PART I

Setting of the Problem

Chapter 1

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The Income and Resource Problem

AMERICANS have levels of living which are among the best in the world. Gross national income for the United States has more than doubled since 1929, and disposable personal income has increased by about half in the same period. Income and goods available to the consumer are still increasing. The results of these increases are seen everywhere: in the amount and variety of food, in the adequacy of housing, in the number of home appliances and automobiles, in health, educational, and recreational services, as well as in other goods and services. These improvements and conveniences are no longer considered luxuries, but are simply part of the "American way of life." Still the end is not in sight. It is predicted that, aside from temporary recessions, national and personal income will continue the sharp upward climb. In the past, these changes in incomes have been accompanied by changes in consumer spending patterns. These changes will continue into the future with the result that premiums or penalties will attach to incomes of different persons and industries.

In part, the accomplishments of agriculture have made possible this progress. At the same time, this economic progress, to which farming has made an important contribution, has caused and is causing income and transfer problems in agriculture. In becoming highly productive and efficient, agriculture has freed labor for use elsewhere in the economy, for production of the other goods and services which now characterize the American way of life.

A nation can be wealthy only if few of its resources are required to produce food for subsistence. The standard of living in many parts of the world is low because so much of the labor force must be used in producing food. Estimates indicate that 45 to 50 percent of Russia's labor force must be used in producing food. In some parts of the world the figure is as high as 80 percent. In contrast with these figures, United States farms require only about 10 percent of the total labor force. Table 1.1 shows the trend in population and the farm labor force, as a percent of the nation's total, since 1920. Agriculture has been shrinking, relative to the remainder of the economy, in labor and capital resources employed and in income produced. This is, of course, to be expected in a wealthy and growing economy. This trend will continue in the United States, and further economic growth can be anticipated as agriculture

continues to use a smaller proportion of the nation's resources and to produce a smaller proportion of the nation's income.

Table 1.1. Trends in People Living on Farms and in Persons Employed in Agriculture, 1920-55*

Year	Percentage of nation's population living on farms	Percentage of available labor force employed mainly in agriculture
1920	30.1	27.0
1940	23.2	17.2
1950	16.6	11.9
1955	13.5	10.1

*Source: Farm Income Situation (AMS).

Currently, each United States farm worker can produce food for 20 persons. Only one person out of 20 need be engaged in producing food; the other 19 are freed to produce other goods and services and to help the national income grow in other directions. As technological progress continues, our farms will be able to produce food with still less labor. Output per man hour in farming is expected to increase by over 35 percent in the next 10 years.

This, then, is the healthy picture of agriculture; it is a development from which most consumers have benefited greatly. Food is available in quantity and quality at a relatively low price. In contrast with some areas of the world, where a major part of the consumer's budget goes for food, the U. S. family need spend only a relatively small portion of its income for food, leaving more for other goods and services.

THE INCOME SITUATION

But this complex of forces gives rise to one of our major farm problems today. The picture today is this: National income is at a record level and has grown at a rate of 6 percent per year since 1950. Aside from temporary setbacks, this general trend is expected to continue. In contrast, total farm income declined by about 25 percent from 1951 to 1955; net income per farm declined by 23 percent, since the number of farms also declined. Hence, we are in a period when national "prosperity" has been moving rapidly upward, but farm income has been going as rapidly downward, even though physical productivity in agriculture is still increasing.

The major cause of the surplus and income problem in agriculture is: Food output has been increasing faster than can be absorbed by growth in the population and national income. But other things have added temporarily to the problem. Export demand, particularly for wheat and cotton, has fallen rapidly in the last few years. Export demand had started to decline before the Korean outbreak, since farm

production had recovered in most of the world by then. In some parts of the world, production was substantially above prewar levels by 1950. The Korean War interrupted the decline in export demand and caused some buildup of stocks in importing countries. U. S. farm exports rose sharply. With the end of the conflict, export demand again decreased. From 1952 to 1955, wheat exports dropped 50 percent; cotton exports dropped about 30 percent. By the end of the 1953 crop year, wheat stocks had grown to more than 900 million bushels — an amount 30 percent larger than one year's national usage. Cotton stocks jumped from 2.8 million bales in 1951-52 to 9.6 million bales in 1953-54. The large stocks of wheat and cotton have led to marketing quotas on these crops. But the large acreage reduction has not eliminated the surplus problem for these commodities.

