



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

**A
SURVEY OF
AGRICULTURAL
ECONOMICS
LITERATURE
VOLUME 4**

Agriculture
in Economic Development,
1940s to 1990s

Lee R. Martin, editor

Published by the University of Minnesota Press
for the American Agricultural Economics Association

Copyright 1992 by The American Agricultural Economics Association

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher.

Every effort has been made to obtain permission to reproduce copyright material in this book. The publishers ask copyright holders to contact them if permission has inadvertently not been sought or if proper acknowledgment has not been made.

Published by the University of Minnesota Press
2037 University Avenue Southeast, Minneapolis, MN 55414
Printed in the United States of America on acid-free paper

Library of Congress Cataloging-in-Publication Data

A Survey of agricultural economics literature.

Includes bibliographies.

Contents: v. 1. Traditional fields of agricultural economics, 1940s to 1970s.—
v. 2. Quantitative methods in agricultural economics, 1940s to 1970s.—[etc.]—
v. 4. Agriculture in economic development, 1940s to 1990s

1. Agriculture—Economic aspects—Research. I. Martin, Lee R. II. American Agricultural Economics Association.

HD1410.5.S88 1977 338.1

76-27968

ISBN 0-8166-0801-6 (v. 1)

ISBN 0-8166-1942-5 (v. 4)

The University of Minnesota is an
equal-opportunity educator and employer.

Fore
Abb
PAI

Chaj

Chaj

Chaj

Copyright 1992 by The American Agricultural Economics Association

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher.

Every effort has been made to obtain permission to reproduce copyright material in this book. The publishers ask copyright holders to contact them if permission has inadvertently not been sought or if proper acknowledgment has not been made.

Published by the University of Minnesota Press
2037 University Avenue Southeast, Minneapolis, MN 55414
Printed in the United States of America on acid-free paper

Library of Congress Cataloging-in-Publication Data

A Survey of agricultural economics literature.

Includes bibliographies.

Contents: v. 1. Traditional fields of agricultural economics, 1940s to 1970s.—

v. 2. Quantitative methods in agricultural economics, 1940s to 1970s.—[etc.]—

v. 4. Agriculture in economic development, 1940s to 1990s

1. Agriculture—Economic aspects—Research. I. Martin, Lee R. II. American Agricultural Economics Association.

HD1410.5.S88 1977 338.1

76-27968

ISBN 0-8166-0801-6 (v. 1)

ISBN 0-8166-1942-5 (v. 4)

The University of Minnesota is an
equal-opportunity educator and employer.

Contents

Foreword.....	xvii
Abbreviations Used in Texts, Notes, and References.....	xxiv
PART ONE. Agricultural Development in Sub-Saharan Africa: A	
Critical Survey	
<i>Carl K. Eicher and Doyle C. Baker</i>	3
<i>Chapter I. Introduction</i>	3
1. Scope of Review	5
2. Standard References	8
3. Overview of Agricultural Systems	10
FARMING SYSTEMS	10
<i>Chapter II. Historical and Theoretical Perspectives</i>	16
1. Historical Perspective.....	17
PRECOLONIAL ECONOMIC ACTIVITY: 1800 TO 1880s	17
THE COLONIAL PERIOD: 1880-1960	18
TRANSITION TO INDEPENDENCE	22
2. Theoretical Perspectives	23
ECONOMIC BEHAVIOR OF FARMERS AND TRADERS	24
WESTERN DEVELOPMENT MODELS	29
POLITICAL ECONOMY AND RADICAL PERSPECTIVE	32
<i>Chapter III. Food and Agricultural Policy</i>	36
1. Agrarian Capitalism and Socialism	36
2. Planning and Agricultural Sector Modeling	39
3. Large <i>versus</i> Small Farms	40
SMALL HOLDER FARMING: A DESCRIPTIVE OVERVIEW	40

vi CONTENTS

LARGE-SCALE FARMING: AN OVERVIEW	41
SMALL-SCALE AND LARGE-SCALE FARMING IN NIGERIA	43
ASSESSMENT	44
4. Marketing Boards and Food Grain Boards	44
MARKETING BOARDS	45
FOOD GRAIN BOARDS	46
5. Agricultural Prices	48
6. Rural Development Programs	50
COMMUNITY DEVELOPMENT AND ANIMATION RURALE	50
INTEGRATED RURAL DEVELOPMENT	51
7. Accelerated Food Production Campaigns	53
8. Synthesis	54
<i>Chapter IV. Smallholder Farming</i>	55
1. Institutions Carrying Out Farm Level Studies	55
2. Methodological Issues in Rural Surveys	59
ISSUES IN SURVEY DESIGN	59
REFERENCES ON SURVEY DESIGN	63
DATA PROCESSING	64
3. Applications of Analytical Techniques	66
BUDGETING	66
REGRESSION ANALYSIS	68
PROGRAMMING MODELS	76
4. Research on Selected Topics	79
SOCIAL AND CULTURAL ISSUES	79
LAND TENURE	82
LABOR USE	83
SUPPLY OF LABOR	86
ALLOCATIVE EFFICIENCY	89
RETURNS TO LAND AND LABOR	91
LAND INTENSIFICATION	93
5. Synthesis	96
<i>Chapter V. Technical Change</i>	97
1. Historical Perspective	98
2. Agronomic Research	100
CROP IMPROVEMENT	101
SOIL FERTILITY AND FERTILIZER	107
RESEARCH ON MANAGERIAL PRACTICES	111
SYNTHESIS	114
3. Irrigation	115
POTENTIAL FOR IRRIGATION	116
COUNTRY AND REGIONAL EXPERIENCES	116

