, which is called an elbow flow meter, is expected to fulfill farmers' needs for a low-cost, accurate irrigation water measuring instrument. Not more than one-third of western irrigation wells have metering equipment.

Farmers can deliver the desired amount of water to an irrigated field if they know how much water the pipe delivers and the length of time the water is applied. As irrigation water becomes scarcer and more expensive, farmers are increasingly concerned about efficient water use.

The elbow flow meter has three advantages over standard water measuring devices.

1. It is less expensive.
2. It is an adaptation of a 90-degree elbow already in a water distribution line, or one that can be installed easily.
3. It causes less reduction in water pressure, or head, in the line; consequently, less energy is required for pumping water through it.