

# Central Issues in Agricultural Policy

*Report of Seminar Sponsored by  
M.G. and Johnnye D. Perry  
Foundation and University of  
Missouri*

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Issues in policy for agriculture and agricultural marketing are always in flux.

The UMC-Perry Foundation seminar reported in these pages was held to bring into focus a range of ideas for future policy directions for U. S. agriculture.

Under terms of agreement between the Perry Foundation and the University of Missouri an annual seminar is to be held "to promote the development of information relative to the socio-economic forces that bear on the welfare of family operated farms and ranches, and upon the income to those operators; to disseminate that information widely among agricultural leaders of the nation; and to provide a forum ... for discussion ... by leaders of organizations, institutions, and legislators."

The Perry Foundation was established in Robstown, Tex., in 1946 as a memorial to members of the Perry family who did much for the agriculture of South Texas. It both sponsors and carries on research in agriculture. The Foundation is dedicated to working toward a prosperous agriculture and the welfare of the people on the land.

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CENTRAL ISSUES IN  
AGRICULTURAL POLICY

Report of Seminar on  
Agricultural Marketing and  
Policy

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University of Missouri-Columbia  
and  
M. G. and Johnnye D. Perry Foundation  
of Robstown, Texas  
held  
October 8-9, 1973  
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# SUMMARY

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The kaleidoscope of thinking on what agricultural policy should be was revealed once again in the variety of ideas presented at the University of Missouri - Perry Foundation seminar in agricultural marketing and policy held October 8-9, 1973, at Columbia, Missouri.

The four principal speakers and the several panels and discussion groups presented a wealth of commentary on policy for agriculture.

A few themes recurred often. They reappeared frequently enough that they may be called central issues. Some are fairly new to policy debates. Others were of older vintage but were given such a new twist as scarcely to be recognizable.

The policy scene is indeed changing.

The summary of central ideas that follows is taken from both the principal addresses and the more formal (but not the informal) discussions.

## **Rural Fundamentalism — With A Fossil Fuel Dimension**

There is something fundamental about the rural scene. This old faith was given new expression, against two backdrops: the view of a nation (and world) trying to spend itself into prosperity, and the reminder that modern farming depends heavily on fossil fuels as a stock resource.

Arnold Paulson put it that "all new wealth comes from nature in the form of raw material production." Harold Breimyer chose the words that "economic strength is rooted in real productiveness and not in fiscal manipulation."

Paulson stressed this theme as reason to give adequate income to raw material producers. He insisted that many governments, instead of doing that, are paying out dollars at the other end — to subsidize demand. In the process they create an ever-spiraling debt. This viewpoint is vir-

tually the same as Breimyer's comment on trying to solve our economic problems by "fiscal measures to sustain dollar income." The consequence is an artificial prosperity — and inflation.

Omitting the phraseology, this strips down to the idea that basic resources count most and any nation disregards them at its peril and to its eventual regret.

But that familiar axiom was revised, and older faiths in rural fundamentalism were recast, by the recognition of how much modern farming depends on industrial resources, including fossil fuels. The supply of those fuels and other stock resources is becoming tighter.

Breimyer: "Gains [in agricultural productivity] have come largely from drawing on ever-increasing quantities of resources of industrial origin . . . [Those] resources made available to farming will not be as plentiful in the future as in the past." Philip Raup: "To an important degree, the critical resource in United States agriculture is no longer land but minerals." Further, "until well into the twentieth century almost all of our food supply came from flow resources derived from solar energy. Today a large and rapidly increasing share of our food supply comes from stock resources, primarily petroleum, coal and minerals." "Recognition that this stock is limited" is a source of much concern.

A variation on this theme began with the often-quoted numbers on how many consumers each farmer supports. Sometimes the figure named is as high as 48 or 50, said Paulson, who then added, "This is not true and it never has been true. We've got the greatest farmers in the world, but they're not that good. One farmer today, with the help of 35 other people in town, can feed 48 people." Food production is a joint enterprise.

## **Farmers' Minority Status**

Are farmers handicapped because they are few? Said Raup, yes, but also because they produce a surplus.

"Farmers are no longer a major political force," he declared. He added that U. S. farmers are hurt more by their minority status than European farmers are, and then explained that Europe is food deficit and therefore solicitous of the strength of its agriculture. The U. S., by contrast, is food surplus.

The inference is that if less available industrial resources keep U. S. farm production from overflowing (the Breimyer thesis), farmers as a minority will gain standing and strength.

Bottum distinguished between raw power and effectiveness. Like Raup he believes that "agriculture no longer has the political muscle to pass just what it wants." He added that "agricultural legislation is going to have to appear creditable to the non-farm groups in the future." But he is sure that agriculture has good standing in both the Congress and our cities. "There still is a reservoir of good will toward farmers."

It is often said that divisions among farmers do more harm than the farmers' lack of numbers. Raup observed, "There is not one agriculture but many agricultures." He noted a widening gap within farming between the few large farms and the many small ones. We may be "witnessing the development of a dual economic structure in American agriculture." "The voting strength in agriculture is at the low end of the income scale while the economic strength is at the upper end."

### Structural Organization of Agriculture

Who is going to own and control farming? This question was woven like a thread throughout the conference. Most persons present agreed with Paulson that family farmers can survive if the test be efficiency. Paulson was the most pessimistic about holding on to family farming, foreseeing a "feudal system" with all farmers becoming tenants.

Bottum predicted that "legislation bearing on who is going to control agriculture will be a continuing issue . . . This legislation will deal particularly with the maintenance of open markets and with federal income tax policies. . . ."

Raup spoke of how farm programs help large farmers more than small. He pointed out that our method of taxing capital gains has created "an incentive . . . for wealthy investors or large firms to buy land on credit, and farm it while holding it in anticipation both of income from annual operation and from ultimate liquidation . . ." He also mentioned the cash accounting privilege, particularly as a hidden subsidy for livestock production (particularly cattle feeding) with high-tax-bracket capital. The subsidy hurts small livestock farmers and feeders, he said.

W. E. Hamilton, on the other hand, pointed out that tax sheltered feeding operations provided good markets

for feeder cattle producers and others. Farmers are not of a single mind on the tax shelter subject, he declared.

Marshall Harris claimed that who will control agriculture is the "greatest single question for agriculture." He favors retaining a decentralized, family farming. However, this would not be the status quo preserved. On the contrary, he asks that we "use the ingenuity we have to develop a new business form for farming." He considers a franchise system as one possibility.

Still another consideration is that nonfarm demand for land, often for economic purposes but sometimes only for hobby and recreation uses, competes with farmers' demand for land to farm. Even if farmers are able to retain or buy their land, the price is bid up to a point where they cannot realize normal returns on it.

### Can Farmers Stand Prosperity?

A novel idea came into the conference when the question was raised as to whether the higher farm incomes of 1973 will prove, as Raup put it, "a benefit or a disaster for family farmers."

Raup commented that there was little interest in buying out family farmers when their incomes were low. But now that farming is more profitable we can expect an "influx of non-farm capital." The income tax rules, he added, make that investment even more attractive.

Paulson raised no such question. He favors keeping incomes at an improved level, as both reward and incentive for abundant production. His argument, however, is based on a more general proposition that unless the value of anything that is produced is returned to the producer, a deficiency in demand is created. The essence of Paulson's philosophy, and his message to the seminar, lies in this sentence: "We must have income equal to the cost of production so that we can buy and exchange it with one another, and if not, we'll eventually monetize so much debt that we bankrupt the system."

Vincent Rossiter likewise declared his confidence that improved returns would strengthen family farm agriculture, and not jeopardize it.

### Consequences of Fuel Shortages

The changing situation with regard to fossil fuels received much attention. With regard to effect on future production, Bottum believes that more wheat and feed grains will eventually be produced than the market will take at target prices. Breimyer and Raup were more guarded, believing that farm production will be held down materially by higher prices of fuel and fertilizer.

Raup carried his viewpoint to two further consequences. One relates, once more, to the structure of agriculture. Cheap energy, he said, has contributed to large and specialized farms. Therefore, higher priced energy might be a factor favoring family farms. His

second observation raises a kind of question about agricultural exports that is not heard often. If we must import petroleum to produce cotton, feed grains, and soybeans, how long will it continue economic for the U. S. to export those commodities? "How durable," he asks, ". . . is our present comparative advantage in export markets for farm products?"

### **The Prospective Supply-Demand Balance**

Fred Heinkel early posed "food and fuel" as "the focal issues of the 70's." As noted above, fuel prospects (including nitrogen fertilizer) were generally seen as holding farm production down to some degree.

Raup and Breimyer declared that structural changes in farming also are tending to restrain production, as some of the newer entrants are under no pressure to intensify. Even established crop-and-livestock farmers, they added, may respond to higher prices received from crops by cutting back or even dropping their time-consuming livestock enterprises.

Breimyer drew an inference that if family farmers do not choose to produce livestock and poultry, "the door will be left wide open for an expansion of factory-type operations. Separating feed production and livestock production further would have a great deal of meaning to the future structure of agriculture."

Hallberg gave a measure of support to this view when he declared the declining trend in milk production to be a matter of concern.

Breimyer summed the conservative outlook for farm production in words that "U. S. agriculture will not suddenly resume such an out-pouring of crop and livestock products as to overwhelm U. S. and world markets . . . . Henceforth, surpluses will be episodic, not continuous. And they are more likely to show up in crop products than livestock."

Not all persons attending the seminar, however, were convinced of this prospect. A number feared a return of surpluses after a year or two. Bottum, as previously stated, shared some concern regarding the grains. But it is significant that this seminar on agricultural marketing and policy, unlike similar meetings in previous years, was not conducted in an atmosphere of preoccupation with surpluses.

Among other topics discussed during the seminar was the perennial one of rural development. Said Bottum, "Rural development will be a continuing issue. There are many valid reasons for not continuing to shift more and more of our rural population to the larger cities."

Foreign trade, transportation (the box car shortage!) and still other subjects did not lack for spokesmen. But the prevailing theme, as explained above, concerned what kind of future lies ahead as agriculture, a basic producer of raw materials for the economy, is subjected to pressures of less accessible industrial inputs, tax-induced and other structural changes, an ever-declining minority status, and fiscal policies undertaken by governments everywhere that have so much effect on farmers' incomes and welfare.

ECONOMIC, SOCIAL, AND POLITICAL FORCES THAT WILL BEAR  
UPON U. S. AGRICULTURE AND WELFARE OF FARMERS  
IN YEARS AHEAD

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Farmers in the United States and in most developed countries have been forced to recognize since the mid-twentieth century that they are a minority group. Their statistical position had been clear at least a generation earlier but in economic, social, and certainly in political dimensions, statistics did not tell the true story. Recognition of the minority status of farming has been variously resisted. It has forced itself upon industrialized countries at critical moments in their histories, going far back into the nineteenth century in the case of England and several smaller countries (Switzerland, Belgium, Luxemburg). In the United States, farming, forestry, and fishing employed half the labor force as late as 1880, and it was 1920 before employed workers in manufacturing and the building trades outnumbered those in agriculture. The percentage of the population employed in U. S. agriculture at the outbreak of the Second World War was approximately the same as it had been in Great Britain one hundred years earlier (22.7 per cent, in 1841).<sup>1</sup>

Acceptance of minority status has been much easier, of course, for farmers in densely settled countries dependent upon imports for a major share of their food supply. The strategic value of a domestic food supply in wartime guaranteed economic support for twentieth century agriculture in the United Kingdom, Germany, and Switzerland, for example, that has been far beyond any attention their farmers could command by weight of numbers or voting strength. And their minority status in a political and social sense has been moderated by a knowledge that they were an essential element in national survival through two World Wars.

The situation in the United States is sharply different. Here the implications of minority status have been forced to the attention of a farm population that has not only maintained the position of the United States as a net agricultural exporter, but increased it after the farm labor force had fallen below five per cent of the gainfully employed. The United States is the first major food exporting country to face the adaptations required of a nation in which farmers are no longer a major political force.

This is a necessary prelude to an understanding of many of the economic, social and political forces that will shape U. S. agriculture in the years ahead. In examining these forces in this seminar, it is important to remember that my crystal ball is no clearer than yours. The points I will make are advanced with much uncertainty. I will raise more questions than I can answer. They will be designed to stimulate discussion, and to provide an outline that can focus that discussion on at least some of the critical issues.

I propose to look first at some elements of change that have direct effects on the farming business. In terms of both immediate impacts and long run implications, the most insistent issue concerns the question of energy.

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<sup>1</sup>Colin Clark, The Conditions of Economic Progress, London, Macmillan, 1940, pp. 185, 187.