ECONOMICS OF IRRIGATION	118
SYNTHESIS AND RESEARCH DIRECTION	119
IRRIGATION REFERENCES	120
4. Animal and Tractor Mechanization	120
METHODOLOGICAL ISSUES	121
ANIMAL TRACTION	122
TRACTOR MECHANIZATION	127
SYNTHESIS	129
5. Agricultural Extension	130
TRAINING AND VISIT	133
6. Farming Systems Research (FSR)	134
<i>Chapter VI. Livestock</i>	138
1. Behavior of Herders: Empirical Evidence	139
2. Livestock Production: Major Issues for Researchers	142
IMPROVING THE DATA BASE	143
HERDERS OR RANCHERS?	143
CATTLE FEEDING AND ANIMAL NUTRITION	145
CATTLE DISEASES AND PARASITES	146
RANGE MANAGEMENT AND LAND USE PLANNING	147
SMALL-SCALE FATTENING SCHEMES	149
3. Small Ruminants	150
4. Research Direction	150
5. Livestock References	150
<i>Chapter VII. Trade, Marketing, Credit and Consumption</i>	151
1. International Agricultural Trade	152
EXPORT LINKAGES	152
INTRA-AFRICA TRADE	152
REGIONAL INTEGRATION	153
SPECIAL TRADE AGREEMENTS	154
FOOD AID	154
2. Local Trade and Food Marketing	155
STUDIES BY GEOGRAPHERS AND ANTHROPOLOGISTS	155
COMPETITIVENESS AND EFFICIENCY OF LOCAL TRADE	157
LIVESTOCK MARKETING	160
FISH MARKETING	161
3. Transportation	162
4. Processing	163
5. Storage	166
METHODOLOGICAL ISSUES	166
ON-FARM STORAGE	167
OFF-FARM STORAGE	168

STORAGE COSTS	169
STORAGE LOSSES	169
IMPROVEMENTS IN TRADITIONAL GRANARIES	170
6. Credit	170
THEORETICAL FRAMEWORK	171
INFORMAL LENDERS	171
GOVERNMENT CREDIT INSTITUTIONS	172
SHOULD INTEREST RATES BE SUBSIDIZED?	172
CREDIT COMPONENTS OF TECHNICAL PACKAGES	173
RURAL SAVINGS	174
POLICY DIRECTION	174
RESEARCH DIRECTION	175
7. Cooperatives	175
8. Consumption	177
THEORETICAL ISSUES	177
METHODOLOGICAL ISSUES	178
EMPIRICAL FINDINGS	179
SYNTHESIS	181
9. Nutrition	182
SEASONAL HUNGER	183
IMPACT OF CASH CROP EXPANSION ON NUTRITIONAL STATUS	183
STRATEGIES FOR ALLEVIATING MALNUTRITION	185
<i>Chapter VIII. Migration, Employment, and Equity Issues</i>	185
1. Income Distribution and Inequality	186
HISTORICAL PERSPECTIVE	186
METHODOLOGICAL ISSUES	186
EMPIRICAL EVIDENCE	187
RESEARCH AGENDA	189
2. Population	190
3. Migration	192
THEORETICAL PERSPECTIVES	193
METHODOLOGICAL ISSUES	194
SEASONAL AND RURAL TO URBAN MIGRATION	195
WHO BENEFITS FROM MIGRATION?	197
SYNTHESIS	197
4. Rural Employment	199
5. Women in Development	200
EMPIRICAL RESULTS	200
NEEDED RESEARCH	202
6. Rural Small-Scale Industry	202
THEORETICAL ISSUES	202

EMPIRICAL RESULTS	203
POLICY DIRECTION	205
RESEARCH DIRECTION	205
7. Fisheries	205
SMALL-SCALE (ARTISAN) FISHING	206
RESEARCH DIRECTION	207
8. Recovery of the Sahel	207
RESEARCH FINDINGS	210
ASSESSMENT	211
<i>Chapter IX. Synthesis and Research Priorities for the 1990s</i>	211
1. Synthesis	211
STATUS OF AFRICA AFTER THREE DECADES OF INDEPENDENCE	214
2. Research Priorities	215
AGRICULTURAL AND INDUSTRIAL SECTOR INTERACTIONS	217
MACROECONOMICS OF FOOD AND AGRICULTURAL POLICY	219
INSTITUTIONAL INNOVATIONS FOR AGRARIAN CHANGE	220
RURAL POVERTY AND INEQUALITY	222
THE ECONOMICS OF PRODUCING FOOD, LIVESTOCK, AND EXPORT COMMODITIES	224
IRRIGATION: TECHNICAL, ECONOMIC, INSTITUTIONAL AND EQUITY ISSUES ..	226
FOOD MARKETING AND CONSUMPTION	227
FOOD SECURITY POLICY OPTIONS	229
DROUGHT AND FAMINE	230
FAMILY FOOD SECURITY	232
NATIONAL FOOD SECURITY POLICY OPTIONS	233
<i>Notes</i>	234
<i>References</i>	250

**PART TWO. Agriculture in Economic Development: Theories,
Findings, and Challenges in an Asian Context**

<i>John W. Mellor and Mohinder S. Mudahar</i>	331
<i>Chapter I. Introduction</i>	331
<i>Chapter II. Agriculture Characteristics and Role</i>	335
1. Stages of Agricultural Development	335
2. Special Characteristics of Asian Agriculture	335
3. Contributions of Agriculture	340
4. Structural Change and Growth Patterns	340
<i>Chapter III. Agriculture and Theories of Economic Development</i>	342
1. Key Economic Relationships	342
LAND AND LAND-AUGMENTING TECHNOLOGICAL CHANGE	342

