Area Agricultural Outlook and Adjustment Conferences

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February 18-27, 1969

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Percent Farm Population is of U. S. Population

Utah Bankers Association
Department of Agricultural Economics
Extension Services
Economics Research Center
Utah State University
RESUME

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FORWARD

The Agricultural Committee of the Utah Bankers Association had sponsored an Annual Credit Conference in Salt Lake City for a number of years. Bankers and agricultural leaders were invited to review problems and policies associated with farming and ranching. Participants in these Credit Conferences amounted to representatives from the close-in counties and fluctuated around 100 people in number. In view of the present agricultural situation, the trends under way and some problems resulting in almost crisis proportions together with the relatively few who were being reached, this Committee felt the need to re-evaluate the Credit Conference objectives and procedure. As a result, the Agricultural Committee of the Utah Bankers Association joined efforts with the Department of Agricultural Economics and the Extension Service of Utah State University in conducting a series of six conferences in various areas of the state--Roosevelt, Price, Cedar City, Ephraim, Provo, and Logan. Each conference was designed to emphasize agricultural adjustments facing each area in the next ten years. Specific conference presentations revolved around outlining in some detail the problem area, then presenting possible adjustments in farm and ranch reorganization and possible public policy implications. Well over 500 lenders and agricultural leaders participated in the one day conferences.

The contents of this publication includes the presentations made by the Department of Agricultural Economics and Extension Services. Other major contributions made to the Conferences in terms of keynote addresses and luncheon speakers are not included. The reasons being that original planning didn't foresee the need for a resume to be printed, and also the difficulty now of obtaining copies of those speeches.

---L.A.C.
AGRICULTURAL ADJUSTMENTS THAT
UTAH FACE IN THE 1970's

N. Keith Roberts

INTRODUCTION

We live in a dynamic world, and whether or not changes are "good" for an individual or a group of people depends upon their ability to use them to an advantage. In some parts of the world farmers and ranchers are just as up-to-date in their methods at the close of their productive life as they were at the beginning because nothing has changed. The same was true in America for our grandfathers. It is not true anymore. Nowadays man's management ability can become "obsolete" three or four times during his productive life if he does not change with the times. We all realize that change is taking place. The rapidity with which it is taking place can best be illustrated by examining the relationship of the number of people supplied with food and fiber by one farm worker in America for years between 1820 and 1967 (Figure 1).

Economics has been called the "dismal science." The phrase was pinned on the profession because of an early 19th century economist named Malthus. He concluded that if the human race survived at all, it would eventually be reduced to a state of utter misery because of the extreme pressure of population on food supplies. Malthus failed to build into his theories the inventiveness of mankind, his ability to control his numerical growth, or his ability to increase his productive capacity given the resources of the world. Though his theories were wrong, we need not condemn his shortsightedness. It is only natural for men to project the certain present into the uncertain future and miscalculate the nature of that future. We have many Malthusians in the world today who see only doom and gloom in our future.

I do not want to be branded a pessimist with respect to Utah's agriculture and rural life. I see problems, but my optimistic philosophy is that every problem has a solution if men are wise enough and smart enough to discover it. I refuse to fall into the Malthusian philosophical trap which underestimates the capacity of men to solve their problems and thereby control their destiny.

Before I discuss the challenge of the foreseeable future that Utah's agriculture faces, let me review briefly our national historical perspective with respect to agriculture.

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1 Head, Department of Agricultural Economics and Director, Economics Research Center, Utah State University, Logan, Utah. Material prepared for six regional agricultural adjustment conferences, February 18-27, 1969.
The commercial family farm

The commercial family farm has always been an ideal form of agricultural enterprise. Because of the family's understanding of the agricultural process and its efficiency, such farms have been considered the most efficient way to produce food. However, with the advent of modern farming techniques, the efficiency of commercial family farms may be questioned.

The modern commercial farm has become a more efficient way to produce food. With the use of modern equipment and machinery, commercial farms can produce more food in a shorter amount of time. However, the use of modern equipment and machinery has also led to an increase in the cost of production. This increase in cost has made it difficult for commercial farms to compete with other forms of agriculture.

Source: USDA - ERS

Figure 1. Persons supplied farm products by one farm worker
Historical Agricultural Institutions

Three amazing ideas were generated among the early founders of this country. They were new with our fathers and are not universally accepted around the world even today. They were first, the concept of the commercial family farm; second, the idea of an educated farm population; and third, the thought that farmers should, like their non-farm brothers, be affluent.

The Commercial Family Farm

A commercial family farm is one on which, first, the decision-making unit is the family; second, most of the labor is provided by the family; and third, there is enough land and capital so that family resources are used efficiently. Such a definition includes most farms in America today. It is true that average farm size has grown during the last 30 years, but growth has resulted from adjusting to technological change rather than change in the philosophy of farm ownership. The picture is not likely to change much by the year 1980. Family-sized farms will probably continue to dominate the American farm scene.

The family farm has been eulogized by many. Thomas Jefferson said, "Those who labor in the earth are the chosen people of God, if He ever had a chosen people, whose breasts He has made His peculiar deposit for substantial and genuine virtue. Corruption of morals in the mass of cultivators is a phenomenon of which no age nor nation has furnished an example." However, Lincoln once observed that "farmers appeared to be no better or worse than other people." If that were so in Lincoln's day, it is certainly more true today as the rural and the urban life are becoming almost the same.

Educated Farmers

The striking difference between American farmers and ranchers and their counterparts in other parts of the world is found in the high level of education here. The concept that the state had some responsibility to put education, even at the university level, within the grasp of all its people was a novel experiment that has paid off handsomely. Nowhere has the payoff been greater than in agriculture. Abraham Lincoln, the man who signed the proclamation making the first transcontinental railroad possible, signed the law creating the Land Grant College system. Out of the latter came education, research, and extension education that made it possible for farm boys and girls to go to college. The result has been a revolution in agriculture.

The payoff is being felt today around the world. An educated American farm boy assigned to an agricultural problem in an underdeveloped country soon realizes that his education is different than that achieved by the aristocracy in the country in which he works. He finds that his education-in-action philosophy is not shared by some of his counterparts. He finds that his desire to improve the masses in agriculture is in conflict with the aristocratic desire of some people to separate the classes. He then fully appreciates the vision of his fathers resulting in mass education.
Affluent Farmers

Our society has supported the proposition that American farmers and ranchers should share in the good things of life along with everyone else. When recognizable differences between farm and non-farm people have arisen, we have tried to do something about them. It is true that sometimes we have made mistakes. However, the point is this: We have thought it wrong that the farmer be desperately poor while his non-farm brother be wealthy.

In times past, it has been generally accepted that the poor farmer should be very poor. Even today most men who farm in other places around the world are agonizingly poor. The hope attached to realizing a favorable crop year for most farmers in the world today is not associated with buying a new car, a new television, education, a new tractor, etc.; but with the survival of a baby, a son, a daughter, a wife, a father, or even one's self. A farm boy transplanted into the latter environment cannot help but marvel at the system that produced his relative affluency.

We must now ask the question: Are our historic agricultural institutions being challenged? The answer is obviously yes! The next question is: Will the challenge destroy, strengthen, or replace the historic institutions? This answer is not so easily found. However, as I said earlier, I am optimistic. I believe man is wise and smart enough to turn almost any dynamic situation to his advantage.

Let us now look more closely at adjustments that we may have to make in the future and why they will be necessary.

ANTICIPATED CONSUMPTION PATTERNS--DEMAND FOR AGRICULTURAL PRODUCTS

Most of the farm products produced in this part of Utah face a national or international market. That is, prices for products produced here are set by demand and supply pressures in the world or the country. Therefore, we must look at those factors which can affect demand for our products in the price-setting world and national markets. All in all, we can be very optimistic about the demand side for many reasons.