We practice "cheap fuel" farming in the United States, and have done so throughout our history of agricultural mechanization. This is a reflection of our resource endowment, and the geographic accident that has located petroleum supplies in proximity to major farming regions. It is also a reflection of our institutional structure, and especially our tax system.

To the extent that state and federal taxes have raised the price of non-farm motor fuels there has been some price-induced restraint in their use. This restraint is lacking for fuels used in farming.

Most of our states have constitutional or legislative prohibitions on the use of motor vehicle taxes for any purpose other than highway building, policing, and maintenance. This applies especially to taxes on motor fuels. One consequence has been to inhibit any taxation of motor fuels used in farming. To do so would raise serious questions about the propriety of taxing farm fuels for general revenue purposes, while motor fuels used in highway travel are taxed only for highway purposes. As a result, farm fuels go untaxed.

The dedication of all highway fuel taxes to highway purposes has thus worked to insulate farm fuels from any cost increases reflecting higher rates of taxation. The cost ratio of farm fuels to non-farm motor fuels has fallen steadily over the past half century, reflecting the rise in highway motor fuel taxes. The decline was especially marked after the introduction of federal taxes to finance the interstate highway program in 1956.

For example, from 1940 to 1960 the composite average state and federal gasoline tax doubled, from approximately 5 cents to 10 cents per gallon.<sup>2</sup> This had no effect upon the price of farm fuels, except to make them cheaper relative to non-farm fuels.

Farm fuels have not only been cheap relative to non-farm motor fuels, but their relative share in farm production costs has been falling. This has undoubtedly influenced farmer decisions regarding mechanization, the number of motors used, size of motors, and intensity of use.

Total expenditures on farm fuels have also declined as a fraction of total cash farm operating expenses, and especially so in recent years. Cash outlays on gas, oil, and grease in the Southeast Farm Management Association farms in Minnesota, for example, were 7.4 percent of total cash operating expense in 1960, 6.2 per cent in 1965, and 4.7 per cent in 1972. In the Southwest Association, the comparable percentages were 4.5 in 1960, 4.4 in 1965, and 2.7 in 1972.<sup>3</sup>

For many farms, fuel has become a minor cost item. Its decline in relative cost outlay has fostered a cheap fuel image. We have as a result an agricultural production structure that is based on the relatively lavish use of fuel, in which cash outlays for fuel have been overwhelmed by the rapid expansion in other cash farm operating expenses.

United States agriculture is thus ill-equipped to face petroleum fuel shortages. Because farm fuel prices have not included the substantial taxes dedicated to highway expenditures, any increase in basic fuel costs will have a larger percentage impact on farmers than on highway users. It seems probable that the half-century decline in the relative cost of petroleum fuels in agriculture will be reversed.

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<sup>2</sup>Statistical Abstract of the United States, 1961, p. 554.

<sup>3</sup>Annual Reports, Southeast and Southwest Farm Management Associations, 1960-1972, Department of Agricultural and Applied Economics, University of Minnesota. The lower percentages in the Southwest are due to the larger role played by feeder cattle purchases in total farm operating expenses in that region.

If this occurs, we can expect a continuing farm fuel problem, and especially in the political arena. Price rises in fuel costs will be painful, but relative farm outlays for fuel are not large enough to insure that price increases will achieve economy in fuel use. If farm fuel prices had been doubled in Southern Minnesota in 1972, for example, fuel expenditures would still have been only about 7 per cent of total cash farm operating expenses.

This suggests that price policy alone may be inadequate to deal with a shortage of petroleum fuels for farming. It must be reckoned a possibility that widespread fuel rationing for agriculture may be needed in the years immediately ahead.

This is the short-run prospect. The longer run agricultural prospect raises issues that go to the heart of the world-wide energy problem. There are farmers alive and farming today who have witnessed in their lifetimes the transformation of agriculture from an activity based on a flow of solar energy converted through crops and animals to one based on a stock of fossil fuels. This is true both for energy used for motive power and energy in the form of fertilizer and agricultural chemicals. We have an agricultural production plant that is almost wholly dependent on an exhaustible resource.

This can only be an transitional phenomenon. Although world wide stocks of fossil fuels are large and many more may be discovered, the international movement of these fuels raises problems of national dependence on trade, balance of payments, and monetary policy that are new in history. In the past, some nations could fear for their food supplies in time of war or blockade. But even England in the darkest days of the Second World War could reckon on her coal for a basic energy supply that could sustain her.

It is a different world today. Every major industrial nation is a net importer of petroleum fuels. Even the Soviet Union with its vast and untapped resources is a net importer. Recognition of the consequences of this form of fuel dependency has been unavoidable in oil-poor nations such as the United Kingdom, Japan, Italy, the two Germanies, and France. It has come suddenly to the United States, and the shock has been great. We do not even have statistics readily available to measure the degree of this dependency, and its consequences for domestic and foreign policy.

One question emerges with unexpected importance. How long will it remain economic for the United States to import petroleum for fuels and fertilizers to produce cotton, feed grains and soybeans for export in order to earn the money needed to pay for the petroleum imports? How durable, in other words, is our present comparative advantage in export markets for farm products?

At the moment this seems to be a ridiculous question. We can export everything we have for sale at prices undreamed of even twelve months ago. But it is a question that must be asked. Potentials for the improvement of agricultural productivity in the rest of the world are great, and especially so in the Soviet Union. The foreign markets that have generated the current euphoria in United States agriculture could prove to be transitory. And if the problem of farm surpluses returns it will be in a new dimension. The conservation of energy supplies will be an added and insistent consideration in any future farm programs that seek to manage surplus farm output.

If a management problem of this type arises, it will be resolved in a changed political climate. An agricultural production plant producing surpluses in competition with householders and motorists for energy supplies will face political opposition of a new kind. Should this occur, it seems probable that agriculture will be subjected to production planning and supply control measures that will be much more demanding than anything we have known in the past.

Programs of food aid to developing nations will undoubtedly feel a major part of the force of any rise in the real cost of energy. It is one thing to sell cheaply or to give away food surpluses produced with domestic resources. It is quite a different matter if these food surpluses must be produced with imported fuels and chemicals. I conclude that the part of the energy crisis in the United States that involves petroleum will have an especially heavy impact on international aid programs.

Cheap energy has also contributed to structural changes in agriculture that result in large and specialized farms. The impact of this change is especially heavy in the feed-livestock sector. And it has consequences for price and market policy that we are only beginning to perceive.

A major source of past imbalance in American agriculture has been the long-standing differential between labor rewards in crop farming and in livestock production. As long as mixed or diversified farming predominated, the farm family could increase family income by care of livestock, although labor returns per hour were often quite low.

One consequence of the expanding size of farms is that the farm family is less likely to be compelled to include a livestock enterprise in order to meet a target family income level. If this income level can be achieved with cash crops alone, there may be little compulsion for the family to commit its labor and its time-schedule to the demanding care of livestock.

This is especially true if the farm is very large and must depend on a significant amount of hired labor. The livestock sector of family farm agriculture is still less mechanized than the crop sector, and the quality of labor required for successful livestock rearing is frequently not available in the farm labor market.

The recent behavior of many family-type farmers in the Middle West suggests that they do have a target family income in mind, at least in the short run. Many family farmers that once included a substantial livestock enterprise in their total farm operation have now eliminated the livestock, and produce only cash grain.

This trend has reduced both the number and the proportion of farmers who find a given increase in the price of a livestock product to be an adequate incentive for increased output. In the past, a farmer growing his own feed could follow the traditional calculations involved in the hog-corn or beef-corn ratios in deciding whether to sell his corn or feed it. These were open options, and he could expand or contract his livestock operation relatively quickly.

For many corn growers today, this option is not available. They have liquidated their hog or beef-feeding enterprises, have no adequate equipment for livestock feeding, and have organized their family time schedules around a cash grain operation with its less insistent daily time commitment.

The price signals needed to secure a given production response are no longer adequately measured by the traditional hog-feed, dairy-feed, or beef-feed price ratios. Imbedded in those traditional ratios were assumed cost components that reflected underemployed family labor, an unmet family income target, and the existence of some unused production-plant capacity in the form of farm buildings, equipment, water systems, etc.

These assumptions no longer hold. A large cash grain farm can meet the family income target. More opportunities are available for the employment of farm women. Children remain in school to older ages, go farther from home for schooling, and seek urban instead of farm employment. There has been a change in farm life styles.

This is nowhere more evident than in the growth of off-farm employment for farmers. The average farm operator family in 1972 received half of its income from non-farm jobs or investments. For farms with gross sales of \$5,000 to \$9,999, off farm income exceeded farm income by 58 percent. In commercial farms with gross sales of \$2,500 to \$4,999, off-farm income was over three times as large as farm income. The majority of the farming population today does not look to farming for its major source of income.<sup>4</sup>

As a result, we may be witnessing a fundamental change in the reaction of farmers to fluctuations in agricultural product prices. Price changes may need to persist over longer periods of time before they elicit a supply response. And when it comes, it may be more massive than the same relative price change would have triggered a generation earlier. Larger, more specialized farms involve heavy capital commitments and elaborate organizational planning. It takes time to set them in production. And once in production they will tend to continue to produce at a given rate in spite of price changes that would have resulted in expansion or cut-backs in a population of family-farm producers.

This is one aspect of scale of operation and degree of specialization that we have not studied adequately. In other fields of agricultural production where large-scale enterprises have predominated, there is evidence to suggest that large scale firms do not alter production schedules in response to price changes, except under sustained economic pressure. This has been reported for rubber in Malaysia, sugar in the Caribbean and pineapple in Hawaii.<sup>5</sup> If production involves a mix of large and small firms, the effect is to shift the short-run burden of output adjustment in response to price to the smaller firms.

We may be entering this phase, in the evolution of United States agriculture. Farm product prices have changed drastically in recent months, and output response has been sluggish in the livestock sector. Many reasons account for this lag in response, not least the wildly fluctuating prices of feedstuffs which make long-range livestock production planning highly uncertain. But it seems likely that one reason is that a basic change has taken place in the structure of agriculture. The result is a production pattern that could lengthen the supply response cycle in livestock products, increase the amplitude of its movements, and result in immobility in supply over relatively long time periods. The agricultural output curve for livestock products, in short, may come to resemble that of the steel industry.

This shift out of livestock has been building up over four decades. With the exception of 1940 and 1946, we have been net importers of meat for nearly 40 years. Domestic milk production is declining and we may well be entering into a production phase in which we will be net importers of dairy products, on an increasing scale.

We are beginning to exhibit the production characteristics of some developing countries in which large land holdings and very small farms exist in a symbiotic relationship. The big farms do not produce livestock products because labor requirements, market risks and price levels do not encourage it. Cash cropping is the rule on big farms. The little farms are limited in their capacity to produce livestock products because they are too small to support

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<sup>4</sup>U. S. Census, 1970, "Income of the Farm Related Population," Series PC (2)-8C, Washington, D. C., U. S. Dept. of Commerce, 1973, and Farm Income Situation, U. S. Dept. of Agriculture, FIS-222, July 1973.

<sup>5</sup>C. R. Wharton, Jr., "Marketing, Merchandising and Moneylending: A Note on Middlemen Monopsony in Malaya". Malayan Economic Review, Vol. VII, No. 2, October, 1962, pp. 24-44; George Beckford, Persistent Poverty, London, Oxford Univ. Press, 1972.

risk-taking and management skills on the scale needed. As a result, livestock production is stunted, and unresponsive to price. In the European version of this relationship between scale of enterprise and output mix it has been difficult to secure an increase in meat production, especially beef, because the farms are so small.

In the American version, we may demonstrate the reverse proposition. It may become increasingly difficult and expensive to gain the increases we need in meat and milk output because our farms are so large.

In a wider sense, this is the way food shortages on a world wide scale will be reflected in our domestic price levels and consumption patterns. Grain can be stored and shipped long distances at low cost. The revolution in ocean transport costs brought about by the giant oil tankers (which can also carry grain) has cheapened the cost of grain imports for food deficit areas.

Grain prices have risen relative to livestock product prices. The grain surplus that for the past two decades had stayed on farms or in the storage bins of the CCC held down market prices and gave us cheap domestic livestock feed prices. This grain surplus is gone. Domestic meat consumers must bid against world market grain prices for the feed required to increase meat supplies. The world demand for more grain is being converted into a restructuring of our domestic output mix of agricultural products.