INELASTIC AGGREGATE SUPPLY OF FOODGRAINS	343
HIGH MARGINAL PROPENSITY OF LABORERS TO CONSUME FOODGRAINS	343
ELASTIC SUPPLY OF LABOR	344
LESS-THAN-PERFECT SUBSTITUTABILITY OF CAPITAL FOR LABOR	344
2. Aggregate Theories of Economic Growth	345
3. Multisector Models of Economic Growth	345
4. Dualistic Development Models	347
POPULATION GROWTH AND LABOR TRANSFER	347
WAGE GOODS PRODUCTION	348
WAGE GOODS TRANSFER	349
CAPITAL FORMATION AND TRANSFER	350
5. Market Orientation	350
<i>Chapter IV. Agricultural Production Behavior, Technology, and Policy</i>	351
1. Technology and Agricultural Productivity	351
GREEN REVOLUTION AND SOURCES OF GROWTH	351
CONTRIBUTION AND DEMAND FOR FERTILIZER	354
ROLE OF IRRIGATION AND WATER MANAGEMENT	357
CONSTRAINTS TO HIGHER CROP YIELDS	359
VARIABILITY IN CEREAL PRODUCTION	360
2. Farm Size, Productivity, and Resource Allocation	360
INVERSE RELATIONSHIP BETWEEN FARM SIZE AND PRODUCTIVITY	360
EFFICIENCY OF RESOURCE ALLOCATION IN AGRICULTURE	363
3. Tenancy, Productivity, and Resource Allocation	365
TENANCY ARRANGEMENT	365
RELATIVE EFFICIENCY OF SHARECROPPING	366
4. Rationality, Incentives, and Price Policy	367
SUPPLY RESPONSE AND PRICE POLICY	367
CROP PRICE SUPPORT AND INPUT SUBSIDY	372
ECONOMIC INCENTIVES AND AGRICULTURAL POLICIES	374
PRICE STABILIZATION AND INTERVENTION POLICIES	377
5. Rural Credit	378
<i>Chapter V. Agricultural Research and Transfer of Technology</i>	381
1. Investment in Agricultural Research	381
2. Contribution of Agricultural Research	383
3. The Transfer of Agricultural Technology and Research	383
4. International Agricultural Research Centers	387
<i>Chapter VI. Marketable Surplus and Marketing Behavior</i>	389
1. Price, Output, and Marketable Surplus	389
2. Farm Size and Marketable Surplus	391
3. Sectoral Terms of Trade and Marketable Surplus	391
4. Agricultural Marketing and Its Efficiency	392

<i>Chapter VII. Modernizing Agriculture and Rural Welfare</i>	393
1. Food, Nutrition, and Consumption Patterns	393
INCIDENCE OF MALNUTRITION	393
GREEN REVOLUTION, NUTRITION, AND PRICES	395
TARGETED NUTRITION AND SUBSIDY PROGRAMS	397
INCOME AND CONSUMPTION PATTERNS	398
2. Labor, Employment, and Wages	399
THE NATURE OF RURAL LABOR SUPPLY	399
THE DEMAND FOR RURAL LABOR	400
3. Poverty, Equity and Technology	401
POVERTY PROBLEM	401
TECHNOLOGY, GROWTH, AND EQUITY	402
POVERTY ALLEVIATION STRATEGY	405
4. Health and Education	407
IMPROVED HEALTH	407
RURAL EDUCATION	408
5. Environmental Considerations	409
6. Women in Development	411
<i>Chapter VIII. Growth Linkages and Agricultural Development</i>	412
1. Sectoral Linkages and Development Strategy	412
2. Growth Linkages and Agricultural Development	413
<i>Chapter IX. International Trade and Resource Transfers</i>	415
1. Resources for Economic Development	415
2. Agricultural Trade and Economic Development	416
AGRICULTURAL TRADE PATTERNS AND GROWTH STRATEGY	416
AGRICULTURAL PROTECTIONISM AND ECONOMIC DEVELOPMENT	420
TRADE BARRIERS AND INTERNATIONAL TRADE NEGOTIATIONS	423
COMMODITY PRICES, MARKET INSTABILITY, AND TRADE	427
TRADE ISSUES, INFORMATION NEEDS, AND POLICY	429
3. National and International Resource Transfers	429
FOREIGN ASSISTANCE AND DEVELOPMENT	429
TRENDS IN MULTILATERAL ASSISTANCE	430
FOOD AID TRENDS AND IMPACT	432
<i>Chapter X. Implementation and Assessment of Agricultural Strategy</i>	436
1. Implementation of Agricultural Development Strategy	436
2. Evaluation of Agricultural Development Strategy	438
<i>Chapter XI. Summary, Conclusions, and Research Agenda</i>	439
<i>Notes</i>	443
<i>References</i>	454
<i>Statistical References</i>	538
1. General Statistical References	538