World Demand

Factors that influence the level of demand are population, per capita income, tastes, and development of substitutes for our kind of agricultural products.

World Population

World population is exploding. In the year One A.D. about 350 million people lived on the earth (Figure 2). By 1675, there my have been 500 million people living. By 1825, just 150 years later, maybe one billion
billion people lived on the earth. Just 100 years later, 1925, possibly two billion mouths had to be fed. Thirty years later, 1955, some three billion people were with us. In another 45 years there probably will be a crowd of at least six billion people sitting at the table every day. These projections are based on man's known ability to increase his survival rate in many parts of the world. Medical attention, economic development, dietary advances, and other things can easily succeed in producing a six billion population by the year 2000 even if birth rates fall drastically.

For example, a community of farmers in Bolivia was studied two years ago. Nearly 50 percent of the children died before they reached two years of age. Medical science could have saved all but one or two percent with the knowledge it already has. Birth rates are dropping around the world but not as fast as survival rates are increasing.

The point is: Population increases alone will keep the demand for agricultural products strong.

**Per Capita Income**

Generally the percentage increase in expenditures on food related to a one percent increase in income will be higher for poor people than for rich people. Most of the people in the world are poor. Thus, we have another upward pressure on the demand for agricultural products.

**Tastes**

As people learn more about health and good diets, tastes change. As people become more wealthy, tastes change. As people move about the world more, tastes change. These changes are usually away from starchy foods, such as rice, wheat, potatoes, etc., and in the direction of fresh fruits, fresh vegetables, meats, milk, etc. As development continues further, tastes change to processed fruits, vegetables, and meats and other products found in our highly-complex, agri-business environment. Changes in tastes have a mixed effect. For some products demand will decline; for others it will increase. For the major products in Utah, world-wide taste pressures on demand should be favorable.

**Substitute Products**

The production of low-cost food and fiber substitutes can have a depressing effect on the world-wide demand for agricultural products. We already know that chemical fibers have taken a big chunk of the growing market that would have gone to wool, cotton, and other agricultural fibers. Now "chemical" foods are beginning to appear on the shelves of our stores.
Figure 2. Estimated World Population, 1 to 2,000 A.D.
Is it possible that in the future food and fiber production will shift entirely away from a land base to a chemical factory base? I doubt it. Farmers and ranchers will continue to meet most of the world's demand for food and fiber from a land-based agriculture. Still, chemical substitutes for some products such as fibers and certain milk products could dampen, a little bit, the demand for farm products.

**Summary of World Demand**

The depressing effect of increased chemical product substitution on the demand for farm and ranch products will not offset the positive effects of rising incomes, increasing population, and changing tastes.

It is likely that the past trends in U.S. exports of agricultural products will continue (Figure 3). Vegetable oils and grains make up the bulk of our agricultural exports. Animal products accounted for about $625 million of the $6.3 billion exported in 1968.

Import trends for agricultural products have also been up (Figure 3). The value of livestock product imports totaled about $1.1 billion in 1968. Coffee, fruits, and vegetable products made up most of the balance of $4.6 billion in 1968.

**United States Demand**

Of course, our major concern is with our domestic demand. Again, it is easy to be optimistic. The same elements—population, income, tastes, and substitutes—will affect the domestic demand.

**U.S. Population**

Our population is not growing at the explosive rate that it is for the world, but it is growing. By the year 2000 we may have 300 million people to feed (Figure 4). That is only 31 years from now. In 1800 we had a population of only five million people.

**Per Capita Income**

Per capita consumer disposable income is rising and will probably continue to rise (Figure 5). However, we have reached the point where the percentage increase in food and fiber is only a small part of the percentage increase in income per capita. Still, rising incomes have to be counted as a positive factor on the demand side.
Figure 3. Value of Exports, U.S., 1930-1980

Source: USDA-Ers
Figure 4. United Population Estimates, 1910-2000
Figure 5. U.S. Per Capita Disposable Income, 1960-1980

Source: USDA-ERS
Change in Tastes

As incomes rise, the composition of diets change. In the U.S., per capita consumption of beef, broilers, turkeys, and processed fruits and vegetables has increased (Figure 6). Consumption of other livestock products and crops has either continued constant or declined in recent years.

Substitute Products

The impact of substitutes on domestic demand for some products can best be seen by examining the trends in per capita consumption of man-made fibers, wool, and cotton. Total fiber consumption per capita was about 45 pounds in both 1950 and 1967; but it dropped for cotton from 31 pounds in 1950 to 22 pounds in 1967; and wool consumption dropped from 4.2 pounds per person in 1950 to 1.6 pounds in 1967. Man-made fibers were consumed at the rate of 10 pounds per person in 1950 and 21 pounds in 1967, and they made up 47 percent of the total fiber consumption in 1967.

Summary of U.S. Demand

The demand for the major agricultural products raised in Utah looks good. Population and incomes are rising, and tastes are shifting in our favor.

ANTICIPATED PRODUCTION PATTERNS--SUPPLY

Yes, the demand side of the future market for our agricultural products looks good. Also, there is no doubt that producers somewhere will increase production to take advantage of the growing demand. However, the questions we face today are these: Which producers will share in the benefits of an expanding market? How can Utah producers meet the inevitable competition from other regions and countries? In order to enhance our position in the future, we need to solve a few critical problems. First, let us look at the kinds of problems we face. Second, let us suggest some possible solutions and indicate their economic impact.

Kinds of Problems

Loss of markets to competitors in other areas is a real threat to our local producers. As soon as outside producers can put their goods in our markets at cost lower than local producers can, they will do it. Of course, the opposite is also true. If our producers can place products in distant markets at lower costs than those prevailing in the area, they will do it. We call this 'wholesome competition,' and it works to the advantage of consumers as well as early farm innovators. Will Utah producers share in the
Figure 6. U.S. Per Capita Consumption of Selected Products, 1950-2000

Source: USDA-ERS
growing market for their products? The answer is yes—if we will make the necessary innovations required to meet the competition. However, the competition is pressing upon us.

**International Competition**

International competition is a distant threat to our markets. On our grocery shelves we see processed foods from Japan, Argentina, and other places. Think if you will what a growing fleet of high-speed, low-cost, long-distance jet cargo planes looking for return loads from foreign producing areas could do to our market position. Two years in Bolivia, which is 6,500 miles from Utah but only 15 hours away by jet today, convinced me that fast, low-cost transportation could turn its thousands of acres of undeveloped, fertile lands into agricultural products that could compete in U.S. markets. Although the planes are in production, we have time to devise counter-moves to protect our position. Capital, specialized labor, management, and traditional institutions are lacking for such foreign developments right now. But, can we afford to wait for the inevitable development to happen in the future before we consider our plight under such conditions? We have two alternatives to cope with such competition. We can try to control imports through political action, or we can innovate and outcompete them in the economic world. I prefer the latter. Political decisions tend to erode away under intense economic pressure. Remember that consumers make up 100 percent of our population, but producers, only five percent. On the other hand, what producer would want to sell in a market that promised no profit? Or, what consumer would want to consistently buy a higher-priced foreign product? Let us plan to outcompete at the economic level.