While weather and postwar demand conditions partly account for fluctuations in farm income since 1946, the major force giving rise to differential income trends is economic growth or progress. Today's commercial farm problem is not the particular aftermath of war; it is not an "atomic fallout" from wartime economic bombs. It arises from complex forces, the roots of which were already well established in the 1920's. The so-called cost-price squeeze, with consumers saying that we had too many resources in agriculture, even then was being reflected in relative prices and incomes for agriculture; farm income was lagging behind nonfarm income. Then the depression of the 1930's and the wars of the 1940's and 1950's came along to obscure the longer-run picture. But the same set of forces which operated in the 1920's is with us again today as a mark of a progressing society. These facts are emphasized by the income data in Table 1.2 for peacetime and full employment years since 1910. These data show that growth in agricultural income has not begun to parallel growth in total national income, a condition expected in a developing economy. The figures also emphasize the extreme difference over the last five years.

WIDESPREAD PROBLEM

The pressure on farm incomes is neither a localized nor a homogeneous problem. It covers important sectors of commercial agriculture. While nonfarm income and wage rates have moved steadily upward since the end of the war, net income of major farm groups has fallen sharply, even from the pre-Korean level of 1947-49. Table 1.3 shows that the net farm income decline has varied by type of farm, with the greatest decline taking place on farms of the Corn Belt and Great Plains. Averaged for the years 1953 through 1955 to remove some of the effect of drouth, net farm incomes for this period were 38 percent below their 1947-49 level for hog-beef farms and 17 percent below for cash grain farms in the Corn Belt. Comparable figures include declines of 25 percent for Wisconsin dairy farms, 42 percent for Southern Plains wheat farms, and 47 percent for Northern Plains ranches. Income for Southern

Table 1.2. Trends in National Income and Farm Income, Selected Peacetime Years (1947-49 = 100)*

Year	National income		Farm income[a]		Income per worker[b]	
	Million dollars	Percent	Million dollars	Percent	Farm (percent)	Nonfarm (percent)
1910	33,252	16.7	4,703	27.3	20.6	31.3
1911	32,393	16.2	3,888	22.5	17.1	31.8
1912	35,022	17.5	4,975	28.8	21.8	31.8
1913	37,552	18.8	4,253	24.7	18.6	35.2
1914	36,454	18.3	4,677	27.1	20.5	34.6
1921	59,272	29.7	4,138	24.0	18.4	58.4
1922	60,970	30.5	5,081	29.5	22.6	54.4
1923	71,626	35.9	5,895	34.2	26.6	58.0
1924	71,251	35.7	5,681	32.9	25.9	58.7
1925	76,304	38.2	7,575	43.9	34.6	57.2
1926	80,937	40.5	6,810	39.5	31.2	61.0
1927	79,123	39.6	6,569	38.1	30.9	59.5
1928	81,467	40.8	6,844	39.7	32.1	59.9
1929	87,122	43.6	7,024	40.7	32.7	61.1
1946	169,730	85.0	16,721	97.0	96.6	86.8
1947	185,296	92.8	17,383	100.8	99.5	93.6
1948	208,980	104.7	19,704	114.3	103.0	102.4
1949	204,641	102.5	14,651	85.0	87.4	103.9
1950	220,151	110.3	15,459	89.6	98.4	108.2
1951	250,779	125.6	18,003	104.4	119.1	116.7
1952	266,406	133.4	17,004	98.8	116.9	122.8
1953	277,893	139.2	15,094	87.5	104.6	126.6
1954	276,780	138.6	14,239	82.6	100.2	128.9
1955	296,398	148.5	13,429	77.9	96.9	135.7

*Source: Farm Income Situation (AMS) and Federal Reserve Bulletin.
[a]Includes government payments, 1933-55.
[b]Total income divided by number of persons employed.

Piedmont cotton farms increased by 19 percent, and tobacco cotton farms, where incomes were not high at the outset, registered slight gains. However, part of these declines must be attributed to short-run fluctuations, such as drouth and hog cycles in the Corn Belt and drouth in the Great Plains.