2. Statistical References for Specific Asian Countries	539
--	-----

**PART THREE. The Theory, Empirical Evidence, and Debates on
Agricultural Development Issues in Latin America:**

A Selective Survey

<i>G. Edward Schuh and Antonio Salazar P. Brandão</i>	545
<i>Preface</i>	545
<i>Chapter I. Introduction</i>	546
1. Historical Background on the Region	546
2. Economic Background of the Region	549
3. Previous Surveys of the Literature on Agricultural Development in Latin America	559
<i>Chapter II. Agriculture in Theories of Economic Development</i>	567
1. The Prebisch Thesis	571
2. The Economic Commission for Latin America (ECLA), Structuralism and Dependency Theory	585
3. The Monetarist-Structuralist Controversy	599
MONETARISM	601
STRUCTURALISM	604
EMPIRICAL TESTS OF THE STRUCTURALIST AND MONETARIST MODELS	608
CONCLUDING COMMENTS	609
4. Summary	610
<i>Chapter III. Theories of Agricultural Development</i>	611
1. The Hayami-Ruttan Model	612
2. Schuh's Eclectic Interpretation of Brazil's Agricultural Modernization	614
3. Other Brazilian Applications of the Hayami-Ruttan Model	620
4. Paiva's Model of Technological Dualism	624
5. De Janvrys Model of Argentine Agricultural Development	628
6. Tests of the Urban-Industrial Impact Model	634
7. Resource-Based Development and the Frontier	637
8. Furtado's Structuralist Model of Agricultural Stagnation	645
9. Socialist Agriculture	650
10. Concluding Comments	655
<i>Chapter IV. Supply Response, Marketing, Consumption, and Production: Empirical Studies</i>	655
1. The Evidence on Supply Response	655
STUDIES OF ANNUAL CROPS	658
STUDIES OF PERENNIAL CROPS	667
STUDIES OF THE LIVESTOCK SECTOR	671

CONCLUDING COMMENTS	677
2. Marketing Studies	682
3. Consumption Studies	686
4. Production Studies	691
5. Concluding Comments	692
<i>Chapter V. The Distribution of Income and Empirical Studies</i>	693
1. The Income Distribution Debate in Brazil	694
CHANGES IN BRAZIL'S DISTRIBUTION OF INCOME IN THE 1960s	694
THE CAUSES OF THE WORSENING OF THE INCOME DISTRIBUTION IN THE 1960s	704
CONCLUDING COMMENTS ON THE INCOME DISTRIBUTION DEBATE IN BRAZIL	723
2. Colombia	724
3. Mexico	726
4. Other Studies	727
5. Concluding Comments	731
<i>Chapter VI. Trade, Exchange Rates, and Trade Performance: A Policy Perspective</i>	734
1. Trade and Exchange Rate Policies and Trade Performance: Selected Countries and Issues	734
ARGENTINA	735
BRAZIL	744
COLOMBIA	760
CHILE	770
MEXICO	773
2. Wheat Imports: Indirect Discrimination Against Traditional Commodities	781
3. Policy Reform in the Southern Cone	784
4. Summary, Conclusions and Some Related Literature	788
<i>Chapter VII. Common Markets, Customs Unions, and Free Trade Associations</i> ..	795
1. Latin American Free Trade Association (LAFTA)	796
2. Andean Common Market	797
3. Central American Common Market (CACM)	798
4. Concluding Comments	805
<i>Chapter VIII. Domestic Commodity Markets, Modern Input Markets, and Traditional Factor Markets: A Policy Perspective</i>	805
1. Domestic Food Policies, Agricultural Policies, and Modern Input Policies	806
2. Contractual Arrangements Among Factors of Production	810
3. Land Tenancy Reform—General Issues	813
4. The Latin American Land Reform Literature	820

5. Agricultural Credit and Credit Policies	830
THE INSTITUTIONAL APPROACH: CREDIT POLICIES	831
THE INSTITUTIONAL APPROACH: EVALUATIONS	835
THE FINANCIAL MARKET APPROACH	840
INFORMAL CREDIT MARKETS	846
CONCLUDING COMMENTS	848
6. Labor Markets and Migration	850
CONCLUDING COMMENTS	857
7. Concluding Remarks on Product and Factor Market Research and Policy	857
<i>Chapter IX. Human Capital: A Policy Perspective</i>	858
1. Education	859
THE RATIONALE FOR INVESTING IN EDUCATION	860
EVIDENCE ON THE RATES OF RETURN TO INVESTMENTS IN EDUCATION ...	862
EDUCATION AND THE DISTRIBUTION OF INCOME	865
EDUCATION AND PRODUCTIVITY	869
EDUCATION, DEMAND FOR CHILDREN, AND POPULATION GROWTH RATES ..	870
EDUCATION AND COMPARATIVE ADVANTAGE	872
CONCLUDING COMMENTS	872
2. Nutrition	873
3. Research and Extension	878
INSTITUTIONAL ISSUES	883
OTHER STUDIES	889
CONCLUDING COMMENTS	890
4. Conclusions	890
<i>Chapter X. Suggestions for Agricultural Development Policy and Concluding Comments</i>	891
1. Functional Policy Issues	892
PRICE AND INCENTIVE POLICY	894
FACTOR MARKET POLICIES	895
INVESTMENT IN HUMAN CAPITAL	896
INVESTMENT IN PHYSICAL INFRASTRUCTURE	898
2. Cross-Cutting Policy Issues	899
MOBILIZATION OF RESOURCES FROM AGRICULTURE	899
IMPROVING THE DISTRIBUTION OF INCOME	900
DECLINE IN THE EXTERNAL TERMS OF TRADE	900
POPULATION POLICY	902
3. International Institutional Issues	903
4. Learning by Doing	904
5. Concluding Comments on the Literature of Latin American Agricultural Development	905

Notes 906
 References 913

PART FOUR. Philosophic Foundations of Agricultural Economic Thought from World War II to the mid-1970s