One of the most persistent and visible trends in United States agriculture has been the continuing increase in size and decline in number of farms since the Second World War. In crude terms, the number of farms was cut in half from 1950 to 1973, and average size doubled. These data are defective in that changes in the definition of a farm have taken place on several occasions since 1950. The 5,648,000 farms enumerated by the census in 1950, for example, included a number of small farms in size classes that are excluded in the estimate of 2,831,000 farms for 1973. Although the degree of decline in number of farms is overstated, the magnitude of the increase in average farm size is not significantly disturbed by this correction.

As we have seen, a part of the explanation for this increase can be traced to the relatively low cost of energy in agriculture which has encouraged the substitution of machine power for human and animal power. This trend has been accelerated by a continuous decline in the cost of machinery and equipment relative to labor. And in recent decades the trend has been heavily influenced by peculiarities in the institutional structure affecting farm price support programs, credit programs, and tax policies. Two of these peculiarities merit closer examination.

Since price support programs have in the past been tied to crop acreage or production history, the size of any government payments to individual farmers has had a direct and linear relation to volume of production. In sharp contrast, by underwriting a relative degree of farm price stability the federal government has had an influence on the risk expectations of farms in different farm size classes that is not linear. A historic limitation on large scale farming activities has always been the indeterminate nature of large risks. In agriculture these involve both market price risks and climatic and biologic risks. By reducing substantially the risk of market price collapse, the net effect of government farm price support programs has been to make farm investments relatively more attractive to large scale investors than to small scale investors or family type farmers. Large scale farmers have been encouraged to use venture capital more effectively than is possible for small entrepreneurs. Capacity to make use of financial "leverage" is in general unavailable to family type farmers. This becomes increasingly important as size of farm expands, permitting a given proportionate increase in equity capital to finance a much larger increase in total business activity.

This in turn has been a consequence of the peculiar nature of United States accounting practices and tax policy with respect to the taxation of income, and particularly income from capital gains. Since interest on borrowed capital is a business expense in computing income tax liability, those enterprises with adequate borrowing power and large incomes can shift from the use of equity capital to the use of borrowed capital to advantage. The net effect is to reduce the cost of capital to the large firm. This opportunity is either unavailable or of minor significance for family type enterprises.

The resulting stimulus to the expansion of the farm business has been given further impetus by our method of taxing capital gains. Up to 1969 this tax was levied at a rate of never more than 25% of the realized capital gain. Since tax liability on earned income can rise to a 50% rate on taxable incomes of \$38,000, there has been a substantial reward to high-income taxpayers for the conversion of earned income into capital gain. Some reduction in this incentive was achieved by the tax reform act of 1969, which provided for an increase in the capital gains tax liability from 25% to 35% when income from capital gains exceeds \$50,000 in a tax year. This rate increase has been relatively small compared to the reward that could be achieved by realizing income in the form of capital gain, never to be taxed at more than 35%, while income from wages and salaries could be taxed at rates up to 50%.

As a consequence, an incentive condition has been created for wealthy investors or large firms to buy land on credit, and farm it while holding it in anticipation both of income from annual operation and from ultimate liquidation, through the differential savings made possible by the capital gains tax structure.

The development of corporation and large scale farming in the last 20 years has been heavily influenced by these trends. They introduced an element of institutional bias into a structure of cost and returns based on conventional farm operating practices that has greatly accelerated the trend toward larger farms. To put the matter in other terms, the farm size structure that we have today is in part a consequence of expanding technology, and of economies of size resulting from the rising cost of labor relative to the cost of capital. But this fails to tell the whole story. A major part of the reason for the continuing expansion of farm size is our institutional structure, particularly our tax system and the past twenty years of farm price support programs.

The farm price support program has been changed but the tax inequity remains. We tax income from property at never more than 35% when realized in the form of capital gain. We put a penalty tax on income from wages and salaries that rises above the 25% marginal rate when income goes above \$12,000 for a married tax payer filing a joint return. It rises above the 35% marginal rate when family income goes above \$24,000. Put in other terms, for family taxable incomes above \$12,000 our tax system gives an increasing reward to income from property over income from labor. This has insured that the operation of the land market will transfer real property over time from the hands of those with low incomes to the hands of those with high incomes. This trend is clearly underway in American agriculture today.

Another dimension of the problem is even more puzzling. It has been a major article of rural faith in the past that the disappearance of family farmers could be traced to low farm prices and lack of ability to command a reward in the market place that was commensurate with contributions to national welfare. We have recently had farm prices at or above parity levels in almost all farm commodities. It remains to be seen whether this dramatic shift in farm price levels will be a benefit or a disaster for family farmers. As noted above, one of the inhibiting factors that has historically prevented large investors from acquiring farm lands has been the combination of high market and weather risks. A major reason for the durability of a family farm

structure is that it could survive catastrophe. It remains to be seen whether or not it can survive prosperity. Under our existing institutional structure, the prospects are that high and stable farm prices will work to the disadvantage of family farmers by attracting an additional influx of non-farm capital that in the past was scared away from farming by high risk.

Apart from incentives for farm size expansion based on our financial and institutional structure, what are the incentives for continued expansion of the scale of farm businesses that are determined by technological and production considerations in agriculture? In answering this question it is important to recognize that we have been led astray by some of the language used in discussing this topic in the past. There is a rhetorical tradition in the United States that leads us to characterize large scale farms as "factories in the field". Much of the recent popular literature discussing trends in United States agriculture has included forecasts and sometimes artists' drawings showing the farm of the future in a version that has been derived from an idealized model of a factory. This imagery is doubly misleading. One major advantage of a factory system is that it permits economies of scale in the movement of raw material through successive processing stages. The other major economic argument in favor of a large factory is that it permits economies of scale in the supervision of labor. For some types of agriculture these two controlling economies can be achieved in large factory-type installations. The outstanding examples relate to vegetable crops and poultry and beefcattle feeding enterprises. Here it has been possible to bring together raw materials in a relatively confined space and establish production systems that utilize biological processes so designed that they resemble a production line structure in a conventional factory. In the language of business economics a "batch operation" has been converted into a "flow operation". To the extent that it will be possible to convert other types of agricultural activity from batch or seasonal enterprises to continuous or flow operations, we can expect a continuation of economic and technological pressures for the enlargement of farm sizes.

The reverse of this proposition must also be examined critically. To the extent that it is not possible to assemble agricultural raw materials at one location and organize them in such a way that they meet the test of a flow process, we can expect substantial diseconomies of scale to be associated with large scale farm enterprises. This is still the case in those types of farm production processes that are based on the conversion of solar energy through plant life. As long as chlorophyll photosynthesis remains the cheapest available means of solar energy conversion, it will be profitable to distribute our crop growing activities over geographic space. In this circumstance, it will be difficult to satisfy the twin conditions necessary for factory systems to prevail, namely economies of size in transport and in labor supervision.

I do not rule out the possibility that we may see a continuing development in automation that will permit field crop enterprises to be converted from batch processes to flow processes. This is achieved, for example, in large scale hothouse operations where temperature, humidity and water supply can be subjected to exact controls. For premium priced fruits, flowers and vegetable crops this possibility is capable of further expansion. Some new technology makes it even probable that certain classes of field crops may be grown under environmentally controlled conditions in the future. At the present time, however, these prospects do not seem tangible for field crop production on the scale necessary to supply us with basic grain and forage inputs. If this is a correct appraisal, then one consequence is that the trend toward large scale farm enterprises for field crop production does not appear to be dictated by technological considerations. If this trend continues, it will almost certainly be due to institutional reasons, particularly those relating to price, credit, and tax policy.

Another dimension must be considered before this discussion can be regarded as balanced. The social structure of farming is a prominent part of the total picture. Throughout our history we have had a dispersed pattern of agricultural settlement, with family farmsteads dotting the landscape. With few exceptions we have never known the type of village-based agriculture that predominates in so many parts of the world. This era of dispersed settlement may well be coming to an end. It is ironic that the region of the country, which in popular mythology has been regarded as most rigorously independent, namely the Great Plains, is the region in which we may first see the emergence of something akin to the village agriculture of Europe or Asia.

The isolation involved in scattered farmsteads and ranches in the Great Plains is now reaching proportions that render it pathologic in a cultural sense. As a consequence, much of the Great Plains is being depopulated in two dimensions. Population is declining over large areas, and those who remain are clustering in villages and small cities. In the European version of this phenomenon, it has been customary to point out that the one-family farm is no longer a viable social institution if the family values its leisure time at opportunity cost rates of return. Young people, and particularly farm wives, are not satisfied to be chained to livestock enterprises in a manner that was accepted by their parents. As a result the agricultural price policies and planning systems of several European countries, especially Sweden and the Netherlands, have established a "two family farm" as the modal enterprise which their planning and price policies seek to support. The main reason for setting the norm at two families was not technological but social. In that way families could have some relief from the demanding work routine required by intensive farming.

On the basis of present trends, it is unlikely that a two-family farm model will prosper in the United States. Instead, the solution that seems to be emerging is a form of village agriculture in which the social defects of isolated one-family farms are being resolved by regrouping farm families in urban places. The farms and ranches that survive this economic and social change may remain in family hands but they will not resemble traditional family farms, in that they may be devoid of rural residences. It is perhaps no accident that this physical concentration of rural residences is taking place in areas where the social cost of distance generated traditions of fierce independence in a past generation, and is associated today with the most pronounced pattern of clustering now visible in American agriculture.

We can now refer back to the introductory remarks concerning the problems faced by American farmers in adjusting to their new status as a minority group. This shift in status involves two major dimensions. The most obvious one is the reduced ability to muster political strength in legislative processes. This is well documented and will not be explored further in this discussion. A second dimension is less well understood but is perhaps more significant in the long run. At the same time that farmers have been declining in absolute numbers and as a percentage of the electorate, an internal shift has taken place in the power structure within agriculture. The political decline has been associated with an economic concentration. From 1949 to 1969, farms with gross receipts from farm sales of \$20,000 and over increased their share of total farm marketings from 31.5% to 73.5%. In that same time period the index of prices received by farmers increased by approximately 10%. Even after correction for price level changes, the share of farm marketings accounted for by farms with sales of over \$20,000 in 1949 prices had more than doubled in 20 years.<sup>6</sup>

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<sup>6</sup>These data and the statistics that follow are from U.S.D.A., Agri-cultural Statistics, 1972, and earlier years; Farm Income Situation, FIS-222, July 1973, pp. 69-71.

An even more revealing indication of the degree of farm size expansion is provided if we compare the economic size of farms required to produce half of the total value of farm output in 1949 and 1969. Slightly over 50% of total receipts from farm marketings was received by farms with cash sales over \$10,000 in 1949; by 1969 farms with gross sales of \$40,000 and over accounted for just under half of total receipts from farm marketings. In 1972, farms with sales of over \$20,000 per farm were 24.4% of the number of farms and accounted for 81.2% of the total cash receipts from farming. We can break this upper farm size class down into two groups. Over the past ten years, there has been virtually no change in the proportion of total cash receipts received by farms with gross sales of \$20,000 to \$39,999. They accounted for 19.7% of total cash receipts from farming in 1963 and 20.0% in 1972. All of the increase in the proportion of receipts from farm marketings by farms with sales over \$20,000 has been accounted for by farms with gross sales of \$40,000 and over. In that same ten years they increased their share of total receipts from farm marketings from 40.2% in 1963 to 61.2% in 1972.<sup>7</sup>

These data make it clear that the voting strength in agriculture is at the low end of the income scale while the economic strength is at the upper end. Although it is too soon to draw conclusions from trends of only a decade, it is at least plausible to suggest that we are witnessing the development of a dual economic structure in American agriculture. This is comprised of a relatively numerous sector of small to medium sized family farms, possessing some voting strength but little economic muscle. This sector accounts for most of the farm population but only a minor fraction of the total value of farm output. The second sector is numerically small but economically powerful, and thus unable to influence events through ordinary political processes. Lacking votes and possessing economic power, it finds it increasingly tempting to achieve its goals through the manipulation of the power structure.

We have already seen the first clear cut evidence of the development of this trend in the "chicken war" that broke out in the early 1960's. This concerned a small number of large poultry producing firms that saw a lucrative overseas market seriously threatened. They were able to mobilize the weapons of economic warfare in the United States out of all proportion to their numbers or their significance in total economic activity. Additional evidence is provided by the recent attempt of organized dairy farmers to use political campaign contributions to influence milk price decisions. In a past generation, the political influence of dairy farmers would have been exercised through the polls. It seems plausible to expect that the next manifestation of this use of economic power instead of voting strength to resolve agricultural problems will occur in the beef sector if large scale beef feedlots are threatened by price collapses and surplus production.

An opening theme of this paper can now be restated. To an important degree, the critical resource in United States agriculture is no longer land but minerals. We are today in a phase in the use of mineral resources that invites comparison with hunting, gathering and fishing stages of development, before the invention of agriculture.

