ABSTRACT

FINANCIAL AND PERSONNEL RESOURCES IN AND RECRUITING AND TRAINING OF PERSONNEL IN AGRICULTURAL ECONOMICS AT LAND-GRANT INSTITUTIONS

by Benjamin Tillman Lanham, Jr.

Agricultural Economics as a field of study was relatively unknown prior to 1900. Since that time, as a professional field, its history has been a story of rapid development, and of continuing growth and adjustment.

A 1941 study of the resources and personnel available in Agricultural Economics emphasized the major weaknesses of Agricultural Economics teaching, research, and extension programs and activities at that time. The changing nature, scope, and complexity of rural and related problems since 1940 emphasize the needs for a study of: (1) the extent that Agricultural Economics has adjusted its teaching, research, and extension programs and activities to meet the changes in needs that have occurred since about 1940, and (2) the extent that these changes in needs mean additional adjustments in the future.

Based on information supplied by Land-Grant institutional Agricultural Economics departments and on available secondary data, an analysis of these situations indicates, that despite the tremendous growth and progress that has been made in the field during recent years, many of the problems and weaknesses that existed in 1940 continued to be major problems and weaknesses in 1955.

The number of Agricultural Economics personnel engaged in Land-

Grant institutional teaching, research, and extension work increased 50 per cent between 1940 and 1955. Financial resources available to Agricultural Economics for teaching, research, and extension work at Land-Grant institutions increased over 300 per cent during this same period.

Departmental organization and administration of Agricultural Economics work varied widely from state to state. In nearly half of the states, extension work was handled administratively separately from teaching and research. This situation was essentially the same in 1955 as in 1940.

A persistency of staff vacancies and a high rate of turnover were major problems in many institutions in 1955. Adding to the acuteness of this situation, many departments were already understaffed in terms of training, experience, and competence.

Many of the problems incident to the recruiting and training of staff personnel that existed in 1940 continued to be unsolved problems in 1955.

In recruiting undergraduates, problems were more closely related to quality than to number of students. For undergraduate training, Agricultural Economics curricula continue to need revision in terms of providing broader and more rigorous and analytical training. A major need is the establishment of more uniformity in the quality and levels of teaching among institutions. Also needed is more emphasis on the

proper selection and assignment of staff personnel for undergraduate teaching.

At the graduate level, more adequate quantitative measures are needed for evaluating graduate capabilities and potentialities. Graduate training, particularly at the Ph.D. level and in the larger graduate training departments, often tends to be highly specialized. For many advanced graduate students, in terms of career opportunities and employment responsibilities after graduation, a broader and a less specialized program may be more appropriate.

Professional staff recruitment faces increasing competition from other Land-Grant institutions and from private agencies for well-trained and competent staff personnel. The ability of most Land-Grant Agricultural Economics departments to recruit and hold competent and experienced staff personnel is becoming increasingly more difficult than in recent years.

The high degree of inbreeding that existed in 1940 continued to persist as a major problem and weakness in a number of institutions in 1955. In some instances, the rate of turnover of professional staffs needs to be increased as a means of solving this situation. In most cases, however, rates of turnover are already too high to permit departments to build stability and continuity into departmental teaching, research, and extension programs and activities.

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Full responsibility for any errors, omissions, or erroneous interpretations or statements in this thesis is assumed by the author.

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CHAPTER I

INTRODUCTION

The history of America has been a story of growth, development, and adjustment. In no phase of American life has this been more evident than in agriculture. Throughout the history of America, and particularly during recent years, there has been a tremendous growth in population, a rapidly increasing production capacity of both agriculture and industry, widespread advances in science and technology, a shift from a predominately rural economy to an agricultural-industrial economy, a relatively high standard of living for many segments of the population, and a present-day demand for even higher economic and social benefits for all American citizens.

Recent changes in American agriculture have been influenced by both farm and nonfarm factors. The effects of these changes have been reflected in both farm and nonfarm sectors of the nation's economy. During recent years, expanding business and industrial developments and activities have both aided in solving old problems and in creating new problems in many agricultural areas of the country. This has been particularly true with respect to the development and use of the country's basic resources in rural areas.

Agricultural Economics as a field of study, concerned with the application of the social sciences to the problems of agriculture, is relatively young. As a subject for teaching and research in Land-Grant institutions, Agricultural Economics was relatively unknown prior to

1900. 1/

The history of Agricultural Economics since about 1900, like that of American agriculture during the same period, has been a story of growth, development, and adjustment. Since Agricultural Economics was deeply rooted in the affairs of agriculture, it was welcomed, early in its history, into the Land-Grant family of professional and scientific workers. 2/

During 1939 and 1940 a comprehensive study of the training and recruiting of personnel in the rural social studies was conducted under auspices of the American Council on Education. In publishing the results of this study with respect to Land-Grant institutions, emphasis was placed on major weaknesses in teaching, research, and extension programs and activities. 3/ No comparable study of Agricultural Economics programs and activities in Land-Grant institutions has been undertaken since the 1940 study was completed.

The changing nature, scope, and complexity of rural problems since 1940 point to the need for a re-study of Land-Grant institutional programs and activities in teaching, research, and extension in Agricultural Economics. Rural problems that have economic, social, and political implications call for study, analysis, and solution. Questions of major concern include: (1) To what extent has Agricultural

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1/ Taylor, Henry C., and Taylor, Anne Dewees, The Story of Agricultural Economics, Iowa State College Press, Ames, Iowa, 1952, p. 53.

2/ Schultz, Theodore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, p.3.

3/ Ibid.

Economics adjusted its teaching, research, and (extension) educational programs and activities to meet the changes in needs that have occurred since about 1940? And, (2) to what extent do these changes in needs mean additional adjustments in Agricultural Economics teaching, research, and (extension) educational programs and activities in the future?

This study is concerned with the teaching, research, and extension programs and activities in Agricultural Economics at 48 Land-Grant institutions. These include the institution in each state which normally does teaching, research, and extension work in Agricultural Economics (Appendix Table 1). Questionnaires were mailed to the heads of departments of Agricultural Economics at each of these institutions. Basic detailed data with respect to teaching, research, and extension was called for on these questionnaires. The data obtained from respondents were supplemented with other data available from secondary sources to form the primary basis on which this study was based.

Of the 48 Land-Grant Agricultural Economics departments contacted, 37 completed and returned the requested questionnaire information. Nonresponding departments were located in all areas of the country and included some large and some small departments. The information received from responding departments, therefore, was assumed to be representative of all Land-Grant Agricultural Economics departments in the country.

CHAPTER II

ORGANIZATION AND ADMINISTRATION OF AGRICULTURAL ECONOMICS

At the Land-Grant institutional level, approximately half of the 48 departments studied were in institutions that emphasized science and technology. Many of these were called state colleges of agriculture and mechanic arts. 1/ The remaining half were in institutions that normally included a liberal arts college and professional schools such as law or medicine. Many of these were characteristically university-type institutions (Appendix Table 1).

Most Agricultural Economics departments are dependent upon other departments within respective institutions for specialized service needs in teaching, research, and extension (Appendix Table 2). It is frequently much more difficult to obtain service needs in statistics, general economics, mathematics, law, and other areas, in institutions that emphasize science and technology than in those with a university-type of organization.

In the 1940 American Council on Education study, Schultz concluded that there were two important problems in departmental organization that confronted rural social science fields at that time: (1) the extent to which the subject-matter field should be divided, and (2) whether teaching, research, and extension should be combined into a single

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1/ In recent years, many of the Land-Grant institutions formerly called colleges have changed their official names to include the word university. In most of these cases, however, the objectives, functions, organization, and operation of these institutions have remained unchanged.

administrative unit. 2/ Schultz pointed out that dividing Agricultural Economics into two or more subfields was undesirable.

In the early years of Agricultural Economics work, there was a strong tendency to divide the field into subfields such as farm management, agricultural marketing, and land economics. Frequently, separate departments were established for each subfield. By 1940, at most Land-Grant institutions, these separate subfields of Agricultural Economics work had been combined into single departments of Agricultural Economics. Principal exceptions were at Land-Grant institutions in Kentucky, Michigan, Massachusetts, Washington, and Oregon. At most of these institutions, departments of farm management and departments in other subfields continued in existance.

Since 1940, farm management and other subfield departments, where they previously had been separate, have been absorbed by or combined into single departments of Agricultural Economics. Of the 48 Land-Grant institutions studied, the distribution of departments by name in 1960 was as follows: Agricultural Economics 32, Agricultural Economics and Rural Sociology 8, Agricultural Economics and Sociology 2, Agricultural Economics and Farm Management 2, Agricultural Economics and Marketing 1, Economics and Sociology 2, and Economics 1. 3/ Thus, from the standpoint of departmental organization, the problem of subdivision of the field of Agricultural Economics into subfield departments has

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2/ Schultz, Theodore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, p. 32.

3/ Compiled from "Workers in Subjects Pertaining to Agriculture in Land-Grant Colleges and Experiment Stations, 1960-61," Agriculture Handbook No. 116, ARS, USDA, April 1961.

been eliminated.

In the 1940 study, Schultz pointed out that to detach either extension or research or teaching from the other two branches would substantially reduce the effectiveness of work in Agricultural Economics. 4/ Although some improvement has been made in this situation since 1940, this continues to be a major problem in many institutions. In 1940, half of the 48 Land-Grant institutions had complete integration of teaching, research, and extension in Agricultural Economics in a single department. In 19 institutions, teaching and research in Agricultural Economics were combined but extension was separate. In the remaining five institutions, each branch of activity was separate. In 1955-56, on matters of general administration, recruitment, promotions, assignment of duties, and budgetary control, the responsibilities of heads of departments of Agricultural Economics with respect to teaching, research, and extension personnel at the several Land-Grant institutions were widely varied, Table 1. A higher degree of integration existed in the recruitment of personnel than in other functions.

The information in Table 1 indicates that the problems incident to bringing together teaching, research, and extension into a single subject-matter department were little nearer solution in 1955-56 than in 1940. Only about half of the Land-Grant institutions studied appeared to have achieved complete integration in Agricultural Economics teaching, research, and extension. Thus, this particular weakness in departmental organization and administration continued to exist in

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4/ Schultz, op. cit., p. 32.

Table 1. Responsibilities of Heads of Departments of Agricultural Economics in Specified Areas at Land-Grant Institutions, 1955-56

(T = Teaching; R = Research; E = Extension)

State	General administration			Recruiting personnel			Promotions			Budgetary control		
Alabama	T	R		T	R		T	R		T	R	
Arizona	T	R		T	R		T	R		T	R	
Arkansas	T	R		T	R		T	R		T	R	
California 1/		-			-			-			-	
Colorado	T	R		T	R		T	R		T	R	
Connecticut	T	R	E	T	R	E	T	R	E	T	R	E
Delaware	T	R		T	R		T	R		T	R	
Florida	T	R	E	T	R	E	T	R	E	T	R	
Georgia	T	R	E	T	R	E	T	R	E	T	R	E
Idaho 1/		-			-			-			-	
Illinois	T	R		T	R	E	T	R	E	T	R	
Indiana 1/		-			-			-			-	
Iowa	T	R	E	T	R	E	T	R	E	T	R	E
Kansas	T	R		T	R	E	T	R		T	R	
Kentucky 1/		-			-			-			-	
Louisiana	T	R		T	R		T	R		T	R	
Maine	T	R		T	R		T	R		T	R	
Maryland 1/		-			-			-			-	
Massachusetts	T	R	E	T	R	E	T	R	E	T	R	E
Michigan	T	R	E	T	R	E	T	R	E	T	R	E
Minnesota	T	R		T	R		T	R		T	R	
Mississippi	T	R		T	R		T	R		T	R	
Missouri	T	R		T	R		T	R		T	R	
Montana 1/		-			-			-			-	
Nebraska	T	R		T	R	E	T	R		T	R	
Nevada	T	R	E	T	R	E	T	R	E	T	R	
New Hampshire 1/		-			-			-			-	
New Jersey	T	R	E	T	R	E	T	R		T	R	
New Mexico	T	R		T	R		T	R		T	R	
New York	T	R	E	T	R	E	T	R	E	T	R	E
North Carolina 1/		-			-			-			-	
North Dakota	T	R		T	R		T	R		T	R	

(Continued)

Table 1 (Continued). Responsibilities of Heads of Departments of Agricultural Economics in Specified Areas at Land-Grant Institutions, 1955-56

(T = Teaching; R = Research; E = Extension)

State	General administration			Recruiting personnel			Promotions			Budgetary control		
Ohio	T	R	E	T	R	E	T	R	E	T	R	E
Oklahoma	T	R		T	R	E	T	R		T	R	
Oregon	T	R		T	R	E	T	R		T	R	
Pennsylvania	T	R		T	R		T	R		T	R	
Rhode Island	T	R		T	R	E	T	R	E	T	R	
South Carolina	T	R		T	R		T	R		T	R	
South Dakota 1/		-			-			-			-	
Tennessee	T	R	E	T	R	E	T	R	E	T	R	E
Texas	T	R	E	T	R	E	T	R	E	T	R	E
Utah	T	R	E	T	R	E	T	R	E	T	R	
Vermont	T	R	E	T	R	E	T	R	E	T	R	E
Virginia 1/		-			-			-			-	
Washington	T	R		T	R		T	R		T	R	
West Virginia	T	R		T	R		T	R		T	R	
Wisconsin	T	R	E	T	R	E	T	R	E	T	R	E
Wyoming 1/		-			-			-			-	

1/ Questionnaire not returned.

1955-56 on about the same level as in 1940 for about half of the Land-Grant institutions studied.

In Schultz's study in 1940, it was pointed out that the rural social science fields logically form a cluster, and should be treated as such in any institutional organization. 5/ In 1955-56, most Land-Grant institutions continued to have rural sociology and other related

5/ Ibid., p. 39.

social science subject-matter areas administered in departments outside of departments of Agricultural Economics (Appendix Table 2). This was particularly pronounced for subject-matter areas such as general economics, business administration, and statistics.

CHAPTER III

FINANCIAL RESOURCES AVAILABLE TO AGRICULTURAL ECONOMICS

The financial resources available to Agricultural Economics in Land-Grant institutions for use in teaching, research, and extension programs and activities vary widely from one institution to another. There is also wide variation in financial resources used in Agricultural Economics relative to total expenditures for teaching, research, and extension among different Land-Grant institutions.

Financial Resources for Research

Research funds used in the support of Agricultural Economics research are derived from both federal and nonfederal sources. In 1955-56, federal sources included principally Purnell and Bankhead-Jones funds. Nonfederal sources included State appropriations, grants and donations, and contract funds.

The total amount of funds available for Agricultural Economics research in Land-Grant institution Experiment Stations increased from $1.2 million in 1940 to $6.0 million in 1955. This represented a 402 per cent increase during this 15-year period, Table 2. Total funds available to Experiment Stations increased 361 per cent during this period. Thus, Agricultural Economics research received a slightly higher percentage of total Experiment Station research funds in 1955 than in 1940.

Experiment Station Research Funds

State Agricultural Experiment Stations conduct a broad and compre-

Table 2. Total Research Funds Available to Experiment Stations and to Agricultural Economics Research Work for Years Ended June 30, 48 Experiment Stations, Specified Years

Year	Total funds available to Experiment Stations 1/	Total research funds available to Agricultural Economics 2/	Agricultural Economics research funds as a percentage of total research funds available to Experiment Stations
	1,000 dol.	1,000 dol.	Per cent
Fiscal year ending:			
June 30, 1940	20,734	1,192 3/	5.7
June 30, 1945	27,327	4/	4/
June 30, 1950	63,019	4/	4/
June 30, 1955	95,562	5,982 5/	6.3
	Per cent	Per cent	
Percentage change from 1940 to 1955	+361	+402	

1/ See Appendix Table 3 for individual state totals.

2/ See Table 9 for individual state totals.

3/ See Schultz, op. cit., Table 1, p. 49.

4/ Not ascertained.

5/ Obtained by: (1) calculating for the reporting institutions, the percentage of total research funds available to Experiment Stations in these institutions that were reported available to Agricultural Economics, and (2) multiplying this percentage by the total amount of research funds available to Experiment Stations for the 48 Land-Grant institutions.

Source: Compiled and calculated from "Report of the Agricultural Experiment Stations," 1940, 1945, 1950, and 1955, OES, USDA. Also, survey of Agricultural Economics departments in 48 Land-Grant institutions, 1956.

hensive program of research in phases of the life, physical, and social sciences related to agriculture. These stations, as one of the major divisions of Land-Grant institutions, have a long and successful history of research experience. The federal government, recognizing the important part that scientific research could play in solving farm problems, encouraged the establishment of State Agricultural Experiment Stations and a continuing grant-in-aid program through passage of the Hatch Experiment Station Act of 1887. The program was further strengthened by subsequent passage of the Adams Act of 1906, the Purnell Act of 1925, the Bankhead-Jones Act of 1935, and the amendment to the Bankhead-Jones Act of 1946. Each of these provided for further endowment and increases in federal-grant payments to states. In 1955, the five measures were combined by Congress into the Hatch Act Amended, which serves as the present authorization for grant-in-aid payments to the states. 1/

The federal government's research grants to State Experiment Stations under the Hatch Act have for many years served as an incentive to individual states to appropriate additional funds from state sources for research. The existence of the Federal-Grant program has also provided encouragement to other public and private agencies, organizations, and individuals to make available to Experiment Stations grant funds and donations for use in agricultural research programs and activities.

A major share of the 361 per cent increase in total Experiment

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1/ Adapted from Knoblauch, H. C., "Basic Research at State Stations," Science, Vol. 130, No. 3389, December 11, 1959, pp. 1639-41.

Station research funds between 1940 and 1955, as indicated in Table 2, came from nonfederal sources while federal funds less than doubled. The major contributor to increased federal funds was the Research and Marketing Act of 1946. Among nonfederal sources, the largest percentage increase in funds was in the area of grant funds. In terms of dollars, increased state appropriations were most important. Significant increases also occurred in sales funds and in certain miscellaneous sources.

In 1940, federal sources accounted for 32 per cent of the total research funds available in Land-Grant institution Experiment Stations; 68 per cent of total research funds were from nonfederal sources, Table 3. In 1955, increases in nonfederal sources of support for research were of enough importance that nonfederal sources represented

Table 3. Percentage of Total Research Funds Available to Experiment Stations from Specified Sources for Years Ended June 30, 48 Experiment Stations, Specified Years.

Item	1940	1945	1950	1955
	Per cent	Per cent	Per cent	Per cent
Experiment Station funds from specified sources:				
Federal	32	25	20	19
Nonfederal	68	75	80	81
State appropriations	45	41	52	52
Sales	10	16	13	11
Grants	2	5	5	7
Fees	3	2	1	1

Source: Compiled and calculated from "Report on the Agricultural Experiment Stations," 1940, 1945, 1950, and 1955, OES, USDA.

81 per cent of the total; federal sources amounted to only 19 per cent.

Despite the tremendous increase in dollar volume of State appropriated funds for research between 1940 and 1955, the increase in the relative importance of State appropriated funds was only from 45 per cent of the total in 1940 to 52 per cent of the total in 1955. Among non-federal sources, the greatest percentage gain in relative importance was in the case of grants and donations, which increased from 2 to 7 per cent of the total during this 15-year period.

The increase in Experiment Station research funds between 1940 and 1955 suggest that the number of personnel engaged in Experiment Station research work would also increase. Table 4 indicates that in 1940, Land-Grant institutions listed a total of 4,496 research workers. In 1955, these same institutions listed a total of 7,694 research workers. This represented a 71 per cent increase in number of research workers during this 15-year period while research funds increased 361 per cent.

A number of factors were responsible for the difference between the percentage increase in research funds and the percentage increase in number of research workers. Among these were increased salary levels per worker, increased maintenance costs, increased operating costs, and increased costs of all items used incident to conducting Experiment Station research activities and programs. This resulted in a 169 per cent increase in the amount of research funds available per research worker between 1940 and 1955. In 1940, research funds per research worker amounted to $4,612; in 1955, research funds per research worker had increased to $12,420. These data are based on the inclusion of both full-time and part-time research workers. On a full-

Table 4. Total Research Funds Available to Experiment Stations in Relation to Total Number of Research Workers for Years Ended June 30, 48 Experiment Stations, Specified Years

Year	Total funds available to Experiment Stations	Total number of research workers 1/	Research funds available per research worker 1/
	1,000 dollars	Number	Dollars
Fiscal year ending:			
June 30, 1940	20,734	4,496	4,612
June 30, 1945	27,327	4,274	6,394
June 30, 1950	63,019	6,781	9,293
June 30, 1955	95,562	7,694	12,420
	Per cent	Per cent	Per cent
Percentage change from 1940 to 1955	+361	+71	+169

1/ These figures include both full-time and part-time resident research workers.

Source: Compiled and calculated from "Report on the Agricultural Experiment Stations," 1940, 1945, 1950, and 1955, CES, USDA.

time equivalent basis, research funds available per research worker would be somewhat higher than the amounts shown in Table 4.

Total farm population decreased from 30 million to 20 million between 1940 and 1955, Table 5. This 32 per cent decrease in farm population occurred during a period when research funds for Experiment Stations increased 361 per cent. On a per capita of farm population

Table 5.

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Table 5. Total Research Funds Available to Experiment Stations in Relation to Farm Population for Years Ended June 30, 48 Experiment Stations, Specified Years

Year	Total funds available to Experiment Stations	Estimated total farm population	Research funds available per capita of farm population	Number of farm people for each dollar of research funds available
	1,000 dol.	1,000	Dollars	Number
Fiscal year ending:				
June 30, 1940	20,734	30,269	0.68	1.46
June 30, 1945	27,327	25,190	1.08	.92
June 30, 1950	63,019	23,332	2.70	.37
June 30, 1955	95,562	20,625	4.63	.22
	Per cent	Per cent	Per cent	Per cent
Percentage change from 1940 to 1955	+361	-32	+581	-85

Source: Compiled and calculated from "Report of the Agricultural Experiment Stations," 1940, 1945, 1950, and 1955, CES, USDA. Also, "Census of Population," 1940 and 1950, Bureau of the Census, U. S. Department of Commerce. And, "Farm Population Estimates," 1945 and 1955, (BAE) AMS, USDA.

basis, research funds to Experiment Stations in 1940 amounted to only $0.68. In 1955, research funds available to Experiment Stations amounted to $4.63 per capita of farm population. This represented a 581 per cent increase during this 15-year period. In terms of numbers of people on farms per dollar expended on the Experiment Stations' total agricultural research programs, there was an 85 per cent decrease

between 1940 and 1955. In 1940, research expenditures amounted to one dollar for each 1.5 persons on farms; whereas, in 1955, research expenditures amounted to one dollar for each 0.2 persons on farms.

Between 1940 and 1955, the percentage increase in farmers' cash farm income (cash receipts from marketings plus government payments) did not equal the percentage increase in funds available for Experiment Station research activities and programs. In 1940, when Experiment Station research funds amounted to about $21 million, cash farm income amounted to about $9 billion. This represented a ratio of $441 of cash farm income to each dollar of available research funds, Table 6. By 1955, Experiment Station research funds had increased to nearly $96 million, while cash farm income had increased to about $30 billion. The ratio of cash farm income to each dollar of research funds in 1955 was $310, thus, indicating a 30 per cent decrease in the ratio during this 15-year period. This means that there was an increase in research funds relative to cash farm income between 1940 and 1955.

Agricultural Economics Research Funds

Research funds available from all sources for research programs and activities in Agricultural Economics at individual Land-Grant institutions in 1955-56 are indicated in Table 7. Also shown for respective institutions is the relative importance of federal and nonfederal sources as contributors to total available Agricultural Economics research budgets. Among individual institutions, the relative importance of nonfederal sources of Agricultural Economics research funds varied from less than 10 per cent to more than 70 per cent of the total.

Table 6. Total Research Funds Available to Experiment Stations in Relation to Farm Income for Years Ended June 30, 48 Experiment Stations, Specified Years

Year	Total funds available to Experiment Stations	Total cash receipts from marketings 1/	Ratio of farm income to each dollar of research funds available
	1,000 dol.	Mil. dol.	Dollars
Fiscal year ending:			
June 30, 1940	20,734	9,145.2	441
June 30, 1945	27,327	22,286.3	816
June 30, 1950	63,019	28,611.3	454
June 30, 1955	95,562	29,630.0	310
	Per cent	Per cent	Per cent
Percentage change from 1940 to 1955	+361	+224	-30

1/ These figures include total cash receipts from marketings and government payments for years indicated.

Source: Compiled and calculated from "Report of the Agricultural Experiment Stations," 1940, 1945, 1950, and 1955, OES, USDA. Also, "Agricultural Statistics," Annual issues, USDA. And, "The Farm Income Situation," Current issues, AMS, USDA.

Variations in amounts of research funds between states and variations in sources of research funds between states are of interest but, in reality, have little meaning. As Schultz pointed out in 1940 in

Table 7. Total Research Funds from All Sources in Agricultural Economics at Land-Grant Institutions, Fiscal Year, 1955-56

State	Federal sources	Nonfederal sources	Total	Percentage from non-federal sources
	Dol.	Dol.	Dol.	Pct.
Alabama	103,884	28,095	131,979	21.3
Arizona	52,658	19,552	72,210	27.1
Arkansas	95,802	6,104	101,906	6.0
California 1/	-	-	-	-
Colorado	50,206	8,625	58,831	14.7
Connecticut	36,840	32,848	69,688	47.1
Delaware	28,000	8,000	36,000	22.2
Florida	87,500	111,540	199,040	56.0
Georgia	139,853	16,622	156,475	10.6
Idaho 1/	-	-	-	-
Illinois	148,316	264,474	412,790	64.1
Indiana 1/	-	-	-	-
Iowa	95,124	133,339	228,463	58.4
Kansas	25,735	56,377	82,112	68.6
Kentucky 1/	-	-	-	-
Louisiana	69,289	82,157	151,446	54.2
Maine	66,941	8,100	75,041	10.8
Maryland 1/	-	-	-	-
Massachusetts	2/	29,595	2/	2/
Michigan	101,621	222,561	324,182	68.6
Minnesota	2/	2/	2/	2/
Mississippi	78,535	18,500	97,035	19.1
Missouri	64,841	27,709	92,550	29.9
Montana 1/	-	-	-	-
Nebraska	49,443	23,091	72,534	31.8
Nevada	30,500	11,300	41,800	27.0
New Hampshire 1/	-	-	-	-
New Jersey	40,098	22,986	63,084	36.4
New Mexico	56,000	30,000	86,000	34.9
New York	136,300	136,514	272,814	50.0
North Carolina 1/	-	-	-	-
North Dakota	54,220	21,594	75,814	28.5

(Continued)

Table 7 (Continued). Total Research Funds from All Sources in Agricultural Economics at Land-Grant Institutions, Fiscal Year, 1955-56

State	Federal sources	Nonfederal sources	Total	Percentage from non-federal sources
	Dol.	Dol.	Dol.	Pct.
Ohio	146,294	76,414	222,708	34.3
Oklahoma	115,026	49,430	164,456	30.0
Oregon	59,441	63,670	123,111	51.7
Pennsylvania	147,822	106,076	253,898	41.8
Rhode Island	31,979	3,938	35,917	11.0
South Carolina	95,877	12,280	108,157	11.4
South Dakota 1/	-	-	-	-
Tennessee	116,035	30,621	146,656	20.9
Texas	225,409	30,711	256,120	12.0
Utah	49,825	18,561	68,386	27.1
Vermont	36,450	13,894	50,344	27.6
Virginia 1/	-	-	-	-
Washington	83,456	64,800	148,256	43.7
West Virginia	2/	2/	2/	2/
Wisconsin	39,250	111,489	150,739	74.0
Wyoming 1/	-	-	-	-

1/ Questionnaire not returned.

2/ Not reported on returned questionnaire.

citingcomparable data for 1939-40, 2/ it is important to recognize the many forms of heterogeneity existing among the several Land-Grant institutions. These include differences in the size of states, in the wealth and resources that constitute the tax base, in the importance of

2/ Schultz, Theodore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, p. 52.

agriculture, in the complexity and intensity of farm problems, in the institutional administrative policies and procedures, and in many other factors where no two states, or even two groups of states, are alike.

A comparison by states of the total amount of funds available for Experiment Station research with the amount available for Agricultural Economics research in 1955-56 is shown in Table 8. For all Land-Grant institutions combined, the proportion of total Experiment Station research funds budgeted for Agricultural Economics research was about 6.3 per cent. Among individual states, the proportion varied from less than 4 to more than 15 per cent. This pattern of distribution among states in 1955-56, after allowing for differences due to grant funds, differed little from the pattern for total rural social science research funds in 1939-40.

With few exceptions, Agricultural Economics research budgets in 1955-56 were mainly dependent upon regular Experiment Station funds. Compared to 1940, however, an increasing number of institutions in 1955-56 were obtaining some funds for research from sources outside of regular Experiment Station funds. Generally, the larger institutions that already had the larger budgets and the larger staffs were the insitutions that made the greatest use of grant and other available outside research funds.