Specialized fruit and vegetable farms, those producing commodities with highest income elasticities, have generally fared better than those producing staple commodities with low price and income elasticities. In this sense, the income and resource problems of the various segments of agriculture are not entirely homogeneous. Neither are the solutions homogeneous for those geographic regions which are depressed. For example, the adjustment problem is quite different between communities with little developing industry, such as western Kansas, and those with rapid local economic growth, such as parts of the eastern Corn Belt. It is different in spring wheat areas, with a declining per capita demand for its product, as compared with parts of Arizona and California,

Table 1.3. Farm Costs and Returns, Typical Commercial Family-Operated Farms, by Type of Farm*

	Corn Belt					
	Hog-beef fattening	Cash grain	E. Wisconsin dairy	S. Piedmont cotton	S. Plains wheat	N. Plains cattle ranches
Size of farm (acres)						
1937-41	178	209	115	158	586	3,322
1953-55	198	228	126	175	696	4,100
Total farm capital						
1937-41	$20,380	$29,950	$12,420	$ 4,700	$19,460	$20,730
1953-55	59,780	88,030	33,717	15,390	74,470	71,480
Net cash income						
1937-41	1,478	1,788	912	206	434	418
1947-49	9,814	8,140	3,061	921	8,962	5,629
1953-55	6,568	6,247	2,050	1,200	6,086	3,385
			Indexes: 1947-49 = 100			
Crop yield per acre						
1937-41	99	99	82	83	53	51
1953-55	105	111	121	111	82	98
Production per hour labor						
1937-41	77	78	79	78	52	64
1953-55	115	114	131	125	96	107
Power and machinery						
1937-41	71	69	62	54	57	65
1953-55	131	135	149	137	124	130
Net farm income						
1937-41	24	29	35	32	12	15
1947-49	100	100	100	100	100	100
1953-55	62	83	75	119	58	53

*Source: "Farm costs and returns, 1955, commercial family-operated farm by type and location," Agr. Inf. Bul. 158.

where some expansion in per capita demand for agricultural products is being realized.

ADJUSTMENTS REQUIRED

Agriculture in a wealthy, rapidly growing economy will generally be faced with a cost-price squeeze and a relative "dampening" of income. The reason is this: As incomes of consumers increase, food no longer becomes their major concern. They want more home appliances, better housing, television sets, recreation, travel, and education. Hence, as his income increases, the American consumer spends relatively little more on food. In fact, he does not buy more pounds of food, but simply changes the composition of the food purchased. The consumer shifts from fats, starchy foods, and similar staples to fresh vegetables, better cuts of meat, fruit, etc. The pounds of food consumed per person has not increased in the last 40 years. Increased expenditures for food, as consumer income rises, is due partly to the purchase of more expensive food, but more particularly to the purchase of extra services which go with food, such as packaging, freezing, etc.

The income elasticity for food expenditures is about .2 (or less), which means that for each 10 percent increase in incomes of consumers, expenditures for food increase by less than 2 percent (again with most of this going for processing and retailing services for food). The consumer does not want more food as much as he wants it in a more convenient package or form. Perhaps the United States has more persons who worry about overeating than those who worry about hunger, although improvement in the composition of diets is still possible. The consumer increases expenditures more rapidly on many nonfarm products as his income increases. While he increases expenditures on food by less than 2 percent with each 10 percent increase in income, his expenditures on home appliances, housing, travel, etc., increase several-fold. The income elasticity of demand for these goods and services is much higher. Table 1.4 shows that agriculture's share of the gross national

Table 1.4. Agriculture's Share of Gross National Product, 1910-1954

Year	Gross national product (billions)	Farm gross national product (billions)	Percentage farm of national gross product
1910	$ 36.7	$ 5.9	16.1
1920	85.0	12.3	14.5
1929	104.4	9.8	9.4
1930	91.1	7.7	8.4
1940	100.6	6.8	6.8
1950	285.1	21.1	7.4
1954	360.5	21.3	5.9

product has steadily declined since 1910. Again, this trend will continue as national income continues to grow and the consumer allocates an increasing proportion of his income to nonfarm products.

As incomes have increased consumers have been unwilling to place higher premiums on farm products. In fact, they have tended to hold prices of farm products down, saying that they do not need much more poundage of food, except as the population grows and more persons need to be fed.

Bidding higher prices or demanding relatively more nonfarm goods and services, the consumer also bids up or maintains the cost of steel, labor, petroleum, and other materials used particularly for those nonfarm goods with high income elasticities. Consequently, the cost of tractors, lumber, fuel, fertilizer, and other agricultural inputs is kept high. Table 1.5 indicates that while the proportion of total assets used in agricultural production has decreased since 1910, the productive assets per worker in agriculture are five and a half times as much as in 1910; in industry the increase is only a little more than three times as much. Agriculture is producing food for the population with an increasingly smaller proportion of the labor force but has been able to accomplish this only by using more productive assets per worker.