With one great difference: In the hunting and gathering phase human beings were securing a food supply that was replenished primarily by the direct use of solar energy, through chlorophyll photosynthesis. When man accomplished the transition to agriculture he did so by a more efficient method of ordering and organizing these solar energy processes. The transition from manpower-agriculture to animal-power agriculture represented a still more efficient organization of these same energy sources.

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<sup>7</sup> U.S.D.A., Farm Income Situation, FIS-222, July 1973, pp. 69-71.

The most recent transition from animal agriculture to mechanized agriculture represents a major change in the mode of energy conversion. Until well into the twentieth century almost all of our food supply came from flow resources derived directly from solar energy. Today a large and rapidly increasing share of our food supply comes from stock resources, primarily petroleum, coal and minerals. It is recognition that this stock is limited that generates the acute environmental concern that has exploded in the last decade.

But in what sense is it limited? The finite nature of the world's stock of resources can only be defined in terms of man's knowledge of how to use these resources. This knowledge gives them value, generates prices, and creates a structure of prices that indicates relative values. We have picked the "low-hanging fruit" first. We use the cheapest sources of power, until they begin to rise in price. Then we set to work to develop new ones.

Our experience with a heavy reliance on fossil fuels is encompassed by the life-span of a man. It is not surprising that we should be having problems of accommodation. The wealth and abundance that has resulted from our discovery of ways to use stock resources is in fundamental conflict with the social systems and religious beliefs we have inherited from our history of resource scarcity.

How can this accommodation be accomplished?

The simplistic solution is a "return to nature." It is hard to believe that sensitive, humane and intelligent people can find this attractive, but some do. In its use of space, it is the ultimate form of conspicuous consumption in our society. Quite simply, we do not have land enough at a hoe-agriculture level of technology to support more than a tiny fraction of the world's population. Those who seriously propose this solution are advocating a form of genocide.

A more realistic solution is composed of two parts:

- 1.) A search for greater economy in existing patterns of use of stock resources. Here there is tremendous scope for improvement, through waste recycling, mass transit, improved space heating and cooling, longer-lived products, and a list of economizing measures that is almost endless.
- 2.) A systematic shift to flow sources of solar energy. And this has begun. Plant breeders are undertaking experiments to improve the biological fixation of nitrogen. Forest products are replacing steel, tin, and aluminum in packaging. But much remains to be done. Greatly expanded research is needed in solar space heating, greater use of winds and tides, multiple cropping under environmentally controlled conditions, zoning to promote land use in areas of maximum photosynthesis potential, biological methods of pest and disease control, and many other similar uses of flow and renewable resources.

A still bolder solution is to expand research into the possibilities of "farming minerals." We now stand at the threshold of the use of solar energy and existing stock resources to reproduce and multiply sources of energy that are substitutes for our present fossil fuels. This is the promise that the nuclear breeder reactor holds out. There are enormous problems and great risks in this endeavor. But this possibility is no longer in the realm of science fiction.

Agriculture in the United States has had an enviable record of invention, innovation, and adaptation, in dimensions both large and small. We have achieved a tremendous multiplier effect from our investment in agricultural

research and development. One reason is that we have had many small firms that experiment at the firm level with the adaptation of new technology.

If there are only big firms, then the research and development spectrum is broken. The main reason why this is true is that responsibility for failure in hierarchial organizations is focused on the decision makers at the top. This holds for firms in private industry or agencies in government. To achieve rapid diffusion of social change or new technology the cost of failure must be diffused. This is the service performed by a mixed structure of small, medium and large firms, or of local, state and federal units of government.

An alternative approach is to concentrate research and development efforts in large public agencies. This has been the approach taken in the Soviet Union, for example. Basic research is expanded and increases in planned investment can accelerate the output of new technology. But it is not applied, or is applied very slowly. The multiplier effect of centralized expenditures on research and development is reduced, under hierarchial management systems.

A concentration of economic power in United States agriculture will find its ultimate test in the capacity of the system to promote change. The history of large scale firms in the past is that they resist change. This is true across cultural and national boundaries, and in private enterprise and socialized economic systems. The revolution under way today in United States agriculture is a reminder that the shadow of impending structural change is almost never recognized until the change is upon us. There is real danger that a reasoned examination of the present trend toward economic concentration will be rendered impossible by those who identify opponents of bigness with sentimental proponents of a return to the family farm. To silence this discussion at this stage in our history would be a monumental disservice to United States agriculture.

It is for this reason that we should be grateful to the University of Missouri and to the Perry Foundation for this opportunity to meet and discuss these vital issues.

LESSONS OF HISTORY--PAST, PRESENT, AND FUTURE  
ABOUT THE EARTH'S RESOURCES

Arnold E. Paulson  
Executive Director, National Organization  
of Raw Materials

When I review the history of economics I come to one conclusion. Economics has been the science of failure. Why? Because all we've had since the beginning of our national history is periods of boom and bust. A boom and a bust. Today we've got the highest interest rates since the days of the Civil War. The liquidity crisis of our commercial banks and our industry is the worst that it has been in the history of our nation. The loan and deposit ratio of all our banks today is at 75%, the highest since 1920. We can't seem to know what's causing it. We have all sorts of theories and that's all we're operating on -- economic theories.\*

If economics were an exact science like the laws of physics the economists of today would be able to solve this monetary problem that faces this country. But the crisis continues to grow in spite of all our theories. So the one challenge that I want to make to America today is that maybe the time has come when we have to sit down and review and revalue our priorities. Let's go back and see where we've been. Let's discover where we're at, and where we're headed, before it's too late.

For there's only one solution to the coming devaluation. That's to prevent it from happening. And that's the only reason that I have any interest in agriculture. I'm not interested in farmers. I'm interested in America. I'm interested in this private enterprise system that we have that's provided the greatest incentive for people in all history of civilization and has provided the greatest standard of living that the people have ever known. I want it to continue.

One of the reasons that we have this crisis today is that the economic formulas are faulty. They're not complete. Something's missing. We've discover-

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\*I can testify to one way to beat a bust: it's the way I beat the crash of 1929. I did it by going broke in 1928. Some people think that's a joke, but it was no joke to me.

People who are worrying about this coming devaluation don't see it as a joke either.

We probably don't hear too much about it but I've had the opportunity the last couple of years to meet, acquaint myself, and counsel some of the wealthiest people in the United States. Some of the real wealthy oil people and big bankers. You may not be frightened, but I'll tell you something, they're frightened stiff. Because they know and they understand the monetary crisis that exists in the United States today and they don't know what to do to protect themselves. One other thing they don't understand is what brought this crisis about, what caused it. And there are no solutions in the making as to how we can prevent it. President Nixon has been working for five years now trying to stop inflation. From 1969 to the present time, five years, the harder he has worked trying to check inflation, the worse it has become.

ed the propensity to spend, the propensity to lend and all the other propensities except one. The propensity for profit. And it's impossible to operate any economic system whether it's Communism, Socialism, Fascism, or our capitalistic system -- it is impossible to operate it without capital profit. The only difference in the United States is here we have people's capitalism, where the people make the capital investment and they have to have the profit, whereas in Russia it's state capitalism and the state has to have the profit in order to invest in new plants, machinery and equipment -- to provide jobs for the expanding labor force and for economic growth. It doesn't make any difference what system we have, "we have to have a profit." And if we don't we continue to monetize debt like we've been doing for the past 20 years in the United States.

I have to laugh every time I read the newspapers about the projections for economic growth. We're going to have about 6% next year, they say. We don't even understand the meaning of economic growth. We don't know what it means. Because all we're going to have next year is the same as we had last year and the 10 or 15 years preceding. We're going to have another 150 billion dollars of debt expansion with no growth. That's what it's going to be, because when we evaluate the economic records of this country, we've reached the point now where it is necessary for the entire nation to reborrow every single dollar we pay on all forms of debt each year. We have to borrow all of it back -- plus another \$150 billion or more to avoid a recession. Now that's a pretty tough one to absorb. But get hold of the United States government's statistical abstract and the economic report of the President of the United States and check it out for yourself.

Another thing that confuses the American people is profits. All we talk about is gross profits and gross savings. What does it mean? It all includes payment on debt. In other words if we pay a hundred billion dollars a year on our debt, mortgage payments on homes and factories and plants, that's savings, "gross savings." But we can't spend it, because we've already spent it. We can't use it for capital expansion unless we remortgage and reborrow, to spend, to buy. This is the situation that we're in today.

We've also been living under the theory that agriculture isn't entitled to a return on its investment. We can't give agriculture, the largest industry in the entire world, the type of profit it should have and the return on its investment because the costs are too high. It was just a few years ago that we attended an agricultural seminar something like this down in Fort Worth, Texas with the economists and the Vice President from the Kansas City Federal Reserve was there and after he completed his talk we started to discuss agriculture with him. We've discussed everything this morning except this one thing. We've talked about the different types of agriculture that may reign tomorrow. Will it be the family farm? Will it be vertical integration? Will it be corporate? But you know we haven't even mentioned the feudal system, have we? And this is what it's going to be. A feudal system with the government owning and controlling all of the land and we'll end up with tenant farmers, because unless agriculture can have a profit it cannot survive. And it doesn't make any difference whether it ends up in the hands of corporations, vertically integrated groups of people, or the family type farm, it still must have a profit or it can't survive.

We've talked about the efficiency in agriculture this morning. About the efficiency of the big operators. We've talked about subsidy payments and how they were allocated. We've talked about capital gains in agriculture. Well now if we want to discover and analyze the efficiency in agriculture let's wipe out all of the subsidies that went to the big efficient operators; let's wipe out their capital gains advantages and compare it to the family type farm

and then see how efficient they are. They couldn't survive; they'd be bankrupt. And the only one who'd be making it is that family farmer that we talked about who's got a part time job in town, to supplement his income.

I believe it was Dryden who said, "Some truth there was but brewed and dashed with lies, to please the fools and puzzle all the wise." Now we've got so many theories and ideologies today, I believe we've got more of them than there are religions in India, and the thing that we the American people have got to do, regardless of which walk of life we travel -- whether we're the banker, the businessman, the farmer, the educator or the professional man -- it's time that we adopt the real philosophy of life and discover the truth. What is truth? What are the facts about agriculture? Can we expect the largest industry in the entire world that has a capital investment of 60% of all the other industries in the United States to operate without a return on its investment? Is this fair? If it's fair, is it profitable? Can the economy afford it? Let's find out before it's too late.

Now we people are the stockholders of the greatest corporation the world has ever known. We're the stockholders of the United States Government; we're the stockholders of the American enterprise system. And the Federal Government compels all of us at the end of each year to prepare a profit and loss statement and a balance sheet on our individual business and our individual income. When we do this it enables us to know where we've been, where we're at, and where we're headed as a business. It tells us whether we made a profit, whether we lost money or whether we're headed for bankruptcy. And here we are, probably the most intellectual people in the world, and never once in the history of this country have we the stockholders ever asked the United States Government for a profit and loss statement and a balance sheet on our corporation. What is the financial condition of the United States? Does anybody in this auditorium know? If we don't know, how can we discuss problems unless we know all of the facts. We can't -- and as Dr. Leon Keyserling once said, "We are flying blind, we don't know where we are going."

For two years 1957-1958, the Joint Economic Committee of the Congress of the United States conducted hearings on the financial condition of the United States. All of the experts, present and past, were invited to testify. Read and analyze the nine volumes of testimony presented at these hearings and arrive at your own conclusion. The ball game was practically over in 1958.

As a result of those hearings, Congress soon declared gold barbaric, no longer of value. WHY WAS GOLD SUDDENLY BARBARIC? The reason was we didn't have any left. The reason was that in 1958 we were already internationally bankrupt; we had no choice. Don't take my word for it. Review the reports and the hearings yourself. What did President Nixon do on August 15, 1971 when he enacted Phase I? Buried deep in his 10 point program was the key to the whole thing and it went over the heads of all the people in this country. It was buried intentionally. He placed an embargo on gold. This is what it was all about: One of his own economists, Pierre Renfret, publicly admitted what it was all about when he addressed the Toronto Investors Club, in Toronto, Canada. He said if the United States Government had been a corporation like all other corporations it would have amounted to a Chapter 10 bankruptcy.

Nixon actually told the rest of the world that the United States could no longer meet its international monetary obligations as spelled out in the Bretton Woods Agreement. Only he said it in more refined terms so that the people didn't understand it. And so all we've been trying to do is shore up the dollar for the international bankers so that they don't lose their shirts on the exchange value of currency.