In comparing research budgets in Agricultural Economics in different states with the importance of agriculture in respective states, Agricultural Economics research funds have been related to the number of farm people in each state (Appendix Table 4). The extreme range in ratios that existed in 1939-40 had largely disappeared by 1955-56. This was due in part to increased research funds for Agricultural Economics

Table 8. Research Funds in Rural Social Sciences in 1939-40 and Research Funds in Agricultural Economics in 1955-56 in Relation to Total Research Funds of Experiment Stations from All Sources for Respective Years at Land-Grant Institutions

State	Ratio of Rural Social Science research funds to total Experiment Station research funds in 1939-40 1/	Ratio of Agricultural Economics research funds to total Experiment Station research funds in 1955-56 2/
Alabama	4.8	5.8
Arizona	3/	8.8
Arkansas	14.3	7.8
California	5.0	3/
Colorado	6.9	4.0
Connecticut	6.0	5.0
Delaware	12.3	6.0
Florida	3.5	5.0
Georgia	5.4	5.6
Idaho	6.8	3/
Illinois	12.4	15.2
Indiana	2.6	3/
Iowa	17.9	6.4
Kansas	6.0	3.8
Kentucky	11.8	3/
Louisiana	22.1	5.6
Maine	10.9	11.9
Maryland	8.2	3/
Massachusetts	4.7	3/
Michigan	8.1	13.1
Minnesota	7.3	3/
Mississippi	1.4	4.5
Missouri	6.6	6.4
Montana	9.6	3/
Nebraska	5.2	4.0
Nevada	17.2	15.2
New Hampshire	12.2	3/
New Jersey	2.9	3.4
New Mexico	10.3	14.6
New York	8.1	5.2
North Carolina	8.3	3/
North Dakota	3/	4.9

(Continued)

Table 8 (Continued). Research Funds in Rural Social Sciences in 1939-40 and Research Funds in Agricultural Economics in 1955-56 in Relation to Total Research Funds of Experiment Stations from All Sources for Respective Years at Land-Grant Institutions

State	Ratio of Rural Social Science research funds to total Experiment Station research funds in 1939-40 1/	Ratio of Agricultural Economics research funds to total Experiment Station research funds in 1955-56 2/
Ohio	5.4	7.3
Oklahoma	8.9	7.7
Oregon	4.5	5.3
Pennsylvania	8.1	11.1
Rhode Island	7.6	9.0
South Carolina	6.8	9.0
South Dakota	13.2	3/
Tennessee	5.6	11.1
Texas	5.7	5.6
Utah	9.6	6.8
Vermont	13.6	14.1
Virginia	16.8	3/
Washington	6.6	5.7
West Virginia	12.1	3/
Wisconsin	8.0	4.7
Wyoming	6.4	3/

1/ Source: Schultz, Theordore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, Table 3, p. 54.

2/ Source: Based on data shown in Appendix Table 3 and Table 9.

3/ Not ascertained.

research in many of the Southern States between 1939-40 and 1955-56. Also contributing was the reduced farm population in these states during this same period. Despite the reduction in ratios for states

in this region of the country, however, these states in 1955-56 continued to receive fewer funds in relation to farm population than was true in other sections of the country. It is in the Southern States that Agricultural Economics research budgets continue to be relatively the smallest, that farm populations continue to be relatively the largest, and that farm problems continue to be among the most complex and intense of any area of the country.

In comparing farm income of each state with the amount of Agricultural Economics research funds in respective states, the same general picture is obtained as when comparing Agricultural Economics research funds with farm population. The wide variations that existed in ratios in 1939-40, however, had been reduced by 1955-56 (Appendix Table 5). This was particularly noticeable in many of the Southern States. Most of the states in the Great Plains, that in 1939-40 had high ratios, continued in 1955-56 to have these same high ratios.

Prior to 1940, the Land-Grant institutions located in the Southern States and in the Great Plains area had been less successful than had those in other areas of the country in establishing active, well-supported research programs in Agricultural Economics and related areas. 3/ Since 1940, however, research activities in Agricultural Economics in most of the Southern States have expanded tremendously, Table 9. The relative rates of change in available research funds for Agricultural Economics research for most Southern States were above the national average for the period 1940 to 1955-56. In the Great

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3/ Ibid., pp. 57-58.

Table 9. Relative Change in Research Funds Budgeted to Agricultural Economics at Land-Grant Institutions, 1939-40 to 1955-56

State	Research funds budgeted to Agricultural Economics: 1939-40	1955-56	Percentage increase
	1,000 dol.	1,000 dol.	Per cent
Alabama	20	132	560
Arizona	1/	72	-
Arkansas	34	102	200
California	62	2/	-
Colorado	17	59	247
Connecticut	15	70	367
Delaware	17	36	112
Florida	20	199	895
Georgia	13	156	1,100
Idaho	10	2/	-
Illinois	72	413	474
Indiana	23	2/	-
Iowa	65	228	251
Kansas	16	82	412
Kentucky	49	2/	-
Louisiana	39	151	287
Maine	19	75	295
Maryland	17	2/	-
Massachusetts	15	2/	-
Michigan	25	324	1,196
Minnesota	36	2/	-
Mississippi	5	97	1,840
Missouri	17	93	447
Montana	18	2/	-
Nebraska	17	73	329
Nevada	17	42	147
New Hampshire	17	2/	-
New Jersey	18	63	250
New Mexico	12	86	617
New York	92	273	197
North Carolina	20	2/	-
North Dakota	1/	76	-

(Continued)

Table 9 (Continued). Relative Change in Research Funds Budgeted to Agricultural Economics at Land-Grant Institutions, 1939-40 to 1955-56

State	Research funds budgeted to Agricultural Economics: 1939-40	1955-56	Percentage increase
	1,000 dol.	1,000 dol.	Per cent
Ohio	33	223	576
Oklahoma	30	164	447
Oregon	19	123	547
Pennsylvania	26	254	877
Rhode Island	5	36	620
South Carolina	22	108	391
South Dakota	16	2/	-
Tennessee	12	147	1,125
Texas	43	256	495
Utah	11	68	518
Vermont	17	50	194
Virginia	31	2/	-
Washington	16	148	825
West Virginia	27	2/	-
Wisconsin	38	151	297
Wyoming	10	2/	-
Total or average	1,192 3/	5,982 4/	402

1/ No information.

2/ Questionnaire not returned, or not reported on returned questionnaire.

3/ See Schultz, Theodore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, Table 1, p. 49.

4/ Total research funds available to Agricultural Economics for the 48 Land-Grant institutions in 1955 were obtained by: (1) calculating, for the reporting institutions, the percentage of total research funds available to Experiment Stations in these institutions that were reported available to Agricultural Economics, and (2) multiplying this percentage by the total amount of research funds available to Experiment Stations for the 48 Land-Grant institutions.

Plains area, rates of increase in Agricultural Economics research budgets were about equal to the national average during this period. In other areas of the country, where Agricultural Economics research budgets were relatively high prior to 1940, the rates of increase since 1940 have been at less than the national average rate.

Financial Resources for Extension

Of the three major divisions in the Land-Grant institutional system, the extension division is the youngest. From its inception to 1940, extension programs and activities, and the support of such programs and activities were vastly expanded. Since 1940, financial support for extension work has continued to expand at a very rapid rate.

Extension funds used in the support of Agricultural Economics extension work are derived principally from federal, state, and county sources. In some states, a limited amount of additional financial support for extension activities comes from certain outside sources, such as farm organizations, commodity organizations, and other similar groups.

The total amount of funds available for Agricultural Economics extension work in Land-Grant institutions in 1940 was about $1 million, Table 10. By 1955, extension funds had increased to a total of $3.5 million, representing a 277 per cent increase during this 15-year period. Total funds available for all Land-Grant institutional extension work during this period increased 200 per cent. Thus, Agricultural Economics extension work received a higher percentage of total extension funds in 1955 than in 1940. Of the total funds available for all extension work in 1940, Agricultural Economics extension work received 2.9 per cent. In 1955, Agricultural Economics extension work received

Table 10. Total Extension Funds Available to Extension Services and to Agricultural Economics Extension Work for Years Ended June 30, 48 Extension Services, Specified Years

Year	Total funds available to Extension Services 1/	Total Extension funds available to Agricultural Economics 2/	Agricultural Economics Extension funds as a percentage of total Extension funds available to Extension Services
	1,000 dol.	1,000 dol.	Per cent
Fiscal year ending:			
June 30, 1940	32,546	930 3/	2.9
June 30, 1945	37,064	4/	4/
June 30, 1950	70,737	4/	4/
June 30, 1955	97,757	3,503 5/	3.6
	Per cent	Per cent	
Percentage change from 1940 to 1955	+200	+277	

1/ See Appendix Table 6 for individual state totals.

2/ See Table 17 for individual state totals.

3/ See Schultz, op. cit., Table 8, p. 63.

4/ Not ascertained.

5/ Obtained by: (1) calculating for the reporting institutions, the percentage of total Extension funds available to Extension Services in these institutions that were reported available to Agricultural Economics, and (2) multiplying this percentage by the total amount of extension funds available to Extension Services for the 48 Land-Grant institutions.

Source: Compiled and calculated from "Report on Cooperate Extension Work in Agriculture and Home Economics," 1940, 1945, 1950, and 1955, Extension Service, USDA. Also, survey of Agricultural Economics departments in 48 Land-Grant institutions, 1956.

3.6 per cent of the funds available for all extension work.

Total Extension Funds

The 200 per cent increase in total extension funds between 1940 and 1955 was made up principally of a 108 per cent increase in funds from federal sources, a 216 per cent increase in funds from county sources, and a 458 per cent increase in funds from state sources. Funds from state sources were mainly state appropriated funds, and those from county sources were mainly appropriations made by county governing bodies, Table 11. The major contributions to increased federal funds were made incident to the passage of the Research and Marketing Act of 1946. In 1955, extension funds from state sources were only slightly less than were those from federal sources. Fifteen years earlier, in 1940, state funds for extension work were only a third as much as were federal funds. Also, state and county funds were about equal during the 1940's; whereas, in 1955, county funds were only two-thirds the amount provided from state sources.

In 1940, federal sources accounted for 56 per cent of the total extension funds available to Land-Grant institutions; 19 per cent of total extension funds were from state sources; and 22 per cent were from county sources, Table 11. By 1955, the amount of extension funds from all sources had increased; however, the proportion of the total derived from federal sources had declined to 39 per cent while the proportion from state sources had increased to 36 per cent. Contributions from county and other sources were relatively unchanged from 1940 to 1955. Of the total amount of funds available for extension work at Land-Grant institutions, approximately a third was expended at colleges

Table 11. Total Extension Funds Available to Extension Services from All Sources for Years Ended June 30, 48 Extension Services, Specified Years

Item	1940	1945	1950	1955
	1,000 dol.	1,000 dol.	1,000 dol.	1,000 dol.
Source of funds:				
Federal	18,220	18,597	30,794	37,982
State and college	6,242	8,786	22,208	34,831
County	7,092	8,480	15,523	22,403
Farm organizations, etc.	992	1,201	2,242	2,541
Total funds available to Extension Services	32,546	37,064	70,737	97,757
	Per cent	Per cent	Per cent	Per cent
Percentage of Extension funds from specified sources:				
Federal	56	50	44	39
State and college	19	24	31	36
County	22	23	22	23
Farm organizations, etc.	3	3	3	2
TOTAL	100	100	100	100
Percentage of Extension funds expended at colleges	35	32	32	32

Source: Compiled and calculated from "Report of Cooperative Extension Work in Agriculture and Home Economics," 1940, 1945, 1950, and 1955, Extension Service, USDA.

and universities throughout this 15-year period.

Although total funds available to extension increased 200 per cent between 1940 and 1955, the total number of personnel engaged in extension work during this period increased only 47 per cent, Table 12. In 1940, there were approximately 9,000 workers in Land-Grant institutions engaged in extension work; in 1955, the number of personnel doing extension work was slightly over 13,000. As in the case of changes in the number of research workers during this period, a number of different factors were responsible for the difference between the percentage

Table 12. Total Extension Funds Available to Extension Services in Relation to Total Number of Extension Workers for Years Ended June 30, 48 Extension Services, Specified Years

Year	Total funds available to Extension Services	Total number of Extension workers 1/	Extension funds available per Extension worker 1/
	1,000 dollars	Number	Dollars
Fiscal year ending:			
June 30, 1940	32,546	8,936	3,642
June 30, 1945	37,064	8,764	4,229
June 30, 1950	70,737	12,132	5,831
June 30, 1955	97,757	13,121	7,450
	Per cent	Per cent	Per cent
Percentage change from 1940 to 1955	+200	+47	+105

1/ These figures include all administrative, supervisory, specialist, and county Extension workers.

Source: Compiled and calculated from "Report of Cooperative Extension Work in Agriculture and Home Economics," 1940, 1945, 1950, and 1955, Extension Service, USDA.

increase in extension funds and the percentage increase in number of extension workers. These included increased salary levels, and increased costs of all operational and maintenance items involved in extension programs and activities. The net result of these changes was a 105 per cent increase in the amount of extension funds available per extension worker between 1940 and 1955. In 1940, extension funds per extension worker amounted to $3,642; in 1955, extension funds per extension worker amounted to $7,450. These data include in addition to all administrative, supervisory, and specialist workers in extension, all county extension workers. In addition, these data include both full-time and part-time extension workers. On a full-time equivalent basis, extension funds available per extension worker would be somewhat higher than the amounts shown in Table 12.

A decrease from 30 million to 20 million in farm population between 1940 and 1955 represented a decrease of 32 per cent, Table 13. Total extension funds increased 200 per cent during this same period. Extension funds in 1940 amounted to only $1.08 per capita of farm population. In 1955, extension funds per capita of farm population amounted to $4.74—an increase of 339 per cent during the 15-year period between 1940 and 1955. In terms of numbers of people on farms per dollar expended on extension work, there was a 77 per cent decrease between 1940 and 1955. In 1940, extension expenditures amounted to one dollar for each 0.9 persons on farms; in 1955, extension expenditures amounted to one dollar for each 0.2 persons on farms.

Between 1940 and 1955, the percentage increase in total funds available for extension work in Land-Grant institutions was almost the same as the percentage increase in farmers' cash farm income (cash

Table 13. Total Extension Funds Available to Extension Services in Relation to Farm Population for Years Ended June 30, 48 Extension Services, Specified Years

Year	Total funds available to Extension Services	Estimated total farm population	Extension funds available per capita of farm population	Number of farm people per dollar of Extension funds available
	1,000 dol.	1,000	Dollars	Number
Fiscal year ending:				
June 30, 1940	32,546	30,269	1.08	0.93
June 30, 1945	37,064	25,190	1.47	.68
June 30, 1950	70,737	23,332	3.03	.33
June 30, 1955	97,757	20,625	4.74	.21
	Per cent	Per cent	Per cent	Per cent
Percentage change from 1940 to 1955	+200	-32	+339	-77

Source: Compiled and calculated from "Report of Cooperative Extension Work in Agriculture and Home Economics," 1940, 1945, 1950, and 1955, Extension Service, USDA. Also, "Census of Population," 1940 and 1950, Bureau of the Census, U. S. Department of Commerce. And "Farm Population Estimates," 1945 and 1955, (BAE) AMS, USDA.

receipts from marketings plus government payments). In 1940, extension funds totaled $32.5 million; in 1955, extension funds totaled $97.8 million—a 200 per cent increase in 15 years, Table 14. Total cash farm income was $9 billion in 1940; it was $30 billion in 1955—a 224 per cent increase in 15 years. The ratio of cash farm income to each dollar of extension funds available was $281 in 1940 and $303 in

Table 14. Total Extension Funds Available to Extension Services in Relation to Farm Income for Years Ended June 30, 48 Extension Services, Specified Years

Year	Total funds available to Extension Services	Total cash receipts from marketings 1/	Ratio of farm income to each dollar of Extension funds available
	1,000 dol.	Mil. dol.	Dollars
Fiscal year ending:			
June 30, 1940	32,546	9,145.2	281
June 30, 1945	37,064	22,286.3	601
June 30, 1950	70,737	28,611.3	404
June 30, 1955	97,757	29,630.0	303
	Per cent	Per cent	Per cent
Percentage change from 1940 to 1955	+200	+224	+8

1/ These figures include total cash receipts from marketings and government payments for years indicated.

Source: Compiled and calculated from "Report of Cooperative Extension Work in Agriculture and Home Economics," 1940, 1945, 1950, and 1955, Extension Service, USDA. Also, "Agricultural Statistics," Annual issues, USDA. And, "The Farm Income Situation," Current issues, AMS, USDA.

1955, thus, indicating a slight decrease in extension funds relative to cash farm income between 1940 and 1955.

Agricultural Economics Extension Funds

Extension funds available from all sources for extension programs

Table 15. Total Extension Funds from All Sources in Agricultural Economics at Land-Grant Institutions, Fiscal Year, 1955-56

State	Federal	State and/or college	Other	Total
	Dol.	Dol.	Dol.	Dol.
Alabama	31,135	87,818	0	118,953
Arizona 2/	-	-	-	-
Arkansas 2/	-	-	-	-
California 1/	-	-	-	-
Colorado	2/	18,274	17,282	2/
Connecticut	32,900	26,648	0	59,548
Delaware 2/	-	-	-	-
Florida	15,000	18,400	0	33,400
Georgia	61,151	32,874	1,003	95,028
Idaho 1/	-	-	-	-
Illinois	49,368	32,340	0	81,708
Indiana 1/	-	-	-	-
Iowa 2/	-	-	-	-
Kansas	23,580	16,260	0	39,840
Kentucky 1/	-	-	-	-
Louisiana 2/	-	-	-	-
Maine 2/	-	-	-	-
Maryland 1/	-	-	-	-
Massachusetts	50,000	25,000	0	75,000
Michigan	92,552	124,670	8,377	225,599
Minnesota	34,167	35,278	0	69,445
Mississippi	37,432	23,537	3,146	64,115
Missouri	66,541	62,341	4,200	133,082
Montana 1/	-	-	-	-
Nebraska	11,800	24,546	0	36,346
Nevada	4,096	550	300	4,946
New Hampshire 1/	-	-	-	-
New Jersey	18,199	34,021	0	52,220
New Mexico	24,000	27,000	0	51,000
New York	105,286	95,952	4,000	205,238
North Carolina 1/	-	-	-	-
North Dakota	10,000	9,200	0	19,200

(Continued)

Table 15 (Continued). Total Extension Funds from All Sources in Agricultural Economics at Land-Grant Institutions, Fiscal Year, 1955-56

State	Federal	State and/or college	Other	Total
	Dol.	Dol.	Dol.	Dol.
Ohio	104,806	63,638	7,000	175,444
Oklahoma	46,200	37,800	0	84,000
Oregon 2/	-	-	-	-
Pennsylvania 2/	-	-	-	-
Rhode Island	12,652	6,162	0	18,814
South Carolina 2/	-	-	-	-
South Dakota 1/	-	-	-	-
Tennessee	18,585	15,065	0	33,650
Texas 2/	-	-	-	-
Utah	9,306	8,099	0	17,405
Vermont	18,288	0	0	18,288
Virginia 1/	-	-	-	-
Washington	12,610	14,209	167	27,986
West Virginia 2/	-	-	-	-
Wisconsin	49,630	22,896	0	72,526
Wyoming 1/	-	-	-	-

1/ Questionnaire not returned.

2/ Not reported on returned questionnaire.

and activities in Agricultural Economics at individual Land-Grant institutions in 1955-56 are shown in Table 15. Also indicated for respective institutions is the relative importance of federal, state, and other sources of extension funds that were available in 1955-56 for Agricultural Economics extension work.

The data from reporting institutions, as shown in Table 15, are difficult to appraise and evaluate in terms of a true picture of Agricultural Economics extension work. In most states, a certain amount of

Agricultural Economics extension work is carried out by administrative personnel at the state and district level which is not included in the data in Table 15. In addition, some of the extension work of county and other field workers can often be classified as Agricultural Economics extension work, and this work is not included in Table 15. Despite these difficulties and a recognition of differences in size of states, in the importance of agriculture, in the acuteness of farm problems, in institutional policies and procedures, and in many other factors where states differ widely from one to another, the data in Table 15 indicate that there are real differences in the support given extension work from state to state.

The proportion of total extension funds available in individual states that is budgeted to Agricultural Economics extension work varies widely throughout all sections of the country. For all Land-Grant institutions, the average is 3.6 per cent. Individual state ratios varied in 1955-56 from less than 1.0 per cent to almost 10.0 per cent, Table 16.

Using the number of people on farms as an index of the importance of agriculture in individual states, farm population has been related to extension funds expended in Agricultural Economics extension work in respective states (Appendix Table 7). The extreme ratios that existed in 1939-40 did not persist in 1955-56. This was due largely to increased extension funds in 1955-56 in most of the states that had highest ratios during the earlier period. Also contributing was a higher than average reduction in farm population in many of these same states between 1940 and 1955.

Wide variations existed in 1955-56 in the ratios among states be-

Table 16. Extension Funds in Rural Social Sciences in 1939-40 and Extension Funds in Agricultural Economics in 1955-56 in Relation to Total Extension Funds from all Sources for Respective Years at Land-Grant Institutions

State	Ratio of Rural Social Science Extension funds to total Extension funds in 1939-40 [1]	Ratio of Agricultural Economics Extension funds to total Extension funds in 1955-56 [2]
Alabama	0.6	4.1
Arizona	[3]	[3]
Arkansas	.5	[3]
California	1.4	[3]
Colorado	[3]	[3]
Connecticut	7.1	8.6
Delaware	7.0	[3]
Florida	4.1	1.9
Georgia	4.2	3.2
Idaho	3.1	[3]
Illinois	2.9	2.3
Indiana	3.0	[3]
Iowa	7.6	[3]
Kansas	4.2	1.4
Kentucky	2.8	[3]
Louisiana	1.0	[3]
Maine	[3]	[3]
Maryland	1.3	[3]
Massachusetts	6.7	5.9
Michigan	5.9	6.5
Minnesota	3.1	3.3
Mississippi	5.3	2.2
Missouri	1.4	5.1
Montana	2.3	[3]
Nebraska	4.4	2.1
Nevada	8.1	1.8
New Hampshire	2.4	[3]
New Jersey	4.4	3.8
New Mexico	4.6	.6
New York	3.3	4.1
North Carolina	.6	[3]
North Dakota	[3]	1.9

(Continued)

Table 16 (Continued). Extension Funds in Rural Social Sciences in 1939-40 and Extension Funds in Agricultural Economics in 1955-56 in Relation to Total Extension Funds from All Sources for Respective Years at Land-Grant Institutions

State	: Ratio of Rural Social Science Extension funds to total Extension funds in 1939-40 1/	: Ratio of Agricultural Economics Extension funds to total Extension funds in 1955-56 2/
Ohio	4.4	6.5
Oklahoma	3/	3.5
Oregon	4.4	3/
Pennsylvania	2.7	3/
Rhode Island	10.3	9.5
South Carolina	4.9	3/
South Dakota	.3	3/
Tennessee	6.3	1.3
Texas	3/	3/
Utah	4.8	2.6
Vermont	4.3	3.2
Virginia	4.2	3/
Washington	.9	1.8
West Virginia	1.5	3/
Wisconsin	7.1	2.7
Wyoming	8.5	3/

1/ Source: Schultz, Theodore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, Table 9, p. 64.

2/ Source: Based on data shown in Table 15 and Appendix Table 6.

3/ Not ascertained.

tween cash farm income (cash receipts from marketings plus government payments) and expenditures for Agricultural Economics extension work (Appendix Table 8). Highest ratios were in the Corn Belt, Great Plains, and Lake States areas. Lowest ratios were in states located in the

South and in the Northeast.

Differences in the amounts of funds budgeted for Agricultural Economics extension work in Land-Grant institutions in 1939-40 and in 1955-56 are shown in Table 17. In two states, there was a decrease in Agricultural Economics extension funds between these two periods. In other states, the increase varied from no change to more than a 2,000 per cent increase. 4/ For all Land-Grant institutions combined the amount of funds budgeted for Agricultural Economics extension work increased 277 per cent between 1939-40 and 1955-56.

Financial Resources in Teaching

In terms of amounts of available financial resources, teaching in Agricultural Economics continues to be the least important of the three major activities in which Land-Grant institutions are involved. Despite this situation, teaching is largely the foundation upon which research and extension relies for training and recruiting of personnel.

Financial resources available for teaching in Agricultural Economics have increased throughout the history of Agricultural Economics as a professional field. In recent years, teaching funds for Agricultural Economics teaching have increased at an increasing rate, due in part to increased demands for teaching services, especially for graduate training of personnel for employment in research, extension,

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4/ Based on the assumption that an increase of less than 100 per cent in any individual state represents a decrease in the amount of real resources available (due to cost changes during this 15-year period), a third of the reporting states actually experienced a decrease rather than an increase in funds budgeted for Agricultural Economics extension work between 1940 and 1955.

Table 17. Relative Change in Extension Funds Budgeted to Agricultural Economics at Land-Grant Institutions, 1939-40 to 1955-56

State	Extension funds budgeted to Agricultural Economics: 1939-40	1955-56	Percentage increase
	1,000 dol.	1,000 dol.	Per cent
Alabama	5	119	2,280
Arizona	1/	2/	-
Arkansas	4	2/	-
California	12	2/	-
Colorado	1/	2/	-
Connecticut	22	60	173
Delaware	6	2/	-
Florida	18	33	83
Georgia	42	95	126
Idaho	8	2/	-
Illinois	22	82	273
Indiana	27	2/	-
Iowa	71	2/	-
Kansas	40	40	0
Kentucky	18	2/	-
Louisiana	1/	2/	-
Maine	1/	2/	-
Maryland	4	2/	-
Massachusetts	31	75	142
Michigan	45	226	402
Minnesota	23	69	200
Mississippi	50	64	28
Missouri	12	133	1,008
Montana	8	2/	-
Nebraska	16	36	125
Nevada	10	5	-50
New Hampshire	5	2/	-
New Jersey	18	52	189
New Mexico	10	51	410
New York	43	205	377
North Carolina	6	2/	-
North Dakota	1/	19	-

(Continued)

Table 17 (Continued). Relative Change in Extension Funds Budgeted to Agricultural Economics at Land-Grant Institutions, 1939-40 to 1955-56

State	Extension funds budgeted to Agricultural Economics: 1939-40	1955-56	Percentage increase
	1,000 dol.	1,000 dol.	Per cent
Ohio	38	175	361
Oklahoma	1/	84	-
Oregon	17	2/	-
Pennsylvania	21	2/	-
Rhode Island	4	19	375
South Carolina	30	2/	-
South Dakota	1	2/	-
Tennessee	42	34	-20
Texas	1/	2/	-
Utah	9	17	89
Vermont	9	18	100
Virginia	20	2/	-
Washington	3	28	833
West Virginia	7	2/	-
Wisconsin	35	73	109
Wyoming	13	2/	-
Total or average	930 3/	3,503 4/	277

1/ No information.

2/ Questionnaire not returned, or not reported on returned questionnaire.

3/ See Schultz, Theodore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington D. C., 1941, Table 8, p. 63.

4/ Total extension funds available to Agricultural Economics for the 48 Land-Grant institutions in 1955 were obtained by: (1) calculating, for the reporting institutions, the percentage of total extension funds available to Extension Services in these institutions that were reported available to Agricultural Economics, and (2) multiplying this percentage by the total amount of extension funds available to Extension Services for the 48 Land-Grant institutions.

industry, government, and in other areas requiring graduate training of employees. Total teaching funds available for teaching Agricultural Economics were $401,000 in 1929-30, $593,000 in 1939-40, and $1,668,000 in 1955-56. During the earlier 10-year period, Agricultural Economics teaching funds increased at a rate of about 5 per cent per year. During the later 15-year period, Agricultural Economics teaching funds increased at a rate of about 12 per cent per year.

Teaching funds available for Agricultural Economics teaching in Land-Grant institutions are obtained mainly from state sources—principally from state appropriations and from institution-collected fees, Table 18. Only a few states have obtained any additional funds for Agricultural Economics teaching from sources other than from state and college sources.

The relative changes in teaching funds budgeted to Agricultural Economics at Land-Grant institutions between 1939-40 and 1955-56 are shown in Table 19. It is difficult to evaluate the significance of changes in individual states unless adequate data are also available relative to changes in undergraduate and graduate demands for teaching, changes in "service" and "major" course demands, and changes in demands for other services and activities normally associated with and charged to teaching funds.

Changes in Demands for Teaching

The demand for teaching services in Agricultural Economics accrue principally from four major sources: (1) teaching of students, mainly from colleges of agriculture, most of whom are majoring in fields other

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Table 18. Total Teaching Funds from All Sources in Agricultural Economics at Land-Grant Institutions, Fiscal Year, 1955-56

State	Federal	State and/or college	Other	Total
	Dol.	Dol.	Dol.	Dol.
Alabama	0	15,340	0	15,340
Arizona	0	7,350	500	7,850
Arkansas	0	13,824	0	13,824
California 1/	-	-	-	-
Colorado	0	13,500	0	13,500
Connecticut	0	27,187	0	27,187
Delaware	0	9,000	0	9,000
Florida	0	49,200	0	49,200
Georgia	0	12,592	0	12,592
Idaho 1/	-	-	-	-
Illinois	0	76,125	0	76,125
Indiana 1/	-	-	-	-
Iowa 2/	-	-	-	-
Kansas	60,260	41,508	0	101,768
Kentucky 1/	-	-	-	-
Louisiana	0	19,172	1,050	20,222
Maine	0	25,530	0	25,530
Maryland 1/	-	-	-	-
Massachusetts	14,000	11,662	0	25,662
Michigan	0	80,596	0	80,596
Minnesota 2/	-	-	-	-
Mississippi	0	18,021	0	18,021
Missouri	0	2,500	0	2,500
Montana 1/	-	-	-	-
Nebraska	0	30,930	0	30,930
Nevada	0	8,175	600	8,775
New Hampshire 1/	-	-	-	-
New Jersey	0	14,562	0	14,562
New Mexico	0	16,000	0	16,000
New York	1,125	76,935	20,000	98,060
North Carolina 1/	-	-	-	-
North Dakota	0	18,650	0	18,650

(Continued)

Table 18 (Continued). Total Teaching Funds from All Sources in Agricultural Economics at Land-Grant Institutions, Fiscal Year, 1955-56

State	Federal	State and/or college	Other	Total
	Dol.	Dol.	Dol.	Dol.
Ohio	0	56,600	0	56,600
Oklahoma	0	31,013	0	31,013
Oregon	0	28,569	0	28,569
Pennsylvania	0	65,531	500	66,031
Rhode Island	0	9,000	0	9,000
South Carolina	0	26,203	0	26,203
South Dakota 1/	-	-	-	-
Tennessee	0	25,170	0	25,170
Texas	0	56,605	0	56,605
Utah	0	16,230	0	16,230
Vermont	0	10,827	0	10,827
Virginia 1/	-	-	-	-
Washington	0	27,383	0	27,383
West Virginia 2/	-	-	-	-
Wisconsin	0	45,517	0	45,517
Wyoming 1/	-	-	-	-

1/ Questionnaire not returned.