**Interregional Competition**

A nearer threat to Utah producers comes from shifts in interregional competition in our own country. It is safe to say that production costs in some areas of the country are falling more rapidly—or maybe I should say they are rising less rapidly—than they are in Utah. The results are obvious in the loss of markets for our broilers and eggs. Our feeder livestock market line to the east is moving further west all the time as the Southwest captures more and more of that market. Fortunately, our markets for feeders to the west continue to grow. The Price-cost squeeze forces marginal producers, processors, and areas out of business. The 1968 "Yearbook of Agriculture, Science for Better Living," recently published by the U.S. Department of Agriculture, highlights innovations that affect interregional competition. Can our producers compete with those in other areas in the future? I think so—if we are willing to make the technical and institutional innovations necessary.
An even closer threat to agriculture in some parts of the state is the shift of resources formerly used for agricultural production to housing developments, highways, idle lands, or to other uses. Urbanization and industrialization create these kinds of problems for agriculture. Since changing land uses are inevitable in areas of growing populations, can the negative impact on agriculture be minimized? Yes—if we are willing to plan and regulate the shift in an orderly fashion.

Problem Analysis Framework

In short, Utah agriculture can compete successfully for the growing market if it will make the necessary innovations in production and marketing. A farm being used at less than capacity is generally a high-cost farm. Economic efficiency will increase and costs per unit decrease until production on the farm or some part of it is pushed beyond its capacity, then costs per unit of production will increase. A small farm will generally have relatively high costs per unit of output when compared to larger farms. Good managers will realize greater profits than poor managers.

The basic concept is in Figure 7. It assumes no change in technology, every unit produced can be sold for the same price, and the business can buy any number of each of the production factors for the same price as the first. Under these conditions, X represents the level of production that will maximize net income to the farm business. At that point the last unit produced will, when sold, just cover the costs of producing it including a reasonable return on the investment. Production to the left or the right of Point X costs more per unit than it returns.

There are four ways to increase the economic well-being of a farm or ranch. First, the present resources and technology can be managed to more nearly minimize costs (approach Point X). Second, new cost decreasing technology can be introduced (lower the cost curves). Third, the scale of operations can be increased (lower and extend the cost curves to the right). Fourth, prices can be increased (raise the price line). Of course, combinations of all four are possible. Since we have concluded earlier than local producers cannot control market prices, increasing price is not a real alternative. That leaves us with innovations, improved management, and size adjustments to lower costs and, hence, improve our competitive position.
Production costs and returns per unit of prod.

Production costs per unit added

Production costs per unit

Price per unit

Returns per unit added

0

X

Production increasing

Figure 7. Hypothetical cost and returns structure for a farm or a processing plant
Critical Problems and Possible Solutions

Control of weeds, insects, and disease will always be a problem facing producers. Labor and management training, transportation, obsolescence in machinery and management, and all the complications of keeping a farm or ranch running are continuing problems for all operators. They are not unique to Utah and should not suggest that we are at a disadvantage with other producing areas. We face a few problems unique to our setting. They include (1) climatic limitations, including water shortages for irrigation; (2) size of producing units; (3) lagging innovations; and (4) institutional stagnation. Obviously, the four areas are not mutually exclusive, but it is convenient to discuss them separately.

Climatic Limitations

We produce most of our feed and cash crops in areas where the length of the growing season is short. Early and late frosts are common. Water shortages also occur. Some large producing regions in other places are more fortunate. (However, they have other limitations.) A few seasons of complete or partial freeze-outs run the per unit costs of production up relative to the areas with less risk from climatic limitations.

How do we overcome this problem? One solution is to continue developmental and adaptive research, then innovate. New varieties and management techniques can reduce the risks and costs of doing business in an area with a short growing season. These kinds of innovations will cause the cost per unit of production to fall below the sales price line (Figure 7); thus providing an income cushion to help the producer over the "bad" years that will come less frequently after changes are made. This is a job no single producer can afford to do for himself. He can, however, support public and private research agencies so that they can afford to do the research to the benefit of all.

Size of Farms

Utah farms and ranches are small relative to those in many other areas. Figure 7 may represent many Utah farms which are just breaking even. Some have costs that are usually above product prices. If that is the case, they will be forced out of business in time. Much of the machinery, management, and buildings found on small farms are not used to full capacity; therefore, costs per unit of production are high. In terms of Figure 7, increasing size of farm or ranch will tend to shift the cost relationships to the right or Point X and below the price line. The result will be more production and increased net returns per unit.
What can producers do about the size problem? Two helpful alternatives are possible. First, farmers could organize themselves into machinery cooperatives so one machine could serve the needs of several farmers. Still, many of the diseconomies of small size would exist—small fields, variable management, and others. However, some cost advantages could probably be realized by such action.

Possibly the most far-reaching suggestion is to create corporate or cooperative farms. Each farmer would receive stock for his capital resource contribution and wages for his labor if used. Under this system, the land resources could be reorganized so large fields would facilitate the machinery input. One manager could run the business. Thus, several adjacent small farms would become one large farm. Instead of several small farms with cost relationships above the product market price (Figure 7), there would be one large farm with its production and cost relationship far to the right of Point X and below the price line, thus producing profits for all concerned.

Innovations

In the 1968 Yearbook of Agriculture I found many innovations discussed. I'm sure that you are far ahead of me on this issue. But, the point is this: When producers in one area innovate, their costs fall below the price line (Figure 7), and they make relatively higher profits than before. Soon other producers enter the game and total production increases. Eventually, product prices fall in response to increased supply. Producers in areas that have not or could not innovate find their costs relatively higher than before (Figure 7). They lose money in normal years and eventually have to shift out of the industry. The early innovator makes the money. The late innovator is forced to do so in order to maintain his old position. The innovator usually has access to the latest discoveries of research in his area and the size and capital structure so he can afford some initial risk.

What can we do in Utah in order to become the early innovators? We must remove the limitations of climate and small size so that we can innovate with less risk. We can support research on innovations better adaptable to our area. We can support economic feasibility studies for innovations developed here and in other places. If we invest in pre-innovation research, we can participate in the early advantages that accrue to the innovator.

Institutional Stagnation

Innovations can be in the form of plant and animal advances, cultural practices, management techniques, or institutional structures. I fear that the latter is the major limiting factor today. Farm size, credit programs, agricultural policy, and resource organization are institutions
requiring attention today. No longer are the major farm economic problems located within the physical boundaries of the farm. The major problems are imposed from off-farm pressures. Farmers can and do control their on-farm problems within reasonable limits, but how do they handle problems created by changing government policies, growing international and interregional competition, continuing inflation, growing credit needs, and other outside forces? The institution of the horse plow has been generally replaced by the institution of the tractor plow. Social, economic, and political institutions have not changed as rapidly as technical institutions have. Innovations in those areas must come and will come for those who will be farming in the 1970's, 1980's, and 1990's.

CONCLUSIONS

My conclusions are optimistic: First, the demand for Utah agricultural products is growing and will continue to grow for the foreseeable future.

Second, production somewhere will keep pace with demand during the next few decades.

Third, Utah can compete successfully in the growing market if climatic and institutional limitations can be overcome, thus making early innovation more acceptable.

Fourth, we have an advantage over most of the world. Our basic institutions of the commercial family farm, the educated farmer, and the affluent farmer will continue to stimulate U.S. agricultural to outcompete the rest of the world for many years to come. The added institution of cooperation among farmers in Utah can make it possible for them to participate in the growing markets at home and abroad.

Fifth, the formula for success in the future is: First, anticipate problems. Second, be prepared with necessary knowledge to solve problems. Third, act through organization to outcompete in the economic arena.