Table 1.5. Agriculture's Share in Total Privately Owned Tangible Assets Used in Production 1910-55

Year	Farm assets (billions)	Nonfarm assets (billions)	Percentage of total in agriculture	Productive assets per worker	
				Farm	Nonfarm
1910	$ 38.9	$ 53.0	42.3	$ 3,370	$2,060
1920	71.4	139.3	33.8	6,230	4,506
1930	47.2	160.0	23.9	4,650	4,160
1940	39.8	147.2	21.3	4,170	3,190
1950	102.3	292.0	26.0	13,630	5,567
1952	130.5	370.0	26.0	19,180	6,790
1955	121.6	420.0	22.4	18,470	7,140

This, then, is the cause of the cost-price squeeze and the income problem in agriculture. Consumers are saying that with higher incomes and a rapid increase in agricultural technology, they wish relatively more of the nation's resources to be used for nonfarm goods, and fewer for farm goods than at present. They are indicating, through the pricing mechanism, that we are producing relatively too much food and too few other things, and that accordingly they want some labor transferred from farming. But while consumers have been saying that they wish only slightly more food per person, output of agriculture has increased more rapidly than consumer demand; and we have had support prices and other governmental programs which have not recognized the basic nature of the adjustment program.

THE CHALLENGE

Two major sets of forces are at work which call for adjustments in agriculture: (1) those facets of growth which place a strain on agriculture from the outside — including changes in the relative importance of products from different sectors of the economy as the consumer allocates a growing income in line with his tastes and values, and (2) those elements of progress generated within agriculture — represented especially by technical improvement and the ability to expand output from a given collection of resources. Farming is being interlaced tighter and tighter, in terms of interdependence, with other sectors of the economy. This interdependence, which is basically the problem of agriculture in a nation growing progressively wealthier, would continue to call for adjustments in agriculture, even if adjustment-generating change within agriculture could be halted. The composition of the product mix will continue to change. A larger percentage of the gross national product will be represented by those commodities with high income elasticities of demand; a smaller percentage will be represented by those commodities with low income elasticities — notably farm products in their natural form. The pull on resources will be similar, and incomes of persons will be affected accordingly, unless adjustment in fact keeps pace with economic growth.

The challenge is to attain balance between agriculture and industry in a rapidly growing economy. Somehow, we need to spread the fruits of economic progress more evenly over the total population. We need a "moving adjustment," and one which is more rapid, to provide comparability of resource returns (incomes can also be comparable) for persons owning equal amounts of resources — including their own labor. Agriculture has contributed materially to economic progress by producing more products with less labor. Labor has been freed for use elsewhere in the economy. But much of it has been left stranded in agriculture, with these two consequences: (1) many farm families have had incomes depressed, resulting in a level of living lower than is consistent with an economy which is rapidly growing wealthy, and (2) the consuming society has not gained fully from the potential contribution of increased physical productivity to economic progress.

The basic solution is obvious: Some resources must be transferred out of agriculture if prices are to be used in guiding production and if income per farm is to be sufficiently high. The reference is mainly to labor, although adjustments in use of capital also are needed. If we had too many kerosene lamps, shaving mugs, and buggies and too few automobiles and television sets, the answer would be simple: Move people and production from buggies, which are in surplus, to automobiles which are in greater demand.

ADJUSTMENT UNDER WAY

The adjustments needed in agriculture are neither revolutionary nor

dramatic. They are already under way. The great excess of births over deaths in agriculture has long required a net migration from the industry. The number of farms and the size of the farm population has, aside from temporary spurts during the depression and postwar periods, declined continuously for several decades. The number of farms in the United States declined by 600,000, or 11.1 percent, between 1950 and 1954. The number of workers in agriculture declined by 40 percent between 1910 and 1956; it declined by 23 percent even in the 10 years, 1947-56. But at the same time, farm output increased by 86 percent between 1910 and 1956 and by 15 percent between 1947 and 1956. Continued adjustments in the farm labor force, population, and farm size will be needed. Adjustments will need to keep pace as the temporarily high postwar demand decreases. They will be needed to an extent which will enable efficient farm managers, with units of efficient size, to have favorable incomes. But just as important, adjustments are needed so that persons who would otherwise be underemployed in agriculture, with resulting low incomes, can take advantage of better income opportunities elsewhere. Currently, many farms are simply too small either to use labor efficiently or to provide a good living, at prices the consumer is willing to pay, to the farm family.