2/ Not reported on returned questionnaire.

than Agricultural Economics, but who take required or elective courses in Agricultural Economics; (2) teaching of undergraduate students who are majoring in Agricultural Economics or in sub-areas within the field of Agricultural Economics; (3) graduate training; and (4) other activties which are normally associated with and charged to teaching services.

Generally, enrollments in colleges of agriculture are considered as an indicator of the demands for "service" teaching of undergraduate

Table 19. Relative Change in Teaching Funds Budgeted to Agricultural Economics at Land-Grant Institutions, 1939-40 to 1955-56

State	Teaching funds in Agricultural Economics: 1939-40	Teaching funds in Agricultural Economics: 1955-56	Percentage increase
	1,000 dol.	1,000 dol.	Per cent
Alabama	3	15	400
Arizona	1/	8	-
Arkansas	4	14	250
California	23	2/	-
Colorado	14	14	0
Connecticut	4	27	575
Delaware	1	9	800
Florida	8	49	512
Georgia	6	13	117
Idaho	2	2/	-
Illinois	22	76	245
Indiana	18	2/	-
Iowa	36	2/	-
Kansas	16	102	538
Kentucky	21	2/	-
Louisiana	18	20	11
Maine	13	26	100
Maryland	7	2/	-
Massachusetts	11	26	136
Michigan	13	81	523
Minnesota	20	2/	-
Mississippi	6	18	200
Missouri	17	2/	-
Montana	9	2/	-
Nebraska	10	31	210
Nevada	4	9	125
New Hampshire	3	2/	-
New Jersey	7	15	114
New Mexico	4	16	300
New York	92	98	7
North Carolina	9	2/	-
North Dakota	1/	19	-

(Continued)

Table 19 (Continued). Relative Change in Teaching Funds Budgeted to Agricultural Economics at Land-Grant Institutions, 1939-40 to 1955-56

State	Teaching funds in Agricultural Economics: 1939-40	1955-56	Percentage increase
	1,000 dol.	1,000 dol.	Per cent
Ohio	12	57	375
Oklahoma	6	31	417
Oregon	10	29	190
Pennsylvania	16	66	312
Rhode Island	2	9	350
South Carolina	7	26	271
South Dakota	5	2/	-
Tennessee	10	25	150
Texas	37	57	54
Utah	7	16	129
Vermont	1	11	1,000
Virginia	14	2/	-
Washington	3	27	800
West Virginia	3	2/	-
Wisconsin	21	46	119
Wyoming	6	2/	-
Total or average	593 3/	1,668 4/	181

1/ No information.

2/ Questionnaire not returned, or not reported on returned questionnaire.

3/ See Schultz, Theodore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, Table 12, p. 69.

4/ Total teaching funds available to Agricultural Economics for the 48 Land-Grant institutions in 1955-56 were obtained by: (1) calculating, for the reporting institutions, the percentage increase in Agricultural Economics teaching funds for these institutions from 1939-40 to 1955-56, and (2) multiplying this percentage by the total amount of teaching funds available for Agricultural Economics teaching for the 48 Land-Grant institutions in 1939-40.

students majoring in areas other than Agricultural Economics. The total enrollments in colleges of agriculture at Land-Grant institutions for the years indicated in Appendix Table 9 show an increase from 1938-39 to 1948-49. In 1955-56, however, agricultural enrollments in Land-Grant institutions had declined to about the same level that existed around 1939-40. 5/ On the basis of these data, it might be assumed that the demand for Agricultural Economics teaching of undergraduates in 1955-56 was approximately the same as in 1939-40.

In many Land-Grant institutions, there has been, in recent years, an increase in both the relative number and the absolute number of undergraduate students taking Agricultural Economics courses either as required or as elective work. In addition, there has been, during recent years, an increase at most Land-Grant institutions in the number of Agricultural Economics undergraduate courses offered to students. The demands for these types of increases in Agricultural Economics teaching are not reflected by the total number of students enrolled in colleges of agriculture. Thus, despite the current trend of enrollments in agriculture, it cannot be assumed that the demand for Agricultural Economics teaching at the undergraduate level is decreasing.

Variations in undergraduate enrollments in colleges of agriculture from state to state are associated not only with the size of Land-Grant institutions in different states but also are influenced by the

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5/ In a preliminary report on "Agricultural Enrollment in the Land-Grant Colleges and Universities" prepared by Henry S. Bruner for the American Association of Land-Grant Colleges and State Universities in November 1960, it was shown that in 1960-61, there were 30,272 students enrolled in colleges of agriculture in 48 Land-Grant institutions. This would represent a decrease of about 9.5 per cent in undergraduate enrollment in agriculture since 1955-56.

percentages of total undergraduate institutional enrollments that are in agriculture. In 1955-56, agricultural undergraduate enrollments represented 9.6 per cent of the total enrollment in Land-Grant institutions, Table 20. By states, this percentage varied from slightly over 3 per cent in some states to more than 20 per cent in several other states. In 1948-49, undergraduate agricultural enrollments for all Land-Grant institutions made up 11.9 per cent of total enrollment. Thus, the relative decrease in undergraduate agricultural enrollment between 1948-49 and 1955-56 was 19 per cent, while the absolute decrease for this same period was 27 per cent. 6/

The total undergraduate enrollment of students majoring in Agricultural Economics in 1954-55 was much less than the number enrolled in this area in 1939-40. 7/ Undergraduate students who major in a particular department, however, require more teaching resources than do students who major in some other department. Majors in a particular department are not only required and often elect to take more courses in the department than do non-departmental majors, but they are frequently in classes of small enrollment, thus, intensifying the demand for teaching. In many cases, it requires no less time to teach

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6/ In Bruner's preliminary report for the American Association of Land-Grant Colleges and State Universities in November 1960, the percentage that undergraduate agricultural enrollment was of total enrollment for 1960 was estimated to be only 6.46 per cent.

7/ Based on replies from 24 "identical" Land-Grant institutions, in terms of numbers of juniors and seniors classified as majors in Agricultural Economics, there were 635 students enrolled in Agricultural Economics at these 24 institutions in 1939-40, compared to 355 students enrolled in Agricultural Economics at these same institutions in 1954-55. This represented a 44 per cent decrease at these particular institutions during this 15-year period.

Table 20. Total Undergraduate Enrollment in Colleges of Agriculture and Percentage of Total Undergraduate Enrollment at Land-Grant Institutions Enrolled in Agriculture, 1955-56

State	Total undergraduate enrollment in colleges of agriculture, 1955-56	Percentage of total undergraduate enrollment at Land-Grant institutions enrolled in agriculture, 1955-56
	Number	Per cent
Alabama	545	7.39
Arizona	279	4.54
Arkansas	362	6.68
California	964	3.85
Colorado	876	20.52
Connecticut	266	3.46
Delaware	120	5.60
Florida	303	3.34
Georgia	545	10.85
Idaho	273	7.98
Illinois	978	5.12
Indiana	1,236	9.55
Iowa	1,899	23.14
Kansas	902	15.09
Kentucky	442	6.99
Louisiana	694	9.36
Maine	474	13.95
Maryland	532	6.71
Massachusetts	324	8.93
Michigan	1,255	8.15
Minnesota	984	5.36
Mississippi	615	18.95
Missouri	1,364	16.70
Montana	401	14.42
Nebraska	682	9.70
Nevada	58	3.67
New Hampshire	214	6.58
New Jersey	391	14.67
New Mexico	278	14.52
New York	1,531	19.05
North Carolina	606	13.99
North Dakota	414	15.83

(Continued)

Table 20 (Continued). Total Undergraduate Enrollment in Colleges of Agriculture and Percentage of Total Undergraduate Enrollment at Land-Grant Institutions Enrolled in Agriculture, 1955-56

State	Total undergraduate enrollment in colleges of agriculture, 1955-56	Percentage of total undergraduate enrollment at Land-Grant institutions enrolled in agriculture, 1955-56
	Number	Per cent
Ohio	1,500	7.81
Oklahoma	1,306	15.83
Oregon	721	12.59
Pennsylvania	1,438	11.06
Rhode Island	163	7.49
South Carolina	567	19.76
South Dakota	586	22.19
Tennessee	588	8.75
Texas	1,123	17.61
Utah	379	11.22
Vermont	277	10.86
Virginia	599	15.96
Washington	567	11.27
West Virginia	332	5.60
Wisconsin	725	3.62
Wyoming	237	9.56
Total	33,453	9.60

Source: Proceedings of 71st Annual Convention of the American Association of Land-Grant Colleges and State Universities.

a small class than a large class. Thus, despite a decline in enrollment of undergraduate majors in Agricultural Economics in many Land-Grant institutions during recent years, this does not necessarily reflect a decline in the demand for teaching of undergraduate students who are majoring in Agricultural Economics.

The current trend in the enrollment of graduate students in Agricultural Economics is opposite that of undergraduate enrollment. 8/ Schultz reported that, based on 36 Land-Grant institutions, graduate student enrollment increased from 227 students in 1929-30 to 623 students in 1939-40. 9/ This represented a 174 per cent increase during the 10-year period 1929-30 to 1939-40, or an increase of about 17.4 per cent per year. In 1955-56, there were 946 graduate students enrolled in Agricultural Economics at Land-Grant institutions. 10/ Thus, graduate student enrollment in Agricultural Economics has continued to increase during recent years. 11/

Graduate student training requires specialized teaching resources, which normally can be obtained only at relatively high costs per unit of instruction. In the early years of graduate training in Agricultural Economics, much of the responsibility for such training was

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8/ With few exceptions, this is also true for all graduate departments and curricula administered in colleges of agriculture within Land-Grant institutions.

9/ Schultz, op. cit., p. 75.

10/ Proceedings of 71st Annual Convention of the American Association of Land-Grant Colleges and State Universities.

11/ Even more pronounced is the rate of increase between 1955-56 and 1960-61, as reported by Bruner's preliminary report for the American Association of Land-Grant Colleges and State Universities in November 1960. In Bruner's report, graduate student enrollment in Agricultural Economics in 1955-56 was estimated at 848 students compared to a 1960-61 estimate of 1,213 students, thus, indicating an increase of 43 per cent during the past five years, or 8.6 per cent per year. Total graduate student enrollment in all departments and curricula administered in colleges of agriculture within Land-Grant institutions increased from 6,649 students in 1955-56 to 8,678 students in 1960-61. Thus, this increase of 30 per cent for all graduate students in agriculture was less than the 43 per cent increase for graduate students in Agricultural Economics during this same period.

centered in a relatively small number of Land-Grant institutions. In recent years, however, most Land-Grant Agricultural Economics departments have initiated graduate training programs. Many of the smaller institutions, and particularly those that have recently started graduate training programs, are currently limited to graduate training at the Master's level. The major load for graduate training in Agricultural Economics at the Ph. D. level is still carried by a relatively small number of institutions. The over-all demand for Agricultural Economics teaching in graduate training programs, however, has been much greater in recent years than during earlier years.

In terms of the total demands for Agricultural Economics teaching in 1939-40 as compared to 1955-56, the numbers of students enrolled in various classifications cannot be used as an accurate criteria for making comparisons between these two periods. Other factors, all of which are more difficult to measure quantitatively, are frequently the more important factors that determine the demand for Agricultural Economics teaching.

Although there was an increase of 181 per cent in budgeted Agricultural Economics teaching funds between 1939-40 and 1954-55, this increase may not have been proportional to the over-all increase in needs for Agricultural Economics teaching funds that occurred during this period. If an adjustment were made in total Agricultural Economics teaching funds to allow, from the beginning to the end of this period, for differences in salary levels and for differences in other costs incident to teaching, it would be questionable as to whether Agricultural Economics teaching was better financed in 1954-55 than 15 years earlier in 1939-40.

Total Financial Resources in Agricultural Economics

The total amount of financial resources available to Agricultural Economics for teaching, research, and extension for recent years has been as follows:

Year	Teaching Mil. dol.	Research Mil. dol.	Extension Mil. dol.	Total Mil. dol.
1929-30	0.4	0.9	0.4	1.7
1939-40	.6	1.2	.9	2.7
1955-56	1.7	6.0	3.5	11.2

In 1955-56, total financial support for Agricultural Economics activities in Land-Grant institutions totaled $11.2 million. The rate of increase in Agricultural Economics funds in recent years has been much more rapid than during earlier periods. The increases in financial support of Agricultural Economics activities, particularly during the past 15 years, have been associated with increased demands for teaching, research, and extension in Agricultural Economics. Also, accompanying this increased financial support have been increases in numbers of personnel in all three areas of Agricultural Economics activities in Land-Grant institutions (see Chapter IV).

CHAPTER IV

PERSONNEL RESOURCES IN AGRICULTURAL ECONOMICS

Increase in Personnel, 1929-30 to 1954-55

The total number of Agricultural Economics workers engaged in teaching, research, and/or extension in Land-Grant institutions increased from 421 in 1929-30 to 1,074 in 1954-55. This increase in Agricultural Economics workers of 155 per cent was in excess of the 113 per cent increase during the same period for all workers in subjects pertaining to agriculture, Table 21. During this 25-year period, the number of Agricultural Economics workers increased at an average rate of about 6 per cent per year as compared to an average rate of increase of about 5 per cent per year for all workers in subjects pertaining to agriculture. Since 1955, the average rate of increase per year has continued at these same levels for each of these respective groups. Total financial resources available to Agricultural Economics during the 25-year period from 1929-30 to 1955-56 increased from $1.7 million to $11.2 million, an increase of 560 per cent, (see Chapter III).

Of the total number of workers in subjects pertaining to agriculture in 1929-30, a total of 6.5 per cent were in Agricultural Economics. In 1934-35, this percentage increased to 7.7. Since that time there has been little change in the relative proportion of Land-Grant institution workers in subjects pertaining to agriculture employed in Agricultural Economics.

Twenty-five years ago, Agricultural Economics workers engaged in extension work involved only half as many personnel as did either

Table 21. Workers 1/ in Subjects Pertaining to Agriculture and Number and Percentage of Workers in Agricultural Economics, 2/ 48 Land-Grant Institutions, 3/ Specified Years

Year	Workers in subjects pertaining to agriculture	Workers in Agricultural Economics	
		Number	Percentage of total
	Number	Number	Per cent
1929-30	6,488	421	6.5
1934-35	6,976	539	7.7
1939-40	9,062	711	7.8
1944-45	9,099	694	7.6
1949-50	12,168	959	7.9
1954-55	13,700	1,074	7.8
1959-60	16,891	1,378	8.2

1/ Includes all teaching, research, and extension workers, except county extension workers.

2/ Includes Rural Sociology workers both when shown as a part of Agricultural Economics departments and when shown as separate departments.

3/ For a listing of the official names of the 48 Land-Grant institutions included, see Appendix Table 1.

Source: Compiled from "Workers in Subjects Pertaining to Agriculture in Land-Grant Colleges and Experiment Stations," Specified Years, OES, USDA. (Also, see Appendix Table 10).

teaching or research. Ten years later, in 1939-40, the number of workers in extension had increased to almost the same level as for teaching or research. In recent years, extension workers have involved only half as many personnel as research and about two-thirds as many personnel as teaching, Table 22.

During the 25-year period from 1929-30 to 1954-55, the number of

Agricultural Economics personnel engaged in teaching increased 130 per cent, the number engaged in research increased 150 per cent, and the number engaged in extension increased 200 per cent. For all workers in Agricultural Economics, the percentage engaged in teaching decreased from 57 per cent of the total in 1929-30 to 52 per cent of the total in 1954-55. The percentage engaged in extension during this period increased from 29 to 34 per cent of the total. The proportion engaged in research was 65 per cent in both 1929-30 and in 1954-55.

Agricultural Economics workers, in terms of full-time equivalents, are show in Table 23 for teaching, research, and extension workers in individual states in 1955-56. The wide variations in number of workers among states in 1955-56 were associated with a number of different factors including the size of individual state Land-Grant institutions; type of Land-Grant institutions; scope of teaching, research, and extension activities and programs; and many other factors.

In 1939-40, most of the states had between 4 and 8 workers in Agricultural Economics research. In 1955-56, most of the states had between 6 and 13 workers in Agricultural Economics research. Generally, states with the largest research staffs had the largest research budgets.

In Agricultural Economics extension work, there were from 2 to 6 extension workers in most states in 1939-40. By 1955-56, the number of extension workers in most states had increased to from 3 to 9 workers per state. As was true with research, states with the largest number of extension workers were generally the states with the largest extension budgets.

Table 23. Number of Teaching, Research, and Extension Workers (Full-time Equivalent) in Agricultural Economics at Land-Grant Institutions, 1955-56

State	Teaching staff	Research staff	Extension staff	Total T - R - E
	Number	Number	Number	Number
Alabama	2	11	10	23
Arizona	2	6	1	9
Arkansas	2	12	9	23
California 1/	-	-	-	-
Colorado	2	5	4	11
Connecticut	3	4	6	13
Delaware	1	4	2/	5
Florida	5	13	4	22
Georgia	3	16	14	33
Idaho 1/	-	-	-	-
Illinois	7	26	8	41
Indiana 1/	-	-	-	-
Iowa	5	9	13	27
Kansas	6	19	8	33
Kentucky 1/	-	-	-	-
Louisiana	3	13	5	21
Maine	3	7	3	13
Maryland 1/	-	-	-	-
Massachusetts	4	12	8	24
Michigan	7	17	17	41
Minnesota	7	17	6	30
Mississippi	3	9	14	26
Missouri	10	27	14	51
Montana 1/	-	-	-	-
Nebraska	4	6	4	14
Nevada	1	4	2	7
New Hampshire 1/	-	-	-	-
New Jersey	2	5	3	10
New Mexico	2	7	5	14
New York	8	12	17	37
North Carolina 1/	-	-	-	-
North Dakota	2	7	3	12

(Continued)

Table 23 (Continued). Number of Teaching, Research, and Extension Workers (Full-time Equivalent) in Agricultural Economics at Land-Grant Institutions, 1955-56

State	Teaching staff	Research staff	Extension staff	Total T - R - E
	Number	Number	Number	Number
Ohio	6	21	17	44
Oklahoma	6	13	7	26
Oregon	3	10	2/	2/
Pennsylvania	6	17	2/	2/
Rhode Island	2	8	3	13
South Carolina	4	16	2	22
South Dakota 1/	-	-	-	-
Tennessee	3	14	9	26
Texas	8	21	9	38
Utah	2	4	2	8
Vermont	2	6	3	11
Virginia 1/	-	-	-	-
Washington	3	13	6	22
West Virginia	2	7	2	11
Wisconsin	8	10	8	26
Wyoming 1/	-	-	-	-

1/ Questionnaire not returned.

2/ Not reported on returned questionnaire.

In the case of Agricultural Economics teaching, most of the states had from 2 to 5 teachers in 1939-40. In 1955-56, most states had from 2 to 6 teachers, on a full-time equivalent basis. Large teaching budgets were associated with large teaching staffs.

When all Agricultural Economics workers are considered and when placed in terms of full-time equivalents, relatively large increases in numbers of workers at most Land-Grant institutions were apparent during the 15-year period between 1939-40 and 1955-56. During the

earlier period, 1939-40, the total number of Agricultural Economics workers in all areas of work ranged between 7 and 19 workers in most states. In 1955-56, the number in most states was between 10 and 28 workers.

Distribution of Agricultural Economics Workers by Rank

The distribution by rank of Agricultural Economics workers in all activities for all Land-Grant institutions combined is shown in Table 24, for the period 1929-30 through 1954-55. During this 25-year period, the relative number of professorships increased only slightly. Large increases occurred in the relative number of staff members holding the associate and assistant rank. Large decreases occurred in the relative number of individuals holding the rank of instructor or specialist.

In terms of absolute numbers of staff members by rank, between 1929-30 and 1954-55, the number of specialists decreased, the number of instructors showed little over-all change, and other ranks had large increases. The percentage increase in number of staff members with the rank of assistant was 381 per cent, associate was 603 per cent, and full professor was 191 per cent.

In some Land-Grant institutions, relatively high percentages of Agricultural Economics workers were in the associate and full professor ranks; in some other institutions, relatively high percentages of workers were in the instructor and assistant ranks. Reasons for these wide variations were associated with the duties, training, competence, and experience of staff members at different institutions. Also, associated with these differences were rates of turnover and the employment, promotion, and other personnel policies and procedures at

Table 24. Number and Percentage of Workers 1/ in Agricultural Economics 2/ by Rank, 48 Land-Grant Institutions, 3/ Specified Years

Year	Workers in Agricultural Economics by rank:					
	Specialist	Instructor	Assistant Professor	Associate Professor	Professor	Total
	Number	Number	Number	Number	Number	Number
1929-30	129	79	69	36	108	421
1934-35	146	78	105	77	133	539
1939-40	213	164	109	86	139	711
1944-45	166	80	146	129	173	694
1949-50	125	103	284	190	257	959
1954-55	103	70	332	253	316	1,074
	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
1929-30	31	18	16	9	26	100
1934-35	28	14	19	14	25	100
1939-40	30	24	15	11	20	100
1944-45	23	12	21	19	25	100
1949-50	13	11	29	20	27	100
1954-55	10	7	30	24	29	100

1/ Includes all teaching, research, and extension workers, except county extension workers.

2/ Includes Rural Sociology workers both when shown as a part of Agricultural Economics departments and when shown as separate departments.

3/ For a listing of the official names of the 48 Land-Grant institutions included, see Appendix Table 1.

Source: Compiled from "Workers in Subjects Pertaining to Agriculture in Land-Grant Colleges and Experiment Stations," Specified Years, OES, USDA.

different institutions.

Distribution of Agricultural Economics Workers by Degree Status

Agricultural Economics workers in all activities were distributed by degree status for all Land-Grant institutions combined as shown in Table 25, for the period 1929-30 through 1954-55. The proportion of Agricultural Economics workers in Land-Grant institutions holding the the Ph. D. degree increased from 22 per cent of the total in 1929-30 to 42 per cent of the total in 1954-55. The proportion of workers with Master's degrees in 1954-55 was 41 per cent of the total—a slightly smaller percentage than was true in 1929-30. The proportion of workers with Bachelor's degrees decreased from 29 per cent of the total in 1929-30 to only 17 per cent of the total in 1954-55. There were no workers in Agricultural Economics in 1954-55 with no degree.

Changes in the absolute numbers of Agricultural Economics workers by degree status between 1929-30 and 1954-55 were as follows: the number with Ph. D. degree increased 386 per cent; the number with a Master's degree increased 126 per cent; and the number with a Bachelor's degree increased 55 per cent.

For all Agricultural Economics workers in Land-Grant institutions in 1954-55, a total of 42 per cent held the Ph. D. degree, 41 per cent had Master's degrees, and 17 per cent had Bachelor's degrees. A relatively higher percentage of Agricultural Economics workers held the Ph. D. degree in some Land-Grant institutions than in others. There was at least one Agricultural Economics staff member with the Ph. D. degree in 1954-55 in each of the 48 Land-Grant institutions. The largest number of Ph. D.'s reported for a single institution was 34,

Table 25. Number and Percentage of Workers 1/ in Agricultural Economics 2/ by Degree Status, 48 Land-Grant Institutions, 3/ Specified Years.

Year	Workers in Agricultural Economics by degree status:				
	No degree	B.S. or B.A.	M.S. or M.A.	Ph.D. or equivalent	Total
	Number	Number	Number	Number	Number
1929-30	14	120	195	92	421
1934-35	18	115	253	153	539
1939-40	19	197	280	215	711
1944-45	19	167	278	230	694
1949-50	23	218	417	301	959
1954-55	0	186	441	447	1,074
	Per cent	Per cent	Per cent	Per cent	Per cent
1929-30	3	29	46	22	100
1934-35	3	21	47	29	100
1939-40	3	28	39	30	100
1944-45	3	24	40	33	100
1949-50	3	23	43	31	100
1954-55	0	17	41	42	100

1/ Includes all teaching, research, and extension workers, except county extension workers.

2/ Includes Rural Sociology workers both when shown as a part of Agricultural Economics departments and when shown as separate departments.

3/ For a listing of the official names of the 48 Land-Grant institutions included, see Appendix Table 1.

Source: Compiled from "Workers in Subjects Pertaining to Agriculture in Land-Grant Colleges and Experiment Stations," Specified Years, OES, USDA.

and, in this case, these represented 87 per cent of the total number of Agricultural Economics staff members at this particular institution.

Comparisons of Rank, Degree Status, and Type of Work Engaged in by Agricultural Economics Workers

The relationships between rank and degree status of Agricultural Economics workers in all Land-Grant institutions combined in 1954-55 are shown in Table 26. For workers with the Ph. D. degree, 44 per cent were full professors, 28 per cent were associates, and 26 per cent were assistants. For workers with Master's degrees, the largest percentage (36 per cent) were assistants, although 24 per cent were associates and 20 per cent were full professors. Another 20 per cent of the workers with Master's degrees were equally divided between the ranks of instructor and specialist. At the Bachelor's level, nearly a third were assistants. Three out of ten were specialists, many of whom were extension workers. The relatively high percentage of full professors with Bachelor's degrees (18 per cent) was explained largely in terms of personnel who had acquired rank following long periods of outstanding Agricultural Economics work in teaching, research, and/or extension.

In terms of rank, nearly two-thirds of the full professors in Agricultural Economics work held the Ph. D. degree, 27 per cent had Master's degrees, and 10 per cent had Bachelor's degrees. Half of the associates had Ph. D. degrees and 42 per cent had Master's degrees. A third of the assistants had Ph. D. degrees and half had Master's degrees. Two-thirds of the instructors had Master's degrees. Among specialists, many of whom were extension workers, slightly more than

Table 26. Distribution of Workers 1/ in Agricultural Economics 2/ by Degree Status and by Rank, 48 Land-Grant Institutions, 3/ 1954-55

Rank	Degree status: B.S. or B.A.	Degree status: M.S. or M.A.	Degree status: Ph.D. or equivalent	Total workers in Agricultural Economics
	Number	Number	Number	Number
Specialists	54	44	5	103
Instructors	19	46	5	70
Assistant Professors	57	159	116	332
Associate Professors	23	106	124	253
Professors	33	86	197	316
TOTAL	186	441	447	1,074
	Per cent	Per cent	Per cent	Per cent
Specialists	52	43	5	100
Instructors	27	66	7	100
Assistant Professors	17	48	35	100
Associate Professors	9	42	49	100
Professors	10	27	63	100
AVERAGE	17	41	42	100
	Per cent	Per cent	Per cent	Per cent
Specialists	29	10	1	10
Instructors	10	10	1	7
Assistant Professors	31	36	26	30
Associate Professors	12	24	28	24
Professors	18	20	44	29
TOTAL	100	100	100	100

1/, 2/, and 3/ (See footnotes 1/, 2/, and 3/, Table 25).

Source: Compiled from "Workers in Subjects Pertaining to Agriculture in Land-Grant Colleges and Experiment Stations, 1954-55," USDA Agriculture Handbook No. 78, OES, ARS, USDA, March 1955.

half had Bachelor's degrees and slightly less than half had Master's degrees.

Of the total personnel engaged in Agricultural Economics teaching at Land-Grant institutions in 1954-55, approximately two-thirds held the Ph. D. degree and one-third had Master's degrees; only 4 per cent had Bachelor's degrees, Table 27. Of the research personnel, 53 per cent had Ph. D. degrees, 39 per cent had Master's degrees, and 8 per cent had Bachelor's degrees. For extension personnel, only 23 per cent had Ph. D. degrees, while 41 per cent had Master's degrees and 36 per cent had Bachelor's degrees. For all workers in Agricultural Economics, 83 per cent had formal training at the Master's level or above, with half of this number having completed the Ph. D. degree.

At all levels of formal training, a higher percentage of Agricultural Economics workers in Land-Grant institutions were engaged in research work than in either teaching or extension work. At the Ph. D. level, the smallest percentage (only 19 per cent) was engaged in extension work. But at the opposite extreme, at the Bachelor's level, the largest percentage (71 per cent) was engaged in extension work. For all Agricultural Economics areas combined, individual workers frequently were engaged in more than one type of work. For all personnel in Agricultural Economics at Land-Grant institutions in 1954-55, 65 per cent were engaged in research, 52 per cent in teaching, and 34 per cent in extension.

The distribution of all Agricultural Economics teaching personnel in Land-Grant institutions in 1954-55 by rank as shown in Table 28 indicates that 37 per cent were full professors, 28 per cent were associates, 29 per cent were assistants, and 5 per cent were instructors.

Table 27. Distribution of Workers 1/ in Agricultural Economics 2/ by Degree Status and by Type of Work Engaged In, 48 Land-Grant Institutions, 3/ 1954-55

Type of work engaged in	Degree status: B.S. or B.A.	M.S. or M.A.	Ph.D. or equivalent	Total workers in Agricultural Economics
	Number	Number	Number	Number
Teaching	22	185	353	560
Research	57	274	371	702
Extension	132	149	85	366
TOTAL 4/	186	441	447	1,074
	Per cent	Per cent	Per cent	Per cent
Teaching	4	33	63	100
Research	8	39	53	100
Extension	36	41	23	100
AVERAGE	17	41	42	100
	Per cent	Per cent	Per cent	Per cent
Teaching	12	42	79	52
Research	31	62	83	65
Extension	71	34	19	34
TOTAL 4/	100	100	100	100

1/ Includes all teaching, research, and extension workers, except county extension workers.

2/ Includes Rural Sociology workers both when shown as a part of Agricultural Economics departments and when shown as separate departments.

