SOCIAL SCIENCE RESEARCH COUNCIL

The Social Science Research Council is an incorporated body representing the following groups of scholars in the social sciences:

AMERICAN ANTEROFOLOGICAL ASSOCIATION.

AMERICAN ECONOMIC ASSOCIATION.

AMERICAN HISTORICAL ASSOCIATION.

AMERICAN POLITICAL SCIENCE ASSOCIATION.

AMERICAN PSYCHOLOGICAL ASSOCIATION.

AMERICAN SOCIOLOGICAL SOCIETY.

AMERICAN STATISTICAL ASSOCIATION.

The purposes of the Council are to further the development of research in the social sciences through planning and financing specific investigations, through granting fellowships for the training of personnel, through cooperation with existing agencies engaged in scientific work, and through a wide variety of allied activities.

Research in Farm Management

--Scope and Method--

Prepared under the direction of
The Advisory Committee on Social
and Economic Research in
Agriculture

JOHN D. BLACK, Editor

H. R. TOLLEY, Executive Secretary of Special Advisory Committee on Farm Management

SOCIAL SCIENCE RESEARCH COUNCIL

230 Park Avenue

New York City

ACKNOWLEDGMENTS

This report represents the joint effort of a large number of the experienced research workers in Farm Management in the United States. Many who have not contributed to its preparation failed to avail themselves of an opportunity to do so for lack of time or other reasons. A special advisory committee was designated by the Advisory Committee on Social and Economic Research in Agriculture to decide upon the general outline of this report and to approve it for publication.

In the preparation of the outline a considerable number of research workers in addition to the members of the Special Advisory Committee were consulted. The Chairman and Executive Secretary of this Special Advisory Committee solicited the assistance of the various workers who have contributed to the report, and performed the task of fitting together their contributions and filling in the gaps. The name of the principal contributor is indicated at the beginning of each section of the report.

Among the Farm Management workers in the United States are some conflicting points of view with respect to the organization of research in the field and the research technique best suited to specific projects. These points of view are not all discussed fully in this report, largely owing to the fact that some workers did not avail themselves of the opportunity to present their points of view.

At various places in the report the Chairman and the Executive Secretary have endeavored by footnotes and otherwise to indicate points on which there are conflicting views and to refer to articles and publications containing discussions of or exemplifying points of view and methods of attack differing from those presented herein.

The final manuscript of this report has been submitted for criticism and comment to all members of the Committee, but some have not found time to read and comment on all of the projects. Dr. Holmes would no doubt have indicated definite disagreement with more of the projects could he have found time to do so. Dr. Myers has indicated this by stating that "he is in hearty disagreement with the point of view and many of the details of a considerable number of the proj-

ects". In some cases, this disagreement is indicated in footnotes attached to individual projects.

Advisory Committee on Social and Economic Research in Agriculture.

John D. Black, Chairman, Harvard University.

EDMUND DES. BRUNNER, Institute for Social and Religious Research.

H. S. GRAVES, Yale University.

Lewis C. Gray, Bureau of Agricultural Economics.

FRANK H. KNIGHT, University of Chicago.

J. H. Kolb, University of Wisconsin.

R. E. MARSH, U. S. Forest Service.

EDWIN G. NOURSE, Brookings Institution.

DWIGHT SANDERSON, Cornell University.

H. R. Tolley, University of California.

M. L. Wilson, Montana State College.

Special Advisory Committee for this Report.

John D. Black, Chairman, Harvard University.

H. R. Tolley, Executive Secretary, University of California.

A. G. BLACK, Iowa State College.

I. G. Davis, Connecticut Agricultural College.

F. F. Elliott, Bureau of the Census.¹
Mordecai Ezekiel, Federal Farm
Board.¹

W. E. GRIMES, Kansas State College.

C. L. Holmes, Bureau of Agricultural Economics.

W. I. Myers, Cornell University.

J. D. Pore, Federal Farm Board.

M. L. Wilson, Montana State College.

⁽¹⁾ When this report was first planned, Dr. Elliott and Dr. Ezekiel were with the Bureau of Agricultural Economics, and Dr. Pope was with the Alabama Polytechnic Institute.

USES OF THIS REPORT

This report is No. 13 in a series on "Scope and Method" of rescarch in the various sub-fields of agricultural economics and rural sociology. This series of reports is part of a program of assistance to research in these fields, upon which the Advisory Committee on Social and Economic Research in Agriculture set forth in 1925 under instruction from the Social Science Research Council. Each report will undertake to outline the research of some sub-field of agricultural economics or rural sociology and then discuss the problems in methodology that are peculiar to it. The outline of any sub-field will be in large part in terms of a listing and discussion of specific research projects that have been undertaken or might be undertaken. Hence the discussion of methodology will be largely in terms of specific projects.