Glenn L. Johnson 970

Chapter I. Introduction 970

1. Structure of This Review 970

2. Coverage 971

3. Meanings and Basic Concepts 972

 THE POSITIVE, NONNORMATIVE, AND PRESCRIPTIVE 972

 ANALYTIC AND SYNTHETIC 973

 DISCIPLINARY, SUBJECT-MATTER AND PROBLEM-SOLVING EFFORTS 973

 COHERENCE, CORRESPONDENCE, CLARITY, AND WORKABILITY 974

Chapter II. The Beginning Inventory 976

1. Wisconsin Institutionalism 976

2. Cornell Empiricism 978

3. Neoclassical Utilitarianism 979

4. Theoretical Statistics and Econometrics 981

Chapter III. Developments from World War II through 1976 981

1. A Short Summary of Agricultural Economics Work, 1946-76 982

2. The Philosophical and Methodological Significance of Selected Developments in Agricultural Economics, 1946-76 985

 THE POST-WORLD WAR II RISE OF NEOCLASSICAL UTILITARIANISM IN AGRICULTURAL ECONOMICS 985

 THE POST-WORLD WAR II UPSURGE IN STATISTICS AND ECONOMETRICS—A STRENGTHENING OF POSITIVE EMPIRICISM 991

 PRAGMATISM AND INSTITUTIONALISM ON THE DEFENSE 992

 DISCIPLINARY EXCELLENCE VS. PROBLEM-SOLVING AND SUBJECT-MATTER EFFORTS 993

 UNEASE AND LOSS OF PURPOSE 996

 THE RESURGENCE OF PRAGMATISM AND INSTITUTIONALISM 997

 RESEARCH WORK ON PRIVATE AND PUBLIC DECISION-MAKING PROCESSES 999

3. The Need to Study the Normative 1007

 PRAGMATISM 1009

 A QUANTIFICATION OF PRAGMATISM 1010

4. Individualism, Liberalism, Existentialism, Reactionaryism, and Processes 1012

5. Marxism 1014

6. The International Association of Agricultural Economists 1015

<i>Chapter IV. The Ending Inventory</i>	1016
1. Positivism	1016
2. Neoclassical Utilitarian Economics	1018
3. Residual Impacts of the Late 1960s	1019
4. Normativism	1020
5. Pragmatism	1021
6. Normativism and Positivism in Subject-Matter Research	1022
7. Prescriptive Research	1022
8. The Meaning of Truth in Economics	1023
<i>Chapter V. In Conclusion</i>	1025
<i>Notes</i>	1027
<i>References</i>	1027

Foreword

In March 1968, C. E. Bishop, president of the American Agricultural Economics Association, appointed a committee to investigate the need for a major survey of the agricultural economics literature published from the 1940s to the 1970s. The committee found that an extensive assessment of this body of literature would indeed be of value to research workers, teachers, extension workers, and graduate students in economics and economic statistics, sociology, geography, political science, and anthropology, as well as teachers, research workers, extension workers, and graduate students in the different fields of technical agriculture. In the end the committee was assigned the responsibility for planning the project and commissioning authors to prepare the papers.

The original members of the committee were Glenn L. Johnson (Michigan State University), M. M. Kelso (University of Arizona), James E. Martin (Virginia Polytechnic Institute), M. L. Upchurch (Economic Research Service of the United States Department of Agriculture), and Lee R. Martin, chairman (University of Minnesota). Early in 1969, James E. Martin resigned from the committee, and several new members—John P. Doll (University of Missouri), Peter G. Helmberger (University of Wisconsin), J. Patrick Madden (Pennsylvania State University), and Edward W. Tyrchniewicz (University of Manitoba)—were appointed. As its first step, the committee tentatively identified the fields to be covered and commissioned highly regarded members of the profession to draw up outlines of the coverage to be undertaken in the different fields. These outlines were used in the selection of economists and sociologists to prepare the surveys and in negotiating agreements with prospective authors. Once the surveys were prepared, the committee again obtained assistance from highly competent members of the profession to make critical, constructive evaluations of

each survey draft. In the stages of outline preparations and paper reviews, the committee sought to strike a representative balance among differing viewpoints in each field. For the preparation of the papers themselves, the committee obtained the services of outstanding rural social scientists with special competence in the respective fields.

In connection with the surveys published in this volume, substantial assistance was provided by the following individuals:

PART ONE. Agricultural Development in Sub-Saharan Africa: A Critical Survey. Preparation of outline: Carl K. Eicher. Review of paper: Dunstan Spencer, Derek Byerlee.

PART TWO. Agriculture in Economic Development: Theories, Findings, and Challenges in an Asian Context. Preparation of outline: John W. Mellor. Review of paper: Yujiro Hayami, Vernon Ruttan, Randy Barker, Dave Feeny, and Delane Welsch.

PART THREE. The Theory, Empirical Evidence, and Debates on Agricultural Development Issues in Latin America: A Selective Survey. Preparation of outline: G. Edward Schuh. Review of paper: Alain de Janvry, Richard A. King, William C. Thiesenhusen, Alberto Valdés, and Robert Stevens.

PART FOUR. Philosophic Foundations of Agricultural Economic Thought from World War II to the Mid-1970s. Preparation of outline: Glenn L. Johnson. Review of paper: W. Burl Back, M. M. Kelso, the late A.N. Halter.

This list includes only the official reviewers who acted on behalf of the association and the committee. Many other individuals who assisted the authors of the surveys in different ways are cited in the notes preceding most of the surveys. Authors were urged to incorporate into their surveys the comments and suggestions provided by the respective reviewers, but final decisions about the content of the surveys were left to the discretion of the authors.