3/ For a listing of the official names of the 48 Land-Grant institutions included, see Appendix Table 1.

4/ Teaching, research, and extension will not add to this total because some staff members were reported as being engaged in more than one type of work.

Source: Compiled from "Workers in Subjects Pertaining to Agriculture in Land-Grant Colleges and Experiment Stations, 1954-55," U. S. Department of Agriculture, Agriculture Handbook No. 78, OES, ARS, USDA, March 1955.

Table 28. Distribution of Workers 1/ in Agricultural Economics 2/ by Rank and by Type of Work Engaged In, 48 Land-Grant Institutions, 3/ 1954-55

Type of work engaged in	Rank: Specialist	Instructor	Asst. Prof.	Assoc. Prof.	Prof.	Total workers in Agricultural Economics
	No.	No.	No.	No.	No.	No.
Teaching	3	32	163	155	207	560
Research	9	47	235	181	230	702
Extension	94	15	89	66	102	366
TOTAL 4/	103	70	332	253	316	1,074
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Teaching	1	5	29	28	37	100
Research	1	7	33	26	33	100
Extension	26	4	24	18	28	100
AVERAGE	10	7	30	24	29	100
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Teaching	3	46	49	61	66	52
Research	9	67	71	72	73	65
Extension	91	21	27	26	32	34
TOTAL 4/	100	100	100	100	100	100

1/ Includes all teaching, research, and extension workers, except county extension workers.

2/ Includes Rural Sociology workers both when shown as a part of Agricultural Economics departments and when shown as separate departments.

3/ For a listing of the official names of the 48 Land-Grant institutions included, see Appendix Table 1.

4/ Teaching, research, and extension will not add to this total because some staff members were reported as being engaged in more than one type of work.

Source: Compiled from "Workers in Subjects Pertaining to Agriculture in Land-Grant Colleges and Experiment Stations, 1954-55," U. S. Department of Agriculture, Agriculture Handbook No. 78, OES, ARS, USDA, March 1955.

A similar situation existed for Agricultural Economics research personnel. In the case of Agricultural Economics extension personnel, there was a different picture of personnel distribution by rank in 1954-55. Only 28 per cent of extension workers held full rank, while 18 per cent were associates, 24 per cent were assistants, and 4 per cent were at the instructor level. In extension, 26 per cent were classified as specialists.

For all academic ranks from instructor through full rank, from one-half to three-fourths of all Agricultural Economics workers in 1954-55 were engaged in teaching and research; about a fourth were engaged in extension work. For workers classified as specialists in 1954-55, more than 90 per cent were engaged in extension work.

Salary Levels, Differences, and Comparisons

Salary levels and salary differences were cited by Schultz in 1940 as the mainspring which moves many of the forces that are continuously at work with respect to institutional and other differences relative to types of work engaged in by Agricultural Economics workers; differences in degree status and rank of Agricultural Economics workers among Land-Grant institutions; problems, policies, and procedures in Land-Grant institutional recruiting and training programs; and other activities relating to Agricultural Economics within and among Land-Grant institutions. Schultz emphasized that salary scales and levels "are plainly one of the chief causes back of the movement of workers from one state to another and from the states to federal agencies. Salaries and salary changes afford the most satisfactory rationale for explaining much of what happens to institutions and to workers

in this field." 1/

Salary levels, in general, have traditionally been higher in some areas and in some Land-Grant institutions than in others. In recent years, the wide variations and differences that formerly existed have tended to become smaller. Despite this trend, however, current salary levels continue to be higher in some areas and in some institutions than in others. Among the factors influencing the relative salary levels among Land-Grant institutions in recent years have been the degree of competition among states, competition from industry and from government agencies, a recognition of the professional opportunities afforded in the smaller institutions, changes in administrative policies and procedures among areas and institutions, and a number of other factors incident to changes in the social, economic, and political framework within different states and regions.

Since a high percentage of the Agricultural Economics personnel in Land-Grant institutions who are engaged in teaching and in research are on joint appointments, average salaries paid, by rank, for this group of workers in 1956 were reported jointly as shown in Table 29. Average salaries paid, by rank, for extension workers in 1956 are shown in Table 30.

For teaching and research workers in 1956, the highest salaries paid at all levels of rank were in institutions located in the Corn Belt, Lake States, and parts of the Northeast. Lowest salaries paid were in the Southern States and in some of the Western States. In the

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1/ Schultz, Theodore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, p. 94.

Table 29. Average Salaries Paid for Teaching and/or Research Staff Members in Agricultural Economics at Land-Grant Institutions, by Rank, 1956

(12-Months basis as of July 1, 1956)

State	Specialist	Instructor or equivalent	Assistant Professor or equivalent	Associate Professor or equivalent	Professor or equivalent
	Dollars	Dollars	Dollars	Dollars	Dollars
Alabama	-	4,125	-	6,650	8,000
Arizona	-	5,750	6,150	7,200	8,800
Arkansas	-	4,600	5,557	6,666	-
California 1/	-	-	-	-	-
Colorado	-	4,800	5,600	6,533	-
Connecticut	-	-	5,820	7,890	8,820
Delaware	-	3,500	6,600	7,700	8,000
Florida	-	-	5,350	6,543	7,787
Georgia	-	3,600	5,500	6,000	7,950
Idaho 1/	-	-	-	-	-
Illinois	-	6,125	6,900	7,972	9,631
Indiana 1/	-	-	-	-	-
Iowa	-	5,700	6,700	7,100	9,100
Kansas	-	4,812	6,165	6,912	8,840
Kentucky 1/	-	-	-	-	-
Louisiana	-	4,800	6,800	7,800	8,800
Maine	-	4,150	5,620	6,500	7,500
Maryland 1/	-	-	-	-	-
Massachusetts	-	5,000	6,000	6,800	8,000
Michigan	-	4,800	7,485	8,398	10,933
Minnesota	-	5,400	7,000	8,350	10,500
Mississippi	-	4,250	5,480	6,700	7,100
Missouri	-	3,750	5,750	7,750	9,000
Montana 1/	-	-	-	-	-
Nebraska	-	4,400	5,000	6,100	8,300
Nevada	-	5,600	7,000	8,000	9,500
New Hampshire 1/	-	-	-	-	-
New Jersey	-	5,500	6,660	7,700	9,100
New Mexico	-	5,244	6,132	7,476	8,700
New York	4,543	-	6,548	7,343	9,467
North Carolina 1/	-	-	-	-	-
North Dakota	4,700	-	5,700	6,720	8,100

(Continued)

Table 29 (Continued). Average Salaries Paid for Teaching and/or Research Staff Members in Agricultural Economics at Land-Grant Institutions, by Rank, 1956.

(12-Months basis as of July 1, 1956)

State	Specialist	Instructor or equivalent	Assistant Professor or equivalent	Associate Professor or equivalent	Professor or equivalent
	Dollars	Dollars	Dollars	Dollars	Dollars
Ohio	-	5,300	6,580	7,588	9,932
Oklahoma	-	4,400	6,200	7,000	8,200
Oregon 2/	-	-	-	-	-
Pennsylvania	4,456	-	6,650	7,495	9,324
Rhode Island	-	5,050	5,942	6,720	-
South Carolina	-	4,200	5,200	6,200	7,200
South Dakota 1/	-	-	-	-	-
Tennessee	-	4,800	5,520	6,750	7,275
Texas	-	-	5,520	6,403	8,092
Utah	-	-	5,600	6,500	8,000
Vermont	-	4,867	5,700	6,500	-
Virginia 1/	-	-	-	-	-
Washington	-	4,783	5,783	7,517	9,850
West Virginia	-	-	5,750	6,900	8,500
Wisconsin	-	5,025	5,952	8,843	10,625
Wyoming 1/	-	-	-	-	-

1/ Questionnaire not returned.

2/ Not reported on returned questionnaire.

case of extension workers in 1956, the same general pattern existed as for teaching and research workers.

As Schultz pointed out in 1940, the South and the West have more acute and more difficult social and economic problems in agriculture than do other areas of the country. Land-Grant institutions in these two areas have acute needs for highly trained and competent staffs in

Table 30. Average Salaries Paid for Extension Staff Members in Agricultural Economics at Land-Grant Institutions, by Rank, 1956

(12-Months basis as of July 1, 1956)

State	Specialist	Instructor or equivalent	Assistant Professor or equivalent	Associate Professor or equivalent	Professor or equivalent
	Dollars	Dollars	Dollars	Dollars	Dollars
Alabama	6,498	-	-	-	-
Arizona	6,500	-	-	-	-
Arkansas 2/	-	-	-	-	-
California 1/	-	-	-	-	-
Colorado	6,900	-	-	-	-
Connecticut	-	4,740	5,700	-	8,820
Delaware 2/	-	-	-	-	-
Florida	7,000	-	-	-	-
Georgia	-	-	5,300	6,100	6,900
Idaho 1/	-	-	-	-	-
Illinois	5,934	-	7,277	7,600	8,973
Indiana 1/	-	-	-	-	-
Iowa	-	6,000	6,700	7,100	7,100
Kansas	-	-	6,840	7,140	7,110
Kentucky 1/	-	-	-	-	-
Louisiana	8,000	-	5,600	-	-
Maine 2/	-	-	-	-	-
Maryland 1/	-	-	-	-	-
Massachusetts	-	5,000	6,000	6,800	8,000
Michigan	-	6,100	7,571	8,800	9,850
Minnesota	-	5,376	7,066	7,400	8,200
Mississippi	-	-	6,000	6,000	7,400
Missouri	-	4,000	5,750	6,750	7,750
Montana 1/	-	-	-	-	-
Nebraska	-	-	5,600	7,200	-
Nevada	-	-	7,000	-	-
New Hampshire 1/	-	-	-	-	-
New Jersey	-	5,500	6,660	7,700	9,100
New Mexico	5,880	5,400	5,700	5,880	-
New York	5,881	-	6,450	7,322	9,150
North Carolina 1/	-	-	-	-	-
North Dakota	-	-	-	7,500	-

(Continued)

Table 30 (Continued). Average Salaries Paid for Extension Staff Members in Agricultural Economics at Land-Grant Institutions, by Rank, 1956

(12-Months basis as of July 1, 1956)

State	Specialist	Instructor or equivalent	Assistant Professor or equivalent	Associate Professor or equivalent	Professor or equivalent
	Dollars	Dollars	Dollars	Dollars	Dollars
Ohio	-	5,675	6,412	8,000	7,350
Oklahoma	6,570	-	-	-	-
Oregon 2/	-	-	-	-	-
Pennsylvania 2/	-	-	-	-	-
Rhode Island	-	-	5,650	6,890	-
South Carolina 2/	-	-	-	-	-
South Dakota 1/	-	-	-	-	-
Tennessee	6,100	-	-	-	-
Texas 2/	-	-	-	-	-
Utah	-	-	-	6,550	-
Vermont	-	-	4,900	-	7,700
Virginia 1/	-	-	-	-	-
Washington	-	-	-	7,517	8,525
West Virginia 2/	-	-	-	-	-
Wisconsin 2/	-	-	-	-	-
Wyoming 1/	-	-	-	-	-

1/ Questionnaire not returned.

2/ Not reported on returned questionnaire.

Agricultural Economics for teaching, research, and for extension work. 2/ And yet, based on salary levels in these states in 1956, many of the Southern and Western States were not paying salaries at levels sufficiently high as compared to other states to recruit, train, and hold

2/ Ibid., p. 97.

the competence and experience that is needed to cope with the prevailing social and economic problems in these areas.

Salaries paid by degree status of Agricultural Economics workers in 1956 are shown in Appendix Tables 11 and 12 for individual Land-Grant institutions. At most of the Southern and Western institutions, the salary differentials between personnel with Master's degrees and those with Ph. D. degrees were much smaller than were those for institutions in other areas of the country. Also, the salaries paid for personnel with Master's degrees in Southern and Western institutions were nearer the average of the salaries paid by other institutions for Master's degrees than was true when comparing salaries for Ph. D. degree personnel between Southern and Western States and the states outside these two regions. The implications of these comparisions are that many institutions in the Southern and Western areas of the country appeared in 1956 to have had relatively low ceilings on the salaries of senior and/or better trained personnel, and, therefore, were unable to hold many of these types of staff members much beyond the period of breaking them in. Also, many Southern and Western Land-Grant institutions appeared to have been paying relatively high salaries to obtain personnel but were unable to advance these staff members in salaries at the rates being followed by Land-Grant institutions outside these two areas.

In discussing the results of an analysis of the salaries paid by Land-Grant institutions for incoming staff members in Agricultural Economics in 1940, Schultz indicated that at that time "the schools with salaries below the average for their senior staff are in the main forced to pay more than average rates to bring to their institutions

senior staff members." He further indicated that "institutions which have built up their own major senior staffs and have the advantage of a large going concern are able to obtain the services of junior staff members at rates of pay distinctly lower than is common for institutions as a whole." 3/ The data from Land-Grant institutions for 1956, as shown in Tables 29 and 30 and in Appendix Tables 11 and 12 indicate that this situation, as described by Schultz in 1940, has changed very little, if any, during recent years.

An indication of the changes in salary levels for Agricultural Economics workers in Land-Grant institutions between 1939-40 and 1956 is shown in Table 31. The data shown for these two periods are not strictly comparable. For 1939-40, the salary levels shown were the highest salaries paid by respective institutions for associate professors of Agricultural Economics. For 1956, the salary levels shown were the average salaries paid by individual institutions for staff members at the associate level in teaching and/or research and in extension Agricultural Economics work. In general, the institutions that were paying the lowest relative salaries in 1956 were the same institutions that paid the lowest relative salaries in 1939-40.

3/ Ibid., p. 99.

Table 31. Comparison of Salaries of Associate Professors of Agricultural Economics at Land-Grant Institutions, 1939-40 and 1956

State	Top salary of Associate Professor: 1939-40	Average salary of Associate Professors engaged in: Teaching or research: 1956	Extension: 1956
	Dollars	Dollars	Dollars
Alabama	3,300	6,650	1/
Arizona	1/	7,200	1/
Arkansas	3,400	6,666	1/
California	3,900	1/	1/
Colorado	3,050	6,533	1/
Connecticut	4,180	7,890	1/
Delaware	3,800	7,700	1/
Florida	3,300	6,543	1/
Georgia	2,700	6,000	6,100
Idaho	2,800	1/	1/
Illinois	4,500	7,972	7,600
Indiana	4,500 2/	1/	1/
Iowa	4,200	7,100	7,100
Kansas	3,500	6,912	7,140
Kentucky	4,200	1/	1/
Louisiana	3,500	7,800	1/
Maine	3,600	6,500	1/
Maryland	3,900	1/	1/
Massachusetts	3,500 2/	6,800	6,800
Michigan	3,900	8,398	8,800
Minnesota	4,600	8,350	7,400
Mississippi	2,400	6,700	6,000
Missouri	4,500	7,750	6,750
Montana	3,500	1/	1/
Nebraska	3,000	6,100	7,200
Nevada	3,200	8,000	1/
New Hampshire	3,500 2/	1/	1/
New Jersey	3,600	7,700	7,700
New Mexico	2,900	7,476	5,880
New York	4,375	7,343	7,322
North Carolina	3,000	1/	1/
North Dakota	2,400 2/	6,720	7,500

(Continued)

Table 31 (Continued). Comparison of Salaries of Associate Professors of Agricultural Economics at Land-Grant Institutions, 1939-40 and 1956

State	Top salary of Associate Professor: 1939-40	Average salary of Associate Professors engaged in: Teaching or research: 1956	Extension: 1956
	Dollars	Dollars	Dollars
Ohio	4,400	7,588	8,000
Oklahoma	3,400 2/	7,000	1/
Oregon	4,000	1/	1/
Pennsylvania	4,000 2/	7,495	1/
Rhode Island	3,500	6,720	6,890
South Carolina	2,600	6,200	1/
South Dakota	2,600	1/	1/
Tennessee	3,200	6,750	1/
Texas	2,750	6,403	1/
Utah	3,000	6,500	6,550
Vermont	3,500	6,500	1/
Virginia	3,400	1/	1/
Washington	3,400	7,517	7,517
West Virginia	3,300	6,900	1/
Wisconsin	4,250	8,843	1/
Wyoming	3,200	1/	1/

1/ Not ascertained or not available.

2/ No figure available for top salary of associate professor but lower salary of full professor was given and used as a basis for making the estimate shown.

Source: Data for 1939-40 from: Schultz, Theodore W., Recruiting and Training of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, Table 24, p. 96.

Data for 1956 from: Tables 29 and 30.

CHAPTER V

RECRUITING AND TRAINING OF PERSONNEL IN AGRICULTURAL ECONOMICS

Agricultural Economics is deeply rooted in the affairs of agriculture. Departments of Agricultural Economics, in a like manner, are generally deeply rooted in the affairs of colleges of agriculture. And, in a similar manner, the personnel in Agricultural Economics are usually closely associated with agricultural interests both in terms of background and training and in terms of the activities and programs in which they are engaged.

Recruiting and training of personnel in Agricultural Economics as a process involves three major phases: undergraduate, graduate, and staff. As a process, one phase or stage follows another. The process is characteristically a highly dynamic procedure for selecting and developing Agricultural Economics personnel.

The process begins at the undergraduate level. Most undergraduate students who have interests in developing careers in Agricultural Economics are found in Land-Grant colleges of agriculture. Despite a decrease in the number of undergraduates enrolled in colleges of agriculture during recent years, total enrollment has been maintained at a level sufficiently high to assure adequate numbers of undergraduates from which Agricultural Economics students have been recruited and trained.

In a report made in 1960, based on an analysis of the changing agricultural curricula in Agricultural Economics in the Southern Land-Grant institutions, it was pointed out that total undergraduate enrollment in 13 Southern Land-Grant institutions had increased 20 per cent

during the period between 1955-56 and 1959-60. During this same period, undergraduate enrollment in agriculture decreased 12 per cent. In Southern Land-Grant institutions, agricultural enrollment represented 8.3 per cent of total undergraduate enrollment in 1959-60 compared to 11.3 per cent in 1955-56. Between 1955-56 and 1959-60, the number of agricultural students who majored in Agricultural Economics at these institutions increased 15 per cent. Thus, while total institutional undergraduate enrollment increased 20 per cent and agricultural enrollment decreased 12 per cent, undergraduate enrollment in Agricultural Economics increased 15 per cent. 1/ In this area of the country, during this recent 5-year period, decreasing undergraduate enrollment in colleges of agriculture did not adversely affect the ability to recruit an increasing number of student majors in the field of Agricultural Economics.

Although Departments of Agricultural Economics are concerned with recruiting and training of personnel for careers in Agricultural Economics as a professional field, many students, particularly at the undergraduate level and to a lesser extent at the graduate level, do not go into professional Agricultural Economics work after completion of their formal training programs, Table 32. In 1955-56, 26 per cent of the graduating seniors from Land-Grant institutions with majors in

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1/ Lanham, Ben T., Jr., "Changing Agricultural Curricula in Agricultural Economics and Rural Sociology to Meet Current and Future Needs," Proceedings, Agricultural Economics and Rural Sociology Section, Association of Southern Agricultural Workers, 1960, Volume I, pp. 125-26.

Table 32. First Positions Taken by Graduates Awarded Specified Degrees in Agricultural Economics from Land-Grant Institutions, 1955-56 1/

Item	B.S. graduates	M.S. graduates	Ph.D. graduates
	Number	Number	Number
Federal employment:			
Research	4	5	4
Extension	0	2	1
Service	6	11	0
Foreign assignment	2	0	0
State employment:			
Teaching	0	3	10
Research	8	13	18
Extension	3	8	0
Service	1	2	1
Military service	48	11	0
Private employment:			
Production fields	7	6	0
Marketing fields	9	7	1
Sales, promotion, etc.	15	4	0
Research	2	3	0
Other	11	3	0
Self employment:			
Farming	38	2	0
Other	4	3	0
Graduate study:			
Home institution	40	20	0
Other institution	14	16	0
Return to foreign countries	0	17	4
TOTAL GRADUATES 1/	212	136	39

1/ Includes the following number of graduates from specified state Land-Grant institutions:

State	B.S. graduates	M.S. graduates	Ph.D. graduates
Arizona	1	1	0
Arkansas	3	5	0
Connecticut	3	4	0
Delaware	4	1	0
Florida	2	3	2

(Continued)

1/ (Continued):

State	B.S. graduates	M.S. graduates	Ph.D. graduates
Georgia	7	3	0
Illinois	*	12	8
Iowa	12	7	11
Kansas	32	4	0
Louisiana	5	11	2
Maine	6	0	0
Massachusetts	2	2	0
Michigan	10	5	3
Mississippi	1	2	0
Missouri	25	4	0
Nebraska	20	7	0
Nevada	3	0	0
New York	*	21	8
North Dakota	*	2	0
Ohio	20	7	1
Oklahoma	6	4	0
Oregon	*	2	1
Pennsylvania	13	11	3
Rhode Island	2	1	0
South Carolina	6	3	0
Tennessee	11	7	0
Utah	5	6	0
Vermont	11	1	0
Washington	2	0	0

* Not reported on returned questionnaire.

Agricultural Economics entered graduate training. 2/ In the same year, an equal proportion of Master's graduates continued their graduate training with work toward advanced degrees.

Of the total number of Agricultural Economics graduating seniors in 1955-56, nearly a fourth entered military service. Principal types of employment of B. S. graduates included employment with private firms

2/ In 1938-39, only 16 per cent of the graduating seniors of that year entered graduate training, thus, reflecting the increasing proportion of undergraduate Agricultural Economics majors who have entered graduate training in recent years.

or organizations 20 per cent, farming 17 per cent, state employment (including Land-Grant institutions) 6 per cent, and federal employment 5 per cent.

For graduates with Master's degrees in Agricultural Economics in 1955-56, 8 per cent entered military service. Major types of employment included state employment (including Land-Grant institutions) 19 per cent, private firms and organizations 17 per cent, federal employment 14 per cent, and farming and other forms of self-employment 4 per cent. A total of 13 per cent were foreign students who returned to foreign countries after completing Master's degrees.

Of the 1955-56 Agricultural Economics graduates with the Ph. D. degree, 70 per cent went into teaching and research work in Land-Grant institutions. Fourteen per cent went into federal employment, principally research. Eleven per cent were foreign students who returned to foreign countries for employment.

Based on the data shown in Table 32, the task of recruiting and training of personnel in Agricultural Economics should have multiple objectives at both the undergraduate and the graduate levels. Only about a fourth of all students go into graduate work; this is equally true at both the Bachelor's and the Master's level. Also, only part of all students go into professional Agricultural Economics work; this is true at all levels of formal training. Thus, in terms of recruitment and training, recognition should be given, at all levels, to the wide variations in the objectives of the personnel involved.

Undergraduate Recruitment and Training

Although Agricultural Economics is a relatively young professional

field, it has acquired and established a firm and respected status in Land-Grant colleges of agriculture. Despite this situation, however, there continues in existence a number of major obstacles in the recruitment of personnel in competition with other subject-matter areas, particularly at the undergraduate level. Among these obstacles, many of which were discussed in detail in Schultz's study in 1940, 3/ are the lack of understanding on the part of students of the relative advantages of and opportunities in various subject-matter areas. Most students entering colleges of agriculture, because of their previous background, experience, and training, are more familiar with production and technical phases of agriculture than with its social and economic phases. These students, therefore, are more likely to enroll in non-social science areas than in Agricultural Economics. It is for this reason that, in some Land-Grant institutions, Agricultural Economics undergraduate enrollments may consist of as many transfer students as of students who initially enroll in the area of Agricultural Economics.

A major problem in the recruitment and training of undergraduate students revolves around the question of quality of students. Schultz pointed out in 1940 that, at that time, many Land-Grant institutions were weak in attracting good students, and in fact, were failing to attract the most competent students enrolled in colleges of agriculture. 4/ In a more recent report, Nicholls implies that there has been some

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3/ Schultz, Theodore W., Training and Recruitment of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, pp. 103-113.

4/ Ibid., pp. 109-113.

improvement in the quality of Agricultural Economics students during recent years, but that the over-all quality of students in colleges of agriculture is still far from encouraging. 5/

Schultz indicated that in 1940 there was considerable evidence that those Agricultural Economics departments which concentrated on the teaching of graduate students usually did not obtain the best undergraduate students on their own campuses. 6/ This was attributed to the inclination of the teaching staffs at such institutions to neglect the interests of undergraduate students. Also involved was the general practice of assigning the less competent and less experienced teachers to undergraduate teaching duties. When the more mature, better trained, more experienced, and more competent teachers are assigned or devote their major efforts and interests toward graduate training programs and graduate teaching, there is always a tendency for the undergraduate program and undergraduate teaching to suffer.

The first permanent impressions which students form of the field of Agricultural Economics often constitute a major factor affecting recruitment of students into the field. These first impressions are frequently made in the first courses taken by students under an Agricultural Economics teacher. For this reason, particular emphasis needs to be placed on the organization and content of these first courses in Agricultural Economics, and special attention needs to be given to the selection and assignment of the teaching personnel who handle such

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5/ Nicholls, William H., "Higher Education and Agricultural Economics: A Critical Appraisal," Journal of Farm Economics, Vol. XLII, No. 5, December 1960, pp. 971-974.

6/ Schultz, op. cit., p. 111.

courses. 7/ It is often argued that the personnel assigned to teach these first courses in Agricultural Economics should be the best teachers available within individual departments. 8/ To accomplish this often involves a change in departmental attitudes and policies and also changes in the attitudes and values that are held by the individual staff members who are assigned such teaching responsibilities.

Undergraduate Curricula in Agricultural Economics

Most Land-Grant institutions provide, within colleges of agriculture, a major in Agricultural Economics or in some closely related area (Appendix Table 13). In some departments of Agricultural Economics,

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7/ This would be true in terms of both departmental interests in recruiting of undergraduate students in Agricultural Economics and departmental interests in stimulating non-departmental majors to elect to take additional course work in Agricultural Economics and in related social science areas. The needs for (or the lack of knowledge in) basic economic training for non-departmental majors is frequently misunderstood or ignored in departmental planning, policies, and procedures with respect to undergraduate teaching. See, for example:

Knight, Willys R., Probing into the Economic Attitudes of College Students, Research Paper No. 3, Bureau of Business and Economic Research, Georgia State College, Atlanta, Georgia, February 1958.

Rasmussen, Wayne D., Liberal Education and Agriculture, Institute of Higher Education, Teachers College, Columbia, New York, 1959.

8/ For a more detailed discussion of the philosophy of undergraduate teaching and of some of the problems incident to improved college teaching, see:

James, H. B., "The Philosophy of Undergraduate Training," Journal of Farm Economics, Vol. XLI, No. 5, December 1959.

Nicholls, op. cit.

Kelly, Fred J., "The Case for Improving the Preparation of College Teachers," Chapter I, Toward Better College Teaching, Bulletin 1950, No. 13, Office of Education, Federal Security Agency, Washington, D. C., 1950.

curricula are available for undergraduate majors in more than one subarea or subfield of Agricultural Economics. At Land-Grant institutions that do not provide a major in Agricultural Economics, students can usually concentrate their course work in the offerings of Agricultural Economics departments to the extent that they can often obtain the approximate equivalent of a major in Agricultural Economics.

The organization of major curricula within colleges of agriculture vary widely from state to state. In those institutions where a uniform program of work is given all students in colleges of agriculture during the first year or during the first two years, with provisions for subject-matter area specialization to follow, students have an opportunity to view all fields before selecting a major field. Also, students do not lose course credits nor time in transferring from one curriculum to another in the event that such transfers are made.

In addition to the above cited differences among Land-Grant institutions, there are wide differences among institutions in the credit hour requirements for completion of a Bachelor's degree in Agricultural Economics. Even wider differences exist among institutions in the curricula content for Agricultural Economics majors with respect to requirements in technical agriculture, in basic sciences, in social sciences, and in the use of electives. 9/

9/ The question of undergraduate curricula in Agricultural Economics has been of major concern to Agricultural Economists, particularly in Land-Grant institutions, for a number of years. Among recent studies and comment relating to this question have been:

James, op. cit.

(Continued)

The general content of the curricula for majors in Agricultural Economics at Land-Grant institutions in 1955-56 is shown in Appendix Tables 13 and 14. In three-fourths of the Land-Grant institutions, only one major option was offered in Agricultural Economics (or in a related area). In the other one-fourth of these institutions, options in Agricultural Economics ranged from two to five. In 1955-56, only a few institutions listed options in agribusiness or agricultural administration. 10/ Most institutions appeared to be placing major emphasis on a single option to meet the needs of students interested in Agricultural Economics.

In 1959, at the American Farm Economic Association's annual

9/ (Continued):

Lanham, op. cit.

Nicholls, op. cit.

Schultz, op. cit.

Stucky, H. R., "Adapting Agricultural Economics Curricula to a Changing Agriculture," Proceedings, Western Farm Economics Association, 1960.

Black, John D., "Economics in Agricultural College Curricula," Journal of Farm Economics, Vol.XXXV, No. 4, November 1953, pp. 484-495.

Renne, Roland R., "Land-Grant Institutions, the Public, and the Public Interest," The Annals of the American Academy of Political and Social Science, Vol. 331, September 1960, pp. 46-51.

10/ The trend in many sections of the country since 1955-56 has been in the direction of placing more emphasis on agribusiness options or agribusiness types of training. In 1960, for example, 9 of 11 Southern Land-Grant institutions had agribusiness majors in effect. Only one of these institutions had an agribusiness curriculum 5 years earlier.

See Lanham, op. cit.