We heard talk this morning about how agriculture can not expect a return on its investment. Yet the printing presses are pumping out two million dollars of currency every hour and we're monetizing that at 10% interest. This is what they're charging. They are creating this money out of nothing. Printing press money. The government prints the money and the Federal Reserve buys it for the cost of printing and it's being issued now at 10 percent interest. These DEBT dollars are being monetized. Yet we are trying to say to those who produce the real wealth of this country, that we can't afford to give them a return on their investment because it costs too much.

I say it's time that we redraw our national priorities and discover where and what went wrong. I prepare a perpetual balance sheet and operating loss statement on the economy of the United States on the same basis as every business and industry and corporation has to do at the end of each year. It's very simple to do, because all we have to do is consolidate all of the segments of the United States into one giant business. We break it down into six different groups. We take the corporations, the small business and professional people, rental income, agriculture, wages, and interest. Those six segments contain every segment of American life. Every dollar of income is represented. My predecessor started compiling this back in 1936. And so now each year we can see the changes and we can make projections on what to expect in the coming years. Now what has happened to the profit structure of the American enterprise system over the past 20 years? Well, if we don't know, we don't know, do we? Because what we don't know, we don't know. But we'd better find out.

We read in the newspapers about the gigantic increase in profits of corporations. Increase from what? Increase from nothing? The same thing applies to the small businessman. Well I'm interested in agriculture, but not for the same reasons as our Land Grant Colleges, or the farm organizations, or the farmers themselves. I'm interested in agriculture because of the impact that it has on the lives of everybody throughout the United States and the rest of the world.

What effect does agriculture have on the income and the profits and the losses of our entire enterprise system? What effect does agricultural income have on the small businessman? What effect does it have on the ability of business and industry to meet the wage, the interest, and the tax cost of operating the economic system?

This is a tough one because there aren't too many people over the past 40 or 50 years that have even given it a thought. And so when we evaluate the economy of the United States and agriculture and try to correlate we have to pit one against the other. After all, economics is nothing more than the production and the distribution of goods and services. Right? What else is there? If we remove the production and distribution of goods and services from the face of the earth what would remain? Nothing but the spiritual, the mystic. But you see what's happened now over the past 20 years -- it started some 40 years ago -- we've made economics the flow of money. The flow of debt, credit, and interest. And the production and the distribution of goods and services and their value have been almost forgotten.

All we can think of is the efficiency of production. Yet, the maximum of efficiency would be actually producing everything for nothing. When we do that, then nobody would have any income with which to buy.

Now, fully as important for any nation to have the ability to produce goods and services is its ability to create or generate the earned income to buy and exchange the production. As an example, if the United States produces \$1 trillion worth of goods and services this year, then it is equally as important that the nation create or generate \$1 trillion worth of earned income in order to buy and exchange the production.

If we don't create the earned income from production times price, we lose the markets because the people don't have the income to buy back what they are capable of producing, unless of course, we make credit available -- and substitute DEBT EXPANSION in lieu of earned income so people can borrow the money and go into debt to buy the production to support somebody else's job.

We have learned about the propensity to spend and lend, but we haven't discovered the propensity of profits necessary to repay the debts. If we review the historic records of this country, we will discover that this is what has been going on for the past twenty years or more -- and that is what inflation is all about. Inflation is nothing more than a scheme to increase the value of the collateral that we use to borrow more money and go deeper into debt. And this is exactly what we've been doing in agriculture. We've made agriculture so efficient that it can't finance itself and so every year we inflate the value of the land so the farmers can go back to the bank and borrow more money and go deeper into debt on the same acres.

This is what Mr. Rossiter was explaining, from 1937 to 1972. Nobody can operate without profit. The best definition that I've ever heard in all my life of economics was given by a black minister who was sitting in an economics seminar one time and nobody understood what they were talking about, so he got up and tried to explain to the people that what they're trying to say is this: "if your outgo exceeds your income, your upkeep will be your downfall". Now this is true with the individual, with the family, with the community, with every state and every nation. We must have income equal to the cost of production so that we can buy and exchange it with one another, and if not, we'll eventually monetize so much debt that we bankrupt the system.

Let's take one look at inflation and then we're going to look at the cause. I wonder how many people realize that the interest that our corporations are paying on debt today contributes more to inflation than all of the profits that every corporation in the United States earns including the profits of all of our banks, insurance companies and financial institutions. The interest they pay on debt contributes more to inflation than all of their profits combined. In 1971 the total corporate profits after taxes was 44.6 billion dollars. And just using simple 5% interest on their debt, their interest was 2 billion dollars more than all of their profits combined.

How many of you people have ever heard housewives protest about the high cost of interest? Let's take a look at agriculture and all of our raw material production. We now have a gross public and private debt of 24 hundred billion dollars. It's increased about 17 hundred billion dollars in the last 22-23 years and we call this prosperity. Simple 5% interest on 25 hundred billion dollars of debt is 120 billion dollars of interest per year. Now this compounds. I'm using 5% simple interest. The total gross income for all of the raw material production in the United States last year, or 1971 -- that's all of our agriculture, food, fiber, forestry, fishing, all of the minerals and all of the oil and chemicals -- was 96 billion dollars. And only a fraction of this was food. And yet the housewives of America protest because farm prices are too high, and they paid 120 billion dollars in interest. You see our priorities are all mixed up. And who is going to tell this to the American housewife if the farm people and the people who are associated in agriculture won't tell them? This is our story.

We brought this up this morning and I agree with it, it's a danger to talk about how efficient agriculture is. One farmer today could feed 48 to 50 other people. This is not true and it never has been true. We've got the greatest farmers in the world, but they're not that good. One farmer today, with the help of 35 other people in town, can feed 48 people. All we've done in agriculture is, we've moved all the labor off the farm and into the cities.

Into the plants and the factories. Into the agribusiness. Into the transportation, education, research centers, and every penny of income for every agribusiness, every agricultural manufacturing plant, International Harvester, Allis Chalmers, John Deere, right on down the line, every dollar they've got invested in their buildings, machinery, equipment, technology; every dollar of wages they pay, every penny of interest; all of the profits that they earn is all part of the farm labor cost. Why? We've just moved them from the farm into town. Where do they recover their costs? The only people who buy their product is the farmer.

If the farmer doesn't have a return on his investment and receive his cost of production plus a reasonable profit for his risk and work, who's going to support the giant agri-industries that we're all working for? If we're going to have a solvent agri-cultural industry in town we've got to have a solvent agricultural industry in the country. They both have to support each other.

It's time that we start to analyze many of these things and discover what really makes the economy of this country tick. I'd like to get into the imports and the free trade -- the reciprocal trade agreement. The reciprocal trade agreement passed in 1934 was passed as a peace program, not only as an agricultural program. And up until then, we had tariffs that protected scab labor and cheap foreign imports from coming into the United States. We didn't have any threats of war. We didn't have our military scattered all over the world to protect the investments of the internationalists who were exploiting the rest of the world. So we adopted the reciprocal trade agreement for peace. The idea was to get rid of our farm surpluses and we would promote world peace with food, and all we have had since then is war. Hot war and cold war and we have spent hundreds of billions of dollars to try and preserve the peace and today we've got our young men scattered in 45 countries of the world to protect the exploitation of the internationalists who want raw materials for nothing, or as cheap as they can get them.

I've been visiting with many of the independent oil people, some of the biggest in the world, and they tell me that the problems of the independent oil people are identical to the problems of the independent farmer. The energy crisis didn't happen two-three weeks ago or a year ago. We've seen this coming for several years but we would not pay an honest price to the independents to dig the wells and to produce the oil. We wanted it for as little as possible. If you'll pardon the expression, we got caught with our pants down, knowing what was coming. And now we're over a barrel. We've made many mistakes because of our failure to open our eyes and to evaluate what's been going on.

The reason the economy of the United States of America is in the worst monetary crisis in its history is because of our treatment to agriculture. It's the cause of the problems in America today, or almost all of them. Because we as a people have forgotten where new wealth comes from. We've forgotten what it's worth. The only thing we've been able to do as citizens of this country is to think about business profits. That's all we know, and it's all we understand. And it's absolutely impossible to have new net business profits without first having economic profits. And yet when we go to Washington and counsel with Congressmen and Senators and travel across the country to the universities and we start talking about economic profits they don't understand what we're talking about.

What is an economic profit? What's the difference between a business profit and an economic profit? We know that business profits can be derived from thousands of different sources. One of the best sources that I know of is that you and I could go out and rob a bank tomorrow. And if we didn't get caught we'd make a healthy profit. And this would be a business profit. But

unfortunately there wouldn't be any profit for the system because our profit was derived from somebody else's loss. And whether we believe it or not this is the way that the business profits have been achieved for almost 20 years. We could do the same by robbing the church collection plate. If we didn't get caught we'd make a profit.

How is it possible for everybody, every group, every segment, within the economy of this country to make a profit without anybody having to lose? Is it possible? Well it better be possible, or there is no solution to the future.

All we've been doing is playing a poker economy. I want to use this one simple illustration. If we were going to nail all the doors of this auditorium shut right now and convert this room into a gambling casino, we would play all of the different types of gambling, chuck-a-luck and roulette and poker and everything else. But before the game starts we would have each and everyone of you people march by up in front. You would empty your pockets and declare exactly the amount of money that you have on you before the game starts. This would be our total money supply. Then the games start. Everytime the wheels of fortune spin and the money changes hands we'd tabulate it, and this would be our gross volume of business (GNP). And the faster it turns over would be the velocity turnover of the money. And we'd play here all day and all night and all next week and we can do millions of dollars of business and we can have a whopping gross sales volume and profit. And then before we leave and go home you'd all march back past the table and declare the amount of money that you have. There could be millions of dollars of profits earned but when we added up the amount of money at the end of the game there wouldn't be one penny more than when the game started. Where did the profits come from? They all came from somebody else's loss.

This is the way we've been operating this economy. Why? Because there's been nothing new added to the system except added debt. Where can we get something for nothing? Everybody has been trying to get it. An economic profit has to come from some source that never has to be repaid. An economic profit is the profit that we add on top of everything else that we had before, that was nonexistent before. Where does it come from? Well, the only thing non-existent that comes into being that wasn't here last year is the raw materials that we extract from nature. From the land, the sea, and the air. In the form of food and fiber, minerals, fossil fuel, etc.

What else has been added? This is the new wealth that we produce and add to the stockpile of everything that we had before. But unfortunately if we take the 5½ to 6 billion bushels of corn that we produced this year and add it to the system we had the corn but how much monetary value did we add to the system if corn didn't have a price, if it were free? If corn is a dollar a bushel we added 6 billion dollars of economic profit to the system. And so the only economic profit that we earn each year is the price that we pay for all of the raw materials that have been brought into being. And outside of that there is none and nobody can prove it, except for one thing: the interest profits that we make from the debt expansion. And so we are now operating negatively. At simple 5% interest it takes 120 billion dollars a year to pay the interest on the gross public and private debt and we only create 96 billion dollars of new wealth or economic profit and this is the reason we have to re-borrow the money to pay the interest and 150 billion dollars of capital debt expansion on top of it. Every year we have to borrow more and more. Why? Because we have to pay the additional interest cost on the additional 150 billion we had to borrow over last year.

This doesn't only involve farmers. This involves every single one of us, business, industry. It affects the faculties of our schools and colleges and universities because this is your life. And if we don't stabilize this thing

and turn this thing around and develop a solvent economic system, you're going to lose everything just like everybody else. There'll be no escape. And so I look at agriculture not as a farm problem but as a universal problem that affects all of us. And agriculture has got to have an honest return on its cost of production, its investment, risk, and work, in spite of farmers. In spite of them and regardless of who controls it, because it's the only way that this nation will create the income and the capital profits, the new wealth, to finance the system. Agriculture has been receiving approximately 50% of the income that it should have rightfully had for almost 20 years, until the last 12 to 18 months. How has this affected the income of the corporations, the small businessman and the rest of them? Well, we've tabulated it. And their profits are down in almost directly the same ratio as agriculture. The corporations have only been earning about 60% of the income and the profits that they should have to operate a solvent corporate structure. Earning profits from each other's debt! The independent businessmen and professional people have been earning about 65% of the income that they should have. The amazing thing is that even the ratios that Carl Wilken worked out way back in '36, and he went all the way back into the 1800's to analyze this, that up until about 1962, 70% of the total monetary value of all of the raw material production used and consumed in this country came from our farms in the form of farm products. The other 30% was all of the other minerals, the oil, fossil fuels, etc.

A year or so ago (1971), in spite of low farm prices agriculture still represented about 65 percent of all the production and consumption in dollar value of total raw material production. Why was it so close if farm prices were so low? Because the value -- the price -- of oil and other raw materials was also underpriced in almost exact ratio to farm prices.