Other participants in this conference will analyze more closely some specific suggestions for institutional changes to strengthen our position as commercial family farmers. There is no room in the future for pessimism and defeatism, but there is room for vision and optimism.
FARM AND RANCH REORGANIZATION

An Alternative to the 70's

Lloyd A. Clement
Extension Economist
Utah State University

Of the 14,500 farms in the state, about 3,500 are considered of commercial size. To be classified commercial, a farm must produce at least $10,000 in gross income and net the farm family $3,500 annual income. The average commercial farm in the state controls about $90,000 worth of investment capital and requires between $10,000 and $20,000 of operating money per year. This farm generates about $28,000 in gross income which in turn produces about $9,000 for family use. If this was a dairy farm, it would have about 60 producing cows; a beef ranch would have about 300 cows; and they would raise part of the feed and furnish part of the labor.

Since the farm is "average," it means that at least half of the commercial farms in the state are organized and produce at somewhat lower levels. At the minimum size level, it would have about 35 dairy cows or 100 beef cows, produce most of the feed and furnish all the labor. Since labor and equipment costs are significant in production and closely associated with a farm's efficiency, let's examine these two items briefly.

The average commercial farm described above has full employment for about 2½ men and $20,000 worth of machinery. The minimum size unit can employ 3/4 of a man and about $15,000 worth of machinery. The operator of the larger farm is over-employed; the latter is under-employed. The availability of farm labor and its competitive cost requires the larger farm to substitute equipment for labor wherever possible. Timeliness of operations and convenience are also important considerations but tend to be secondary to that of lowering hired labor cost. Since the larger farm has more acres and livestock, the fixed costs are lowered per animal unit since they are spread over more production units.

The smaller farm, 35 dairy or 100 beef cows, on the other hand is faced with a different problem. His operation is marginal in terms of producing adequate family income but economical as an enterprise. This operator should be finding ways to become fully employed. Instead of limiting his adjustment towards mechanization to the point that allows him to sell more of his labor, he tends to do as the larger operator; he substitutes capital for labor. The result is that the smaller operator mechanizes himself out of part of a job. He has a full line of equipment
and machinery, part of which cannot be justified in terms of work available. To our smaller operator, timeliness of operations and convenience become a major consideration for ownership. There are many so-called "convenience" machines on our smaller farms today. These tend to do two things: decrease operator employment and increase production costs.

The alternatives available to the smaller commercial farm operator are two-fold: First, he could limit the capacity of his machine to better fit the farm and work available. This means that he should maintain smaller power units which require more time but produce more labor income since he has excess labor to sell. For the "heavy" jobs requiring additional power, this could be hired.

The other alternative, if he doesn't want to limit "horsepower" is to expand the cropping operation by renting or purchasing land to the point where large capacity equipment can be justified. If this alternative is chosen, considerably more capital and credit is required as well as labor management problems are magnified. In addition, the number of crop acres needed to justify the machinery may produce more feed than the livestock can utilize. If this situation develops, the problem then becomes one of complete farm reorganization, including the expansion of the breeding herd. The question now becomes: Should he expand both livestock and feed production?

As we examine this further, the following facts come more clearly into focus:

1. The obsolescence of buildings and equipment become more important since their original usefulness becomes obsolete faster than they wear out. This is readily evident with barns, feed handling facilities, sheds, swathers, balers, trucks, tractors, combines, poultry houses, grain storage, silos, etc.

The problem with many of our farms is that they are operating with too few productive livestock units to provide adequate family income. Their money is in "service" units (machines) which tend to be consumptive and not productive. The available labor, management time, and capital is shared with an equally uneconomic cropping program in many cases. If the resources now used for cropping could be concentrated on the livestock operation, in many instances gross income could be increased quickly because of better efficiency. Much of this added income becomes net to the operator since fixed costs are already committed. For instance, if our 100-cow beef operator or 35-cow dairy unit was to concentrate resources presently used for cropping operations on the production of meat or milk, an early effect would be to increase production per cow as a result of better management. These operators would then have time and the necessary operating capital to push production from a 400-pound calf or 12,000 pounds of milk per cow per year to a 450-pound calf or 15,000 pounds per cow. This means that from the same number of cows he could increase production 105,000 pounds of milk or 4,000 pounds of beef. This would be equivalent to adding seven 12,000-pound dairy cows or 10 beef
cows. This increased production would add a considerable amount to gross income and not a single dollar of investment capital has been added.

On the other side of the coin, if our operators shift out of livestock and specialize in feed production, capital, labor, and management time can be concentrated on enough producing acres to justify large capacity equipment. This keeps fixed costs in line while the operator concentrates on the production of five ton alfalfa hay, 30 ton corn silage and 100 bushel barley crops, instead of the typical three ton hay, 15 ton silage and 50 bushel barley yields.

2. As our smaller commercial farm operator considers expansion, increased specialization becomes an important factor.

A breeding herd of 60 dairy cows or 300 beef cows properly managed and cared for is a full time job for any operator without an acre of crop-land to worry about. A typical situation on Utah livestock farms, attempting to produce part or all of their feed, is that the cost of the produced feed is about the same as they could buy it for. This means that these farms and ranches are maintaining investment capital, labor, and management time in questionable operations. It is entirely possible then that these resources could be more properly used by specializing in either one or the other.

3. Still a third factor is management itself. The high levels of investment, large amounts of operating capital, and the volume of dollar sales all cry out for top level management skills and abilities. The goal of a debt free farming operation nowadays, however desirable it may be, is much more difficult if not impossible to attain. This means that credit levels must be managed such that interest costs do not get out of line. Tax management is also of major concern to commercial farm operators. Still another major problem becoming increasingly important is how to transfer property from one generation to the next. The time a farm operator must spend managing his business must increase. This requires office space and the necessary facilities to do the job as well as off-farm training and education in analysis skills. To do a good job of managing requires reliable operating information. Operators will be increasing their accounting costs in the future in an effort to supply this information.

In view of these and other pressures, already alluded to, a new type of business organization for small, marginal farm and ranch operations must develop in Utah's agriculture. This appears increasingly evident as the economic gap widens between marginal and part-time farms on the one hand and larger commercial farms on the other. If we are to keep Utah's agriculture competitive in the market place, some combination of cooperative action that has the legal, financial, and management advantages of a corporation needs to be applied to production agriculture.

What I envision here you might call a "cooperative corporation." Its functions and purposes would differ from those traditionally associated
With farm cooperatives. It would not have the function of supplying feed, fertilizer and other expense items to production. Neither would it be organized to facilitate the marketing of crops or livestock. A number of farm cooperatives have performed these functions well. Yet, they have not solved the problems stemming from the inefficiencies of the many smaller, individual farm or ranch operating units we have in Utah. These inefficiencies continue to place the owners and managers of these units at a distinct cost disadvantage.

As a possible solution to the problem faced by over 10,000 farms in Utah, let's consider applying a "cooperative corporation" type of organization to the production phase of farms and ranches. Here is how such an organization might be set up: (1) Several small farmers or ranchers would pledge their farm or ranch assets--including land, buildings (exclusive of homes), machinery, water, livestock, and other assets needed for the incorporating purpose--to the corporate structure. (2) These individual owners would rely on basic management policy decisions from an elected board of directors, from hired management, or from both. (3) They also would share in returns from the corporation in proportion to their equity contribution.

Initially the corporation would utilize the land and other assets as they exist at the time of incorporating. However, a comprehensive farm or ranch plan would be developed early and adjustments to this plan would be made as rapidly as machines and buildings became obsolete or worn out. Fences, irrigation systems, and field lay-outs would be reorganized on a planned basis such that full economies of scale could be realized as early as possible. Operating labor could be contracted for or hired by the corporation from the stockholders. Or the stockholder could turn his entire farming operation over to the corporation and do non-farm work full time. This latter arrangement would not only provide the stockholder with steady non-farm income, it would also provide income from the corporation for the use of his agricultural assets.