Also, see Stucky, op. cit.

meeting, H. Brooks James, in discussing the philosophy of undergraduate training, emphasized that a new program of instruction was needed to meet the needs of a modern agriculture and to develop enlightened citizens for the kind of world to be faced in the years ahead. James indicated that, in many institutions, conditions have changed tremendously since curricula were developed, while in others, current curricula are not adequate. He stated that "past programs have been aimed mainly at farming and not at agriculture in its broadest sense. Programs have been weighted heavily with applied training and have been weak in fundamentals. Many programs have failed to achieve a reasonable balance between science, technology, and liberal arts and thus have failed to produce the kind of behavior in their graduates for which they were planned." 11/

This analysis by James indicates that what appears to be needed is a curriculum designed to bring into existence a new combination of cultural, scientific, technical, and business courses. Such a curriculum would include training at the undergraduate level in the humanities, history, political science, and social relations as well as technical and scientific work in agriculture and business courses. Student programs would emphasize broad general training rather than narrow specialization. Individual student programs would be developed in accordance with individual student needs and interests. Graduates would continue to be trained for work in agricultural production and marketing, but would also be qualified for employment in many of the agri-

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11/ James, op. cit.

cultural industries that are closely related to agriculture. 12/

At the American Farm Economic Association's annual meeting in 1960, William H. Nicholls, in a critical appraisal of higher education and Agricultural Economics, warned that there are real dangers in going too far in the direction of developing practical and applied curricula for Agricultural Economics students even at the undergraduate level. 13/ Nicholls concludes that the Land-Grant undergraduate colleges of agriculture start with relatively poor quality freshmen who, by the time they receive their Bachelor's degrees, make an even poorer showing relative to most other graduating seniors. This, Nicholls attributes in part, to the curricula in existence in many Land-Grant institutions.

One of the characteristics of general significance relative to Agricultural Economics curricula in Land-Grant institutions is the wide variation among institutions in the credit hours required for graduation. Appendix Table 13 indicates that in 1955-56, the number of credit hours required for a Bachelor's degree ranged from 120 hours to 155 hours. Institutions with relatively low hourly requirements were those located in the Corn Belt Area, the Lake States Areas, and in California and New York. Relatively high hourly requirements were in institutions located principally in the Southern and in the Northeastern areas of the country.

Of more significance than the total hours required for graduation were the variations among states in the types of courses or general content of Agricultural Economics curricula. These variations are

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12/ Lanham, op. cit.

13/ Nicholls, op. cit.

shown in Appendix Table 14.

Social science courses in the student's major field comprised less than 10 per cent of total hourly requirements in eight institutions. They comprised more than 20 per cent of total requirements in 10 institutions. Thus, for most Land-Grant Agricultural Economics departments, courses in the student's major field made up between 10 and 20 per cent of the hourly requirements for degrees in Agricultural Economics.

In the case of non-rural social science courses, the range in requirements was from a low of 2 per cent to a high of 30 per cent of the total hourly requirements for graduation. For most institutions, non-rural social science courses represented from 10 to 20 per cent of total requirements.

For most institutions, total social science requirements ranged from 22 to 36 per cent of total requirements for graduation. For all institutions, combined the average hourly requirement for graduation was 137 hours, of which 39 hours (or 30 per cent of the total) were required in social science courses.

Technical agriculture courses, including the basic plant and animal science courses, soils, agricultural engineering, and related courses, varied in requirements from 2 per cent at one institution to 46 per cent at another. Many of the courses in this category were laboratory-type courses, and therefore, frequently occupied a relatively large part of the student's time.

Agricultural science courses are related both to technical agricultural courses and to basic science courses. These include, in general, the applied basic science courses, many of which occur in

curricula during the junior and senior years. In Agricultural Economics curricula, this category of courses was relatively unimportant at most institutions in terms of credit hours required. At 20 institutions, no credit hours were required in this area. At other institutions, the requirements were up to about 5 per cent of total hourly requirements for graduation.

Basic science courses, including basic courses in chemistry, physics, botany, zoology, and related courses, were relatively important in all institutions. The variation in requirements was from about 10 to 20 per cent of total hourly requirements in all institutions.

Mathematics and statistics were not listed in the curricula of two institutions, however, this does not necessarily mean that the Agricultural Economics students at these institutions did not obtain training in mathematics and/or statistics. This type of training can be, and frequently is, made a part of other courses in Agricultural Economics or in general economics. In only one institution were the requirements in mathematics and statistics more than 10 per cent of the total hourly requirements.

English, as an indicator of training in communication skills, was required in all institutions. In only six institutions were English requirements in excess of 10 per cent of total hourly requirements. In most institutions, English requirements represented from 5 to 8 per cent of total requirements.

Electives, in some institutions, were restricted to approved listings of courses. In some cases, student-faculty advisory arrangements were used to determine the use of electives. And, in other cases, students were free to use electives for courses of their choice. The

number of hours of electives in Land-Grant Agricultural Economics curricula varied widely from state to state. In some institutions, the number of hours of electives was less than 10 (in one case, it was less than 5) hours. In such cases, student programs lacked flexibility and all students were required to follow essentially the same program. With additional hours of electives, more flexibility is possible and in many cases, programs can be developed that are more nearly in line with student needs and interests.

A modal curriculum, based on information shown in Appendix Table 14, compared to a modal curriculum, based on a comparable analysis for 1939-40, 14/ indicates that few major changes occurred in the over-all Agricultural Economics curricula setup within Land-Grant institutions between 1939-40 and 1955-56. 15/ The only substantial change during this period was an increase in the required hours in the social sciences (in areas outside the major field). This and other changes of lesser importance are shown below:

	Semester hours required in:	
	1939-40	1955-56
Technical Agriculture	24	23
Agricultural Economics	19	21
Social Sciences	12	18
Basic Sciences	20	18
English	9	10
Mathematics and Statistics	9	7
Military and Physical Education	9	8
Agricultural Science	5	3
Electives	27	29
Total credits for graduation	134	137

14/ Schultz, op. cit., p. 119.

15/ For an indication of changes that have been made since 1955-56 or that were contemplated in 1960, see Appendix Table 15, based on information from Stucky, op. cit.

During recent years, the over-all problems and weaknesses in undergraduate recruitment and training in Agricultural Economics have included the following:

1. Increasing enrollments in Land-Grant institutions have been in areas outside of colleges of agriculture. Despite these decreasing enrollments in colleges of agriculture, the field of Agricultural Economics has been able to recruit and enroll an increasing percentage of undergraduates from colleges of agriculture.

The principal problem has not been numbers of students but quality of students. In colleges of agriculture, the quality of students during recent years has been below institutional averages in terms of background, capabilities, and performance. Since Agricultural Economics students have been recruited primarily from colleges of agriculture, this has posed a particularly acute problem in terms of obtaining quality students. The competition for good students has been keen between all departments within colleges of agriculture. With only a small number of good students available, this problem will become even more acute in the years ahead.

2. Student objectives in Agricultural Economics training often have differed widely from one student to another. Most students have obtained a Bachelor's degree as a terminal degree and have obtained employment immediately after graduation. Some students, however, have been interested in entering graduate training following graduation with the idea of later going into professional Agricultural Economics work. These two groups of students have had different objectives, different interests, and different needs. Most departments of Agricultural Economics have been limited to a single departmental major, thus, have

been unable to provide different programs for different groups of students. Factors associated with such situations have included a relatively fixed curriculum, a small number of elective credit hours, and the existing departmental attitudes, policies, and procedures with respect to undergraduate training.

3. Departmental objectives in Agricultural Economics undergraduate training have been widely variable from one institution to another. Some departments have placed major emphasis on the development of undergraduate training for students who planned to seek employment following graduation. Some have placed emphasis on undergraduate training designed to train and develop students for qualification for graduate training following graduation. And some have been so involved in graduate training programs that undergraduate training may have suffered from lack of planning, attention, and resources.

4. The problems of recruiting and training have been directly affected in some institutions by existing departmental policies with respect to the assignment of teachers to handle first courses in Agricultural Economics.

5. The curricula in Agricultural Economics at most institutions have been continuously under study. Frequent changes have been made, but generally such changes have been minor and thus have had little effect on over-all curricula requirements. Many curricula lacked flexibility and few were adapted to the different needs and interests of students. Only a few institutions have developed dual-purpose curricula, or separate curricula that permitted different training programs for training students for employment on the one hand and for training students for graduate school qualification on the other.

6. The quality or level of teaching has been highly variable from one institution to another. A particular course at one institution may have been offered in the sophomore year, at another in the junior year, and at still another in the senior year. Also, at one institution a textbook may have been used in a sophomore introductory course and used as the textbook at another institution for an advanced course in the junior or senior year. The results of such differences obviously mean differences in levels of training and in quality of degrees granted among institutions. These kinds of differences have been due in part to institutional and departmental policies and procedures, but have been also influenced by teachers themselves. It was emphasized in a recent report relating to improving the preparation of college teachers that "college teaching is the only major learned profession for which there does not exist a well-defined program of preparation directed toward developing the skills which it is essential for the practitioner to possess." 16/

The solution to many of the problems incident to undergraduate training in Agricultural Economics is not necessarily in the development of more specialized curricula, although in many cases these are basic needs. More important, in most cases, are the needs for increased teaching interests, improved teaching competency, better student-faculty relations, more rigorous and analytical teaching, and more flexibility in the development of individual student training programs. 17/

16/ Kelly, op. cit., p. 1.

17/ For a detailed discussion of a suggested procedure for accomplishing these types of objectives in undergraduate curricula development, see Nicholls, op. cit., pp. 977-979.

Graduate Recruitment and Training

Despite the many problems and weaknesses in undergraduate training programs in Agricultural Economics, there has been, during recent years, an increasing number of personnel going into graduate work in this area. They have represented an increasing percentage of the undergraduates coming out of undergraduate training programs in Agricultural Economics. Between 1929-30 and 1939-40, the number of Agricultural Economics graduate students increased about 100 per cent or at the rate of 10 per cent per year. Between 1939-40 and 1955-56, the number of graduate students increased about 75 per cent or at a rate of 5 per cent per year. Total graduate student enrollment in Agricultural Economics was estimated to be 946 in 1955-56. 18/ This figure, which includes statistics and rural sociology, overstates the number of graduate students in Agricultural Economics. Also, this figure includes, in addition to graduate students who were preparing for professional careers in Agricultural Economics, a number of graduate students who happened to be enrolled in Agricultural Economics graduate work but who were not working toward Agricultural Economics graduate degrees. These include federal agency and extension workers who were obtaining various types of special training in social science areas to fit into their respective job requirements that involve economic, sociological, and political training needs.

Enrollment of graduate students, as candidates for graduate degrees, varied widely from one institution to another in 1955-56, Table 33.

18/ Proceedings of the 71st Annual Convention of the American Association of Land-Grant Colleges and State Universities.

Table 33. Number of Graduate Students Enrolled as Candidates for Degrees in Agricultural Economics at Land-Grant Institutions, 1955-56 1/

State	Number of graduate students enrolled as candidates for degrees in Agricultural Economics		
	Master's	Ph.D.	Total
	Number	Number	Number
Alabama	0	0	0
Arizona	1	0	1
Arkansas	1	0	1
California	0	1	1
Colorado	9	0	9
Connecticut	4	3	7
Delaware	2	0	2
Florida	3	3	6
Georgia	5	2	7
Idaho	4	0	4
Illinois	18	16	34
Indiana	22	14	36
Iowa	18	30	48
Kansas	0	0	0
Kentucky	14	1	15
Louisiana	14	2	16
Maine	0	0	0
Maryland	10	5	15
Massachusetts	2	1	3
Michigan	27	29	56
Minnesota	5	8	13
Mississippi	4	0	4
Missouri	7	0	7
Montana	4	0	4
Nebraska	7	0	7
Nevada	0	0	0
New Hampshire	0	0	0
New Jersey	4	0	4
New Mexico	3	0	3
New York	16	24	40
North Carolina	10	9	19
North Dakota	8	0	8

(Continued)

Table 33 (Continued). Number of Graduate Students Enrolled as Candidates for Degrees in Agricultural Economics at Land-Grant Institutions, 1955-56 1/

State	Number of graduate students enrolled as candidates for degrees in Agricultural Economics:		
	Master's	Ph.D.	Total
	Number	Number	Number
Ohio	29	20	49
Oklahoma	0	1	1
Oregon	8	5	13
Pennsylvania	8	3	11
Rhode Island	3	0	3
South Carolina	3	0	3
South Dakota	8	0	8
Tennessee	11	0	11
Texas	7	2	9
Utah	7	0	7
Vermont	2	0	2
Virginia	0	0	0
Washington	0	0	0
West Virginia	0	0	0
Wisconsin	2	12	14
Wyoming	2	0	2

1/ Source: Tabulated from "Candidates for Graduate Degrees" as reported in the Journal of Farm Economics, Vol. XXXVIII, No. 2, May 1956.

These variations were associated with the size and scope of institutional graduate training programs, institutional differences in resources available for graduate training, and a number of other factors. Differences in the relative enrollments of the total number of graduate students seeking degrees in Agricultural Economics and of the number enrolled at the Master's and at the Ph. D. levels in different Land-Grant institutions for the year 1955-56 are shown in Table 33.

Graduate enrollment in Agricultural Economics at Land-Grant institutions in 1955-56 was heavily concentrated in only a few institutions. This situation has been true for a number of years. In 1955-56, 10 institutions accounted for nearly two-thirds of the Agricultural Economics graduate enrollment. It is usually in institutions of this type that emphasis is placed on training students for professional careers in Agricultural Economics. Most of these institutions have relatively high enrollments of graduate students at the Ph. D. level. Other Land-Grant institutions, many of which provide graduate training at the Master's level only, in many cases, place major emphasis on training programs for graduate students who wish to use the Master's degree as a terminal degree and for those who are seeking additional training in the social sciences for use incident to their regular employment situations.

The sources of graduate students in Agricultural Economics in the larger, more specialized graduate training departments are principally from outside institutions; whereas, for smaller, less specialized graduate training departments (particularly for those that offer only the Master's degree), the sources of graduate students are mainly from within these same institutions (Appendix Table 16). This situation is more pronounced at the Ph. D. level than at the Master's level.

The relationships between graduate student enrollment and graduate degrees awarded in Agricultural Economics at Land-Grant institutions in 1955-56 are indicated by the data shown in Tables 33 and 34. Although these ratios of output are highly variable, and in some instances are very high, they, in themselves, have little significance without additional detailed knowledge relative to individual institu-

Table 34. Number of Graduate Degrees Awarded in Agricultural Economics at Land-Grant Institutions, Specified Years

State	Master's degrees awarded in:		Ph.D. degrees awarded in:		
	1938-39 1/	1955 2/	1938-39 1/	1955 2/	1960 3/
	Number	Number	Number	Number	Number
Alabama	0	0	0	0	0
Arizona	0	1	0	0	0
Arkansas	0	6	0	0	0
California	5	0	2	5	10
Colorado	1	0	0	0	0
Connecticut	2	0	0	0	1
Delaware	0	0	0	0	0
Florida	0	0	0	0	0
Georgia	4	3	0	0	0
Idaho	0	0	0	0	0
Illinois	12	9	0	8	7
Indiana	2	9	3	7	14
Iowa	5	1	1	7	9
Kansas	5	9	0	1	0
Kentucky	9	3	0	2	0
Louisiana	7	7	0	2	1
Maine	0	2	0	0	0
Maryland	5	1	0	0	0
Massachusetts	5	0	0	0	0
Michigan	2	11	0	1	7
Minnesota	9	9	5	4	4
Mississippi	0	3	0	0	0
Missouri	3	0	0	0	4
Montana	6	11	0	0	0
Nebraska	10	6	0	4	0
Nevada	0	0	0	0	0
New Hampshire	0	0	0	0	0
New Jersey	1	0	0	0	0
New Mexico	0	0	0	0	0
New York	21	18	14	12	4
North Carolina	1	5	0	5	5
North Dakota	0	0	0	0	0

(Continued)

Table 34 (Continued). Number of Graduate Degrees Awarded in Agricultural Economics at Land-Grant Institutions, Specified Years

State	Master's degrees awarded in:		Ph.D. degrees awarded in:		
	1938-39 1/	1955 2/	1938-39 1/	1955 2/	1960 3/
	Number	Number	Number	Number	Number
Ohio	5	5	1	1	11
Oklahoma	6	9	0	1	3
Oregon	2	6	0	0	0
Pennsylvania	1	8	0	2	3
Rhode Island	0	0	0	0	0
South Carolina	0	5	0	0	0
South Dakota	1	1	0	0	1
Tennessee	5	6	0	0	0
Texas	6	4	0	2	2
Utah	0	6	0	0	0
Vermont	1	2	0	0	0
Virginia	5	2	0	0	0
Washington	1	0	0	0	0
West Virginia	0	1	0	0	0
Wisconsin	8	2	4	9	5
Wyoming	3	0	0	0	0

1/ Source: Schultz, Theodore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, Appendix Table XXII, p. 260.

2/ Source: Tabulated from Journal of Farm Economics, Vol. XXXVIII, No. 2, May 1956.

3/ Source: Tabulated from Journal of Farm Economics, Vol. XLIII, No. 2, May 1961.

tional setups. The implications of these ratios, however, do raise questions relative to problems and policies of recruitment of graduate students, financing graduate programs, requirements for graduate degrees, and other questions relating to graduate training.

Among the major problems and weaknesses in graduate recruitment and training in Agricultural Economics during recent years have been the following:

1. Selections of beginning graduate students have been made by different criteria among Land-Grant institutions. The problems of selection and recruitment have been complicated by the absence of suitable quantitative measures or other criteria for evaluating graduate capabilities and potentialities of individuals. Part of these difficulties have been due to shortcomings of undergraduate training programs, particularly the inability of undergraduate curricula to attract the better students who were enrolled in colleges of agriculture, and the general lack of rigorous and analytical training provided by some institutions at the undergraduate level.

2. With the bulk of the graduate training in Agricultural Economics for students seeking professional careers being centered in only a few institutions, there have been both advantages and disadvantages. On the favorable side,this situation has made it possible for both the better students and the more outstanding graduate teachers to be attracted by the larger graduate centers. Larger classes for many of the advanced courses at these institutions have been more efficiently handled than would have been possible if only a few students had been available. On the unfavorable side, there have been dangers in over-centralization in that some graduate programs have attained such size that the advantages of personal guidance, close student-faculty relations, adequate research supervision, and other features of a more nearly optimum arrangement may have been lost. Also, there has been the danger of having too few individuals dominate the training,

the thinking, the points of view, and the ideas that should normally be promoted on a broad base during an individual's graduate training period. 19/

3. In the smaller graduate training departments, many of which have offered graduate training at the Master's level only, most graduate students have been recruited from their own institutions. Thus, a tendency toward pronounced regionalism may have been promoted within such graduate training work. Since many of the graduate students in these institutions have not gone into other institutions for additional graduate work, this problem has been particularly acute for the institutions concerned.

4. Graduate training at many institutions, particularly at the larger graduate centers and at those that emphasized training at the Ph. D. level, frequently has tended to be highly specialized. This type of training was criticized by Nicholls in 1960 when he pointed out that such training provided specialists who were incapable of tackling the current wide range of economic and social problems that relate to agriculture. 20/ Nicholls suggests the need for developing the types of graduate programs that will prepare graduate students to be able to find useful solutions to problems, with the most efficient tools available chosen in a problem-solving context.

19/ For a complete and detailed discussion of graduate training in the field of economics, see:

Bowen, Howard R., "Graduate Education in Economics," American Economic Review, Vol. XLII, No. 4, Part 2, September 1953.

Also see, Nicholls, op. cit.

20/ Nicholls, op. cit., p. 984.

Professional Staff Recruitment and Training

Professional staff recruitment and training can best be discussed and evaluated in terms of two different, yet closely related, aspects: outgoing staff members and incoming staff members. The going and coming of staff members within a department is a normal phenomenon. The rate of turnover of staff members in a department is an indicator of growth, stability, or deterioration.

Outgoing Staff

During the 5-year period between 1951 and 1956, a total of 304 staff workers in Agricultural Economics left their positions at 36 Land-Grant institutions, Table 35. This resulted in a rate of turnover 21/ only slightly lower than that of 10 to 15 years earlier. More than a third of the personnel leaving Land-Grant institution positions during this period moved to other colleges or universities. Slightly less than a third went with the U. S. Department of Agriculture or some other public agency. Nearly 20 per cent went into private agency types of employment. Of the remaining number of staff members who left Land-Grant institutions during this period, about 10 per cent were retired, and about 5 per cent became self-employed.

The principal competition faced by Land-Grant Agricultural Economics departments during this period was in the very high rate of movement of staff members from one institution to another. Although the U. S. Department of Agriculture research agencies took about a

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21/ The calculated rate of turnover for the period 1951-56 was 7 per cent per year (Appendix Table 17), compared to a rate for the period 1933-40 of 8 per cent per year (Schultz, op. cit.).

Table 35. Outgoing Professional Staff in Agricultural Economics at Land-Grant Institutions During 5-Year Period, 1951-56*

(By Occasion for Leaving)

State	Retirement	Death	Other college or university	USDA research	USDA other	Other public agency	Private agency	Self-employed	Other	Total
	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number
Alabama	-	1	3	3	-	-	2	-	-	9
Arizona	-	-	4	1	-	1	1	-	-	7
Arkansas	-	-	4	1	1	-	-	-	1	7
California 1/	-	-	-	-	-	-	-	-	-	-
Colorado	2	-	4	-	-	-	-	-	-	6
Connecticut	1	-	4	-	-	-	-	-	-	5
Delaware	-	-	-	-	-	-	-	-	-	0
Florida	-	-	2	-	-	-	3	-	1	6
Georgia	1	-	2	-	7	2	2	-	-	14
Idaho 1/	-	-	-	-	-	-	-	-	-	-
Illinois	1	2	3	-	3	2	5	1	-	17
Indiana 1/	-	-	-	-	-	-	-	-	-	-
Iowa	-	-	4	-	-	1	-	-	-	5
Kansas	-	-	7	1	1	1	3	1	-	14
Kentucky 1/	-	-	-	-	-	-	-	-	-	-
Louisiana	1	-	5	-	2	3	4	-	1	16
Maine	1	-	-	1	1	1	3	1	-	8
Maryland 1/	-	-	-	-	-	-	-	-	-	-
Massachusetts	2	-	1	1	-	-	-	-	-	4
Michigan	1	-	4	-	-	1	4	-	4	14

(Continued)

Table 35 (Continued). Outgoing Professional Staff in Agricultural Economics at Land-Grant Institutions During 5-Year Period, 1951-56*

(By Occasion for Leaving)

State	Retirement	Death	Other college or university	USDA research	USDA other	Other public agency	Private agency	Self-employed	Other	Total
	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number
Minnesota	2	1	1	-	-	-	-	1	-	5
Mississippi	2	1	1	4	2	1	5	-	-	16
Missouri	-	-	3	-	-	-	2	-	-	5
Montana 1/	-	-	-	-	-	-	-	-	-	-
Nebraska	2	-	4	2	-	1	-	-	-	9
Nevada	3	-	1	-	-	-	1	-	-	5
New Hampshire 1/	-	-	-	-	-	-	-	-	-	-
New Jersey	-	1	-	-	1	-	-	-	-	2
New Mexico	-	-	1	-	-	1	1	-	1	4
New York	2	-	3	-	3	-	4	2	-	14
North Carolina 1/	-	-	-	-	-	-	-	-	-	-
North Dakota	-	-	3	-	-	2	-	-	-	5
Ohio	1	-	3	-	1	-	2	-	-	7
Oklahoma	1	-	3	1	-	-	1	1	-	7
Oregon	-	1	3	-	-	-	-	1	-	5
Pennsylvania	1	-	3	1	-	-	-	-	-	5
Rhode Island	-	-	3	-	1	-	2	-	-	6
South Carolina	-	-	3	1	1	-	2	-	-	7
South Dakota 1/	-	-	-	-	-	-	-	-	-	-
Tennessee	-	-	4	-	-	1	-	-	-	5

(Continued)

Table 35 (Continued). Outgoing Professional Staff in Agricultural Economics at Land-Grant Institutions During 5-Year Period, 1951-56*

(By Occasion for Leaving)

State	Retirement	Death	Other college or university	USDA research	USDA other	Other public agency	Private agency	Self-employed	Other	Total
	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number
Texas	-	1	1	1	1	-	1	-	-	5
Utah	-	-	3	-	1	1	1	-	-	6
Vermont	-	1	5	-	-	-	-	-	-	6
Virginia 1/	-	-	-	-	-	-	-	-	-	-
Washington	-	-	6	3	3	4	4	5	1	26
West Virginia	-	-	-	-	-	-	-	-	-	0
Wisconsin	3	-	1	1	2	-	1	-	-	8
Wyoming 1/	-	-	-	-	-	-	-	-	-	-

*Includes deaths, retirements, etc., but excludes leaves of absence.

1/ Questionnaire not returned.

third of the staff members who went into public agency employment between 1951 and 1956, the competitive role of the U. S. Department of Agriculture has been less in recent years than during the 10-year period prior to 1940. Between these two periods, industry, business, and other private agency employment have rapidly increased in importance as users of trained personnel in Agricultural Economics.

Of the total number of professional staff members leaving Land-Grant Agricultural Economics work between 1951 and 1956, approximately a third were engaged primarily in research work. Another third were primarily engaged in joint teaching and research responsibilities. Slightly more than a fourth were extension workers. Most of the remaining staff members who left during this period were primarily full time teachers.

A total of 40 per cent of the Agricultural Economics staff members who left Land-Grant institutions between 1951 and 1956 held Ph. D. degrees; 52 per cent had Master's degrees. More important at individual institutions, some departments lost very high percentages of their senior staff members, while others did not. Some departments were large enough that loss of a few staff members did not disrupt departmental organizations and operations. Departments that suffered greatest from high turnover were those that recruited competent but inexperienced personnel and after seeing these personnel become more experienced and more productive, then, these departments, because of financial or other reasons, were unable to hold them.

Losses of professional staff in Agricultural Economics at Land-Grant institutions were greatest at the assistant and instructor levels during the period between 1951 and 1956. More than a third of the

staff losses were at the assistant level; approximately 20 per cent were instructors. Losses of senior staff members made up nearly a third of total losses. Staff with full rank contributed 17 per cent of losses and those with the rank of associate made up 12 per cent of the total.

Incoming Staff

During the 5-year period between 1951 and 1956, a total of 413 incoming staff workers were reported by 36 Land-Grant Agricultural Economics departments, Table 36. These additions represented both replacements for staff members who left during this period and net additions to teaching, research, and extension staffs in Agricultural Economics. Since this group of Land-Grant institutions lost 304 staff members during this period (Table 35) due to retirement, deaths, and acceptance of positions elsewhere, there was a net increase in Agricultural Economics workers at these 36 institutions of 109 persons during this 5-year period. 22/

Selection and recruitment of personnel in Agricultural Economics are influenced by a number of different factors. Among these are the supply of available personnel, type of training and experience of potential employees, type of training and experience required by employing institutions, budgetary limitations, degree of competition faced, and many other factors. Table 36 indicates that approximately half of the incoming staff workers in Land-Grant Agricultural Economics

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22/ The net increase in staff members during the period 1951-56 was at a rate slightly higher than for the period 1933-40, when 454 persons were appointed to positions in 48 Land-Grant institutions.

Table 36. Incoming Professional Staff in Agricultural Economics at Land-Grant Institutions During 5-Year Period, 1951-56

State	By institution where undergraduate training was received:		By instituion where highest advanced degree held was received:	
	Own institution	Other institutions	Own institution	Other institutions
	Number	Number	Number	Number
Alabama	7	5	3	9
Arizona	0	8	0	8
Arkansas	7	3	5	5
California 1/	-	-	-	-
Colorado	1	6	0	7
Connecticut	0	8	2	6
Delaware	1	1	0	2
Florida	4	10	4	10
Georgia	15	9	9	15
Idaho 1/	-	-	-	-
Illinois	10	10	9	11
Indiana 1/	-	-	-	-
Iowa	2	3	2	3
Kansas	9	6	7	8
Kentucky 1/	-	-	-	-
Louisiana	18	1	15	4
Maine	5	5	1	9
Maryland 1/	-	-	-	-
Massachusetts	6	5	1	10
Michigan	10	16	9	17
Minnesota	2	4	2	4
Mississippi	15	4	9	10
Missouri	2	4	0	6
Montana 1/	-	-	-	-
Nebraska	1	5	2	4
Nevada	0	5	0	5
New Hampshire 1/	-	-	-	-
New Jersey	3	3	2	4
New Mexico	1	5	0	6
New York	8	12	15	5
North Carolina 1/	-	-	-	-
North Dakota	3	3	0	6

(Continued)

Table 36 (Continued). Incoming Professional Staff in Agricultural Economics at Land-Grant Institutions During 5-Year Period, 1951-56

State	By institution where undergraduate training was received:		By institution where highest advanced degree held was received:	
	Own institution	Other institutions	Own institution	Other institutions
	Number	Number	Number	Number
Ohio	17	9	13	13
Oklahoma	6	7	1	12
Oregon	0	4	0	4
Pennsylvania	2	10	3	9
Rhode Island	3	9	0	12
South Carolina	2	5	0	7
South Dakota 1/	-	-	-	-
Tennessee	1	4	0	5
Texas	8	10	7	11
Utah	5	-	2	3
Vermont	9	1	2	8
Virginia 1/	-	-	-	-
Washington	8	15	2	21
West Virginia	1	1	2	0
Wisconsin	3	2	2	3
Wyoming 1/	-	-	-	-

1/ Questionnaire not returned.

departments were recruited from personnel who had completed their undergraduate training at the same institution where they were appointed. Some of these persons, however, had attended other institutions between the time of completing undergraduate work and the time of appointment. Of the remaining incoming professional staff between 1951 and 1956, 40 per cent completed their undergraduate training at other Land-Grant institutions and 10 per cent at non-Land-Grant institutions.

Of particular significance was the situation at individual institutions. One-third of the responding institutions shown in Table 36, recruited and appointed more than half of their incoming staff from personnel who had completed their undergraduate training at the same institutions to which they were appointed. Many of these institutions were located in the Southern States.