It is expected that these reports will be useful in the following ways: First, directors of experiment stations and chiefs of divisions of agricultural economics and of rural sociology in land-grant institutions in the United States, and persons similarly responsible for direction of the research in agricultural economics and rural sociology in other types of institutions, will find the outlines of the various sub-fields of much help in laying out continuing programs of research for their institutions. Second, individual research workers, graduate students looking for thesis subjects, and teachers conducting research seminars, as well as the agencies above named, will find the listing and discussions of projects helpful in choosing suitable research projects. Third, the descriptions of research already done will save research workers from duplicating other work and help them to find a way of building upon it successfully. Fourth, the discussion of the nature of a project and the qualitative background will reveal the body of the subject-matter which needs to be mastered for its intelligent prosecution, and the difficulties involved, and thus save many research workers from launching forth upon projects for which they have not yet qualified themselves, or which may be too difficult for all but the chosen few. Fifth, the analysis of methodology will furnish a basis for a more intelligent decision as to the procedures and methods which will lead to valid and usable results. Sixth, the discussion of methodology will also suggest helpful devices in technique and details of procedure that might not otherwise he brought to the attention of the research workers. Seventh, the discussions of both scope and methods will make clear to those organizing research in any field the contributions which workers on different subjects have to offer to it, and point the way to the form of collaboration needed.

LIST OF CONTRIBUTORS TO THIS REPORT

The parts of this report contributed by each of the following are indicated at the beginning of each section. Those interested are urged to correspond directly with the contributor with respect to any phase or detail of his discussion.

- A. G. Black, Chief, Agricultural Economics Section, Iowa State College, Ames, Iowa.
- JOHN D. BLACK, Professor, Department of Economics, Harvard University, Cambridge, Massachusetts; Director for the Social Science Research Council of the Project on Scope and Method of Research in Agricultural Economics and Rural Sociology.
- C. A. Bonnen, Research Specialist in Farm Management, Texas Agricultural Experiment Station, College Station, Texas.
- H. C. M. Case, Head, Department of Farm Organization and Management, University of Illinois, Urbana, Illinois.
- MARION CLAWSON, Assistant Agricultural Economist, Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.
- RALPH H. Colz, Extension Economist in Farm Management, College of Agriculture, University of Nebraska, Lincoln, Nebraska.
- M. R. Cooper, Senior Agricultural Economist, Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.
- I. G. Davis, Professor, Department of Agricultural Economics, Connecticut Agricultural College, Storrs, Connecticut.
- F. F. Elliott, Agricultural Economist, Bureau of the Census, United States Department of Commerce, Washington, D. C.
- MORDECAI EZEKIEL, Assistant Chief Economist, Federal Farm Board, Washington, D. C.
- L. P. Gabbard, Chief, Division of Farm and Ranch Economics, Texas Agricultural Experiment Station, College Station, Texas.
- VIRGIL D. GILMAN, Farm Management Demonstrator, Montana State College, Bozeman, Montana.
- W. E. Grimes, Head, Department of Agricultural Economics, Kansas State Agricultural College, Manhattan, Kansas.
- DONALD O. HAMMERBERG, Assistant Economist, Connecticut Agricultural College, Storrs, Connecticut.
- L. H. Hauter, Assistant Director and Extension Economist, New Mexico College of Agriculture and Mechanic Arts, State College, New Mexico.
- Harold Herges, Associate Professor, Department of Rural Economics, College of Agriculture, University of Nebraska, Lincoln, Nebraska.
- C. L. Holmes, Chief, Division of Farm Management and Costs, Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.
- Harold Howe, Associate Professor, Department of Agricultural Economics, Kansas State Agricultural College, Manhattan, Kansas.
- R. R. Huderson, Associate Professor, Department of Farm Management, College of Agriculture, University of Illinois, Urbana, Illinois.
- EDGAR B. HURD, Associate Agricultural Economist, Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.
- R. D. Jennines, Livestock Specialist, Bureau of the Census, United States Department of Commerce, Washington, D. C.
- R. S. Kiffs, Associate Agricultural Economist, Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.
- R. L. MIGHELL, Assistant Research Professor, Department of Farm Management, Massachusetts State College, Amberst, Massachusetts.
- D. Cuptus Mumford, Associate Agricultural Economist, Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.

- KENNETH H. MYERS, Associate Agricultural Economist, Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.
- George A. Pond, Associate Professor of Farm Management, Division of Agricultural Economics, University of Minnesota, University Farm, St. Paul, Minnesota.

minnesoca.