This type of structure, the cooperative action by several producers operating as a corporation, would immediately aggregate a number of small, inefficient farms into a large, commercial operation. With such an operation, per unit costs and production volume could be competitive in the market.

**How to Organize a "Cooperative Corporation"**

Some explanation of the legal aspects of "cooperative corporation" should be made. Under Utah law, any five or more farm operators can organize a "cooperative corporation" if a minimum of $1,000 worth of assets are available to the new firm. In addition, articles of incorporation and by-laws must be filed, with an application, with the Secretary of State and payment of the necessary filing fees. Names and addresses of the officers of the proposed firm must be listed and the principal place of business noted. Also, the purpose (or reason) of the new firm
must be declared and the name under which it is to operate. The costs of incorporating vary according to the complexity of the legal problems associated with organizing and the size of the stock issue. These costs, however, are usually of minor importance.

Once these formalities have been accomplished, the new organization can begin to do business.

If there are more than ten incorporators, the business must operate as a regular corporation and pay taxes on such. In general, this means that the first $25,000 in earnings will be taxed at 30 percent and that above $25,000 will be taxed at 52 percent. In addition, the dividends paid to the stockholders must be taxed as personal income.

On the other hand, if there are ten incorporators or less, the election can be made to be taxed as a partnership. In other words, net income generated by the business can be divided among the stockholders on the basis established in the by-laws and taxed as individual income. This minimizes the possibility of "double taxation." Which of these two methods is best for the individual stockholders must be determined through careful, detailed examination by a competent attorney.

There are many ways that a group of farm operators can declare assets and stock shares, but suppose, for example, that we have ten dairymen who have elected to organize and operate as a corporation, producing only market milk and taxed as a partnership. These operators established a share of stock as being equal to one sound dairy cow, 25 pounds of milk base, and $300 in cash. A value of $300 was set for the dairy cow and base value at $12.50 a pound. This amounts to $912.50 for one share.

Each of the operators, prior to the target data set to actually begin operating as a corporation, pledge or guarantee a certain amount of these shares to be turned over to the corporation on that date. This particular point in the organizing process represents another critical and major decision area. It is here that the distinction is made as to whether the business now becomes a "cooperative association" or a corporation. Our example cannot be defined as a non-profit cooperative as our familiar supply and marketing cooperative associations can since it is organized primarily as an investment reducing, efficiency producing, profit making enterprise. That is the reason for calling it a "cooperative corporation." It requires a cooperation of several agricultural producers to work together and own assets together. It also requires the corporate type organization which allows the aggregating of several small farms into one large operation. This arrangement limits the liability of each operator, allows him to stay in agriculture if he chooses, provides added income and incentive, makes it easier to transfer property, gives each operator more market power, lowers production costs, and supports the local community and area economy.
Summary

With regards to the situation in Utah's agriculture today and looking down the road in the 1970's, I have outlined four ways by which farms and ranches can adjust into strengthened profit positions.

1. Maintain as much of the available capital in productive units (cows, acres, etc.) as possible and as little as possible in consumptive units (tractors, buildings, etc.).

2. Reorganize on some basis that which maintains agricultural assets in agriculture but takes advantage of the economies of scale.

3. Find ways to boost per unit output.

4. Build in and study ways to implement labor and other efficiencies.

Many people in our state depend on these public lands directly for making a living. In addition to the people directly dependent on public lands, there are others who are indirectly dependent on public lands for their livelihood. For example, ranchers with grazing permits are directly dependent on public lands. A business in a rural community that supplies ranchers who use public lands are indirectly dependent on public lands. Thus, public land policy decisions not only affect the direct users, but also those businesses indirectly dependent on those lands. When changes in use of the public lands occur, many people besides the direct users are affected.

One of the major uses of our public lands is grazing by domestic livestock. In fact, the major portion of Utah's range livestock industry is dependent upon these lands. About 2,000 ranchers in Utah own permits to graze national forest lands and about 2,600 own permits to graze BLM lands. Many ranchers have both BLM and FS permits. The best estimate available is that about 950 cattle permits on FS also have a BLM permit. Rancher dependence on these lands varies from a few weeks to the entire year's grazing. In any case, ranching in most parts of Utah has developed with public land use as a basic part of the year-round livestock feed program.

Changes in public resource policy that affect grazing will have significant impacts on Utah's agriculture. Domestic livestock grazing has been reduced on many public ranges in Utah over the past 20 years. This has had its impact on ranchers and local communities. One could discuss
Public resource policy decisions cover a wide range of possibilities. It would be impossible to talk about all of them in the time allotted, even if I knew something about them. Therefore, I will confine my remarks to policy issues on public lands. I feel more confident in this area since a great deal of my research effort has been on these problems.

Public lands are very important to Utah's agriculture. About 75% of the land area of Utah is owned by the federal and state governments. The major government agencies involved are:

- Bureau of Land Management, about 23.0 million acres
- United States Forest Service, about 8.0 million acres
- Department of Defense, Army and Air Force, about 1.8 million acres
- National Park Service, about .6 million acres

Many people in our state depend on these public lands directly for making a living. In addition to the people directly dependent on public lands, there are others who are indirectly dependent on public lands for their livelihood. For example, ranchers with grazing permits are directly dependent on public lands. A business in a rural community that supplies ranchers who use public lands are indirectly dependent on public lands. Thus, public land policy decisions not only affect the direct users, but also those businesses indirectly dependent on these lands. When changes in use of the public lands occur, many people besides the direct users are affected.

One of the major uses of our public lands is grazing by domestic livestock. In fact, the major portion of Utah's range livestock industry is dependent upon these lands. About 3,000 ranchers in Utah own permits to graze national forest lands and about 2,600 own permits to graze BLM lands. Many ranchers have both BLM and FS permits. The best estimate available is that about 850 cattle permittees on FS also have a BLM permit. Rancher dependence on these lands varies from a few weeks to the entire year's grazing. In any case, ranching in most parts of Utah has developed with public land use as a basic part of the year-round livestock feed program.

Changes in public resource policy that affect grazing will have significant impacts on Utah's agriculture. Domestic livestock grazing has been reduced on many public ranges in Utah over the past 30 years. This has had its impact on ranchers and local communities. One could discuss
the pro and cons of these cuts for weeks and never settle the arguments as to whether they were justified. In the end each case would have to be argued separately.

I want to make one comment on this point. When grazing cuts are made the total economic impact is much greater than the value of the public aums lost by the rancher. The rancher may have no alternative sources of feed to replace the loss of public forage. He is then faced with the problem of cutting down his herd and becoming less efficient in his operation or going out of the ranching business. If he goes out of business he would lose because his base properties are not worth as much because of the loss of public grazing. If he goes out of business and leaves the ranching community there are secondary economic losses in that community. If he goes to the city and is not trained to take a job there, other social costs of adjustments and training will occur. The total cost to society caused by these adjustments could be very high. Therefore, one must be very careful in making policy decisions that can cause these adjustment problems.

I want to discuss with you a couple of current problems related to public lands that are very much in the news of late. They are the grazing fee problem and the extension of the national monuments in Utah. I don't plan to discuss these issues in detail at this time. However, we can discuss them in detail in our group discussions this afternoon if there is interest in this area.

The grazing fee problem boils down to a couple of related issues. First, should the policy of the government be to maximize revenues from the public lands? Second, if the policy is to set user costs equivalent with the user costs in the private sector of the economy, should the cost of holding the grazing permit be included as a cost of using public lands? Let's discuss these points for a moment.