The Committee on Publication of Postwar Literature Reviews arranged for publication of the four-volume set of literature surveys. Members of that committee were Emerson M. Babb (chairman), J. Patrick Madden, Lee R. Martin, and the late John C. Redman. Neil Harl provided valuable assistance to both committees in the publication phase.

On behalf of the members of the association, the Postwar Literature Review Committee, and the Publication Committee, I wish to express sincere gratitude to the authors of the surveys in the volume and to the advisers, reviewers, and others who participated in the planning and implementation of this project.

Finally, I would like to direct readers' attention to literature surveys of some

closely related fields of agricultural economics—surveys that both complement and supplement the surveys in the four volumes.

The following surveys have been published in an Australian journal, the *Review of Marketing and Agricultural Economics*.

- Weinschenck, G., W. Henricksmeier, and F. Aldinger [1969]. "The Theory of Spatial Equilibrium and Optimum Location in Agriculture: A Survey." 37(1):3-70.
- Renborg, U. [1970]. "Growth of the Agricultural Firm: Problems and Theories." 38(2):51-101.
- Dillon, J. L. [1971]. "An Expository Review of Bernoullian Decision Theory in Agriculture: Is Utility Futility?" 39(1):3-80.
- Gray, R. W., and D. J. S. Rutledge [1971]. "The Economics of Commodity Futures Markets: A Survey." 39(4):57-108.
- Breimyer, H. F. [1973]. "The Economics of Agricultural Marketing: A Survey." 41(4):115-165.
- Anderson, J. R. [1974]. "Simulation: Methodology and Application in Agricultural Economics." 42(1):3-55.
- Richardson, R. A. [1976]. "Structural Estimates of Domestic Demand for Agricultural Products in Australia: A Review." 44(3):71-100.
- Dillon, J. L., and C. Perry [1977]. "Multiattribute Utility Theory, Multiple Objectives and Uncertainty in *Ex Ante* Project Evaluation." 45(1):3-27.
- Anderson, J. R. [1979]. "Impacts of Climatic Variability in Australian Agriculture." 47(3):147-177.
- Greig, I. D. [1981]. "Agricultural Research Management and the *Ex Ante* Evaluation of Research Proposals: A Review." 49(2):73-94.
- Kennedy, J. O. S. [1981]. "Applications of Dynamic Programming to Agriculture, Forestry and Fisheries: Review and Prognosis." 49(3):141-173.
- Godden, D. [1982]. "Plant Variety Rights in Australia: Some Economic Issues." 50(1):51-95.
- Randall, A. [1982]. "Economic Surplus Concepts and Their Use in Benefit Cost Analysis." 50(2):135-163.
- Mules, T. J. [1983]. "Input-Output Analyses in Australia: An Agricultural Perspective." 51(1):9-30.
- Sgro, P. M. [1983]. "A Selective Review of Developments in International Trade Theory: Commercial Policy and Free Trade." 51(1):31-50.
- Colman, D. [1983]. "A Review of the Arts of Supply Response Analysis." 51:201-230.
- Davidson, B. R. [1984]. "A Preliminary Benefit Cost Analysis of the Inland Diversion of the Coastal Rivers of New South Wales." 52(1):23-47.
- McCarl, B. [1984]. "Model Validation: An Overview with Some Emphasis on Risk Models." 52(3):153-173.

- Fisher, B. [1985]. "Frontiers in Agricultural Policy Research." 53(2):74-81.
- Throsby, C. D. [1986]. "Agriculture in the Economy: The Evolution of Economists' Perceptions over Three Centuries." 54(3):5-48.
- Gerritsen, R., and A. Murray [1987]. "Rural Policy Survey, 1986: The Battle for the Agenda." 55(1):7-23
- Gerritsen, R., and J. Abbott [1988]. "Shifting to Certainty? Australian Rural Policy in 1987: A Review." 56(1):9-26.
- Manegold, D. [1988]. "Recent Changes in EC Agricultural Policy: A 1987-88 Policy Review." 56(2):153-178.
- Muller, J. D., *et al.* [1988]. "The Consumption Behaviour of Farmers: A Review of the Evidence." 56(2):179-193.

Another important set of literature surveys in agricultural economics is being published in the *British Journal of Agricultural Economics*. To date the following survey articles have been published:

- Peters, G. H. [1970]. "Land Use Studies in Britain: A Review of the Literature with Special Reference to Applications of Cost-Benefit Analysis." 21:171-214.
- Thornton, D. S. [1973]. "Agriculture in Economic Development." 24:225-287.
- Josling, T. E. [1974]. "Agricultural Policies in Developed Countries: A Review." 25:229-264.
- Barnard, C. S. [1975]. "Data in Agriculture: A Review with Special Reference to Farm Management Research, Policy, and Advice in Britain." 26:289-333.
- Bateman, D. I. [1977]. "Agricultural Marketing: A Review of the Literature of Marketing Theory and Selected Applications." 27:171-225.
- Hardaker, J. B. [1979]. "A Review of Some Farm Management Research Methods for Small-Farm Development in LDCs." 30:315-327.
- Newby, H. [1982]. "Rural Sociology and Its Relevance to the Agricultural Economist: A Review." 33:125-165.
- Le Vay, C. [1983]. "Agricultural Cooperation Theory: A Review." 34:1-44.
- Fox, G. [1987]. "Models of Resource Allocation in Public Agriculture Research: A Survey." 38:449-462.
- Gasson, R., *et al.* [1988]. "The Farm as a Family Business: A Review." 39:1-41.
- Turner, R. H. [1988]. "Pluralism in Environmental Economics: A Survey of the Sustainable Economic Development Debate." 39:352-359.