It is easy to say that the basic solution to the problem of commercial agriculture is fewer farms, a smaller labor force, and a rate of growth in aggregate output which matches growth in demand. But the actual solution is not simple. Adjustments in farm numbers and the labor force have been quite rapid and they may continue to be so. But it is unlikely that the farm problem will vanish in a year or two. The adjustment will necessarily continue to be gradual, although the rate should be increased to an extent reasonably possible. Because of spatial considerations, acquired values, and differences in required and acquired skills, the adjustment process is more complex than the obviousness of the basic solution. The lathe operator can readily transfer his skills from tractors to automobiles but the transfer from milking cows to electronics is not as simple. Similarly, the bookkeeper who transfers from one firm to another in Detroit can remain in his home and community. But the western Kansas wheat farmer must break home and community ties if he transfers to a television firm in Minneapolis. Also, the costs of inter-industry transfer are greater for him than the intra-city transfer of the Detroit worker.

FLEXIBLE GROUPS

When we say that the long-run solution lies in fewer labor resources in agriculture and in a smaller number of farms, we do not mean that every farmer should quit farming. The majority of farm families are experienced in this occupation. Many prefer farm life and would make lower returns elsewhere. But many persons now on farms are still flexible in their final choice of occupation. Included here are beginning

operators with small families who have invested but little capital, do not own their farms, have not developed strong community ties, and therefore can move fairly easily. (To replace retiring farmers we, of course, need beginners with capital and management resources who can expect to make as much or more in farming than in other occupations.) Also, many farmers situated near industrial opportunities can continue as part-time farmers. But perhaps most of all, we should look upon the problem as one of longer-term adjustment — of encouraging more of our farm youth to follow other pursuits.

Farming in general must be made more flexible. The composition of the product mix must become more adaptable to relative changes in demand for agricultural commodities as income per capita tends to grow. The size of the total output and resources used needs to conform more closely to demand. The adjustment problem in wheat areas stems as much or more from changing consumption patterns, as incomes have increased, as from a rate of technical progress which exceeds the rate of growth in demand — the major problem of the feed grain economy.

ALTERNATIVES IN DEMAND AND PRODUCTION ADJUSTMENT

The income and resource problems in agriculture will be solved through two basic sets of phenomena or relationships: demand and production (supply) adjustment. But as these two sides of Marshall's scissors are manipulated, they need to be consistent with the value systems of farm and urban people, as well as with economic progress. Evidently our society places a high value on progress. It makes large investments in agricultural research and education as one means of increasing labor productivity and progress. But what can be said about the rate of change or progress which is desired? Are the numerous farm policies, which often retard the full realization of potential progress, a reflection of society's belief that change is too rapid, that we must slow down the tempo and provide compensation for those whose incomes are affected adversely? Or, are they simply a reflection of lack of knowledge on the part of society generally? To provide a more rapid solution to the farm problem we need to examine these values as well as the alternatives in demand and production adjustment.

SOLUTIONS THROUGH DEMAND

Many of the solutions proposed for agriculture pertain to demand. Often it is said that if we will only wait out the drouth, a growing population and an increase in national income will restore equilibrium in returns to agriculture. But at the current rate of growth in population and farm output, the dry spell will be too long for comfort. We are now producing at a rate required for the population level four or five years hence; and in addition, we have an accumulated surplus. We need to

look carefully at the demand potential and then see how supply can be adapted to it. Obviously, governmental policies of the past and present do not accomplish this.

Remedies through increasing demand, aside from population growth and increases in national income, are popular over the country. Proposals include quality improvement, advertising, improved nutrition, promotion, and industrial uses of farm products. Proper emphasis needs to be given to the potential of solving the farm problem through changes on the demand side. Currently, however, the major potential for solving the immediate problems of agriculture appears to fall on the production side.

Proposals for increasing demand usually give insufficient recognition to substitution effects. For example, an intensive advertising program which entices the consumer to eat more pork will most certainly reduce his intake of beef or poultry, although total meat consumption might be increased somewhat. Or, a quality improvement program which places hams in cans or frozen peas in cardboard containers will mainly replace consumption of ordinary hams or canned peas. The products and services which increase most in demand are cans and boxes, not hams and peas.