If farm prices alone had been underpriced, then the spread or ratio would have been greater. And so the challenge that I want to extend to everybody today, and I'm not extending it in the form of criticism or ridicule, I'm extending it as a challenge -- let's discover the truth, let's find out how important agricultural income is to you regardless of which walk of life you travel. Because if we don't create the economic profits to operate a sound economic system we're going to see the devaluation that many of the people are talking about today. And today we've got over 10 times the debt involved that we had in the '30's.

This means that we could experience something that could be at least 10 times as serious as anything that we've ever experienced before. And this is why agriculture is important to me. Because of the income that agriculture produces to help finance and stabilize the entire economy. Agriculture when it has the right percentage of income creates the jobs and the plants and the factories in the cities.

My time is up but I want to just explain in one minute what's happened this past year. It's unbelievable. The states can't figure out why there's been such a tremendous increase in state sales tax revenue as we've experienced this year. The state of Illinois as of July or August had an 85 million dollar increase. The country banks can't figure out why their bank deposits have increased at the ratio they've increased, some of them up to 25% instead of the 2½% growth that existed before. The only thing that's changed is agriculture. Farm prices. The farmers finally got a little of the prosperity that they deserve and they came into town and they started to pay off their bills. When they paid the bills there was sales tax and they started to order new machinery and equipment and they paid sales tax. They couldn't buy the machinery and the equipment and the cars and the trucks so they had to put some of the money in the bank until these goods are available and as a result bank deposits increased. It increased so alarmingly that we've got country

bankers back home that are worried sick. They said corn should never be over 80¢ a bushel, "we don't know what to do with the money." The state of Illinois, it is reported, is talking about cutting its state sales tax for the very same reason. Nebraska the same. This is what farm prosperity does for the nation. This nation can have perpetual prosperity and on a sound solvent economic basis if we will but open our eyes and discover the basic facts that All New Wealth Comes from Nature in the form of raw material production -- and that this new wealth is worth no more in monetary terms than the price we as a nation are willing to pay ourselves for it.

We do have a choice. We can continue to underpay ourselves as a nation for all of our new wealth production and continue to monetize debt until the system grinds into a total collapse, OR,

We can start immediately to MONETIZE REAL WEALTH and create the necessary annual earned income necessary to finance a sound, stable, solvent economic system for our nation.

I am very sorry, my time is up. I wish I could spend the entire afternoon discussing this topic with you. It's been a pleasure to be here.

PROSPECTIVE SUPPLY, DEMAND, AND PRICING SITUATION  
IN U. S. AGRICULTURE

Harold F. Breimyer  
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The title of this talk is as familiar as it is formidable. Just about everyone is wondering what the supply/demand situation for U. S. farm products, short and long term, may be. Just about everyone admits that much uncertainty surrounds the issue.

"Everyone" means just that; it is not confined, chauvinistically, to citizens of the United States. To the world-scope of concern I can testify; and therein lies the only exceptional feature of my talk. The text that follows was drafted in a hotel room in Sao Paulo, Brazil during an interlude between sessions of an international meeting of agricultural economists. Speakers at the meeting showed a remarkable sensitivity to the production situation in our nation. They demonstrated, too, a remarkable willingness to express an opinion about it, however thin their knowledge.

But those persons quickly expanded the issue to the world as a whole. For the questions we in the U. S. ask about our supply-demand position are being duplicated in questions other peoples ask about the world situation. This is true even of the developing nations that have experienced the so-called Green Revolution and are now worrying about how green it really is.

The reason for commonality of interest is not hard to find. All food producing nations are subject to the same influences of variable weather, quixotic demand, and even uncertain resources. Furthermore, they are bound together in a network of trade that has tougher threads than we like to acknowledge.

The local Brazilian setting was favorable to contemplating the U.S., hemispheric, and even world food conditions. Brazil is not only the home of aromatic coffee and of Pelé, the world's best soccer player. It is also a country that possesses one of the world's few remaining areas of virgin productive land. We gringos saw some of it, on a trip west from Sao Paulo.

Though quick to comment, the world's leading economists assembled in Sao Paulo revealed a sharp division in their assessment of the overall food situation. One viewpoint nevertheless found itself at a tactical disadvantage. Those souls, whether from the U. S., Brazil, or Belgium, who purred reassurances that present shortages are strictly temporary and surpluses will soon reappear found themselves on the defensive. In the aggressors' role were persons holding the opposite opinion, namely, that we cannot expect the horn of plenty to be refilled soon, thereupon to spill over into both the well-fed and hungry areas of this Spaceship Earth.

A brief reflection on human psychology will help interpret diverse currents of opinion. For all their claims about how scientific they are, economists are subject to psychological influences. For example, some individuals at the Brazil meeting revealed apprehensions about the productivity of U. S. agriculture because their homelands are so vulnerable to any short-fall. This is true of representatives of Japan and several European countries

that have been buying our foodstuffs so regularly as to have built up a dependence on them. We could reprove their reading so much implied promise into Yankee trading, were it not that the U. S. has begged, promoted, and even subsidized their buying from us. It is not hard to understand why Japan, for example, feels vexed when we change overnight not only our sales pitch but our sales contracts.

The less affluent nations are equally apprehensive and annoyed. For almost 20 years the U. S. grandiloquently acted as food storer and dispenser for nations that always live on the edge of misery. No matter that our largess in our Food for Peace program was partly self-serving. We declared our charitable intentions and called them a part of our foreign policy. Our recent denial of a two-decades-long posture is visible to all. In response, the FAO has called again for a World Food Bank to replace the storage service that the U. S. provided until recently.

#### Wounded Pride

If some economists turn dismal because of their apprehensions, others are swayed into optimism by a subconscious need to protect their professional egos.

Economists have brazenly claimed some credit for the steady rise in agricultural productivity that for a century and a half has forestalled Malthus' dire forebodings. According to their self-image, economists have contributed expertise to the development and combining of the resources of production. Their calculations have extended from choosing an economical ration for pigs<sup>1</sup> to designing a national policy for conservation and use of land. These economists would like to think they are still helping to keep production rising.

Thus we have the interesting pairing wherein some economists of the world are pessimists out of fear they won't have enough to eat, and others optimists out of a need to see their egos validated.

#### Other Mixed Feelings

Lest I seem to take my fellow economists too much to task, let two other illustrations of mixed or biased feelings be offered.

Farmers, for example, have their own split personalities. Like everyone else they are not just economic men but have mixed aspirations. I am convinced that they take genuine satisfaction in producing wholesome food for people to eat. They like to see their pastures green and their corn ears crowded with kernels. At the same time they know about the law of demand. They have learned that superabundant production does not reward them as a class.

The confusions and paradoxes in the present inflationary situation do not escape farmers. My hunch is that most farmers, particularly crop farmers, like the prices of the past year and can dream of keeping them, but in sober moments they would willingly return to something closer to normal that is more dependable for the future.

One other group deserves mention. It is the officials of the party that at any time holds power. Political leaders simply must have an optimistic streak in them. It is necessary for heads of state to promise both produc-

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<sup>1</sup>A personal incident illustrates the need of agronomists and animal scientists for such help. As an undergraduate I enrolled in a course in feeds and feeding, where I was taught how to balance rations for maximum daily gain. When I drew on what I had learned in agricultural economics to apply cost and price data, showing that profit criteria would yield different solutions, the professor was astonished. He had not considered the point.

tivity and prosperity. They cannot do otherwise. Since the behavior is both biologically instinctive and strategically mandatory, there is no hint of reproval in these remarks. The only moral to be drawn is that a certain correction factor must be read into official pronouncements at a time such as this.

### The 1972-7? Episode

Against this background of world-wide apprehensions and the dilemma facing individual farmers, let us consider what we know and what we do not know about the supply-demand situation in U. S. agriculture in October 1973.

I think we know this much:

(1) We know that the basic or normal position in the world food balance, as viewed in its long historical sweep, is one of deficit, nor surplus. Only through heroic achievement is food production pushed steadily higher. Upon any lapse in effort or any string of natural disasters, production will level out or even slip backward. It is incorrect and even vainglorious to suppose that a continuous uptrend in production is the normal state of affairs.

(2) We know that the quantitative difference between too much and too little food is narrow. This statement refers to food as a whole. The ease of switching among foods when the total food supply is unchanged seriously misrepresents the consequences of even small changes in total food supply.

This rather simple axiom has been presented to many Missouri audiences by my colleague Clarence Klingner.

In technical language, it says that the aggregate demand function for food is extremely inelastic. The curve is very steep. This is particularly true in a high-income country such as the U. S. However, it is valid in all nations.

(3) Extending point (2) further, we know that in the short run consumers will divert sizable amounts of their income to food. They protest and complain and write letters to the editor of their newspaper and to their Congressman, but they spend the extra money. Manifestly, many lower income consumers are less able to fight with their dollars to get scarce food.

(4) We know that when a food shortage is world-wide, the wealthier nations behave just like wealthier consumers here at home. They use their dollars -- of which they have plenty just now! -- to outbid others for U. S. feedstuffs and foodstuffs. Our devaluation added further to their ability to buy the products of our farms, ranches, and orchards.

U. S. farm products obviously now command a strong position in world trade. Whether this is the unmixed blessing it is sometimes alleged to be is a different issue -- it is something we do not know for sure.

(5) In a different vein, we know something about the sources of past gains in the capacity of U. S. agriculture to provide food and fiber for our and other people. Physically, those gains have come largely from drawing on ever-increasing quantities of resources of industrial origin. Technically, they are attributable to scientific research and education, which first discovered how to use the new resources and then taught farmers the tricks of doing so. Institutionally, a system of proprietary landholding farming, which gave the operating farmer latitude in management and a measure of reward for his achievement, must be credited with contributing to our agricultural progress.

What "resources of industrial origin" have been so instrumental? Not those that save human labor, but those that (1) save horsepower and (2) make land more productive. The modern generation forgets how much land was freed for other uses when the tractor and petroleum fuel replaced horses. Of

resources that add to land's productiveness, chemical fertilizers stand far out in front. Pesticides and similar chemicals are a distant second.

(6) The sixth and last certainty is that the world has vast unmet needs for food for good nutrition. Only in irresponsible circles is the Green Revolution credited with solving the world's food problems. The new varieties of grain are adapted only to areas having adequate water available at precisely the right times. Moreover, they make heavy demands on chemical fertilizer. The Green Revolution is marvelous but far from a universal solution to food needs, which remain great in many areas of the world. It is lack of buying power that puts a ceiling on demand for food.

#### Our Uncertainties

Regrettably, the six things we know are not enough to answer our fundamental question. We must resort to judgments in the arena of uncertainty.

The first three observations below are on the positive side regarding the future productive capacity of U. S. agriculture. The last five are negative.

(1) First to be named is the prospect of rebounding from certain temporary factors. As examples:

- (a) In three of the last four years (including 1973) crop harvests in the U. S. were reduced by bad weather or disease. This is worse than normal probability. We can hope for better luck in the future.

It must be admitted, though, that some scanners of weather patterns say they see a cyclical sequence in weather conditions. If they are correct, we will be in for a bad time.

- (b) In 1972 poor crop conditions showed up in many parts of the world. This almost had to be coincidental, and is not likely to be repeated. In fact, conditions seem to be much better this year.

(2) Technical knowledge keeps advancing. Moreover, a lot of present knowledge has not yet been put into practice.

(3) Federal farm programs are showing built-in flexibility. All restrictions on acreage of wheat, feed grains and cotton have been lifted for 1974.

These are the three principal considerations that point to larger U. S. farm output in the future. They carry a hint that world output also will rebound.

The following are on the conservative side with respect to the likely scale of further increases in U. S. production.

(4) Industrial resources made available to farming will not be as plentiful in the future as in the past. Even if allocations protect agriculture, purchase prices will be substantially higher than previously.

Petroleum for diesel fuel and gasoline is the most advertised instance, but shortages of natural gas may prove more damaging. About 90 percent of all nitrogen for fertilizer is produced from natural gas, the supply of which is likely to approach exhaustion within a relatively few years.

Likewise, though they are overlooked in the furor about energy, a number of metals important to agriculture are becoming scarcer.

Farmers have long taken plentiful fuel and fertilizer for granted. They will not be able to indulge in that luxury any longer. Adjustments to follow

in U. S. agriculture will take many forms and sink deep.

(5) Although technological advances in farming are continuing, as noted in (2) above, no dramatic breakthroughs have come about recently. We are mainly building on past achievements. Perhaps hybrid wheat and soybeans lie just over the horizon, but they are not clearly in sight yet. We seem to be on a technological plateau.