Incoming professional staff members during the 1951-56 period were employed in all areas of Agricultural Economics work. A total of 40 per cent were employed primarily as research workers. An additional 30 per cent were employed on joint teaching-research appointments. The remaining 30 per cent were employed primarily as extension workers.

Only 29 per cent of the incoming staff workers between 1951 and 1956 had received their Ph. D. degrees. 23/ A total of 54 per cent had completed their Master's degrees. Many of the workers in this group had received some graduate training beyond the Master's degree, but they had not completed the Ph. D. degree. In terms of individual Land-Grant institutions, for 6 of the 36 reporting institutions, more than half of the incoming staff workers during this period had completed their Ph. D. degrees. For an equal number of institutions, only about 10 per cent of the incoming staff workers had completed the Ph. D. degree. All of this latter group of institutions were located in the Southern States.

Data for incoming professional staff members indicating the institutions from which the highest advanced degree held at the time of

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23/ This was slightly higher than the 27 per cent figure for incoming staff workers during the period 1933-40.

appointment was received are shown in Table 36. For the 36 institutions reporting for the period from 1951 to 1956, a total of 131 out of 344 incoming staff members with advanced degrees received their highest advanced degree attained at the time of appointment from the appointing institution. This represented 38 per cent of the total. Excluding this group, it is possible to determine the relative importance of different Land-Grant graduate departments of Agricultural Economics as sources of staff personnel for other departments within the Land-Grant institutional setup. Such an analysis indicates that during the period 1951-56, the graduate departments in seven institutions supplied more than 58 per cent of the incoming professional staff of other Land-Grant institutions. Four institutions—Cornell, Iowa State, Wisconsin, and Minnesota—accounted for 44 per cent of the total, and supplied staff personnel as follows: Cornell 29, Iowa State 26, Wisconsin 20, and Minnesota 19. Other institutions of importance during this period included Purdue 11, Harvard 11, Illinois 10, California 8, Florida 6, and Michigan State 6. The institutions that supplied from 2 to 4 staff members each included Chicago, Kansas State, and Pennsylvania State (4 each); Connecticut, Oklahoma State, North Carolina State, Missouri, and Kentucky (3 each); and Louisiana State, Montana State, Nebraska, and Texas A & M (2 each).

Most of the incoming professional staff workers during the period 1951-56 were appointed at the instructor or assistant level. These two groups made up 70 per cent of the total. Of the total, 42 per cent were appointed as assistants, 28 per cent as instructors, 9 per cent as associates, and 3 per cent at full rank. The remaining incoming staff workers were primarily appointments in extension work with the rank of

specialist.

Staff training under formal leave of absence arrangements was in relatively wide use both in terms of participating institutions and in terms of numbers of staff members involved. During the 5-year period 1951-56, a total of 29 out of 36 reporting Land-Grant institutions had one or more staff members on leave to pursue graduate work at some time during this period. The number of personnel involved averaged about four per reporting institution, and the variation in number was from one for several institutions to more than 10 in three institutions—all of which were in the Southern States, Table 37.

During this 5-year period, of the staff members who were on leave of absence to pursue graduate work, three-fourths were on leave of absence for 1 year or more; the remaining one-fourth were on leave of absence for less than 1 year. There were wide variations in financial arrangements for such leave both with respect to different institutions and with respect to length of leave periods. For individuals on leave for more than 1 year, 4 per cent were on leave with full pay, 37 per cent with part pay, and 59 per cent without pay. For the personnel on leave for less than 1 year, 38 per cent were on leave with full pay, 38 per cent with part pay, and 24 per cent without pay.

Three-fourths of the Agricultural Economics staff personnel that were on leave of absence to pursue graduate work during the period 1951-56, were persons on joint teaching-research appointments; the remaining one-fourth were extension workers. A relatively high proportion of the teaching-research personnel taking leave for graduate study were on leave with pay and for periods of 1 year or more. Most of the extension workers who were on leave for graduate study were on

Table 37. Total Number of Staff Members (Teaching, Research, and Extension) in Agricultural Economics at Land-Grant Institutions Taking Leave to Pursue Graduate Work During 5-Year Period, 1951-56

State	Leave for 1 year or more			Leave for less than 1 year			Total
	With full pay	With part pay	Without pay	With full pay	With part pay	Without pay	
	No.	No.	No.	No.	No.	No.	No.
Alabama	-	2	4	-	-	-	6
Arizona	-	1	-	1	-	-	2
Arkansas	-	-	3	-	-	-	3
California 1/	-	-	-	-	-	-	-
Colorado	-	-	1	-	-	-	1
Connecticut	1	1	1	2	-	1	6
Delaware	-	-	-	-	-	-	0
Florida	-	-	3	-	-	-	3
Georgia	-	3	3	1	1	-	8
Idaho 1/	-	-	-	-	-	-	-
Illinois	-	-	1	-	-	1	2
Indiana 1/	-	-	-	-	-	-	-
Iowa	-	-	-	-	-	-	0
Kansas	-	2	4	-	3	-	9
Kentucky 1/	-	-	-	-	-	-	-
Louisiana	1	3	1	4	1	1	11
Maine	-	1	-	-	-	-	1
Maryland 1/	-	-	-	-	-	-	-
Massachusetts	-	-	-	2	-	-	2
Michigan	-	-	3	-	-	-	3
Minnesota	-	1	-	-	-	-	1
Mississippi	-	2	7	2	-	2	13
Missouri	1	2	-	-	2	-	5
Montana 1/	-	-	-	-	-	-	-
Nebraska	-	-	-	-	-	-	0
Nevada	-	-	-	-	-	-	0
New Hampshire 1/	-	-	-	-	-	-	-
New Jersey	-	-	-	-	-	-	0
New Mexico	-	4	-	-	-	-	4
New York	-	-	-	-	-	-	0
North Carolina 1/	-	-	-	-	-	-	-
North Dakota	-	-	-	-	1	-	1

(Continued)

Table 37 (Continued). Total Number of Staff Members (Teaching, Research, and Extension) in Agricultural Economics at Land-Grant Institutions Taking Leave to Pursue Graduate Work During 5-Year Period, 1951-56

State	Leave for 1 year or more			Leave for less than 1 year			Total
	With full pay	With part pay	Without pay	With full pay	With part pay	Without pay	
	No.	No.	No.	No.	No.	No.	No.
Ohio	-	-	-	-	-	-	0
Oklahoma	-	2	3	-	1	1	7
Oregon	-	1	-	-	-	-	1
Pennsylvania	-	-	3	-	-	2	5
Rhode Island	-	-	-	-	-	-	0
South Carolina	-	-	-	-	2	-	2
South Dakota 1/	-	-	-	-	-	-	-
Tennessee	-	2	8	-	-	-	10
Texas	-	-	1	-	-	-	1
Utah	-	1	-	-	1	-	2
Vermont	-	3	-	-	-	-	3
Virginia 1/	-	-	-	-	-	-	-
Washington	-	1	2	-	-	-	3
West Virginia	-	-	2	-	-	-	2
Wisconsin	-	-	1	-	-	-	1
Wyoming 1/	-	-	-	-	-	-	-

1/ Questionnaire not returned.

leave with part pay and for periods of 1 year or more.

In the past, some institutions have been reluctant to grant leaves of absence to staff members, even for purposes of pursuing graduate study, partly because of a fear that many such leaves were often considered to be one-way tickets to new positions. 24/ This situation has

24/ Schultz, op. cit., p. 161.

apparently changed in recent years. Based on 36 reporting institutions, of the total number of persons taking leaves of absence during the period 1951-56 to pursue graduate work, 97 per cent returned (or planned to return) to their respective institutional staffs. The proportion who returned (or planned to return) was the same for both those on joint teaching-research appointments and those on extension appointments.

The principal problems and weaknesses in professional staff recruitment and training during recent years have included the following:

1. Rates of turnover have been excessively high in many institutions, and particularly in those institutions located in areas of the country where the social and economic problems of agriculture have been the most difficult and complex, and where professional staff experience, competence, and stability have been greatly needed.

2. Competition from other Land-Grant institutions and from private agencies has been of growing importance as a major factor affecting the ability of many Land-Grant institutions to hold their best trained, most experienced, and most competent workers. This has been a particularly acute problem in the smaller Land-Grant institutions that frequently have been short on finances and other resources needed to meet such competition.

3. Serious problems have continued to persist in many Land-Grant institutions with respect to inbreeding of the professional staff in Agricultural Economics. This has occurred both in the case of institutions that have trained young Agricultural Economists and then kept them on their staffs as permanent staff workers, and in the case of institutions that have recruited all or the major part of their incoming staff from a limited number of graduate schools. The latter case has

been characteristic of many of the institutions in the Southern States.

4. It has continued to be difficult for many institutions to recruit and hold well-trained personnel. This has been particularly true with respect to personnel with Ph. D. training, and has been an especially acute problem in many Southern States.

5. Many Land-Grant institutions have made use of leaves of absence to encourage staff members to pursue graduate or post-graduate work, but in only a few of the institutions where leaves of absence have been used for these purposes have institutions provided adequate leave with full pay or with part pay. In many instances, individuals have been granted leaves of absence for graduate study only under the provision of leave without pay.

6. Since most professional staff appointments initially come from graduate ranks, the increasing emphasis being placed on highly specialized graduate training in some graduate departments has been of growing concern as a factor influencing recruitment and training of professional staff members. Specialized training is needed in many areas. But, in the future as in the past, the greatest demand for and the better opportunities for young Agricultural Economists may lie not in specialization but in the broad, fundamental, practical areas of study relating to the social, economic, and political aspects of agriculture. 25/

Staff Vacancies: 1956 and Projections

The heads of departments of Agricultural Economics were requested to indicate the number of staff vacancies in Agricultural Economics

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25/ Also see Nicholls, op. cit., p. 984-985.

teaching, research, and extension in their respective Land-Grant institutions as of July 1, 1956. In 37 responding institutions, a total of 95 vacancies (full-time equivalents) were reported. In terms of areas of work, 13 per cent of these vacancies were in teaching, 50 per cent in research, and 37 per cent in extension (Appendix Table 18).

As an additional indication of the personnel needs in Agricultural Economics at Land-Grant institutions, heads of departments of Agricultural Economics were requested to indicate their estimates of anticipated increases in number of professional staff members that would be needed as Agricultural Economics workers in their respective Land-Grant institutions during the 5-year period from 1956 to 1961. Based on estimates made as of July 1, 1956, the increase in workers needed at the 37 reporting institutions for this 5-year period was 264 additional workers (in full-time equivalents). 26/ In terms of broad areas of work, estimated total needs were made up of 22 per cent teachers, 51 per cent research workers, and 27 per cent extension workers.

26/ These estimates represent the equivalent of about 352 additional Agricultural Economics workers that would be needed in all Land-Grant institutions between 1956 and 1961. The actual increase in the number of Agricultural Economists in Land-Grant institutions that occurred between 1956 and 1961 was 365, representing the increase from 1,074 workers in 1954-55 to 1,439 workers in 1961.

CHAPTER VI

SUMMARY AND CONCLUSIONS

Agricultural Economics as a field of study concerned with the application of the social sciences to the problems of agriculture and as a subject for teaching and research in Land-Grant institutions was relatively unknown prior to 1900. Since that time, the history of Agricultural Economics has been a story of rapid development and growth, and of continuing change and adjustment. 1/ In 1941, the results of a comprehensive study of the resources available in the field of Agricultural Economics and of the training and recruiting of personnel in this field were published by the American Council on Education. 2/ This particular study placed emphasis on major weaknesses of teaching, research, and extension programs and activities in Land-Grant institutions at that time. No comparable study of Agricultural Economics programs and activities in Land-Grant institutions has been undertaken since the 1940 study was completed.

The changing nature, scope, and complexity of rural and related problems since 1940 emphasize the needs for a re-study of Land-Grant institutional programs and activities in teaching, research, and extension work in Agricultural Economics. Questions of major concern include: (1) To what extent has Agricultural Economics adjusted its

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1/ Taylor, Henry C., and Taylor, Anne Dewees, The Story of Agricultural Economics, Iowa State College Press, Ames, Iowa, 1952.

2/ Schultz, Theodore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941.

teaching, research, and extension programs and activities to meet the changes in needs that have occurred since about 1940? And, (2) to what extent do these changes in needs mean additional adjustments in Agricultural Economics teaching, research, and extension programs and activities in the future?

Based on information supplied by Land-Grant institutional Agricultural Economics departments and on available secondary data, an analysis of the situation with respect to Land-Grant institutional programs and activities in Agricultural Economics in 1955, and a comparison of the 1955 situation with that of 1940, was made. Many of the comparisons made indicate, that despite the tremendous growth and progress that was made in the field of Agricultural Economics during this 15-year period, that some of the problems and weaknesses that existed in 1940 have continued to be major problems and weaknesses during recent years.

For the field of Agricultural Economics, the period between 1940 and 1955 was a period of growth and adjustment. The number of personnel engaged in Land-Grant institutional teaching, research, and extension work in Agricultural Economics increased from 711 in 1939-40 to 1,074 in 1954-55 — a 50 per cent increase. 3/ Throughout this period, the number of Agricultural Economics workers represented about the same percentage (7.8 per cent) of the total number of workers in subjects pertaining to agriculture at Land-Grant institutions.

The total amount of financial resources available to Agricultural Economics for teaching, research, and extension in Land-Grant institu-

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3/ In 1959-60, the number of Agricultural Economics workers in Land-Grant institutions was 1,378, thus, representing a 30 per cent increase since 1954-55.

tions increased from $2.7 million in 1939-40 to $11.2 million in 1955-56 — a 315 per cent increase during this 15-year period. Largest increases were for research work and smallest increases were for teaching.

Departmental organization and administration of teaching, research, and extension work in Agricultural Economics varied widely from state to state in 1955. In nearly half of the states, extension work was handled administratively separately from teaching and research. This arrangement works to the disadvantage both of extension workers and of research workers and teachers. This situation was essentially the same in 1955 as in 1940.

A persistency of staff vacancies and a high rate of turnover of professional staff members in Agricultural Economics departments were major problems at many Land-Grant institutions in 1955. In looking into the immediate future at that time, heads of departments of Agricultural Economics estimated that staff needs would continue to increase in teaching, research, and extension. Adding to the acuteness of this situation, many Land-Grant Agricultural Economics departments in 1955 were already understaffed in terms of numbers, training, experience, and competence. These conditions focused major attention toward the problems of recruiting and training of Agricultural Economics staff personnel for Land-Grant institutional work in teaching, research, and extension.

The process of recruiting and training of Agricultural Economics staff personnel begins at the undergraduate level, primarily in colleges of agriculture within Land-Grant institutions. During recent years, increasing enrollments in Land-Grant institutions have been in

areas outside of colleges of agriculture. Despite this situation, the field of Agricultural Economics has been able to recruit and enroll an increasing percentage of undergraduates from colleges of agriculture. In recruiting undergraduates, problems have been more closely related to quality than to numbers of students.

At the undergraduate training level, Agricultural Economics curricula continue to need revision in line with changing needs, particularly in terms of providing broader, yet more rigorous and analytical training.

A major need in undergraduate training is the establishment of more uniformity in the quality and levels of teaching among institutions. Also, more emphasis needs to be placed on the proper selection and assignment of staff personnel who are to be responsible for undergraduate teaching.

In the selection and recruitment of graduate students, adequate quantitative measures for evaluating graduate capabilities and potentialities need to be developed.

In the smaller graduate training departments, most graduate students are enrolled in graduate schools at the same institutions where their undergraduate work is done. In these cases, such students should be encouraged to seek graduate training at other institutions. At the same time, these institutions should intensify efforts to bring in graduate students from outside institutions.

Graduate training, particularly at the Ph.D. level and at the larger graduate training centers, often tends to be highly specialized. For many advanced graduate students, and particularly in terms of career opportunities and employment duties and responsibilities after

graduation, a broader and a less specialized program may be more appropriate than a highly specialized training program.

Competition from other Land-Grant institutions and from private agencies is a major factor affecting the ability of departments to recruit and hold well-trained and competent staff members. This type of competition is also affecting the ability of many departments to hold their most competent and experienced permanent staff members.

Inbreeding of professional staff in Agricultural Economics continues to persist in many institutions. This is a particularly acute problem in some regions of the country. In these instances, the rate of turnover of professional staffs may need to be increased as a means of solving this situation. In most cases, however, rates of turnover are already too high to permit departments to build stability and continuity into departmental teaching, research, and extension programs and activities.

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APPENDIX A

STATISTICAL TABLES

Appendix Table 1. Official Name and Location of the 48 Land-Grant Institutions Studied *

(As of 1955-56)

State	Institution	Location of institution	U-C code 1/
Alabama	Alabama Polytechnic Institute	Auburn	C
Arizona	University of Arizona	Tucson	U
Arkansas	University of Arkansas	Fayetteville	U
California	University of California 2/	Berkeley 4	U
Colorado	Colorado Agricultural and Mechanical College	Fort Collins	C
Connecticut	University of Connecticut 3/	Storrs	C
Delaware	University of Delaware	Newark	U
Florida	University of Florida	Gainesville	U
Georgia	University of Georgia 4/	Athens	U
Idaho	University of Idaho	Moscow	U
Illinois	University of Illinois	Urbana	U
Indiana	Purdue University	Lafayette	C
Iowa	Iowa State College of Agriculture and Mechanic Arts	Ames	C
Kansas	Kansas State College of Agriculture and Applied Science	Manhattan	C
Kentucky	University of Kentucky	Lexington	U
Louisiana	The Louisiana State University and Agricultural and Mechanical College	Baton Rouge 3	U
Maine	University of Maine	Orono	U
Maryland	University of Maryland 5/	College Park	U

(Continued)

Appendix Table 1 (Continued). Official Name and Location of the 48 Land-Grant Institutions Studied *

(As of 1955-56)

State	Institution	Location of institution	U-C code 1/
Massachusetts	University of Massachusetts	Amherst	C
Michigan	Michigan State University of Agriculture and Applied Sciences	East Lansing	C
Minnesota	University of Minnesota	St. Paul 1	U
Mississippi	Mississippi State College	State College	C
Missouri	University of Missouri	Columbia	U
Montana	Montana State College	Bozeman	C
Nebraska	University of Nebraska	Lincoln	U
Nevada	University of Nevada	Reno	U
New Hampshire	University of New Hampshire	Durham	U
New Jersey	Rutgers University	New Brunswick	U
New Mexico	New Mexico College of Agriculture and Mechanic Arts	State College	C
New York	Cornell University 6/	Ithaca	U
North Carolina	North Carolina State College of Agriculture and Engineering	Raleigh	C
North Dakota	North Dakota Agricultural College	Fargo	C
Ohio	Ohio State University 7/	Columbus 10	U
Oklahoma	Oklahoma Agricultural and Mechanical College	Stillwater	C
Oregon	Oregon State College	Corvallis	C

(Continued)

Appendix Table 1 (Continued). Official Name and Location of the 48 Land-Grant Institutions Studied *

(As of 1955-56)

State	Institution	Location of institution	U-C code 1/
Pennsylvania	Pennsylvania State University	State College	C
Rhode Island	University of Rhode Island	Kingston	C
South Carolina	Clemson Agricultural College	Clemson	C
South Dakota	South Dakota State College of Agriculture and Mechanic Arts	College Station	C
Tennessee	University of Tennessee 8/	Knoxville 16	U
Texas	Texas Agricultural and Mechanical College (System)	College Station	C
Utah	Utah State Agricultural College	Logan	C
Vermont	University of Vermont and State Agricultural College	Burlington	U
Virginia	Virginia Polytechnic Institute 9/	Blacksburg	C
Washington	State College of Washington	Pullman	C
West Virginia	West Virginia University	Morgantown	U
Wisconsin	University of Wisconsin	Madison 6	U
Wyoming	University of Wyoming	Laramie	U

*Since 1955-56, the official names of many of the Land-Grant institutions have been changed. In most cases, however, the objectives, functions, organization, and operation of these institutions have remained unchanged.

1/ U-C code refers to University-College code as follows:
University (U) refers to those institutions that include a liberal arts college and such professional colleges as law and medicine — the characteristic university-type of organization (See Marsh: AMERICAN UNIVERSITIES AND COLLEGES).

(Continued)

1/ (Continued):
College (C) refers to those institutions that emphasize science and technology — the so-called state colleges of agriculture and mechanic arts.

This classification and description adapted from Schultz, Theodore W., TRAINING AND RECRUITING OF PERSONNEL IN THE RURAL SOCIAL STUDIES, American Council on Education, Washington, D. C., 1941, pp. 42-43.

2/ Includes units of the University of California located at Davis, Los Angeles, and Riverside.

3/ Includes Agricultural Experiment Station located at New Haven.

4/ Includes Agricultural Experiment Stations located at Tifton and Griffin.

5/ Includes State College Division located at Princess Anne.

6/ Includes Agricultural Experiment Station located at Geneva.

7/ Includes Agricultural Experiment Station located at Wooster.

8/ Includes University Branch located at Martin.

9/ Includes Agricultural Experiment Station located at Norfolk.

Source: Compiled from "Workers in Subjects Pertaining to Agriculture in Land-Grant Colleges and Experiment Stations, 1955-56," U. S. Dept. of Agri., Agriculture Handbook No. 95, OES, ARS, USDA, March 1956.

Appendix Table 2. Inclusion of Specified Subject-Matter Areas in Departments of Agricultural Economics at Land-Grant Institutions, 1955-56

State	Sociology		Economics		Business Adm.	Statistics
	Rural	General	Consumer	General		
Alabama	no	no	no	no	no	no
Arizona	no	no	no	no	no	no
Arkansas	yes	no	no	no	no	no
California 1/	-	-	-	-	-	-
Colorado	yes	yes	no	yes	yes	no
Connecticut	no	no	yes	no	no	no
Delaware	no	no	yes	no	no	yes
Florida	no	no	no	no	no	yes
Georgia	no	no	2/	no	no	2/
Idaho 1/	-	-	-	-	-	-
Illinois	yes	no	no	no	no	yes
Indiana 1/	-	-	-	-	-	-
Iowa	yes	yes	yes	yes	no	no
Kansas	yes	no	no	no	no	yes
Kentucky 1/	-	-	-	-	-	-
Louisiana	no	no	no	no	no	yes
Maine	yes	no	no	no	no	yes
Maryland 1/	-	-	-	-	-	-
Massachusetts	no	no	no	no	2/	yes
Michigan	no	no	no	no	no	no
Minnesota	no	no	yes	yes	no	yes
Mississippi	no	no	no	no	no	yes
Missouri	no	no	yes	no	no	no
Montana 1/	-	-	-	-	-	-
Nebraska	yes	no	no	no	no	yes
Nevada	yes	2/	no	no	no	no
New Hampshire 1/	-	-	-	-	-	-
New Jersey	2/	2/	2/	2/	2/	2/
New Mexico	no	no	no	no	no	no
New York	no	no	yes	no	no	yes
North Carolina 1/	-	-	-	-	-	-
North Dakota	yes	no	yes	no	no	no

(Continued)

Appendix Table 2 (Continued). Inclusion of Specified Subject-Matter Areas in Departments of Agricultural Economics at Land-Grant Institutions, 1955-56

State	Sociology		Economics		Business Adm.	Statistics
	Rural	General	Consumer	General		
Ohio	yes	no	no	no	no	no
Oklahoma	no	no	no	no	no	no
Oregon	no	no	yes	no	no	yes
Pennsylvania	yes	no	no	no	yes	yes
Rhode Island	no	no	yes	yes	no	no
South Carolina	yes	no	no	no	no	yes
South Dakota 1/	-	-	-	-	-	-
Tennessee	yes	no	yes	no	no	no
Texas	yes	yes	yes	no	no	yes
Utah	no	no	no	no	no	yes
Vermont	yes	no	yes	no	no	no
Virginia 1/	-	-	-	-	-	-
Washington	no	no	no	no	no	yes
West Virginia	yes	no	no	no	no	no
Wisconsin	no	no	no	no	no	no
Wyoming 1/	-	-	-	-	-	-

1/ Questionnaire not returned.

2/ Not reported on returned questionnaire.

Appendix Table 3. Total Income of Experiment Stations from All Sources for Years Ended June 30, Specified Years

State	1940	1945	1950	1955
	1,000 dol.	1,000 dol.	1,000 dol.	1,000 dol.
Alabama	599	722	1,669	2,280
Arizona	225	262	492	822
Arkansas	279	382	929	1,303
California	1,615	1,912	4,939	8,377
Colorado	281	423	857	1,465
Connecticut	436	379	1,111	1,401
Delaware	142	234	389	597
Florida	730	1,023	2,996	3,969
Georgia	317	440	737	2,787
Idaho	171	205	756	1,022
Illinois	692	861	2,019	2,713
Indiana	1,117	1,260	2,737	3,142
Iowa	522	910	2,205	3,537
Kansas	347	621	1,027	2,166
Kentucky	515	468	975	1,524
Louisiana	262	497	1,580	2,683
Maine	208	305	482	630
Maryland	271	355	674	1,108
Massachusetts	320	330	641	891
Michigan	405	454	1,333	2,482
Minnesota	613	694	1,898	2,909
Mississippi	376	714	1,631	2,170
Missouri	355	499	1,053	1,443
Montana	242	396	1,022	1,315
Nebraska	328	394	1,131	1,817
Nevada	108	128	182	276
New Hampshire	167	138	189	370
New Jersey	621	709	1,210	1,845
New Mexico	173	230	474	589
New York	1,388	1,540	3,421	5,283
North Carolina	307	455	1,637	2,383
North Dakota	221	339	934	1,566

(Continued)

Appendix Table 3 (Continued). Total Income of Experiment Stations from All Sources for Years Ended June 30, Specified Years

State	1940	1945	1950	1955
	1,000 dol.	1,000 dol.	1,000 dol.	1,000 dol.
Ohio	1,100	1,505	2,366	3,048
Oklahoma	482	657	1,388	2,125
Oregon	438	585	1,511	2,330
Pennsylvania	422	610	1,411	2,292
Rhode Island	99	125	252	400
South Carolina	365	752	771	1,198
South Dakota	184	251	494	824
Tennessee	265	351	890	1,327
Texas	1,114	1,462	3,458	4,588
Utah	178	261	583	1,004
Vermont	117	132	232	355
Virginia	272	377	1,069	1,760
Washington	346	538	1,701	2,617
West Virginia	247	316	789	957
Wisconsin	669	901	2,187	3,180
Wyoming	187	230	570	681
Total	20,734	27,327	63,019	95,562

Source: "Report on the Agricultural Experiment Stations," 1940, 1945, 1950, and 1955, USDA.

Appendix Table 4. Size of Farm Population Compared to Research Funds in Rural Social Sciences in 1939-40 and in Agricultural Economics in 1955-56 at Land-Grant Institutions

State	Number of farm people for each dollar budgeted for Rural Social Science research in 1939-40 1/	Number of farm people for each dollar budgeted for Agricultural Economics research in 1955-56 2/
	Number	Number
Alabama	70	6.3
Arizona	3/	1.0
Arkansas	29	6.3
California	10	3/
Colorado	17	.3
Connecticut	6	.9
Delaware	3	.9
Florida	16	1.1
Georgia	104	5.6
Idaho	20	3/
Illinois	13	1.7
Indiana	38	3/
Iowa	12	3.0
Kansas	39	4.7
Kentucky	24	3/
Louisiana	16	3.0
Maine	10	1.6
Maryland	13	3/
Massachusetts	11	3/
Michigan	25	2.0
Minnesota	22	3/
Mississippi	254	9.8
Missouri	53	8.1
Montana	9	3/
Nebraska	34	4.7
Nevada	1	.3
New Hampshire	5	3/
New Jersey	8	1.8
New Mexico	14	1.4
New York	8	2.0
North Carolina	69	3/
North Dakota	3/	2.9

(Continued)

Appendix Table 4 (Continued). Size of Farm Population Compared to Research Funds in Rural Social Sciences in 1939-40 and in Agricultural Economics in 1955-56 at Land-Grant Institutions

State	Number of farm people for each dollar budgeted for Rural Social Science research in 1939-40 1/	Number of farm people for each dollar budgeted for Agricultural Economics research in 1955-56 2/
	Number	Number
Ohio	31	3.6
Oklahoma	25	2.7
Oregon	13	1.8
Pennsylvania	33	2.7
Rhode Island	3	.3
South Carolina	42	5.8
South Dakota	17	3/
Tennessee	108	6.0
Texas	54	4.1
Utah	9	1.2
Vermont	7	1.5
Virginia	26	3/
Washington	15	1.8
West Virignia	21	3/
Wisconsin	20	4.5
Wyoming	7	3/

1/ Source: Schultz, Theodore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, Table 4, p. 55.

2/ Source: Based on data shown in Table 9 and farm population estimates for 1955.

3/ Not ascertained.