Solution of the income problem for one segment of agriculture through promotion, advertising, and quality improvement may simply shift the burden to another segment. Our concern here should be with solution of the over-all problem. But an objective examination should be made of improved nutrition, promotion, or any other market developments which actually do promise to solve the basic problem. Services which improve quality have a relatively high priority as the income of the consumer increases. The fact that income elasticities are highest for the nonagricultural component of food purchases is evidenced in the declining portion of the consumer's dollar which reaches the farmer. Possibilities of demand appreciation through quality improvement appear to have more promise for increasing consumer utility than for increasing farm income.

SOLUTIONS THROUGH PRODUCTION ADJUSTMENT AND SUPPLY

In large part, the basic solution must come from the production or supply side. How can we increase the flexibility of the producing plant? Can we improve our knowledge of the supply function sufficiently to devise educational and action programs which bring production more closely in line with demand?

What should be the production structure of agriculture? How many farms should we have, and how many people should be employed in the industry? Spatially, how should production be contracted to provide a total output, and a composition of output, consistent with consumer demand? Do we have sufficient information on returns to scale and resource productivities to specify the magnitude of adjustment required

in farm numbers and agricultural workers to provide resource returns and family incomes comparable with other employment opportunities?

Restoration or attainment of equilibrium for agriculture, measured in the sense of comparable resource returns and family incomes — even if subjective values are included in these quantities — revolves particularly around these specific production relationships. But in the same category are other possibilities and problems which merit further attention. Examples are part-time farming, capital structure, and credit facilities. Given the adjustments outlined above, a problem which will become even more pressing is the capital requirements of a beginning farmer.

Farm management workers and production economists have a challenge before them. The adjustments required in agriculture call for data. Significantly, the purpose of this conference is to examine the entire structure of economic phenomena involved in solving the basic problem of agriculture, but in particular, to provide a basis for redirecting research relating to the production adjustments of agriculture.

COMPLEXITY OF PHENOMENA AND VARIOUS DISCIPLINES

Solution of the basic problem of agriculture can challenge most of the scientific disciplines found in land-grant colleges. Often, research efforts will need to be integrated. Just as important as the problem of production adjustment is social adjustment. Indeed, sociologists should be closely allied with an intensive effort to bring balance to agriculture. Shifts in the farm population necessarily give rise to migration and community problems. At the same level are institutional problems which challenge the land economists, such as equitable and efficient taxation and the possibilities of zoning and water regulations in rural-urban transition areas.

PROGRAM ANALYSIS

The farm problem is not subject to easy and quick solution, nor will it be solved by major farm programs of the type in existence over the past two decades. While these programs may not have retarded adjustment as much as sometimes supposed, they have not been directed to the basic cause of the farm problem. They have only helped to postpone the day of reckoning. An entirely different emphasis in governmental programs is needed if they are to provide real long-run solutions. Society may indeed feel obligated to compensate agriculture for the particular burden which falls on it as a result of progress. However, programs are possible which will provide this compensation as well as facilitate resource adjustment. This conference should help provide the basis for establishing such programs.

GENERAL CHALLENGE IN RESEARCH AND EDUCATION

In broad perspective, the agricultural adjustment problem poses a new challenge for the entire land-grant college system, the U. S. Department of Agriculture, and the farm organizations which serve the farming industry. These agencies have been administered efficiently. In a century of service to agriculture and society, they helped to: (1) increase agricultural output in early years when the status of economic and population growth allowed a greater farm product to be consistent with higher farm incomes, (2) provide food for wartime allies and postwar adjustments, and (3) safeguard the food supplies in decades when population growth was extremely rapid, both from the standpoint of births and immigration.

But now the challenge to institutions serving the industry is to help agriculture adjust its use of resources and output of product to national economic growth, as well as to aid this economic growth through further technical improvement. To be certain, investment in new techniques and their extension needs to be continued and perhaps even accentuated, but more in terms of national economic growth than in terms of increasing the incomes of farmers per se. If agriculture is not to bear the extreme burden of this economic progress, and if the technical innovations in agriculture are to make their full contributions to economic growth, then these efforts must be complemented with activities which help agriculture to adjust. Major efforts should be directed to research and education which facilitate the movement of surplus labor from agriculture. To free labor from agriculture, through technical progress, and then leave it stranded is as inconsistent with economic growth as not having freed it in the first place.