(6) If we are going to have to make do with a less generous supply of industrial inputs than in the past, the spotlight of attention will naturally shift to that resource by which man has fed and clothed himself for countless millenia, namely, land. If we find we will need more land than in the past, we will also find that we don't have as much of it as we thought we did.

During the years of land retirement programs, when land seemed permanently in surplus, we wantonly let millions of acres of it slip into nonfarm uses. Corn land and cotton land and grazing land went into home sites and industrial plants and superhighways and military bases and airports. Seldom if ever were nonfarm developments diverted away from fertile farmland. On the contrary, good farmland often was the first choice because it required less earthmoving to convert it to the nonfarm use that was sought.

A recent controversy in Illinois illustrates. An atomic energy plant has been scheduled for construction in the north central part of the state. Commonwealth Edison chose a block of 7,000 acres of the best Illinois corn and soybean land because it "lay so well", in place of more rolling land that actually is located closer to the plant site. When citizens objected, the AEC approved the location but reduced the size to 3,000 acres. Those acres will be lost to farming forever.

This year U. S. farmers planted crops on about 330 million acres. This acreage was 26 million more than in 1972, but it was 40 million below the peak years of the past. A modest further increase in 1974 will leave us still well below the high mark of the past.

(7) In my brief paragraph above listing the factors that have contributed to the wonderful record of productivity of U. S. agriculture I included the institutional organization of agriculture.

Now I must add the note that, in my judgment, certain changes in organization are reducing the responsiveness of farm production to price incentives, and its overall output. Although we perpetuate the image that most farming is done by rugged individuals who give full attention to farming their 200 or 400 acres (more in range country), the fact is that "you can't hardly get that kind no more." Aside from the widespread practice of part-ownership, there is a vast amount of part-time farming, retirement farming, farming by agribusiness corporations, hobby farming, tax-loss farming, large-scale farming, and nominal farming of land held for speculation, sometimes under the shelter of differential assessment.

What is the overall effect of these varied arrangements? On the whole, I believe, those operations are not in the mainstream of agriculture. They are insulated to some extent from the pressure the typical family farmer has always felt to press as hard as he could to make his land productive. The part-time farmer may do his plowing when his wage job allows him free time. The hobby farmer may raise fine beef cows on the best corn land. The speculative holder of land scratches it just enough to qualify for tax concessions. The net effect is negative, I believe; and it shows up more in livestock than in crop production.

(8) Lastly, the present higher incomes of crop farmers and the high risk implicit in this year's prices of livestock have on balance tended to discourage livestock farmers from expanding their operations. In a brief if

salty word, if a grain farmer can make enough income from his grain operations why should he board a bunch of hogs or cows 365 days a year? And particularly why should he do so if he fears a "deflationary adjustment" (that is, a bust) in livestock prices?

#### Supply Prospects: A Sum-up

By a simple tally, the above listing has five items pointing to conservative prospects for farm output and only three on the positive side. More significant is that the points of uncertain knowledge outnumber those of certainty by eight to six.

In a summary judgment, the prospects are different for the crop than for the livestock side of agriculture. And how much different they are will depend partly on national policy regarding export of feedstuffs.

With regard to crops, we can keep production high if we want to. "Wanting to" includes allocating fuel and ingredients for fertilizer and any other inputs of industrial origin that threaten to become short in supply. It also includes adequate price guarantees, to protect against excessive market weakness.

Livestock and poultry enterprises present a different picture. Yet they are an important part of agriculture. They contribute a sizable part of total farm income -- though official data exaggerate the amount operating farmers receive. The published figures include the income going to integrators and to nonfarm investors in feedlot operations. Meat and poultry products are also high on the scale of consumer touchiness. Public policy for agriculture and farm programs, including export policy for feedstuffs, will be affected by how consumers feel about the supply and price of meat and poultry.

The reasons I am somewhat apprehensive about future levels of livestock production are the following:

(1) The tendency of many crop-and-livestock farmers to avoid labor intensive enterprises such as hogs and dairy cattle. As noted above, improved incomes of recent years have made it easier for them to indulge their preferences.

(2) With respect to beef cattle, so important in farm income, a tightness in supply of low-cost resources. No more cheap grazing land is available. Except to the extent new programs free a little previously-idled land for grazing, all increases in beef cattle production (separate from feeding) will have to come from diverting resources from other enterprises. This would be a very costly expansion, and therefore a slow one.

Much of past expansion in beef herds came as a replacement to other roughage-consuming species of livestock. Significantly, total livestock numbers in the U. S. as measured by their roughage requirements have not increased much. Roughage consuming livestock now total about 100 million units. This is up only a little from the 96 million of 1963, the 99 million of 1943, or even the 92 million of 1933 -- and the 1933 figure was scarcely different from the peak years of World War I. (See chart.)

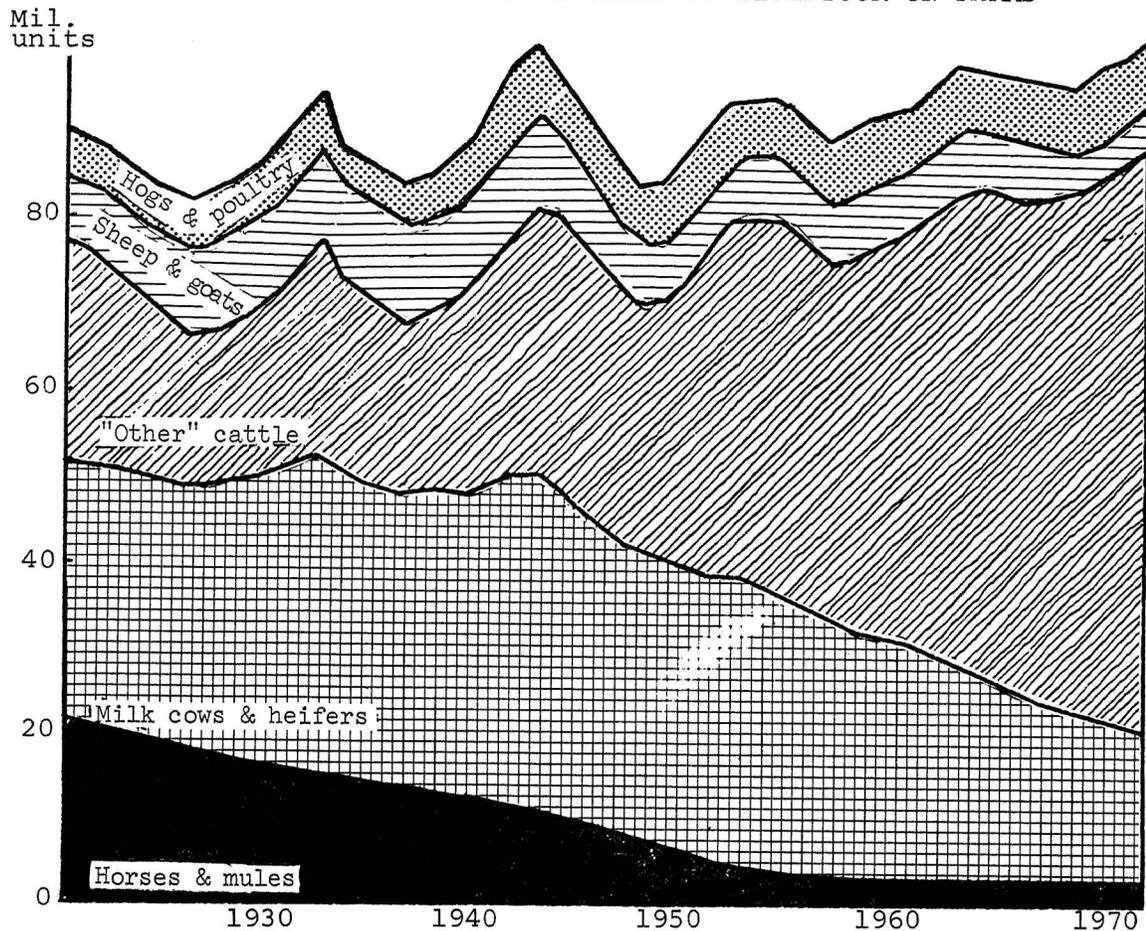
In other words, on a national basis the expansion of beef cow herds over time has been accounted for not by growth in forage capacity but by successive diversions from horses and mules, then sheep, then milk cows. The chart shows how dramatic that diversion has been.<sup>2</sup>

It is unlikely that any of these species will decline much further, thereby graciously making room for more beef cows. The best hope for expand-

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<sup>2</sup>Units of horses and mules are now 19 million below their one-time peak, and sheep units are 6 million below their high mark. Units of dairy cattle have declined at least 20 million from their wartime high.

ROUGHAGE-CONSUMING ANIMAL UNITS OF LIVESTOCK ON FARMS



ing beef cattle production would be to induce beef cows to drop twin calves. Research for multiple births is underway.

(3) Uncertainty as to how much concentrate feed will go into domestic feeding. Past increases in total livestock and poultry production have depended heavily on concentrate feed, not roughages. It is in concentrate feed production that we have shown our marvelous productivity. I expressed above my confidence that we will continue to turn out vast quantities of corn and soybeans.

But corn and beans do not convert automatically into pork, beef and eggs. Recently foreign countries have shown themselves ready, willing and able to buy concentrate feedstuffs out from under the noses of our own livestock and poultry men. Furthermore, the unwillingness of our government to continue a policy of storage and stabilization for feedstuffs discourages domestic livestock production and encourages exports.

Hence we have the interesting if alarming spectacle that our government must consider whether, despite the urgent need to earn foreign exchange, it should restrict exports of feedstuffs in order to sustain livestock and poultry production at home and thereby keep consumers from exploding in protest against what they regard as excessively high prices of meat, milk and eggs.

Equally interesting, if not equally alarming, is the possibility that a trading relationship in feed and livestock products will emerge between the U. S. and Europe similar to that which now exists in metals and finished metal products between the U. S. and Japan. Will we ship our feeds to Europe and buy back dairy products, and perhaps even some meat and poultry items?

But even this is not the whole story. Poorer nations also want our grains; and they use them directly as human food. They pay for some shipments, and ask long term credits on others. In a humanitarian sense, it is noteworthy that a bushel of grain will feed several times more human beings directly than when converted via livestock.

Policy for food exports, whether to developed or less developed nations, remains deep in diplomacy. The Federation of American Scientists has declared that inasmuch as this is true, "we have an obligation to handle it diplomatically. All-out stop and go policies -- in which uncontrolled open markets alternate with embargoes -- become inappropriate...."<sup>3</sup>

#### Meaning to Structure of Agriculture

If commercial family farmers continue to shift out of livestock to cash grain, the door will be left wide open for an expansion of factory-type operations. Separating feed and livestock production further would have a great deal of meaning to the future structure of agriculture.

It should be noted, however, that other factors also are contributing to such a change in structure. I have in mind the income tax regulations that give high-income nonfarmers a competitive advantage over farmer feeders of cattle. This, however, is a separate subject deserving separate discussion.<sup>4</sup>

#### Demand and Pricing Situation

The analysis thus far has not considered the demand side of the supply-demand equation. Demand will continue to wield a great deal of influence, but we must be careful how we look at it.

Economists need to keep their tools up to date. Those of us born and reared in the tradition of economic recession are all too prone to couch our fears in terms of the old pattern of an industrial recession accompanied by loss of consumer income and by price deflation.

That was the story of the Great Depression of the 1930's and the little replicas we have seen since.

It is probably not the prototype for the hazards that we face now.

In my judgment very serious perils lie in our national future. Their physical base is an increasing shortage of natural resources, combined with the cost of shielding our environment from the damage wrought by careless resource use in the past. This will be exacerbated by the highly unequal distribution of wealth and income in our country. It is one of the oldest of proverbs that inequitable distribution of wealth is not too hard to live with so long as more wealth can be created. When everyone's lot is improving we don't worry too much about relative rates of improvement. But if our national wealth and income level out, the distribution of that wealth begins to bear on economic and social stability.

Ironically, if such a situation materializes it will be made worse if we insist on applying tools that were shaped for another time and different

<sup>3</sup>F.A.S. Newsletter, vol. 26, no. 7, Sept. 1973, p. 2.

<sup>4</sup>For a summary review see my "Investment in Farming, Income Tax Rules, and Who Will Control," Economic and Marketing Information for Missouri Agriculture, Oct. 1973.

circumstances. More specifically, the more I reflect on the economic philosophies of our age in history the more convinced I am that they can be summed as a deep and abiding faith in the efficaciousness of the fiscal device of generation of income. The connotation of the word "faith" reminds of an apt parallel with religion, for just as religious leaders preach that human comity must rest on human integrity, even so economists teach that economic strength is rooted in real productiveness and not in fiscal manipulation.