A bureau of the budget directive to the public land agencies directed them to make a study of their user charges and "set them to provide a fair return to the government and equitable treatment to the users. Where competitive bidding is not feasible, the appraisal should take into consideration comparability with fees established for comparable state and private grazing lands."

This directive raises a couple of questions that need to be answered. Why should the government change the fee policy that has been in effect for some 60 years (on national forests)? The fee policy in the past has had many social and economic purposes incorporated into it. Maximum federal revenues from grazing was not one of the purposes. If the Bureau of the Budget has the authority to set fee policy, why have they discriminated against a few uses? If the goal or policy is to get
all the revenue the market will bear, why not charge all users under the same policy. What do I as a recreationist pay for utility I receive from a visit to the public lands? What do I as a hunter pay for the forage (and use of space) consumed by big game on public or private lands? If for every deer harvested there are nine others in the breeding herd, should I pay for the forage consumed by ten deer when I harvest one in the fall? I think we should consider these questions when public land policy issues come up.

Historically, the intent of Congress does not appear to be to collect full value for the use of our public resources. What the intent of Congress is today on this issue is open for question.

I mentioned that the question of the grazing permit having value was another point of controversy. It has been established through studies that the grazing permit has a monetary value set in the market. This value has been recognized by various government agencies in the past. In many instances the government has paid ranchers directly the market value of the permit when it was lost. If a nominal return on the value of the permit is included in the cost of grazing public land there is little or no justification for a fee increase, i.e., the rancher is now paying all the forage is worth if you allow him four to six percent on the money he has invested in the permit. The government's position on the issue is that the rancher may be paying the full value of the forage but the government is not getting it. The current fee increase is based on the fact that the permit value is not included in the comparison of costs on public and private leased rangelands. As I see it the government does not want to recognize the permit value because it will be a precedent in making grazing a right and tend to freeze public land use in grazing.

If the current fee policy is not reversed there will be substantial impacts on the economy of Utah. As grazing fees are increased ranchers have less income to spend. Let's assume the fees on BLM and FS lands are $1.23/aum (the new base fee). Rancher income in Utah will decline about $1.5 million each year. As mentioned, this income loss will result in losses in the secondary sectors of the economy. In my work I have assumed a conservative multiplier of 2.0, which would make the secondary loss about $3.0 million. Yet the multiplier computed in a study at the U of U indicates it might be as high as 4.3. If the fee policy, in fact, sets the fees at full market value, the permit values will be zero. Ranchers will suffer a loss of capital assets equal to the value of their permits. The average value of forest permits is $25/aum and for BLM permits is $14/aum. The capital loss in permit values would be about $33 million in Utah. This is a brief summary of some of the impacts the current grazing fee problem will have on Utah agriculture.

County revenues and federal revenues will increase by an amount equal to the increased grazing fees. As county and federal revenues are
spent this spending will have multiple effects on the economy. However, if they are not spent in the same areas as they were collected there will be income distribution problems.

Senator Wallace F. Bennett refers to the additions to the two national monuments in Utah as the "Interior Department Land Grab." In this move 49,000 acres were added to Arches National Monument and 215,000 acres were added to Capital Reef National Monument. I don't know enough about the details of this move to make a lot of comment on it. Generally, any time lands are tied up in one use their contribution to the economy of Utah and the country is reduced. There are cases where this statement does not hold. One would have to show that the present uses of the land are really competitive with the proposed use. Can the recreational potential of this area be reached only by eliminating the other uses of the land? If the answer to this question is yes, then what are the expected costs and benefits to the proposed new use.

It is quite likely that the cost-benefit ratio for the people of Utah could be different than a cost-benefit ratio determined on the national level. This brings up a question. Should the people of Utah, the state where the lands are located, have more to say about their use than people in eastern states who have no public lands to contribute to the national well-being? I am sure we are not going to answer this question today, but it is worth considering as we see what is happening in public resource policy.

Recreation has received a great deal of attention the past decade. Utah has been very active in setting up programs to attract tourists to Utah. Local counties and groups of counties have programs to entice tourists to visit their local areas. Much of this attention has been directed toward outdoor recreation. The increased demand for outdoor recreation has had considerable impact on public resource policy. These policy decisions have an effect on public lands, national parks, Bureau of Reclamation projects and many other natural resources.

At present considerable effort has been made by public agencies to provide outdoor recreation facilities to meet the increased demand. I am not going to argue that this is good or bad. Again I would like to make a point by asking a question. Does the federal government, for that matter the state government, have an obligation to provide free or very low cost outdoor recreation facilities for the public?

Publically developed outdoor recreation facilities are by no means the only way we can meet this demand. Private enterprise has moved into this area quite rapidly over the past few years. (dude ranching, etc.)

Probably we will have a combination of private and public developments in this area. At any rate it will have an impact on our rural agriculture areas of Utah.
There have been large increases in the expenditures made for food, clothing, equipment, fuel, etc., used in recreation activity furnished on public lands. The available evidence indicates that increased expenditures for outdoor recreation do not materially benefit business firms in the rural areas where the recreation opportunity exists. Quoting from a recent study: "The economic impact of recreation developments on local economies will be slight even under optimum conditions because: (1) the incidence of expenditures of recreation users will accrue to the major metropolitan centers, (2) the multiplier effect from new dollars spent by recreationists in local economies will be low in comparison to major metropolitan centers... and (3) a comparative disadvantage in providing goods and services lies with the local areas at present and will not improve in the future." There will undoubtedly be sizeable increases in business activity in the state, but it will not filter to the rural areas.

It also seems possible that costs accruing to local governments for providing many services to visiting recreationists will rise, and perhaps sharply. Whenever large numbers of people come together there are problems in law enforcement, traffic control, garbage disposal and sanitation, and increased requirement for public services such as transportation, electricity and potable water. The federal government assumes much of the responsibility for these services but by no means all. Thus, we have local areas getting a burden of increased costs and the increase benefits going to the metropolitan areas of the state. This opens new problems that should be studied to get answers before new policy changes are made.

The way natural resource policy decisions are made is a very important matter. It seems that everyone is an expert on natural resource management. At least we all seem to have strong opinions on the subject. One can get many solutions to these problems in the barber shop, the pool hall, the wildlife federation meeting, on the street corner, the local women's club, the cattlemen's and wool growers meetings, at most departments in our universities and from the government policy makers. I didn't list these in order of sound reasoning on the subject.

The recent problems Secretary Hickel had in getting seated shows the concern people have for natural resources. To quote an article in the Salt Lake Tribune, February 13, 1969: "He (Hickel) implied he hadn't quite realized until his difficult Senate confirmation hearings that 'people do give a damn' about the preservation of natural resources."

It seems that there is an increasing awareness of the general public concerning our natural resources and their management. For example, people on the East Coast are very much interested in public policy decisions that relate to public lands. Some of them have never seen these lands and have little hope of ever seeing them, yet they get satisfaction out of knowing they are out here. They have a voice in the formulation of policy just as you who live next to the public lands, which is the way it should be in a
democracy. The political process as we know it in this country will continue to be the way policy decisions are reached. In general, I have no argument with this method. However, I see problems if policy decisions are based completely on popular opinion. The most popular decision is not necessarily the best decision. Public opinion seems to have considerable impact on some public resource policy decisions. Public natural resources are a valuable asset to the nation and to the state and should be managed under a set of principles that will maximize their contribution to the well-being of the country.