Two literature surveys in natural resource economics have been published:

Fisher, A. C., and F. M. Peterson [1976]. "The Environment in Economics: A Survey." *J. Econ. Literature* 14:1-33.

Peterson, F. M., and A. C. Fisher [1977]. "The Exploitation of Extractive Resources: A Survey." *Econ. J.* 87:681-721.

Several surveys have appeared in the *Journal of Economic Literature*:

Johnston, B. F. [1970]. "Agricultural and Structural Transformation in Developing Countries: A Survey of Research." 8:369-404.

Perlman, M. [1981]. "Population and Economic Change in Developing Countries: A Review Article." 19:74-82.

Mellor, J. W., and B. F. Johnston [1984]. "The World Food Equation: Interrelations among Development, Employment, and Food Consumption." 22:531-574.

Shoven, J. B., and J. Whalley [1984]. "Applied General-Equilibrium Models of Taxation and International Trade: An Introduction and Survey." 22:1007-1051.

Sen, A. [1985]. "Social Class and Justice: A Review Article." 23:1764-1776.

Winston, C. [1985]. "Conceptual Development in the Economics of Transportation: An Interpretive Survey." 23:57-94.

Griffin, K., and J. Gurley [1985]. "Radical Analysis of Imperialism, the Third World, and the Transition to Socialism: A Survey Article." 23:1089-1143. R. Schenk [1985]. "A Comment." 24:676.

Other 1982-89 literature reviews related to agricultural development are listed below.

McPherson, M. F. [1982]. *Land Fragmentation: A Selected Literature Review*. Cambridge, MA, HIID, Discussion Paper No. 141.

Clayton, E. [1983]. *Agriculture, Poverty and Freedom in Developing Countries*. London, Macmillan.

Bartlett, J., and D. Gibbon [1984]. *Animal Draught Technology: An Annotated Bibliography*. London, Overseas Dev. Group of the University of East Anglia.

Cohen, A. [1984]. "Review Article: The Macroeconomic vs. the Microeconomic Approach to Development: The Fertility of Development Efforts as a Function of Institutional Inertia." *Econ. Dev. and Cultural Change* 32(2):423-430.

Kumar, T. M. V. [1984]. "Integrated Rural Development Planning and Energy Priorities: Participating Surveys in India Micro-Regions." In *Rural Energy to Meet Development Needs: Asian Village Approaches*, ed. N. Islam, R. Morse, and M. H. Soesastro. Boulder, CO, Westview Press, pp. 241-278.

Philippine Ministry of Energy [1984]. "Philippine Rural Energy Resource and Consump-

- tion Survey." In *Rural Energy to Meet Development Needs: Asian Village Approaches*, ed. N. Islam, R. Morse, and M. H. Soesastro. Boulder, CO, Westview Press, pp. 135-168.
- Von Witzke, H. [1984]. "Poverty, Agriculture, and Economic Development: A Survey." *European Rev. Agr. Econ.* 11(4):439-453.
- Clay, E. J., and H. W. Singer [1985]. *Food Aid and Development: Issues and Evidence (A Survey of the Literature since 1977 on the Role and Impact of Food in Developing Countries)*. World Food Programme, Occasional Paper No. 3.
- Feder, G., R. E. Just, and D. Zilberman [1985]. "Adoption of Agricultural Innovations in Developing Countries: A Survey." *Econ. Dev. and Cultural Change* 33(2):255-298.
- Jones, S. F. [1985]. *Marketing Research for Agriculture and Agribusiness in Developing Countries: Courses, Training and Literature*. UK Tropical Dev. and Research Institute.
- Kim, S. [1985]. "Models of Energy-Economy Interactions for Developing Countries: A Survey." *J. Energy and Dev.* 11(1):141-164.
- Pevetz, N. [1985]. "Standortsgemasse Landwirtschaft und 'Okoeentwicklung' in der Dritten Welt" (Agriculture Adapted to the Environment and 'Ecodevelopment' in the Third World: An Analysis of the Literature). *Monatsberichte über die Osterreichische Landwirtschaft* 32(12):741-751.
- Hodge, I. D., and M. Whitby [1986]. "The UK: Rural Development, Issues and Analysis." *European Rev. Agr. Econ.* 13:391-413.
- Rao, J. M. [1986]. "Agriculture in Recent Development Theory." *J. Dev. Economics* 22(1):41-86.
- Rohrer, W. C. [1986]. "Developing Third World Farming: Conflict between Modern Imperatives and Traditional Ways." *Econ. Dev. and Cultural Change* 34(2):299-314.
- Sands, D. M. [1986]. *The Technology Applications Gap: Overcoming Constraints to Small Farm Agriculture*. FAO Research and Technology Paper No. 1.
- Timmer, C. P. [1986]. "Redesigning Rural Development from a Food Policy Perspective." *Econ. Dev. and Cultural Change* 34(4):855-860.
- Whitby, M. [1986]. "Rural Development in Europe: Some Surveys of Literature: An Editorial Postscript." *European Rev. Agr. Econ.* 13(3):433-438.
- Arnon, I. [1987]. *Modernization of Agriculture in Developing Countries: Resources, Potentials and Problems*. Chichester, West Sussex, UK, 2nd ed.
- Clay, E. J., and J. Shaw, eds. [1987]. *Poverty, Development and Food*. Festschrift for H. W. Singer. Basingstoke, Hants, UK, Macmillan Press.
- Kirk, C. [1987]. *People in Plantations. A Literature Review and Annotated Bibliography*. University of Sussex, IDS, Research Report No. 18.
- Sarris, A. H. [1987]. *Agricultural Stabilization and Structural Adjustment Policies in Developing Countries*. FAO Econ. and Social Dev. Paper No. 65.
- Shaw, A. B. [1987]. "Approaches to Agricultural Technology Adoption and Consequences of Adoption in the Third World: A Critical Review." *Geoforum* 18(1):1-19.