Confidence that dollar income will cure everything is equally held privately and publicly. Although every man-jack (and woman-jill) of us professes otherwise, we all glory in advances in our money income and wealth. Individually, we like to see our salaries raised each year and have come to regard an annual boost as a kind of inherent right. Furthermore, we exult in gains in value of our holdings in common stock or houses or land. When stock values seemed to turn faithless the shift was to farmland and to commodity futures.

The next level of private action is that of aggregations of much size and power. If a big business or a labor union or an organization of civil service retirees or a farm bargaining association finds itself pressed to sustain its place in the economic sun it thereupon seeks to raise the prices and incomes it receives. This is the natural behavior of monopoly but many less-than-monopolistic organizations try to follow the same pattern.

Central governments have been leading exponents of the spending principle. During the Great Depression and in every little recession since, the practice has been to spend ourselves into recovery. Policies have been undertaken to bribe the rich into investing their idle funds, to induce the middle classes to borrow cheap money to build new homes, and even to grant the poor a pittance in welfare payments and food packages or stamps. At the same time government itself has deficit-spent for a variety of purposes.

Underlying the philosophy and the practice is the vitally important premise that our national resources are ample but insufficient demand has caused them to be idle. The philosophy and practices were appropriate so long as the premise held. They were appropriate so long as we actually had undeveloped resources at hand, waiting to be employed.

The premise no longer holds. We are no longer wealthy with unused resources. We are not basking in the reflection of our superior productivity. Indeed, we have been shocked into admitting that other nations are productive too and even able to outperform us in many ways: our psychic slip is showing.

We probably will continue to try to force-feed the economy, thereby creating some genuine prosperity but a big dose of make-believe. And because of the power lodged in various parts of the economy and the commitment to keeping incomes of large sectors moving upward alongside the cost of living, we have got ourselves into an almost irreversible inflationary situation. I don't know of any man wise enough to offer a satisfactory solution or predict the eventual outcome.

In my judgment the "demand" situation in years ahead will be defined not so much by the level of income as such as by the fiscal measures taken to cope with the conflicting forces of inflationary pressures and sluggish production. It seems highly likely that agriculture will be caught right in the middle, as indeed it has been for two or three years. If my analysis is correct we can expect a succession of production incentives and disincentives, price controls and decontrols, export restrictions and export encouragements -- all in a confusing and unpredictable pattern. In my judgment, promises that farm product markets will soon return to a deregulated "normal" are false as sugar plum fairies. It is not that such an outcome will not be earnestly sought, but

rather that a sequence of "temporary" circumstances will intervene.

#### Foreign Demand

In the account thus far I have skirted the topic of export demand for U. S. farm products except to suggest that demand for feedstuffs will be strong.

The U. S. Department of Agriculture has made several projections of export demand, and I would not try to improve on them. One could warn that the immediate surge in that demand, based largely on 1972 crop failures in the Soviet Union and elsewhere, could readily tempt into an overstatement of future trends. On the other hand, the surplus of dollars in foreign hands is a positive factor. And even though Europe and Japan will be more worried about petroleum than farm products, those dollars won't do them much good in buying oil.

More likely, I believe, is that our future farm exports will be caught up in policy decisions including those about international monetary exchange and trade agreements. Further, if the domestic scene will be as turbulent as I forecast, export and import controls will be among the devices wielded in desperate attempts to solve our vexing problems. I do not believe foreign demand for farm products will be an independent factor in the future economic scene.

#### A Sum-up

The overall tone of the argument presented here is that U. S. agriculture will not suddenly resume such an outpouring of crop and livestock products as to overwhelm U. S. and world markets. There will be too many restraining factors for that to happen. Henceforth, surpluses will be episodic, not continuous. And they are more likely to show up in crop products than livestock.

The product most likely to continue in relatively short supply is beef. Unless we can tempt the old cow into dropping twin calves regularly I believe the limitation in supply of cheap roughage for that lazy boarder will arrest any rapid expansion.

In no sense, however, does this mean that 1973 levels of prices of wheat, corn, soybeans, hogs and beef cattle will be sustained in future years. On both the supply and demand side 1973 has been truly exceptional. Consumers will not continue to spend the kind of money for food that they have spent. Farmers will not always get the 43 percent of the consumer's food dollar that they got in the first quarter of 1973 (compared with 38-40 percent a few years ago). Supplies of farm products will not stay as short as in recent months. A price adjustment lies ahead. Like every such correction to a temporarily heady situation, it will be painful.

Central to my judgment that supply will nevertheless not be terribly burdensome or prices distressingly low is the prospect that industrial resources used in agriculture will not be as super-plentiful in the future as the past. Petroleum and chemical fertilizer are the prime candidates for relative shortages.

Yet when all else has been said, the future supply, demand, and price situation in agriculture will depend to large extent on what action is taken regarding it. It depends on what is done about assuring allocation of essential fuel and other materials. It depends on what is done by means of research and extension to help farmers adjust to a changing pattern of input supplies and costs. It depends on whether it will be national policy to undergird farmers' incomes as they expand their output, and to stabilize

supplies and prices of feed via a wise reserve policy. It depends also on what our policy will be regarding exports of food and feed to other nations.

But the supply, demand, and price situation in agriculture in the future will depend also on whether income of the consuming population is sustained by putting people to productive work, or by fiscal measures to sustain dollar income -- or, as a third and potentially devastating alternative, by turning the screws down tight, accepting widespread unemployment, and letting the low income third of the nation scrounge. This third alternative would amount to a literal and faithful application of the Keynesian doctrine, holding on to it after it had passed its usefulness. Applied rigorously, it would cure all inflation including that in prices of farm products. It would put us right back into the situation of land held idle by government edict and people kept idle by government indifference. In a nation frustrated and frightened and in danger of drifting into political reactionism, this is a genuine possibility.

THE TOPICS AND THE SETTING FOR MAKING  
FARM POLICY IN THE YEARS AHEAD

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We have had an open, realistic, interesting conference representing a cross section of agricultural thinking. As a result we have had many different thoughts expressed about agricultural policy. This has occurred not only because we differ on what we perceive as the situation and the solution, but also because we differ on the kind of society we are striving for, or our goals.

Bishop Gruka of Gary once said to me, "I can call in two physicians when a man is sick. In a relatively short time they will agree what should be done because they understand how a normal body should function. If I ask the same two men what we should do about a public problem, they are immediately in an argument because they differ on how a normal society should function." So, part of our differences arise over our perception of the kind of society we want.

Individuals are placed on this earth with widely varying levels of productivity. This occurs from variations in environment and in genetic inheritance.

At the same time individuals in our society have a strong sense of equity. But we have learned from experiences in the world that if each individual receives equal returns, productivity of the group tends to fall to the level of the least productive. Then all have less. Therefore, a free society is always seeking that combination between rewarding the productive and obtaining equity which satisfies society at any given time. It is basically an unsolvable problem as long as man is as he is.

Mankind in all history has only found five economic systems for dealing with this problem:

- 1 - Dictatorship, where an individual or small group decides what will be produced and how and to whom it will be distributed.
- 2 - Caste or Status Quo System - This works where little technical change occurs, as in India years ago.
- 3 - Anarchism - This has never lasted long but has existed for short periods.
- 4 - Democratic Socialism - Government officials are elected but the government owns the resources and makes the decisions.
- 5 - Free choice or free enterprise system - The individual makes the decision of what he will produce and what he will buy.

Of course, we have a combination of 4 and 5. It is interesting to note that no free society has ever existed in the world for any length of time that was completely socialized or that was completely free enterprise.

In the 1960's we surveyed the thinking of representative samples of farmers in 12 states. We tried to get their attitudes and values. In essence we

found that from 15 to 20 percent believed we should control agricultural output and set farm prices. They understood and accepted this approach for other segments of society. At the other end of the scale were 20 to 25 percent of the farmers who believed in free prices. They understood the consequences of free prices and believed in them for other segments of society. This left 55 to 60 percent who were not too clear in their perception and who tended to swing towards controls in times of low prices and towards free prices when farm prices were higher. I have found this helps politicians to understand the kind of an issue they are dealing with in farm income policy.

In recent years it has been somewhat our policy that if the free enterprise approach was not meeting our social criteria, we socialize it. In a number of areas this has not worked out as well as was hoped. Thus, there is a growing school of thought that we need to modify our institutions that are not performing as we desire, in ways that will keep some degree of competition in them. I think this concept is particularly important in the agricultural area and offers a challenge to agriculture.

Against this backdrop let me now turn more specifically to agricultural policy.

As I have listened at this conference, I think we might agree that our goals in agricultural policy are: (1) an adequate farm income, (2) maintaining the decision making on the independent farm, and (3) obtaining and maintaining adequate community services. Regarding the third goal, we would of course have differences on what level of services was adequate and how they should be maintained.

From the late twenties to the early forties, both Democrats and Republicans from the South and Mid-west joined up to form a so-called agricultural bloc. They, with some support from the West, had the muscle to pass farm legislation which they originated. If a congressman in any district would not go along, there were enough farm votes in his district so that if a farm leader went out and held a meeting in the congressman's district, the leader could put on some pressure.

Now, the farm population has declined to the point where agriculture, to a greater degree, must operate more as a minority group. The further expansion of government into new areas has involved agriculture in many national programs not arising in agriculture. It has reached the stage where some people are saying that the legislative agenda for agriculture is being largely set by people outside of agriculture. They point to such issues as environmental protection, energy and land use as examples.

In any event, agricultural legislation is going to have to appear creditable to the non-farm groups in the future. Agriculture no longer has the political muscle to pass just what it wants, and others will continue to put legislation on the agricultural agenda.

This does not mean that agriculture will be treated any less favorably. In England and Germany, where the rural population has been relatively small compared to the total population, this has not been true. I once put this question to a leader of the largest farm organization in England. He said, "We have been treated better than before there became so few of us to be helped in time of economic trouble."

There is a greater recognition in Congress that no group should be unduly discriminated against economically. This is likely to continue. It offsets, to some degree, the decreased political muscle of agriculture.

There still is a reservoir of good will toward farmers. Many people in our cities are still first and second generation farmers. There are many who know the farmer battles nature, that many farmers still work long hours, and

that agriculture is an efficient industry.

Farmers, however, on various issues may have to seek political allies more than in the past. These allies may be different on different issues.

Now, let us turn to some of the political issues affecting agriculture in the years ahead.

With average weather the world has the capacity to produce more wheat and feed grains than the commercial market will take at U. S. farm program target levels. Therefore, for certain years at least the farm income program will continue to be an issue. Such issues as, how figure the conservation reservoir? should we pasture set-aside acres? and should livestock enterprises be supported as are crops? -- these will come to the front at various times, as will other issues involving the farm program.

If we are going to be a heavy supplier of grain to the world, the question arises of what reserve stock should be maintained. This raises the question of what organization should do it and how it should be handled if we do maintain a reserve. If we are going to hold our share of the world markets, the importing countries are going to insist that we be prepared to meet their continuing needs, and not just sell when we have a surplus.

Legislation bearing on who is going to control agriculture will be a continuing issue during the next decade or two. This legislation will deal particularly with the maintenance of open markets and with federal income tax policies affecting the distribution of income and resources in agriculture. It also must provide for agriculture's having continual access to the central money markets and for the maintenance of public knowledge in the agricultural area.

Rural development will be a continuing issue. There are many valid reasons for not continuing to shift more and more of our rural population to the larger cities.

Some of the issues that will be kept on the agricultural legislative agenda by non-agricultural forces are: environmental issues, energy, land use, taxation, inflation, and many others some of which cannot be anticipated.

When we have been neglectful of an area we tended once, we do not re-acquire competency readily. There is a certain amount of fadism developed in the media. In the trade-offs between the environmentalists and the resource users, for example, the environmentalists carry society beyond what it will accept over time. Soil conservation and now clean air and water are examples in point. We then have to work out the practical compromises and the trade-offs.

The energy issue will probably go through the same stages. It will affect agriculture even though we only use in agricultural production 3 percent of the petroleum consumed in the United States.

#### Summary

The political framework for agricultural policy making has changed during the past three decades. The opportunity for agriculture is no less, but the approach used now must recognize more fully the national implications of such legislation. Likewise, agricultural policy makers must be prepared to accept more of the agricultural legislation being put on the agenda by non-farm groups.

Let us vigorously argue our viewpoints and then work out the best compromise. You may not get all you want, but let me say to you that there are a lot of farmers around the world who would like a chance to be a U. S. farmer. I have seen them and talked to them.