- J. D. Pope, Senior Economist, Federal Farm Board, Washington, D. C.
- EMIL RAUCHENSTEIN, Senior Agricultural Economist, Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.
- WALTER J. ROTH, Senior Agricultural Economist, Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.
- David Rozman, Assistant Research Professor, Department of Agricultural Economics, Massachusetts State College, Amherst, Massachusetts.
- W. P. Thomas, Agricultural Economist, Utah State Agricultural College, Logan, Utah.
- H. R. Toller, Director, Giannini Foundation of Agricultural Economics, University of California, Berkeley, California.
- H. R. Wellman, Extension Specialist in Agricultural Economics, College of Agriculture, University of California, Berkeley, California.
- ORIS V. Wells, Assistant Agricultural Economist, Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.
- DAVID L. WICKERS, Agricultural Economist, Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.
- M. L. Wilson, Head, Department of Agricultural Economics, Montana State College, Bozeman, Montana.
- WALTER W. WILCOX, Junior Agricultural Economist, Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.
- H. C. Wоорworth, Agricultural Economist, Agricultural Experiment Station, University of New Hampshire, Durham, New Hampshire.

TABLE OF CONTENTS

			I aye
Objectives		***************************************	3
Definition of	the F	ield (Tolley)	4
Farm Manaş	gement	as Applied Science (Black)	11
Recent Tren	ds (R	oth, Tolley)	16
Suggested P	rocedu	re for Specific Research Projects (Tolley, Black)	23
Project	1.	Type-of-Farming Areas (Elliott, Tolley)	28
Project	2.	Classifying Farming Types (Davis, Eliott)	36
Project	3.	Accounting for Changes in Farming Types (J. D. Black, Hurd)	48
Project	4.	A Type-of-Farming Study in a State	67
		Utah (Clawson, Thomas)	68
		Nebraska (Elliott, Hedges)	74
		Connecticut (Davis)	76
		Comments on Type-of-Farming Studies (Davis, Tolley)	78
Project	5.	Current Changes in Farming (Hauter)	81
Project	6.	Interregional Competition in Agricultural Production (J. D. Black)	87
Project	7.	The Economics of Production of a Commodity (Cooper, Jennings)	101
Project	8.	Most Advantageous Organization and Practices in an Area (Ezekiel)	109
Project	8A,	An Example of a Synthetic Study (Gabbard, Bonnen)	133
Project	9	Effect of Price Changes in Farm Organization (Wells)	-137
Project	10.	Adjustments to Obtain a Given Income (Wells)	143
Project	11.	Adjustments Based on the Outlook (Ezekiel, J. D. Black)	147
Project	12.	Planning the Agriculture of an Area (J. D. Black)	154
Project	13.	An Agricultural Program for a "Problem Area" (Tolley and Wilson)	156
Project	14.	Testing Reorganization Plans (Roth, Kifer)	159
Project	15.	The Experimental Method in Farm Management Research (Gilman, Wilson)	169
Project	16.	Prices to be Received by Farmers (Wellman)	179
Project	17.	Proportional Combination of the Factors of Production (A. G. Black)	181
P roje ct	18.	Dr. W. J. Spillman's Project for Experimental Determination of the Most Economical Rate of Use of Fertilizer (Tolley)	189
Troject	10.		1

Project 19.	Statistical Determination of Economical Rate of Feeding Dairy Cows (Pond)	196
Project 20.	Relative Economy of Different Farm Practices (Pope, Tolley, Kifer, Myers, Case, J. D. Black)	201 1
Project 21.	Case Study of Orchard Management Problems (Woodworth)	224
Project 22.	Variations in Labor Inputs (Hammerberg, Mighell)	228
Project 23.	The Economical Use of Family Labor (Rauchenstein)	238
Project 24.	Economical Farm Layout (Kifer, Tolley)	242
Project 25.	Layout of Farm Buildings and Farmstead (Listed only)	250
Project 26.	Standards of Performance or Operating Ratios, Etc. (J. D. Black)	250
Project 27.	Unit Cost of Production of Farm Products (J. D. Black)	262
Project 28.	Developing Systems of Records and Accounts (Hudelson, Cole)	271
Project 29.	Economy of Loans on Farming Operations (A. G. Black, Grimes, Howe, Wickens)	276
Project 30.	Financial Programs of Farm Families (Howe, Tolley)	281
Project 81.	Farm Management and Leasing Systems (See Land Tenure)	284
Project 32.	Tenure and Quality of Farming (See Land Tenure)	284
Project 33.	Part-time Farming (J. D. Black, Rozman)	284
Project 34.	The Economies of Large-scale Farming (Mumford, Tolley)	287
Project 85.	Human Aspects of Entrepreneurship in Farming (Wilcox, Pond)	305
Project 36.	Agricultural Entrepreneurship (Holmes)	313
Project 87.	Case Studies of the Entire Farm Business (J. D. Black)	317
Project 38.	Description of Agriculture in an Area (J. D. Black)	320 、