Multiple-use is a term used to define the concept under which most of our public lands are managed. I agree with this concept because I think these lands can make their maximum contribution to society under such a plan. The uses made of our public lands are not competitive at all levels of use. For example, grazing and recreation probably supplement each other over a wide range of use intensities. Areas where recreation use is very heavy, like picnic sites, are competitive with grazing livestock and livestock use will be eliminated in these areas. In other areas proper livestock grazing may very well add to the recreation experience. Recreationists, especially those from outside a ranching community, get added enjoyment in seeing livestock on the public lands. Society loses net benefits when management policies are adopted which assume all uses are competitive and one use can only be increased at the expense of another use. Research needs to be done to determine the relationships that exist between uses on our public lands. The general public should be educated to the fact that our public lands can sustain many properly managed uses. Our livestock industry can do a great deal to inform people from other parts of the country that grazing of domestic livestock on these western rangelands does not "poison" them. A tourist from the East probably looks at our sagebrush ranges and thinks we have destroyed them beyond hope of rehabilitation, even if they are in prime condition.

We have a new administration in Washington, D. C. I'm sure they are going to be taking a new look at the present government policies of the Departments of Agriculture and Interior. Up to now they haven't publicly said too much about proposed policy changes. Secretary Hickel is still trying to explain what "conservation for conservation sake" is. I wish he would come up with a universal definition of conservation in these deliberations. Almost every one of us has a different idea of what conservation is. At present I haven't seen any report of significant changes in Interior Department policies.

A week or so ago I heard a speech given by a congressman from Idaho. He outlined the new program in agriculture as he saw it. There will be no new sweeping programs in agriculture. Secretary Hardin wants to improve the overall operation and efficiency of the Department of Agricul-
ture. The main points given on farm programs were:

1. Increase farm income

2. Welfare of the city and rural areas is connected—solving the problems in one implies solving the problems in the other.

3. Greater economic opportunity in rural areas of the nation

4. Preserve the independently-owned farms and ranches.
IMPLICATION OF URBAN EXPANSION ON WASATCH FRONT AGRICULTURE*

Dr. Rondo A. Christensen

There is nothing new about urban expansion and the implications it poses to agriculturists. "Proposals for programs or policies that would 'do something for agriculture faced with urban pressures' are nearly as numerous as the proverbial fleas on a hound dog" (2, p. 1306). The recent popular approval of Constitutional Amendment Number 4 here in our own State, to allow farm land to be assessed in relation to its agricultural value, is only one case in point.

The origin of urban pressures on agriculture "might conceivably be traced to the early urban-rural fringe areas of antiquity--the Nile Valley, Mesopotamia, and the Indus River. Urban developments have occurred--and taken land from farming--wherever agricultural production, itself dependent upon a moderate climate, has stimulated marketing and trade activities as well as population growth and concentration. Conversion of land from agricultural to non-agricultural use is a normal aspect of economic growth" (2, p. 1306).

Despite the fact that Utah is located in "rural America," our population is more concentrated and urbanized than most states. About three-fourths of our population lived in the four Wasatch Front Counties of Utah, Salt Lake, Davis, and Weber in 1960. By 1975 we expect nearly 78 percent of our population to be concentrated in these four counties, and 83 percent in these four counties plus Box Elder and Cache.

Expansion of the population in these areas has brought rural-urban fringe problems to Utah, just as it did to the Nile Valley in antiquity, and just as it now does to such highly populated states as California and New York.

While acres of land in farms have been increasing in most counties in Utah, such has not been the case along the Wasatch Front, where urban expansion has taken its toll most noticeably. Acres of land in farms decreased in Salt Lake County 214,000 acres between 1959 and 1964, or 35 percent; 234,000 in Weber County between 1950 and 1964, or 46 percent; and 97,000 acres in Davis County between 1954 and 1964, or 28 percent. Of our four most populated Counties, only Utah County has maintained the number of acres in farm land in recent years.

Most of these land resources have slipped permanently away from agricultural use with little fanfare and with little concern by the public. Lack of public concern is probably due to the historic abundance of natural resources available for man's use in the past. Even now our agricultural "problems"

continue to be ones of over-abundance, rather than scarcity. No one has gone hungry, poorly clothed, or ill sheltered for lack of food and fiber that could have been produced on the urban and idle ground that once was in agricultural production in Salt Lake, Davis, and Weber Counties.

At the risk of sounding heritical, I dare say that no one would even go hungry for lack of the availability of food in the United States even if agricultural production were to cease altogether throughout the entire State. Experience in the past indicates that as land changes from agricultural to urban uses, both in and outside of the State, productivity on the remaining land increases with the use of more non-land inputs to offset the loss in acres of land. It is interesting to note that both crop and livestock production in Utah reached an all time high in 1967. There seems to be no immediate danger, either in Utah or the nation, of food shortages due to loss of agricultural land even though urban expansion continues at the present rate.

Problems of Urban Expansion

If population increases and urban expansion are inevitable, and if food and fiber will continue to be abundant throughout the foreseeable future, why concern ourselves with continued urban expansion?

There are several reasons worthy of consideration. I would like to suggest three. First, when the market is left completely free to private economic competitive forces, urban expansion is oft-times inefficient and causes waste of scarce resources and increases costs to society. This is particularly true when urban sprawl occurs, as it usually does. Second, without some protection, sprawl can be costly to farmers and cause agriculture in the rural-urban fringe to begin to disintegrate and decay prematurely, long before the land is needed for urban expansion. Third, agriculture is a basic and stabilizing industry, and as such should be safeguarded and protected from unwarranted inroads.

I would now like to expand briefly on each of these subjects.

First, urban sprawl. "Today's suburbanization is characterized by discontinuity. Housing tracts, industrial parks, tracts of idle land, and land in agriculture may be intermixed in the region where the suburban development takes place. Such a region has been described as urban sprawl. Sprawl occurs in three major forms. Leap-frog development is the type of development most often characterized as sprawl. It describes the settlement of discontinuous tracts for urban uses. Ribbon development sprawl is composed of segments of urban developments which extend axially and leaves the interstices or middle parts under-developed. A third type of sprawl is low density continuous development, which is merely an extensive use of land in the process of suburban development and does not necessarily include idle land per se" (1, p. 83).
"The major cause of urban sprawl undoubtedly is the freedom of sellers and buyers of land in decision making. The free enterprise system, under which land is subject to private ownership, along with little public restraint on transfer of ownership and use of land makes the land market a forum of monopolistic competitors, each acting independently. The sellers as well as the buyers hold a variety of expectations about future land values, differences of opinion as to most profitable use, and variety of desires for current income. As a result, transfer of land from agricultural to urban uses does not take place as a uniform movement away from the metropolitan area."

"Furthermore, urban utilization of land actually withdrawn from agricultural use does not necessarily take place within a certain time period after the withdrawal. The final result is then what we call urban sprawl, i.e., a region where tracts of housing areas, idle land, and agricultural land are intermingled" (1, p. 84).

Sprawl, as compared to a well organized growth of suburban areas causes higher costs to society. The most important cost seems to be the wastage of land connected with sprawl. Large areas are neither urban nor rural. Developed tracts are widely dispersed. The land not used for suburban development is often idle. Looked at from the viewpoint of society, no scarce resource including land should be held idle. When we have idle resources we realize a waste. With sprawl, cost of public utilities like water and sewage systems are higher and the need for public as well as private transportation increases. Another cost to society is the loss of the open space areas when the sprawl takes over. A few badly designed developments in an open area can cause considerable damage to the recreational value of the area. Some people have strongly opposed sprawl for this reason.