Appendix Table 5. Farm Income Compared to Research Funds in Rural Social Sciences in 1939-40 and in Agricultural Economics in 1955-56 at Land-Grant Institutions

State	Cash farm income for each dollar budgeted for Rural Social Science research in 1939-40 1/	Cash farm income for each dollar budgeted for Agricultural Economics research in 1955-56 2/
	Dollars	Dollars
Alabama	5,659	3,568
Arizona	3/	4,708
Arkansas	3,801	6,039
California	9,278	3/
Colorado	8,096	7,254
Connecticut	2,122	2,443
Delaware	1,098	2,889
Florida	6,195	3,050
Georgia	11,236	4,135
Idaho	9,667	3/
Illinois	6,951	4,160
Indiana	12,471	3/
Iowa	8,458	9,114
Kansas	15,038	10,268
Kentucky	2,799	3/
Louisiana	2,444	2,464
Maine	2,874	2,533
Maryland	3,713	3/
Massachusetts	4,971	3/
Michigan	6,707	1,991
Minnesota	8,430	3/
Mississippi	31,784	5,990
Missouri	12,057	10,699
Montana	4,573	3/
Nebraska	14,386	13,438
Nevada	789	881
New Hampshire	1,246	3/
New Jersey	5,575	5,333
New Mexico	4,287	1,977
New York	3,056	2,967
North Carolina	10,085	3/
North Dakota	3/	7,079

(Continued)

Appendix Table 5 (Continued). Farm Income Compared to Research Funds in Rural Social Sciences in 1939-40 and in Agricultural Economics in 1955-56 at Land-Grant Institutions

State	Cash farm income for each dollar budgeted for Rural Social Science research in 1939-40 1/	Cash farm income for each dollar budgeted for Agricultural Economics research in 1955-56 2/
	Dollars	Dollars
Ohio	9,184	4,637
Oklahoma	4,709	3,055
Oregon	5,658	3,106
Pennsylvania	8,999	3,063
Rhode Island	1,295	694
South Carolina	4,973	3,278
South Dakota	6,004	3/
Tennessee	10,765	3,027
Texas	12,860	7,441
Utah	3,076	2,162
Vermont	2,427	2,200
Virginia	2,912	3/
Washington	6,631	3,622
West Virginia	1,518	3/
Wisconsin	6,026	6,477
Wyoming	4,817	3/

1/ Source: Schultz, Theodore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, Table 5, p. 56.

2/ Source: Based on data shown in Table 9 and cash farm income estimates for 1955.

3/ Not ascertained.

Appendix Table 6. Total Funds Allotted to Extension, Fiscal Years Ended June 30, Specified Years

State	1940	1945	1950	1955
	1,000 dol.	1,000 dol.	1,000 dol.	1,000 dol.
Alabama	1,206	1,387	2,249	2,913
Arizona	179	204	372	501
Arkansas	812	932	1,681	2,031
California	947	1,081	3,148	4,662
Colorado	377	434	837	1,232
Connecticut	305	345	510	698
Delaware	94	94	154	253
Florida	455	536	1,179	1,716
Georgia	1,046	1,187	2,139	2,974
Idaho	269	265	654	917
Illinois	1,206	1,241	2,555	3,522
Indiana	966	1,051	1,878	2,787
Iowa	1,254	1,431	2,470	2,932
Kansas	988	1,035	2,171	2,901
Kentucky	912	953	1,810	2,505
Louisiana	651	1,050	1,998	2,717
Maine	244	269	403	565
Maryland	486	435	850	1,457
Massachusetts	481	552	859	1,269
Michigan	732	1,021	2,038	3,489
Minnesota	811	832	1,579	2,104
Mississippi	1,058	1,066	2,175	2,957
Missouri	893	983	1,918	2,602
Montana	355	412	794	985
Nebraska	607	641	1,133	1,685
Nevada	133	150	236	281
New Hampshire	245	246	359	462
New Jersey	441	520	867	1,361
New Mexico	271	372	759	850
New York	1,760	2,100	3,636	4,959
North Carolina	1,300	1,409	3,685	5,205
North Dakota	360	409	804	1,009

(Continued)

Appendix Table 6 (Continued). Total Funds Allotted to Extension, Fiscal Years Ended June 30, Specified Years

State	1940	1945	1950	1955
	1,000 dol.	1,000 dol.	1,000 dol.	1,000 dol.
Ohio	1,051	1,123	1,865	2,693
Oklahoma	846	938	1,761	2,372
Oregon	506	696	1,460	2,141
Pennsylvania	1,023	1,125	1,991	2,703
Rhode Island	79	89	140	199
South Carolina	687	752	1,511	2,084
South Dakota	369	381	778	1,121
Tennessee	929	1,036	1,994	2,577
Texas	2,016	2,191	3,929	4,988
Utah	200	240	454	645
Vermont	219	232	345	556
Virginia	889	1,189	2,079	3,050
Washington	395	554	1,248	1,539
West Virginia	506	617	1,024	1,258
Wisconsin	799	941	1,789	2,696
Wyoming	189	228	481	636
Total	32,546	37,064	70,737	97,757

Source: "Report of Cooperative Extension Work in Agriculture and Home Economics," 1940, 1945, 1950, and 1955, USDA.

Appendix Table 7. Size of Farm Population Compared to Extension Funds in Rural Social Sciences in 1939-40 and in Agricultural Economics in 1955-56 at Land-Grant Institutions

State	Number of farm people for each dollar budgeted for Rural Social Science Extension in 1939-40 1/	Number of farm people for each dollar budgeted for Agricultural Economics Extension in 1955-56 2/
	Number	Number
Alabama	277	7.0
Arizona	3/	3/
Arkansas	305	3/
California	49	3/
Colorado	3/	3/
Connecticut	7	1.0
Delaware	8	3/
Florida	18	6.5
Georgia	34	9.1
Idaho	23	3/
Illinois	34	8.7
Indiana	32	3/
Iowa	12	3/
Kansas	18	9.6
Kentucky	56	3/
Louisiana	123	3/
Maine	3/	3/
Maryland	46	3/
Massachusetts	5	1.1
Michigan	19	2.9
Minnesota	40	9.4
Mississippi	27	14.8
Missouri	99	5.7
Montana	23	3/
Nebraska	25	8.9
Nevada	2	2.4
New Hampshire	14	3/
New Jersey	8	2.2
New Mexico	19	2.3
New York	14	2.7
North Carolina	265	3/
North Dakota	3/	11.6

(Continued)

Appendix Table 7 (Continued). Size of Farm Population Compared to Extension Funds in Rural Social Sciences in 1939-40 and in Agricultural Economics in 1955-56 at Land-Grant Institutions

State	Number of farm people for each dollar budgeted for Rural Social Science Extension in 1939-40 1/	Number of farm people for each dollar budgeted for Agricultural Economics Extension in 1955-56 2/
	Number	Number
Ohio	25	4.6
Oklahoma	3/	5.3
Oregon	14	3/
Pennsylvania	39	3/
Rhode Island	3	.6
South Carolina	32	3/
South Dakota	358	3/
Tennessee	26	25.9
Texas	3/	3/
Utah	15	4.6
Vermont	14	4.1
Virginia	30	3/
Washington	112	9.8
West Virginia	80	3/
Wisconsin	18	9.3
Wyoming	6	3/

1/ Source: Schultz, Theodore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, Table 11, p. 67.

2/ Source: Based on data shown in Table 15 and farm population estimates for 1955.

3/ Not ascertained.

Appendix Table 8. Farm Income Compared to Extension Funds in Agricultural Economics at Land-Grant Institutions, 1955-56

State	Extension funds in Agricultural Economics	Cash farm income 2/	Cash farm income for each dollar of Agricultural Economics Extension funds
	1,000 dol.	Mil. dol.	Dol.
Alabama	119	471	3,957
Arizona	1/	339	-
Arkansas	1/	616	-
California	1/	2,601	-
Colorado	1/	428	-
Connecticut	60	171	2,850
Delaware	1/	104	-
Florida	33	607	18,394
Georgia	95	645	6,789
Idaho	1/	323	-
Illinois	82	1,718	20,951
Indiana	1/	1,043	-
Iowa	1/	2,078	-
Kansas	40	842	21,050
Kentucky	1/	539	-
Louisiana	1/	372	-
Maine	1/	190	-
Maryland	1/	237	-
Massachusetts	75	189	2,520
Michigan	226	645	2,854
Minnesota	69	1,215	17,608
Mississippi	64	581	9,078
Missouri	133	995	7,481
Montana	1/	400	-
Nebraska	36	981	27,250
Nevada	5	37	7,400
New Hampshire	1/	70	-
New Jersey	52	336	6,462
New Mexico	51	170	3,333
New York	205	810	3,951
North Carolina	1/	944	-
North Dakota	19	538	28,316

(Continued)

Appendix Table 8 (Continued). Farm Income Compared to Extension Funds in Agricultural Economics at Land-Grant Institutions, 1955-56

State	Extension funds in Agricultural Economics	Cash farm income 2/	Cash farm income for each dollar of Agricultural Economics Extension funds
	1,000 dol.	Mil. dol.	Dol.
Ohio	175	1,034	5,908
Oklahoma	84	501	5,964
Oregon	1/	382	-
Pennsylvania	1/	778	-
Rhode Island	19	25	1,316
South Carolina	1/	354	-
South Dakota	1/	506	-
Tennessee	34	445	13,088
Texas	1/	1,905	-
Utah	17	147	8,647
Vermont	18	110	6,111
Virginia	1/	446	-
Washington	28	536	19,143
West Virginia	1/	117	-
Wisconsin	73	978	13,397
Wyoming	1/	130	-

1/ Questionnaire not returned, or not reported on returned questionnaire.

2/ Cash receipts from marketings including government payments.

Appendix Table 9. Total Undergraduate Enrollments in Colleges of Agriculture at Land-Grant Institutions, 1938-39, 1948-49, and 1955-56

State	Undergraduate enrollment in colleges of agriculture in: 1938-39 1/	1948-49	1955-56
	Number	Number	Number
Alabama	722	903	545
Arizona	270	350	279
Arkansas	378	564	362
California	2/	1,828	964
Colorado	391	986	876
Connecticut	2/	373	266
Delaware	88	144	120
Florida	2/	411	303
Georgia	2/	800	545
Idaho	287	370	273
Illinois	1,053	1,208	978
Indiana	2/	1,542	1,236
Iowa	1,438	2,397	1,899
Kansas	731	1,306	902
Kentucky	390	697	442
Louisiana	648	1,044	694
Maine	216	746	474
Maryland	308	811	532
Massachusetts	175	438	324
Michigan	2/	1,630	1,255
Minnesota	1,858	1,514	984
Mississippi	2/	780	615
Missouri	1,054	1,765	1,364
Montana	2/	509	401
Nebraska	513	829	682
Nevada	103	66	58
New Hampshire	140	276	214
New Jersey	2/	646	391
New Mexico	345	455	278
New York	1,616	1,563	1,531
North Carolina	2/	976	606
North Dakota	352	496	414

(Continued)

Appendix Table 9 (Continued). Total Undergraduate Enrollments in Colleges of Agriculture at Land-Grant Institutions, 1938-39, 1948-49, and 1955-56

State	Undergraduate enrollment in colleges of agriculture in: 1938-39 1/	1948-49	1955-56
	Number	Number	Number
Ohio	1,662	1,860	1,500
Oklahoma	2/	1,851	1,306
Oregon	824	980	721
Pennsylvania	924	2,019	1,483
Rhode Island	125	183	163
South Carolina	2/	601	567
South Dakota	445	582	586
Tennessee	430	795	588
Texas	1,959	2,241	1,123
Utah	501	727	379
Vermont	88	290	277
Virginia	654	837	599
Washington	569	739	567
West Virginia	232	571	332
Wisconsin	2/	1,136	725
Wyoming	2/	298	237
Total (48 states)	XXX	45,833	33,453
Total (34 states)	21,489	30,752	22,543

1/ Data available in 1938-39 for only 34 Land-Grant institutions.

2/ Data not available.

Source: Data for 1938-39 from: Schultz, Theodore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, Table 14, p. 72.

Data for 1948-49 and 1955-56 from: Proceedings of 71st Annual Convention of American Association of Land-Grant Colleges and State Universities.

Appendix Table 10. Total Number of Workers 1/ in Agricultural Economics 2/ by Institution, 48 Land-Grant Institutions, 3/ Specified Years

Institution 3/	1929-1930	1934-1935	1939-1940	1944-1945	1949-1950	1954-1955
	No.	No.	No.	No.	No.	No.
Alabama	7	6	5	17	30	23
Arizona	-	-	5	4	6	6
Arkansas	6	8	9	16	20	20
California	13	19	22	20	33	40
Colorado	9	13	8	8	15	13
Connecticut	7	15	13	12	15	19
Delaware	3	3	4	3	4	4
Florida	7	10	12	7	18	24
Georgia	5	8	13	11	23	28
Idaho	3	6	5	4	6	8
Illinois	18	20	27	28	38	45
Indiana	12	12	14	17	28	32
Iowa	23	34	48	41	46	38
Kansas	9	12	25	19	31	40
Kentucky	12	15	23	20	18	35
Louisiana	4	9	20	22	22	23
Maine	6	8	11	10	14	11
Maryland	7	10	13	14	26	26
Massachusetts	11	11	10	10	13	17
Michigan	16	18	23	19	34	37
Minnesota	17	22	21	22	23	25
Mississippi	8	9	18	16	25	26
Missouri	12	9	13	11	28	30
Montana	8	9	9	9	11	19
Nebraska	8	11	12	12	14	20
Nevada	6	7	5	5	3	4
New Hampshire	3	7	6	6	7	7
New Jersey	6	8	11	7	6	7
New Mexico	2	3	7	6	12	13
New York	22	31	35	28	32	39
North Carolina	7	7	12	14	24	27
North Dakota	9	6	10	7	14	11

(Continued)

Appendix Table 10 (Continued). Total Number of Workers 1/ in Agricultural Economics 2/ by Institution, 48 Land-Grant Institutions, 3/ Specified Years

Institution 3/	1929-1930	1934-1935	1939-1940	1944-1945	1949-1950	1954-1955
	No.	No.	No.	No.	No.	No.
Ohio	19	21	17	18	22	31
Oklahoma	6	8	15	20	27	24
Oregon	11	11	16	13	22	28
Pennsylvania	14	13	18	21	31	30
Rhode Island	2	3	5	6	10	12
South Carolina	6	12	19	22	21	29
South Dakota	10	10	10	6	16	22
Tennessee	6	14	26	26	25	29
Texas	12	16	29	38	31	30
Utah	5	7	12	9	15	19
Vermont	6	5	5	4	5	8
Virginia	9	11	15	17	18	21
Washington	7	9	10	10	24	19
West Virginia	7	10	10	11	11	11
Wisconsin	13	21	28	25	35	37
Wyoming	2	2	7	3	7	7
Total	421	539	711	694	959	1,074

1/ Includes all teaching, research, and extension workers, except county extension workers.

2/ Includes Rural Sociology workers both when shown as a part of Agricultural Economics departments and when shown as separate departments.

3/ For a listing of the official names of the 48 Land-Grant institutions included, see Appendix Table 1.

Source: Compiled from "Workers in Subjects Pertaining to Agriculture in Land-Grant Colleges and Experiment Stations," Specified Years, OES, ARS, USDA.

Appendix Table 11. Average Salaries Paid for Teaching and/or Research Staff Members in Agricultural Economics at Land-Grant Institutions by Degree Status, 1956

(12-months basis as of July 1, 1956)

State	B.S. or B.A.	M.S. or M.A.	Preliminaries for Ph.D.	Ph.D. or equivalent
	Dol.	Dol.	Dol.	Dol.
Alabama	-	4,125	7,700	7,100
Arizona	-	6,000	8,400	7,275
Arkansas	-	5,470	6,020	6,600
California 1/	-	-	-	-
Colorado	-	5,333	6,000	6,500
Connecticut	-	7,460	5,640	8,292
Delaware 2/	-	-	-	-
Florida	6,000	5,783	7,033	8,240
Georgia	4,600	5,850	5,950	7,170
Idaho 1/	-	-	-	-
Illinois	5,633	7,554	6,000	8,343
Indiana 1/	-	-	-	-
Iowa	-	-	5,700	8,300
Kansas	4,850	5,220	6,166	7,380
Kentucky 1/	-	-	-	-
Louisiana	-	5,480	7,038	8,046
Maine	4,150	5,250	6,150	6,860
Maryland 1/	-	-	-	-
Massachusetts	3,500	6,800	-	8,000
Michigan	-	8,300	-	9,110
Minnesota 2/	-	-	-	-
Mississippi	4,250	5,200	6,900	6,740
Missouri	3,000	4,500	7,000	8,000
Montana 1/	-	-	-	-
Nebraska	-	4,400	-	6,500
Nevada	-	6,200	6,800	8,500
New Hampshire 1/	-	-	-	-
New Jersey 2/	-	-	-	-
New Mexico	-	6,244	6,132	7,060
New York	4,415	4,800	-	8,405
North Carolina 1/	-	-	-	-
North Dakota	4,700	5,860	6,660	8,100

(Continued)

Appendix Table 11 (Continued). Average Salaries Paid for Teaching and/or Research Staff Members in Agricultural Economics at Land-Grant Institutions by Degree Status, 1956

(12 months basis as of July 1, 1956)

State	B.S. or B.A.	M.S. or M.A.	Preliminaries for Ph.D.	Ph.D. or equivalent
	Dol.	Dol.	Dol.	Dol.
Ohio	-	5,100	6,742	7,940
Oklahoma	-	4,400	6,000	7,500
Oregon	5,052	7,037	-	7,593
Pennsylvania	4,308	4,530	6,408	8,210
Rhode Island	3,600	5,050	6,026	6,592
South Carolina 2/	-	-	-	-
South Dakota 1/	-	-	-	-
Tennessee	-	5,920	7,000	6,910
Texas 2/	-	-	-	-
Utah	-	5,300	6,600	6,750
Vermont	-	4,867	5,700	7,067
Virginia 1/	-	-	-	-
Washington	5,500	5,669	6,733	6,988
West Virginia	-	5,666	6,860	7,800
Wisconsin	5,124	6,392	9,800	9,601
Wyoming 1/	-	-	-	-

1/ Questionnaire not returned.

2/ Not reported on returned questionnaire.

Appendix Table 12. Average Salaries Paid for Extension Staff Members in Agricultural Economics at Land-Grant Institutions by Degree Status, 1956

(12-months basis as of July 1, 1956)

State	B.S. or B.A.	M.S. or M.A.	Preliminaries for Ph.D.	Ph.D. or equivalent
	Dol.	Dol.	Dol.	Dol.
Alabama	6,466	6,570	-	-
Arizona	-	-	-	6,500
Arkansas 2/	-	-	-	-
California 1/	-	-	-	-
Colorado 2/	-	-	-	-
Connecticut	-	6,090	-	7,840
Delaware 2/	-	-	-	-
Florida	-	7,500	6,500	7,000
Georgia	5,300	6,050	6,400	-
Idaho 1/	-	-	-	-
Illinois	7,872	7,543	5,800	7,965
Indiana 1/	-	-	-	-
Iowa	-	6,900	-	6,400
Kansas	6,990	7,110	6,840	-
Kentucky 1/	-	-	-	-
Louisiana	-	7,600	-	7,400
Maine 2/	-	-	-	-
Maryland 1/	-	-	-	-
Massachusetts	3,500	6,800	-	8,000
Michigan	7,360	7,063	-	8,706
Minnesota	5,376	7,000	-	7,600
Mississippi	6,257	6,267	-	-
Missouri 2/	-	-	-	-
Montana 1/	-	-	-	-
Nebraska	4,900	6,300	6,800	7,400
Nevada 2/	-	-	-	-
New Hampshire 1/	-	-	-	-
New Jersey 2/	-	-	-	-
New Mexico	-	5,800	-	-
New York	-	5,424	-	7,778
North Carolina 1/	-	-	-	-
North Dakota	-	7,400	7,608	-

(Continued)

Appendix Table 12 (Continued). Average Salaries Paid for Extension Staff Members in Agricultural Economics at Land-Grant Institutions by Degree Status, 1956

(12-months basis as of July 1, 1956)

State	B.S. or B.A.	M.S. or M.A.	Preliminaries for Ph.D.	Ph.D. or equivalent
	Dol.	Dol.	Dol.	Dol.
Ohio	7,500	5,930	6,270	6,500
Oklahoma	6,580	6,560	-	-
Oregon 2/	-	-	-	-
Pennsylvania 2/	-	-	-	-
Rhode Island	-	5,650	-	-
South Carolina 2/	-	-	-	-
South Dakota 1/	-	-	-	-
Tennessee	5,500	6,300	-	7,000
Texas 2/	-	-	-	-
Utah	-	6,550	6,550	-
Vermont	4,900	6,400	-	-
Virginia 1/	-	-	-	-
Washington	7,400	7,950	7,200	8,525
West Virginia 2/	-	-	-	-
Wisconsin 2/	-	-	-	-
Wyoming 1/	-	-	-	-

1/ Questionnaire not returned.

2/ Not reported on returned questionnaire.

Appendix Table 13. Undergraduate Curricula in Agricultural Economics and Related Areas in Departments of Agricultural Economics at Land-Grant Institutions 1/

Institution 2/	Scholastic year	Name of undergraduate curriculum	Semester credit hours required for graduation
			Number
Alabama	1955-56	Agricultural Administration	141
Arizona	1955-56	Agricultural Economics	130
Arkansas	1955-56	Farm Management	132
Arkansas	1955-56	Marketing	132
Arkansas	1955-56	Interdepartmental	132
California	1955-56	Agricultural Economics	124
Colorado	1955-56	Agricultural Business	140
Colorado	1955-56	Farm and Ranch Management	140
Connecticut	1955-56	Agricultural Economics	124
Delaware	1955-56	Agricultural Economics	142
Delaware	1955-56	Agricultural Business Management	143
Florida	1955-56	Agricultural Economics	133
Georgia	1956-57	Agricultural Economics	137
Idaho	1956-57	Agricultural Economics	136
Illinois	1955-56	Agricultural Economics	130
Indiana	1956-57	Agricultural Economics	146
Indiana	1956-57	Agricultural Administration	149
Iowa	1956-57	Agricultural Economics	133
Iowa	1956-57	Farm Management	133
Iowa	1956-57	Marketing	133
Iowa	1956-57	Public Service and Administration	133
Kansas	1955-56	Agricultural Administration	131
Kentucky	1956-57	Agricultural Economics	140

(Continued)

Appendix Table 13 (Continued). Undergraduate Curricula in Agricultural Economics and Related Areas in Departments of Agricultural Economics at Land-Grant Institutions 1/

Institution 2/	Scholastic year	Name of undergraduate curriculum	Semester credit hours required for graduation
			Number
Louisiana	1955-57	Agricultural Economics	144
Maine	1956-57	Agricultural Economics	147
Maine	1956-57	Farm Management	147
Maryland	1953-54	Agricultural Economics	140
Massachusetts	1956-57	Agricultural Economics	135
Massachusetts	1956-57	Farm Management	135
Massachusetts	1956-57	Agricultural Economics - Fruits and Vegetables	135
Massachusetts	1956-57	Agricultural Economics - Animal Science	135
Massachusetts	1956-57	Agricultural Economics - Feeds and Fertilizers	135
Michigan	1955-56	Agricultural Economics	128
Minnesota	1955-57	Agricultural Economics	128
Mississippi	1956-57	Agricultural Economics	144
Missouri	1955-56	Agricultural Economics (General)	128
Montana	1956-57	Farm Operations	140
Montana	1956-57	Agri-Business	140
Montana	1956-57	Public Service	140
Nebraska	1956-57	Agricultural Economics	128
Nevada	1956-57	Agricultural Economics	135
New Hampshire	1956-57	Agricultural Economics	136
New Jersey	1956-57	Agricultural Economics	155

(Continued)

Appendix Table 13 (Continued). Undergraduate Curricula in Agricultural Economics and Related Areas in Departments of Agricultural Economics at Land-Grant Institutions 1/

Institution 2/	Scholastic year	Name of undergraduate curriculum	Semester credit hours required for graduation
			Number
New Mexico	1956-57	Agricultural Economics	144
New Mexico	1956-57	Farm and Ranch Operations	144
New Mexico	1956-57	Agri-Business	144
New York	1956-57	Agricultural Economics (Agriculture)	120
North Carolina	1954-55	Agricultural Economics	146
North Dakota	1956-57	Agricultural Economics	136
Ohio	1955-56	Agri-Business	140
Oklahoma	1954-55	Agricultural Economics	130
Oregon	1956-57	Agricultural Economics	131
Pennsylvania	1955-56	Farm Planning and Management	140
Pennsylvania	1955-56	Agricultural Marketing and Business	140
Pennsylvania	1955-56	Rural Services and Administration	140
Rhode Island	1955-56	Agricultural Economics	144
South Carolina	1955-56	Agricultural Economics	150
South Dakota	1955-56	Farm Management	136
South Dakota	1955-56	Agricultural Finance	136
South Dakota	1955-56	Agri-Business	136
Tennessee	1955-56	Agricultural Economics	141
Texas	1955-56	Agricultural Economics	143
Texas	1955-56	Farm Management	143
Utah	1956-57	Agricultural Economics	124

(Continued)

Appendix Table 13 (Continued). Undergraduate Curricula in Agricultural Economics and Related Areas in Departments of Agricultural Economics at Land-Grant Institutions 1/

Institution 2/	Scholastic year	Name of undergraduate curriculum	Semester credit hours required for graduation
			Number
Vermont	1956-57	Agricultural Economics	138
Virginia	1956-57	Agricultural Economics	133
Washington	1955-56	Agricultural Economics (Science)	135
Washington	1955-56	Agricultural Economics (Technical)	135
West Virginia	1956-57	Agricultural Economics	144
Wisconsin	1954-55	Agricultural Economics	124
Wyoming	1956-57	Agricultural Economics	133

1/ Based on college and university catalogues for years as indicated in column 2 of table.

2/ For full name of institutions, see Appendix Table 1.

Note: For a breakdown of credit requirements for graduation by major subject-matter categories, see Appendix Table 14.

Appendix Table 14. Undergraduate Curricula in Agricultural Economics by Semester Credits Required for Graduation and by Specified Groupings of Subject-Matter Areas at Land-Grant Institutions, 1955-56 1/

Institution 2/	Semester credit hours required for graduation	Basic Sciences 3/	Agricultural Sciences 4/	Technical Agriculture 5/	Social Sciences 6/	Agricultural Economics 7/	Math and Statistics	English	Military Science and Physical Education	Electives
Alabama	141	17	0	40	27	14	10	11	8	15
Arizona	130	28-30	0	20	11	24	7	11-12	6	23-24
Arkansas	132	21	6	36-37	3	27	6-7	8	4	19-21
California	124	18	0	8	21	18	9	6	8	36
Colorado	140	17	3	41	16	28	5	6	8	17
Connecticut	124	20	0	4	9	33	3	9	8	38
Delaware	142	20	7	33	22	24	3	12	12	9
Florida	133	12	0	15	28	24	11	8	4	31
Georgia	137	29	3	27	13	17	9	10	7	23
Idaho	136	12	7	4	10	24	11	9	8	50
Illinois	130	22	8/	35	16	8/	8/	6	16	35
Indiana	146	25-28	4	7	9	12	3	9	11	60-68
Iowa	133	11	4	14	39	19	19	16	4	9
Kansas	131	16	0	23	11	23	5	10	4	39
Kentucky	140	19	3	26	16	26	6	8	10	26
Louisiana	144	15	0	28	19	32	6	6-12	10	23-28

(Continued)

Appendix Table 14 (Continued). Undergraduate Curricula in Agricultural Economics by Semester Credits Required for Graduation and by Specified Groupings of Subject-Matter Areas at Land-Grant Institutions, 1955-56 1/

Institution 2/	Semester credit hours required for graduation	Basic Sciences 3/	Agricultural Sciences 4/	Technical Agriculture 5/	Social Sciences 6/	Agricultural Economics 7/	Math and Statistics	English	Military Science and Physical Education	Electives
Maine	147	18	6	18	3	29	9	8	7	49
Maryland	140	16	0	13	15	30	12	16	16	22
Massachusetts	135	12	0	24	9	14	9	12	13	43
Michigan	128	14	0	15	18	13	6	6	8	49
Minnesota	128	27	3	28	13	21	3	10	0	21
Mississippi	144	11	0	25	21	32	6	12	6	31
Missouri	128	25	5	32	5	21	8	6	8	18
Montana	140	16	4	18	30	22	8	10	6	26
Nebraska	128	20	3	37	9	17	6	8	4	24
Nevada	135	9	0	23	24	23	7	13	8	28
New Hampshire	136	19	5	17	12	17	9	11	4	42
New Jersey	155	30	8	36	30	6	6	9	12	18
New Mexico	144	16	0	26	18	30	10	12	10	22
New York	120	18	3	55	12	3	3	6	0	20
North Carolina	146	28	0	24	9	41	8	12	12	12
North Dakota	136	22	5	25	9	28	13	10	4	21

(Continued)

Appendix Table 14 (Continued). Undergraduate Curricula in Agricultural Economics by Semester Credits Required for Graduation and by Specified Groupings of Subject-Matter Areas at Land-Grant Institutions, 1955-56 1/

Institution 2/	Semester credit hours required for graduation	Basic Sciences 3/	Agricultural Sciences 4/	Technical Agriculture 5/	Social Sciences 6/	Agricultural Economics 7/	Math and Statistics	English	Military Science and Physical Education	Electives
Ohio	140	23	5	3	16	16	7	11	11	51
Oklahoma	130	18	3	20	18	22	6	5	8	30
Oregon	131	13	3	18	18	19	7	8	8	36
Pennsylvania	140	16	0	16	12	22	0	12	10	52
Rhode Island	144	17	0	15	9	6	3	6	12	76
South Carolina	150	24	7	25	9	29	10	18	4	24
South Dakota	136	20	6	22	29	9	7	6	6	32
Tennessee	141	29	3	27	8	24	8	12	5	25
Texas	143	14	0	18	21	28	7	15	4	36
Utah	124	19	0	25	26	25	6	15	4	4
Vermont	138	11	0	15	6	31	3	15	0	51
Virginia	133	12	3	21	16	25	6	12	5	31
Washington	135	22	3	8	35	13	13	10	11	20
West Virginia	144	24	4	32	21	22	3	9	10	19
Wisconsin	124	18	0	11	4	3	0	6	0	82
Wyoming	133	16	3	30	5	24	4	10	8	33

(Continued)

Appendix Table 14 (Continued).

1/ Based on college and university catalogues for 1955-56, where available. In some instances, data refer to the academic year either before or after 1955-56.

2/ For full name of institutions, see Appendix Table 1.

3/ Includes chemistry, physics, botany, zoology, geology, and bacteriology.

4/ Includes plant pathology, entomology, agricultural chemistry, agricultural bacteriology, and genetics.

5/ Includes courses such as animal husbandry, dairy husbandry, poultry husbandry, soils, agronomy, horticulture, agricultural engineering, and related courses.