The challenge in education is extremely great. Education to inform farm persons of the relative income opportunities in different occupations will, over the long run, be decidedly more effective than current farm programs in solving the basic farm problem. Proper education, with the research to support it, cannot alone effect the transfer of all surplus farm labor, but it can be the important catalyst in bringing about adjustments required in a rapidly growing and full-employment economy.

It is obvious, of course, that the adjustment will require time. Labor in farming represents persons, not an inanimate resource. Labor is represented in older persons with values which tie them to the community and occupation. It involves persons who do not have the skills for ready transfer to other industries, who do not have funds for transportation to other work or for retraining in other employment. It represents persons who must market themselves as a resource and who have incomplete information about the market for their services.

INVESTMENT IN THE HUMAN RESOURCE AND MOBILITY AIDS

But herein lies the modern challenge. Insufficient investment has

been made in research and education relative to the human resource in agriculture. Far larger quantities are invested in the capital resource through items such as improved farm machinery, fertilizer, livestock breeding, and animal rations; or in developing the land resource through improved soil management, irrigation, reclamation, and soil conservation. Certainly, we need to make a commensurate investment in that resource which is not only a means, but also is an end in itself, the human resource. Many opportunities and possibilities exist. Among these are: better economic information on income opportunities in farming and in other occupations for persons with different funds and skills; increased emphasis on vocational training which prepares farm youth for better opportunities in nonfarm employment, as well as for improved management in an increasingly competitive agriculture; vocational guidance and counseling which reaches farm youth at a flexible point in their lives and which guides them to their most promising and rewarding alternative; employment services which effectively inform farm persons of alternatives in other locations and industries; retraining programs for persons already in agriculture who wish to transfer to other employment; unemployment compensation, transportation subsidies, and "severance or mustering out" pay for those who prefer transfer over subsidies — through commodity loans, conservation grants, and soil bank payments — for remaining in agriculture.

We venture the proposition that even though more research is badly needed, the greatest need is education. As professional economists, we have considerable knowledge of the qualitative nature of required adjustments. But we have not been sufficiently effective in translating this knowledge to farm people. We have not sufficiently informed farm youth that while some are needed as efficient managers in a competitive agriculture, others can better prosper in nonfarm employment. We have failed to provide interregional and long-run outlook information regarding employment opportunities, but have emphasized almost entirely the short-run outlook on commodities such as hogs, cattle, and potatoes. The blame falls partly upon ourselves, as economists, for lack of proper emphasis in educational programs. But an important part of it also falls on agricultural education in general. Our emphasis in vocational agriculture and 4-H work, for example, has considered mainly the farm youth who will return to agriculture. The welfare and life's satisfactions of those who will not or should not remain in farming is no less important. To allow some to enter agriculture, only to find later that they have selected the wrong occupation, is no favor to them.

Investment in the human resource, with emphasis on education to keep people properly informed in occupational outlook and opportunities, should be the major element of policy in decades ahead.

ECONOMIC DEVELOPMENT

Increasingly, the agricultural economist needs to focus his attention

on local economic development. His ranks have been somewhat thinned as his colleagues have accepted job opportunities in developmental programs for foreign lands. But often the challenge is just as great in a local or state area. Generally, we have been passive, leaving the encouragement of industrial growth to chambers of commerce. Yet the agricultural adjustment problem can be solved most simply by local economic development which is consistent with the spatial features of our society. It is far less painful and costly for a farm youth or established operator to transfer to a position in his home town than to move to the next state or across the nation; he need not move into a totally new community with an entirely different set of basic values. He may even remain as a part-time farmer.

We know too little about the phenomena of economic development. However, we certainly need to sharpen our tools in order to: (1) better predict where it should or will take place, (2) determine the spark which kindles growth, and (3) prevent misguided effort where it is economically ill-advised as the solution to the local adjustment problem.

THE COMMERCIAL FARMER IN AGRICULTURE

This conference necessarily has a pessimistic note: it deals with a problem. But it need only be a short-run problem. It arises because the potential of a more bountiful living exists and because agriculture has contributed greatly to this potential. Agricultural scientists have shown great ingenuity in helping to provide a foundation for this potential in economic growth. It is the expectation of the North Central Farm Management Research Committee that this conference will help generate ingenuity in raising the economic possibilities of agriculture to levels consistent with a progressive nation.