Second, the cost of urban expansion, particularly in the form of sprawl, to farmers. Along with a rapid growth in our metropolitan area comes an expansion of the area around it that will be affected by the suburban influence. Expectations of large future increases in land values cause speculative activities to expand in these areas. Certain tracts of farming are sold for prices that exceed what could be justified by agricultural production. This causes real estate assessments and thus taxes to increase in the area resulting in an increase in costs to the remaining farmers. As the purchased tracts are developed, new families move in and the need for public services such as schools and roads increases. The increase in public expenditures often is met by an increase in the mill levy, which means a further rise in real estate taxes, and an increased tax burden to the farmers in the area (1, p. 88).

Because of the scattered pattern of development, the land that remains in farming becomes cut up and more difficult to farm effectively. Much of the natural ground cover may be replaced by the roofs and pavement of the subdivisions, and possible storm run-off may spill onto the farmland. Furthermore, the suburbanites may complain about tractor noise early in the morning and use of crop sprays may be prohibited. The possibility of crop damage due to trespassing will increase as more people move into the area, and costs may increase due to greater expenses incurred to prevent odors and flies as well as labor becoming more expensive (1, p. 88).
Another factor affecting farming in an area of sprawl is the increase of uncertainty concerning future land prices and assessments. Prior to pressures of urban expansion land prices in the area were determined almost entirely by the expected net return from agriculture. After the suburban influence has been realized however, the farmer does not know if he may some day receive an offer for his land so high that he simply cannot resist it, in the face of rapidly mounting property taxes, a primary holding cost, and other operating costs. This causes most farmers in the area to operate on a short-run rather than a long-run basis, e.g. no long-run plans will be made concerning investment and crop rotation. In other words, the whole farming operation is likely to be geared to obtain maximum short-run profit without regard to the impact of this policy on long-run profits, since there is no long-run farming situation (1, p. 89).

The anticipation of an early sale causes many farmers to let their land lie idle. In addition, the anticipation of long-run capital gains causes more and more land to be held by older, less progressive, if not retired, farmers. This, together with the holding of agricultural land by off-farm speculators in the wake of urban expansion eventually causes additional farm land to become idle.

The combined effect of fewer acres of land in farms, smaller, more cut up and scattered parcels, decreased soil fertility, and less application of new technology can result in a decaying agriculture. As total agriculture decreases in an area, the economic plight of the remaining agriculture can be expected to worsen as farm supply and marketing firms move or close their doors, reducing competition in sale of farm supplies and reducing the number of outlets for farm commodities.

Third, the importance of agriculture as a basic and stable industry. Agriculture is a basic industry, that is, it brings new money into the economic system of an area. The importance of agriculture along the Wasatch Front, as well as in the entire State for that matter, is much more than is indicated by total gross farm income which is over $200 million in the State. This is because of the multiplier effect of farm income on the economy. The expenditure of farm income by farm families causes consumption to expand by the amount they spend; this creates a further increment of income to others, which in turn leads to more consumption and hence to still another increment of income by others; and so on.

Furthermore, agricultural production is relatively stable, and is virtually independent of the business cycle; it tends to be about the same during all phases of the cycle in general business. Industrial production and employment, on the other hand, moves in perfect conformity with cycles in general business activity, and the amplitude of movement is quite wide.

It is unfortunate, if not ironic, that agriculture and urban expansion generally compete for use of some of the best farming land. The six Wasatch Front counties of Utah, Salt Lake, Davis, Weber, Box Elder, and Cache, not only account for about 80 percent of our population, but over 50 percent of our agricultural production. All six counties are among the eight most
important agricultural counties in the State in terms of value of sales of agricultural products. The eight most important counties in order of importance are: Utah, Box Elder, Cache, Sanpete, Weber, Salt Lake, Millard, and Davis. Elimination of agriculture along the Wasatch Front would strike a hard blow to the agricultural sector of our state's economy, as well as the economies of the particular counties involved.

Some Possible Solutions to the Problems

How do we eliminate urban sprawl, premature conversion of farmland to non-farm use as a result of property tax pressure and lack of adequate planning for community growth and development, and minimize the adverse effects of urban expansion on agriculture?

Urban sprawl could be eliminated by several available methods, but to function effectively all of them require public interference in the land market. The question then arises: Do we prefer public planning and government interference with less sprawl, or would we rather maintain a situation of urban sprawl and less public interference? The answer to this question depends on value judgments and is not further considered in this paper. In the following, alternative solutions to the problem are set up and it is up to the individuals through the voting mechanism to decide which solution should be applied" (1, p. 89).

The most effective policy to limit sprawl probably would be to provide a metropolitan agency with the power to purchase all land in the urban-rural fringe using the power of eminent domain. Further use of the land, once it were in the ownership of the metropolitan agency, should be determined by an over-all planning authority. The plan should direct the suburban growth by developing the area along a frontier moving away from the city and leaving no idle land in the developed area. Public schools, parks, and possibly open areas for recreational purposes should be included in the developing plan. The land not yet ready for development might be leased back to farmers on a short-term basis. As the development frontier moves out, the developed tracts should be sold as plots with certain restrictions concerning house building, etc., attached to them. Development of suburban areas in the region outside the area bought by the metropolitan agency should be restricted by zoning. This proposed solution could be very effective, but initially it would require great sums of money and a great deal of public interference in private land ownership. Therefore, it is likely to be rejected by society as a preferred solution (1, pp. 89, 90).

"A solution that would be less drastic, as far as public interference goes, would be a public purchase of the development rights on the land. However, unless the purchasing agency has the power to purchase the development rights on all land in a certain fringe area or to prohibit developments on land for which development rights could not be bought, the program is not likely to work. As an incentive for farmers to sell their development rights,
the land for which development rights are sold should be assessed only according to its value in agricultural use. This would increase the incentive to keep the land in agricultural production until the planning agency considers it mature for development' (1, p. 90).

A third means by which urban sprawl might be limited is an improvement of the zoning ordinances. The present system of zoning, in many cases, produces sprawl rather than limits it. When an area of primarily agricultural land is zoned as a future housing area, the land prices within the area rise considerably. If zoning ordinances are enforced only close to the metropolitan area, it may very well be profitable for developers to buy and develop tracts farther away from the city where land prices and taxes are not affected by the zoning. This clearly produces sprawl. To avoid this phenomenon the zoning ordinance could be expanded to include not only land in the near urban fringe area, but also agricultural land that is not likely to become valuable for suburban growth in the near future. In other words, the zoning ordinance should be extended so far away from the city that there will be no incentive to develop areas outside the outer zone limit (1, p. 90).

Where do we stand in Utah?

As a result of the passage of Constitutional Amendment No. 4 last November, a bill entitled "Farmland Assessment Act of 1969," Senate Bill No. 136, has now been prepared and has passed the Senate and is on its way to the House. This bill allows for qualifying farmland to be assessed in relation to its value for agricultural use, beginning in 1970. When the land is taken out of agricultural use it will be subject to a deferred or roll back tax equivalent to the difference between the taxes paid and the taxes that would have been paid during the preceding five years had the land been assessed in relation to full market value. This should do much in the way of removing property tax pressure to prematurely convert farm land to nonfarm use. It should also help some in allowing farmers to plan, organize, and operate in such a way as to maximize long-run profits rather than short-run profits, thus keeping their farms viable, if their preferences are to do so.

Senate Bill No. 136 is not the total answer, however. If the public desires to maximize the use of efficient use of our limited land resources, curb urban sprawl and its attendant wasteful costs to society, and encourage a viable, productive agriculture in the rural-urban fringes of our population centers, the deferred tax plan will have to be tied to a broad plan of area development and land use control through zoning. Deferral of taxes alone will not accomplish these worthwhile objectives. Some Utah counties have already prepared master development plans for the future and enacted zoning ordinances to help develop land use according to the master plan. Other counties are in the process of doing this. Those that have not should be encouraged to do so.
References