6/ Includes all non-rural social science courses, such as government, history, geography, psychology, general economics, business administration, and related courses.

7/ Includes agricultural economics, rural sociology, agricultural education, and related courses.

8/ Not ascertained.

Note: For a comparison with undergraduate curricula requirements in Agricultural Economics in 1939-40, see: Schultz, Theodore W., Training and Recruiting of Personnel in the Rural Social Studies, American Council on Education, Washington, D. C., 1941, Appendix Table XIX, pp. 255-256.

Appendix Table 15. Recent Curricula Changes in Agricultural Economics and Agricultural Business, Land-Grant Colleges and Universities

(Period Covered: 1955 to 1960)

Institution	Major changes last 5-years		Are changes now being considered		Forces prompting changes 1/					Have Agri-Business curricula as such		Degrees offered	
					Dean	Dept.	Students	Alumni	Faculty				
	Yes	No	Yes	No	-	-	-	-	-	Yes	No	M.S.	Ph.D.
Auburn University	Yes			No	4	1	2	3		Yes		Yes	
Arizona, University of	Yes			No		1	2			Yes		Yes	
Arkansas, University of	Yes		Yes				X		X		No	Yes	
California, University of	Yes			No					X	Yes		Yes	
Connecticut, University of		No		No						Yes		Yes	Yes
Delaware, University of	Yes		Yes		1				2	Yes		Yes	
Florida, University of		No	Yes		1	2				Yes		Yes	Yes
Georgia, University of	Yes				3		2		1	Yes		Yes	Yes
Idaho, University of	Yes			No	1			2		Yes*		Yes	
Illinois, University of	Yes			No					1	Yes		Yes	Yes
Kansas State University	Yes		Yes		1					Yes		Yes	Yes
Kentucky, University of	Yes		Yes		3	2		4	1	Yes		Yes	Yes
Maine, University of	Yes				X					Yes		Yes	
Maryland, University of	Yes		Yes		2	1			2/		No	Yes	Yes
Massachusetts, University of	Yes		Yes		X	X				Yes		Yes	
Michigan State University	Yes				1					Yes*		Yes	Yes

(Continued)

Appendix Table 15 (Continued). Recent Curricula Changes in Agricultural Economics and Agricultural Business, Land-Grant Colleges and Universities

(Period Covered: 1955 to 1960)

Institution	Major changes last 5-years		Are changes now being considered		Forces prompting changes 1/					Have Agri-Business curricula as such		Degrees offered	
					Dean	Dept.	Students	Alumni	Faculty				
	Yes	No	Yes	No	-	-	-	-	-	Yes	No	M.S.	Ph.D.
Minnesota, University of	Yes				1					Yes		Yes	Yes
Mississippi State University	Yes				X	X				Yes		Yes	Yes
Missouri, University of	Yes			No	1	2			2/	Yes		Yes	Yes
Montana State College	Yes				1					Yes*		Yes	Yes
Nebraska, University of	Yes			No	X				2/	Yes		Yes	Yes
Nevada, University of	Yes			No						Yes		Yes	
New Hampshire, University of	Yes			No	1	4	2		3	Yes*			
New Mexico State University	Yes					1			2	Yes		Yes	
Cornell, University of		No		No						Yes		Yes	Yes
North Carolina State College	Yes				1					Yes*		Yes	Yes
North Dakota Agri. College	Yes			No					2/		No	Yes	
Ohio State University	Yes			No	1	1	1	1	1	Yes		Yes	Yes
Oklahoma State University	Yes				1	2				Yes		Yes	Yes
Oregon State College	Yes		Yes		1	2	3			Yes*		Yes	Yes
Pennsylvania State University	Yes			No	1	1	1	1	1	Yes		Yes	Yes
Purdue University	Yes			No	1	1	1	1	1	Yes		Yes	Yes

(Continued)

Appendix Table 15 (Continued). Recent Curricula Changes in Agricultural Economics and Agricultural Business, Land-Grant Colleges and Universities

(Period Covered: 1955 to 1960)

Institution	Major changes last 5-years		Are changes now being considered		Forces prompting changes 1/					Have Agri-Business curricula as such		Degrees offered	
					Dean	Dept.	Students	Alumni	Faculty				
	Yes	No	Yes	No	-	-	-	-	-	Yes	No	M.S.	Ph.D.
Rhode Island, University of	Yes			No					1	Yes		Yes	
South Carolina, Clemson College		No	Yes		1	1	1	1		Yes		Yes	Yes
Tennessee, University of	Yes			No	1	2			3	Yes		Yes	
Texas A & M		No	Yes							Yes		Yes	Yes
Utah State University	Yes		Yes		2	1	4	3				Yes	
Vermont, University of	Yes			No					2/			Yes	Yes
Virginia State College	Yes		Yes		1	2	3			Yes			
Iowa State University		No		No			X	X		Yes		Yes	
Washington State University	Yes			No	1			3	2/	Yes*		Yes	
West Virginia, University of	Yes			No	3	2			1		No	Yes	
Wisconsin, University of		No	Yes		1				2	Yes			
Wyoming, University of		No	Yes		X	X			2/	Yes		Yes	Yes
Louisiana State University	Yes		Yes			X				Yes		Yes	Yes
Colorado State University	Yes			No			2	3	4	Yes		Yes	

* - Change to three or five total majors in Agricultural College.

(Continued)

Appendix Table 15 (Continued).

X - Indicates an answer with some explanation or variation.

1/ Answers exceed total questionnaires returned due to combined answers.

2/ An appointed College Committee.

Source: Adapted from Stucky, H. R., "Adapting Agricultural Economics Curricula to a Changing Agriculture," Proceedings, Western Farm Economics Association, 1960.

Appendix Table 16. Source of Graduate Students in Agricultural Economics at Land-Grant Institutions, 1955-56

State	Source of graduate students in Agricultural Economics: Master's candidates: Own institution	Master's candidates: Other institutions	Ph.D. candidates: Own institution	Ph.D. candidates: Other institutions	Total number of graduate students
	Number	Number	Number	Number	Number
Alabama	2	1	0	0	3
Arizona	1	1	0	0	2
Arkansas	4	3	0	0	7
California 1/	-	-	-	-	-
Colorado	5	4	0	0	9
Connecticut	3	5	1	3	12
Delaware	2	1	0	0	3
Florida	9	2	3	6	20
Georgia	6	0	0	0	6
Idaho 1/	-	-	-	-	-
Illinois	10	9	5	16	40
Indiana 1/	-	-	-	-	-
Iowa	9	12	8	23	52
Kansas	6	0	0	0	6
Kentucky 1/	-	-	-	-	-
Louisiana	6	14	2	2	24
Maine	1	0	0	0	1
Maryland 1/	-	-	-	-	-
Massachusetts	0	0	0	0	0
Michigan	9	15	4	18	46
Minnesota	4	9	10	12	35
Mississippi	8	0	0	0	8
Missouri	13	1	4	7	25
Montana 1/	-	-	-	-	-
Nebraska	7	3	0	0	10
Nevada	0	0	0	0	0
New Hampshire 1/	-	-	-	-	-
New Jersey	4	1	0	0	5
New Mexico	4	1	0	0	5
New York	8	13	7	19	47
North Carolina 1/	-	-	-	-	-
North Dakota	4	5	0	0	9

(Continued)

Appendix Table 16 (Continued). Source of Graduate Students in Agricultural Economics at Land-Grant Institutions, 1955-56

State	Source of graduate students in Agricultural Economics: Master's candidates: Own institution	Master's candidates: Other institutions	Ph.D. candidates: Own institution	Ph.D. candidates: Other institutions	Total number of graduate students
	Number	Number	Number	Number	Number
Ohio	16	6	9	6	37
Oklahoma	7	4	3	4	18
Oregon	4	5	0	5	14
Pennsylvania	16	4	7	12	39
Rhode Island	2	1	0	0	3
South Carolina	4	3	0	0	7
South Dakota 1/	-	-	-	-	-
Tennessee	4	7	0	0	11
Texas 2/	-	-	-	-	-
Utah	7	2	0	0	9
Vermont	0	3	0	0	3
Virginia 1/	-	-	-	-	-
Washington	0	1	0	2	3
West Virginia	2	0	0	0	2
Wisconsin	2/	2/	2/	2/	54
Wyoming 1/	-	-	-	-	-

1/ Questionnaire not returned.

2/ Not reported on returned questionnaire.

Appendix Table 17. Relative Rates of Turnover of Professional Staffs in Agricultural Economics at Land-Grant Institutions, 1951-56

(Size of Staff in 1955-56 = 100)

State	Outgoing professional staff during period 1951-56	Size of professional staff in 1955-56	Rate of turnover *
	No.	No.	Rate
Alabama	9	23	39
Arizona	7	9	78
Arkansas	7	23	30
California	1/	1/	3/
Colorado	6	11	55
Connecticut	5	13	38
Delaware	0	5	0
Florida	6	22	27
Georgia	14	33	42
Idaho	1/	1/	3/
Illinois	17	41	41
Indiana	1/	1/	3/
Iowa	5	27	19
Kansas	14	33	42
Kentucky	1/	1/	3/
Louisiana	16	21	76
Maine	8	13	62
Maryland	1/	1/	3/
Massachusetts	4	24	17
Michigan	14	41	34
Minnesota	5	30	17
Mississippi	16	26	61
Missouri	5	51	10
Montana	1/	1/	3/
Nebraska	9	14	64
Nevada	5	7	71
New Hampshire	1/	1/	3/
New Jersey	2	10	20
New Mexico	4	14	29
New York	14	37	38
North Carolina	1/	1/	3/
North Dakota	5	12	42

(Continued)

Appendix Table 17 (Continued). Relative Rates of Turnover of Professional Staffs in Agricultural Economics at Land-Grant Institutions, 1951-56

(Size of Staff in 1955-56 = 100)

State	Outgoing professional staff during period 1951-56	Size of professional staff in 1955-56	Rate of turnover *
	No.	No.	Rate
Ohio	7	44	16
Oklahoma	7	26	27
Oregon	5	2/	3/
Pennsylvania	5	2/	3/
Rhode Island	6	13	46
South Carolina	7	22	34
South Dakota	1/	1/	3/
Tennessee	5	26	19
Texas	5	38	13
Utah	6	8	75
Vermont	6	11	55
Virginia	1/	1/	3/
Washington	26	22	118
West Virginia	0	11	0
Wisconsin	8	26	31
Wyoming	1/	1/	3/

* Based on outgoing professional staff during the period 1951-56 and measured in terms of number of professional staff in 1955-56 = 100.

1/ Questionnaire not returned.

2/ Not reported on returned questionnaire.

3/ Not ascertained.

Appendix Table 18. Professional Staff Vacancies in Agricultural Economics at Land-Grant Institutions as of July 1, 1956

(In Full-Time Equivalents)

State	Teaching	Research	Extension	Total
	No.	No.	No.	No.
Alabama	0.50	2.50	2.00	5.00
Arizona	.00	.00	.00	.00
Arkansas	.00	3.00	2/	3.00
California 1/	-	-	-	-
Colorado	.50	1.50	.00	2.00
Connecticut	.00	.20	.80	1.00
Delaware	.00	.00	.00	.00
Florida	2.00	3.00	1.00	6.00
Georgia	.00	4.00	4.00	8.00
Idaho 1/	-	-	-	-
Illinois	1.50	1.50	.00	3.00
Indiana 1/	-	-	-	-
Iowa	1.00	1.00	3.00	5.00
Kansas	.50	.50	3.00	4.00
Kentucky 1/	-	-	-	-
Louisiana	.00	1.00	.00	1.00
Maine	.00	.00	2/	.00
Maryland 1/	-	-	-	-
Massachusetts	1.50	2.50	4.00	8.00
Michigan	.50	2.50	5.00	8.00
Minnesota	.00	3.00	2.00	5.00
Mississippi	.00	2.00	.00	2.00
Missouri	.00	1.00	.00	1.00
Montana 1/	-	-	-	-
Nebraska	1.00	1.00	.00	2.00
Nevada	.00	1.00	1.00	2.00
New Hampshire 1/	-	-	-	-
New Jersey	.00	.00	.00	.00
New Mexico	.00	.00	1.00	1.00
New York	.00	.00	.00	.00
North Carolina 1/	-	-	-	-
North Dakota	.50	.50	.00	1.00

(Continued)

Appendix Table 18 (Continued). Professional Staff Vacancies in Agricultural Economics at Land-Grant Institutions as of July 1, 1956

(In Full-Time Equivalents)

State	Teaching	Research	Extension	Total
	No.	No.	No.	No.
Ohio	.00	.00	1.00	1.00
Oklahoma	.50	.50	2.00	3.00
Oregon	.30	.70	2/	1.00
Pennsylvania	.00	1.00	2/	1.00
Rhode Island	.00	.00	.00	.00
South Carolina	.00	3.00	.00	3.00
South Dakota 1/	-	-	-	-
Tennessee	1.00	2.00	1.00	4.00
Texas	.00	1.00	1.00	2.00
Utah	.30	1.70	.00	2.00
Vermont	.00	.00	.00	.00
Virginia 1/	-	-	-	-
Washington	.40	1.60	.00	2.00
West Virginia	.00	2.00	2/	2.00
Wisconsin	1.00	1.00	4.00	6.00
Wyoming 1/	-	-	-	-

1/ Questionnaire not returned.

2/ Not reported on returned questionnaire.

APPENDIX B

LIST OF LAND-GRANT INSTITUTIONAL PERSONNEL RESPONDING TO QUESTIONNAIRE

APPENDIX B

LIST OF LAND-GRANT INSTITUTIONAL PERSONNEL
RESPONDING TO QUESTIONNAIRE

Institution 1/	Personnel Responding to Questionnaire
Alabama	Ben F. Alvord, Department of Agricultural Economics, Alabama Polytechnic Institute, Auburn, Alabama
Arizona	R. E. Seltzer, Department of Agricultural Economics, University of Arizona, Tucson, Arizona H. R. Baker, Agricultural Extension Service, University of Arizona, Tucson, Arizona
Arkansas	Henry J. Meenen, Department of Rural Economics and Sociology, University of Arkansas, Fayetteville, Arkansas
California	No response
Colorado	Rex D. Rehnberg, Department of Economics and Sociology, Colorado Agricultural and Mechanical College, Fort Collins, Colorado
Connecticut	P. L. Putnam, Department of Agricultural Economics and Farm Management, University of Connecticut, Storrs, Connecticut
Delaware	R. O. Buasman, Department of Agricultural Economics, University of Delaware, Newark, Delaware
Florida	Henry G. Hamilton, Department of Agricultural Economics, University of Florida, Gainesville, Florida
Georgia	J. W. Fanning, Division of Agricultural Economics, University of Georgia, Athens, Georgia
Idaho	No response
Illinois	G. L. Jordan, Department of Agricultural Economics, University of Illinois, Urbana, Illinois

1/ For full names and a listing of Land-Grant institutions as of 1955-56, see Appendix Table 1.

Indiana	No response
Iowa	Karl A. Fox, Department of Economics and Sociology, Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa
Kansas	George Montgomery, Department of Economics and Sociology, Kansas State College of Agriculture and Applied Science, Manhattan, Kansas
Kentucky	No response
Louisiana	Bueford M. Gile, Department of Agricultural Economics, The Louisiana State University and Agricultural and Mechanical College, Baton Rouge, Louisiana
Maine	Charles H. Merchant, Department of Agricultural Economics and Farm Management, University of Maine, Orono, Maine
Maryland	No response
Massachusetts	A. H. Lindsey, Department of Agricultural Economics and Farm Management, University of Massachusetts, Amherst, Massachusetts
Michigan	L. L. Boger, Department of Agricultural Economics, Michigan State University of Agriculture and Applied Sciences, East Lansing, Michigan
	L. W. Witt, Department of Agricultural Economics, Michigan State University of Agriculture and Applied Sciences, East Lansing, Michigan
Minnesota	O. B. Jesness, Department of Agricultural Economics, University of Minnesota, University Farm, St. Paul, Minnesota
	H. P. Hanson, Agricultural Extension Service, University of Minnesota, University Farm, St. Paul, Minnesota
Mississippi	D. W. Parvin, Department of Agricultural Economics, Mississippi State College, State College, Mississippi
	J. V. Pace, Agricultural Extension Service, Mississippi State College, State College, Mississippi
Missouri	O. R. Johnson, Department of Agricultural Economics, University of Missouri, Columbia, Missouri

Montana	No response
Nebraska	Howard W. Ottoson, Department of Agricultural Economics, University of Nebraska, Lincoln, Nebraska
Nevada	John L. Fischer, Department of Agricultural Economics, University of Nevada, Reno, Nevada
New Hampshire	No response
New Jersey	Allen G. Waller, Department of Agricultural Economics, Rutgers University, New Brunswick, New Jersey
New Mexico	H. R. Stucky, Department of Agricultural Economics, New Mexico College of Agriculture and Mechanic Arts, State College, New Mexico
	A. E. Triviz, Agricultural Extension Service, New Mexico College of Agriculture and Mechanic Arts, State College, New Mexico
New York	T. N. Hurd, Department of Agricultural Economics, Cornell University, Ithaca, New York
North Carolina	No response
North Dakota	Fred R. Taylor, Department of Agricultural Economics, North Dakota Agricultural College, Fargo, North Dakota
Ohio	Mervin G. Smith, Department of Agricultural Economics and Rural Sociology, Ohio State University, Columbus, Ohio
	J. H. Sitterley, Department of Agricultural Economics and Rural Sociology, Ohio State University, Columbus, Ohio
Oregon	G. Burton Wood, Department of Agricultural Economics, Oregon State College, Corvallis, Oregon
Pennsylvania	M. E. John, Department of Agricultural Economics and Rural Sociology, Pennsylvania State University, University Park, Pennsylvania
Rhode Island	Niels Rorholm, Department of Agricultural Economics, University of Rhode Island, Kingston, Rhode Island

South Carolina	G. H. Aull, Department of Agricultural Economics and Rural Sociology, Clemson Agricultural College, Clemson, South Carolina
South Dakota	No response
Tennessee	D. M. Thorpe, Department of Agricultural Economics and Rural Sociology, University of Tennessee, Knoxville, Tennessee
Texas	T. R. Timm, Department of Agricultural Economics and Rural Sociology, Texas Agricultural and Mechanical College, College Station, Texas
Utah	George T. Blanch, Department of Agricultural Economics and Marketing, Utah State Agricultural College, Logan, Utah
Vermont	T. M. Adams, Department of Agricultural Economics, University of Vermont and State Agricultural College, Burlington, Vermont
Virginia	No response
Washington	E. J. Working, Department of Agricultural Economics, State College of Washington, Pullman, Washington R. M. Turner, Agricultural Extension Service, State College of Washington, Pullman, Washington
West Virginia	W. W. Armentrout, Department of Agricultural Economics, West Virginia University, Morgantown, West Virginia
Wisconsin	Marvin A. Schaars, Department of Agricultural Economics, University of Wisconsin, Madison, Wisconsin
Wyoming	No response

APPENDIX C

QUESTIONNAIRE

Survey of Teaching, Research, and Extension Activities in Agricultural Economics

State _____ Respondent _____

Date _____ Title _____

This schedule is being sent to the Head of the Department of Agricultural Economics at the major Land-Grant college or university in each of the 48 states. Results of this survey, together with available secondary data, will be used in making an analysis of teaching, research, and extension work in Agricultural Economics at these institutions. Particular attention will be given to an evaluation of future trends in the field.

1. With respect to teaching, research, and extension work in Agricultural Economics at your institution, check areas where the Head of the Department of Agricultural Economics has specific responsibility

Item	Research	Teaching	Extension
Over-all administration			
Recruitment of personnel			
Assignment of duties			
Promotions			
Budgetary control			

Comments with respect to present and/or future degree of integration of all teaching, research, and extension work in Agricultural Economics at your institution:

2. Indicate whether the Department of Agricultural Economics at your institution includes the following subject-matter areas:

Subject matter areas	Yes	No	If No, comments as to special relations with specified subject-matter areas
Rural Sociology			
General Sociology			
Consumer Economics			
Business Administration ...			
Statistics			
General Economics			
Farm and Home Development Programs of Ext. Service .			

3. Distribution of Professional Staff in Agricultural Economics by Type of Work Engaged In, July 1, 1956 (including staff members on leave).

Item	Professional staff in Agricultural Economics	
	Number of workers 1/	Full-time equivalent 2/
	Number	Number
Type of work:		
Teaching		
Research		
Extension		
TOTAL	XXX	

1/ Workers engaged in more than one type of work will be included opposite each type of work done. Totals of teaching, research, and extension in this column, therefore, may not add to total number of workers on the staff.

2/ Totals shown for teaching, research, and extension in this column should add to total number of workers on the staff.

4. Distribution of Professional Staff in Agricultural Economics by Degree Status, July 1, 1956 (including staff members on leave).

Item	Professional staff members by major types of work engaged in: 1/	
	Teaching and/or Research staff members	Extension staff members
	Number	Number
Degree status: 2/		
B.S. or B.A. degree		
B.S. plus 1 year		
M.S. or M.A. degree		
M.S. plus 1 year		
M.S. plus 2 years		
Prelims for Ph.D. degree .		
Ph.D. degree		
TOTAL		

1/ Totals in these columns should check with totals in column 1 of Question 3.

2/ Designated degree status or equivalent.

5. Professional Staff in Agricultural Economics Taking Leave to Pursue Graduate Work and Number Who Have Returned or Who Plan to Return for At Least One Year, 5-Year Period, 1951-56.

Item	Staff members taking leave to pursue graduate work, 1951-56	Staff members who have returned or who plan to return for at least one year
	Number	Number
Teaching and/or Research staff members:		
Leave for 1 year or more -		
With full pay		
With part pay		
Without pay		
Leave for less than 1 year -		
With full pay		
With part pay		
Without pay		
TOTAL		
Extension staff members:		
Leave for 1 year or more -		
With full pay		
With part pay		
Without pay		
Leave for less than 1 year -		
With full pay		
With part pay		
Without pay		
TOTAL		

6. Outgoing Professional Staff in Agricultural Economics During the 5-Year Period, 1951-56. 1/

Staff member (A, B, C, etc.)	Major type of work engaged in at time of leaving dept. (T, R, or E) 2/	Degree status at time of leaving department 3/	Rank at time of leaving department 4/	Place employed and type of work engaged in after leaving department 5/
A				
B				
C				
D				
E				
F				
G				
H				
I				
J				
K				
L				
M				
N				
O				
P				
Q				

1/ Include deaths, retirements, etc., but exclude staff members on leave.
2/ Indicate "T" for teaching, "R" for research, and "E" for extension.
3/ Indicate B.S., M.S., Prelims, or Ph.D.
4/ Indicate professor, associate (professor), assistant (professor), instructor, or specialist.
5/ Indicate kind or place of employment and type of work. For example: U.S.D.A. - research, university-teaching, self employed-farming, private-marketing, etc.

7. Incoming Professional Staff in Agricultural Economics During the 5-Year Period, 1951-56.

Staff member (A, B, C, etc.)	Major type of work engaged in at time of 1st appointment in the department (T, R, or E) 1/	Degree status at time of joining department 2/	Rank of first appointment in the department 3/	Institution from which individual received:	
				B.S. degree	Advanced degree 4/
A					
B					
C					
D					
E					
F					
G					
H					
I					
J					
K					
L					
M					
N					
O					
P					
Q					

1/ Indicate "T" for teaching, "R" for research, and "E" for extension.
2/ Indicate B.S., M.S., Prelims, or Ph.D.
3/ Indicate professor, associate (professor), assistant (professor), instructor, or specialist.
4/ Highest advanced degree held (beyond B.S. degree) at time of joining the department.

8. Current Professional Staff Vacancies in Agricultural Economics - (July 1, 1956)

Type of work	Current staff vacancies in full-time equivalents
	Number
Teaching	
Research	
Extension	
TOTAL	

What are the general areas of work where current vacancies exist; what training and experience is desired of applicants; and what are your current problems of filling such vacancies?

Other comments with respect to problems of recruitment of professional staff and/or problems of maintaining a "full" staff:

9. Estimated Changes in Number of Professional Staff Members in Agricultural Economics During the 5-Year Period 1956-61.

Type of work	Estimated changes in number of staff members in full-time equivalents	
	Increase	Decrease
	Number	Number
Teaching.....		
Research.....		
Extension.....		
TOTAL.....		

For Increases, what are the general areas of work where new positions will develop; what training and experience will be desired of applicants; and what is the present outlook for filling such positions?

For Decreases, what are the general areas of work where positions will be curtailed; and what will be the reasons for this curtailment of work?

10. Average Salaries Paid (12-months basis) for Professional Staff in Agricultural Economics by Rank, July 1, 1956. 1/

Item	Professional staff members by major types of work engaged in: Teaching and/or Research staff members	Extension staff members
	Dollars	Dollars
Professor		
Associate Professor		
Assistant Professor		
Instructor		
Specialist		

1/ Include all staff members regardless of length of tenure with your department.

Are the above differentials between ranks equitable? Yes___ No___

If not, how should they be changed? _____

11. Average Salaries Paid (12-months basis) for Professional Staff in Agricultural Economics by Degree Status, July 1, 1956. 1/

Item	Professional staff members by major types of work engaged in: Teaching and/or Research staff members	Extension staff members
	Dollars	Dollars
B.S. or equivalent		
M.S. or equivalent		
Prelims for Ph.D. degree		
Ph.D. degree		

1/ Include all staff members regardless of length of tenure with your department.

Are the above differentials between degree status equitable?

Yes___ No___ If not, how should they be changed? _____

12. Research Funds from All Sources, Agricultural Economics, Specified Years.

Item	1954-55 Dollars	1955-56 Dollars
Federal:		
Hatch		
Adams		
Purnell		
B-J, Section 5		
B-J, Sec. 9 (b) 1 and 2		
B-J, Sec. 9 (b) 3		
B-J, Title II		
Other		
TOTAL FEDERAL FUNDS		
Non-Federal:		
State appropriations		
Grants 1/		
Fees		
Sales		
Balance from previous year		
Miscellaneous		
TOTAL NON-FEDERAL FUNDS		
GRAND TOTAL		

1/ Include special endowments, industrial fellowships, etc.

Contrast the use of research funds in your department with respect to major fields or areas of work between the pre-war period (1939-40) and the present period (1955-56):

Contrast the recruitment and assignment of research personnel in your department with respect to major fields or areas of work between the pre-war period (1939-40) and the present period (1955-56):

13. Teaching Funds from All Sources, Agricultural Economics, Specified Years

Item	1954-55 Dollars	1955-56 Dollars
Federal		
State and/or College		
Grant 1/		
Other		
TOTAL FUNDS		

1/ Include all special gifts, endowments, fellowships, etc.

14. Extension Funds from All Sources, Agricultural Economics, Specified Years.

Item	1954-55	1955-56
	Dollars	Dollars
Federal		
State and/or College		
County		
Other 1/		
TOTAL FUNDS		

1/ Include farmers' organizations, etc.

Contrast the use of Extension funds in Agricultural Economics at your institution with respect to major fields or areas of work between the pre-war period (1939-40) and the present period (1955-56):

Contrast the recruitment and assignment of Extension personnel in Agricultural Economics at your institution with respect to major fields or areas of work between the pre-war period (1939-40) and the present period (1955-56):

15. Undergraduate enrollment in Agricultural Economics and Related Data, Fall Term, Specified Years.

Year	Total undergraduate enrollment in your institution	Total Junior and Senior enrollment in:			Number of B.S. degrees awarded to majors in Ag. Econ.
		Institution	Agriculture	Agricultural Economics	
	Number	Number	Number	Number	Number
1939-40					
1944-45					
1949-50					
1954-55					
1955-56					

16. Graduate Student Enrollment 1/ in Agricultural Economics, Fall Term, Specified Years

Item	1939-40	1944-45	1949-50	1954-55	1955-56
	Number	Number	Number	Number	Number
M.S. candidates.....					
Ph.D. candidates....					
Post Doctoral.....					
Special.....					
TOTAL.....					

1/ Include both on-campus enrollment for specified years and those students formerly enrolled who were actively working on theses or other phases of a continuing graduate program in specified years.

What is the present outlook for changes in graduate enrollment in your department in the future?

17. Source of Graduate Students in Agricultural Economics, Fall Term, 1955-56.

Item	M.S. candidates	Ph.D. candidates	Indicate number, if any, recruited from full-time employment
	Number	Number	Number
Source of graduate students: 1/			
Your institution..................			
Other institutions:			
TOTAL GRADUATE STUDENTS 2/....			XXX

1/ Institution granting each student the highest degree held prior to his present enrollment at your institution.
2/ These totals should check with totals in last column of Question 16.

18. Total Number of Advanced Degrees Awarded in Agricultural Economics, 1/ Specified Years

Year	Masters	Ph.D.
	Number	Number
1939-40		
1940-41		
1941-42		
1942-43		
1943-44		
1944-45		
1945-46		
1946-47		
1947-48		
1948-49		
1949-50		
1950-51		
1951-52		
1952-53		
1953-54		
1954-55		
1955-56		

1/ Include Agricultural Economics degrees only. Do not include advanced degrees awarded to majors in general economics, consumer economics, general sociology, rural sociology, business administration, or statistics.

Comments on above: _____

19. First Positions Taken by Students Awarded Specified Degrees in Agricultural Economics from Your Institution 1955-56.

Item	B.S. graduates	M.S. graduates	Ph.D. graduates
	Number	Number	Number
Federal employment:			
Research			
Extension			
Service			
Foreign assignment			
State employment:			
Teaching			
Research			
Extension			
Service			
Military service			
Private employment:			
Production fields			
Marketing fields			
Sales, promotion, etc			
Research			
Other			
Self employment:			
Farming			
Other			
Graduate study:			
Your institution			
Other institution			
Returned to foreign countries			
TOTAL GRADUATES