But in aiding agricultural adjustment through labor transfers, we should not swing the pendulum too far and devote too little attention to the commercial farmer who remains in agriculture. Family farms of efficient size, managed properly, are and can be prosperous. Just as we seek to drain surplus resources from agriculture, we need to focus attention on those who should remain and produce the basic food product of the nation. As a requirement for an efficient agriculture, we need to provide information and services which allow commercial farms to employ resources and produce commodities in proportions consistent with consumer demand and favorable family income.

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Discussion

THIS paper on "The Income and Resource Problem" provides the keynote for this symposium. After reviewing it quite searchingly I find myself in general agreement with the statement of the problem we are to discuss. My remarks, therefore, will merely supplement this paper.

The authors emphasize the high level of living in America today. The gloomy forebodings of the Rev. Thomas R. Malthus near the turn of the 18th century have seen no fulfilment in our present economy. Our population is not pressing on our food supply; rather, the reverse appears to be true, even in the face of our recent upsurge in rate of population growth.

The authors devote relatively little attention to the revolution in agricultural technology that has swept this country with devastating speed in our lifetime. To me this is one of the major causes of the problem under study. This may well be compared with the industrial revolution starting near the close of the 18th century. One radical difference is the breakneck speed with which this avalanche of new techniques has revolutionized this ages-old business of farming. Within the memory of our present generation of farmers almost every agricultural operation has been changed or displaced.

The wide disparity between the rewards in industry and agriculture, in different areas and in different types of farming, has been mentioned in this keynote paper. The authors might well have added that within each of these areas and within each type of farming group even greater disparity of income exists among individual farmers. Those areas and those individuals that have been able to utilize effectively the new techniques have, in general, kept pace with industrial prosperity in their areas.

The problem, therefore, as this paper points out, is primarily one of adjustment in resource utilization. For several reasons adjustments in agriculture have been slower than in industry. Agriculture is composed of a large number of small units in which management is an unspecialized function. Farmers are traditionally conservative. Too often they would rather bear their existing ills than take the risk of facing unknown hazards. Furthermore, agriculture is a biological business, and nature sets the pace.

Prior to the current agricultural revolution, rapid adjustments were less essential than in this highly dynamic age of ever changing techniques. I well remember this statement (characteristic of those epigrammatic generalizations for which he was famous) by Dr. G. F. Warren: "Adjustments in agriculture are made largely by the sheriff and the undertaker." In other words, extreme measures have been necessary to induce changes in agriculture. This slow response to change is doubtless a significant reason why agricultural prosperity has lagged behind that of the rest of our economy. What was good enough for our fathers is not good enough to keep the farmer in step with the progress of this modern atomic age.

Speeding up adjustments of resource use in agriculture is an individual and not an over-all or mass process. As the authors point out, to move a man from farming to urban employment is a more violent shift than is a move from one industry to another within the same area. The less radical the shift, the easier the adjustment. Since education is involved, changes cannot be made quickly in individual cases.

Another factor to consider in agricultural adjustments is determination of which areas to retain in agriculture and which to release for industrial, urban, or suburban development. Land differs widely in its adaptation for agricultural production. Good level prairie land should be retained in agriculture. Rolling land or timber lands on the lighter soil may be more satisfactory for urban or suburban residential development. This land use problem is only one of the types of problems that will arise in making the adjustments needed to bring agriculture back in line with the rest of our economy.

I would like your consideration of one more idea that occurred to me in studying this paper. A very large proportion of the public funds for agricultural research is for the field of production — agronomy, plant and animal breeding, livestock feeding, control of insects and diseases that prey on our crops and livestock, and the like. We need more of these expenditures, not less. But we must not be blind to the fact that the funds for this type of research contribute to the excess of agricultural production over present needs which the authors of this paper decry. Is it not time that we supplement these funds with additional expenditures for economic research to guide adjustments in the pattern of farm production to effective demand? Is it not time for us to spend more of our energies in trying to increase farm profits — and not merely production?

Sponsorship of this conference by a farm management research committee seems highly appropriate. The farm management researcher is perhaps more directly concerned with helping the farmer make money than any other research worker in agriculture. This concern should be an opportunity and a challenge to us in planning our research programs and in demanding financial support to conduct them.