- Brookfield, H. [1988]. " 'Sustainable Development' and the Environment: Review Article." *J. Dev. Studies* 25(1):126-135.
- Groosman, A. J. A. [1988]. *Technology, Development and the Seed Industry in North-South Perspective: A Literature Survey*. Tilburg Institute of Dev. Research, Working Paper No. 38.
- Hulme, D. [1988]. "Land Settlement Schemes and Rural Development: A Review." *Sociologia Ruralis* 28:42-61.
- Lele, U. [1988]. "Empowering Africa's Rural Poor: Problems and Prospects in Agricultural Development." In *Strengthening the Poor: What Have We Learned?* ed. J. P. Lewis. Washington, ODC.
- Rao, P. K. [1988]. "Planning and Financing Water Resource Development in the United States: A Review and Policy Perspective." *Amer. J. Econ. and Sociology*. 47(1):81-96.
- Srinivasan, T. N. [1988]. "International Trade and Factor Movements in Development Theory, Policy, and Experiences." In *Trade and Development, Proceedings of the Winter 1986 Meeting of the International Agricultural Trade Research Consortium*, ed. M. D. Shane, Washington, USDA, ERS Staff Report.
- Vandergeest, P. [1988]. "Commercialization and Commoditization: A Dialogue between Perspectives." *Sociologia Ruralis* 28(1):7-29.
- Long, N., and van der Ploeg [1988]. "New Challenges in the Sociology of Rural Development. A Rejoinder to Vandergeest." *Sociologia Ruralis* 28(1):30-41.
- Amanor, K. [1989]. *340 Abstracts on Farmer Participating Research*. London, ODI, Network Paper No. 5.
- Herrmann, R. [1989]. *Wirkungen Nationaler Agrarpolitiken auf den Agrarhandel der Ertwicklungs-länder und Möglichkeiten der Handelsliberalisierung* (The Effects of National Agricultural Policies on the Agricultural Trade of Developing Countries and Possibilities of Liberating Trade). University of Kiel, Institut für Weltwirtschaft, Arbeits Papiere No. 374.
- Norem, R. H., R. A. Yoder, and Y. Martin [1989]. "Indigenous Agricultural Knowledge and Gender Issues in Third World Agricultural Development." In *Indigenous Knowledge Systems: Implications for Agriculture and International Development*, ed. D. M. Warren et al. Ames, ISU Press.
- Piccini, A. [1989]. "Dalle Carestie al Surplus: Teoria e Pratica dello Sviluppo Agricolo" (From Shortage to Surplus: The Theory and Practice of Agricultural Development). *Rivista di Politica Agraria* 7(2):3-11.
- Rao, J. M. [1989]. "Agricultural Supply Response: A Survey." *Agr. Economics* 3(1):1-22.

Also worthy of note is Marguerite C. Burk's [1967] "Survey of Interpretations of Consumer Behavior by Social Scientists in the Postwar Period," *J. Farm Econ.* 49:1-31.

December, 1991

Lee R. Martin
Survey Editor

Abbreviations Used in Texts, Notes, and References

AAEA	American Agricultural Economics Association. Ames, Iowa
ACAR	<i>Associação de Crédito e Assistência Rural (Association of Credit and Rural Assistance)</i>
ACE	American Council on Education. Washington
ACIAR	Australian Centre for International Agricultural Research. Canberra
ACM	Andean Common Market
ACMP	Andean Common Market Pact
ACP	Africa, Caribbean, Pacific. EEC, Brussels
ADB	Asian Development Bank. Manila
ADC	Agricultural Development Council. New York
AES	Agricultural Experiment Station
AIC	Agriculture Inputs Corporation
AID	United States Agency for International Development. Washington
AL	Alabama, United States
AMIRA	Groupe de Recherche pour l'Amélioration des Méthodes d'Investigation en Milieu Africain (Research Group on the Improvement of Survey Methods in Rural Africa). Paris
ANPES	Associação Nacionalde Programação Econômica e Social. São Paulo, Brazil
ANU	Australian National University. Canberra
APO	Asian Productivity Organization. Tokyo

APROSC	Agricultural Projects Services Center. Katmandu, Nepal
AR	Animation Rurale
ARE	African Rural Economy
ARTEP	Asian Regional Team for Employment Promotion. ILO, Bangkok
ARTI	Agrarian Research and Training Institute. Sri Lanka
ARU	Agricultural Research Unit. World Bank, Washington
ASEAN	Association of Southeast Asia Nations. Jakarta
ATIP	Agriculture Technology Improvement Project
BAE	Bureau of Agricultural Economics, USDA
BARC	Bangladesh Agriculture Research Council. Dhaka
BCST	Bananas, Cotton, Sugar, and Tobacco
BIDS	Bangladesh Institute of Development Studies. Dhaka
BRALUP	Bureau of Research Assessment and Land Use Planning. University of Dar es Salaam, Tanzania
BULOG	Badan Urusan Logistic (National Logistics Agency). Indonesia
CA	California, United States
CAA	Center for Agricultural Adjustments. ISU, Ames
CAAE	Chinese Association of Agricultural Economics
CAAS	Chinese Academy of Agricultural Sciences
CACM	Central American Common Market
CADU	Chíalo Agricultural Development Unit. Ethiopia
CAEA	Central American Economic Association. San José, Costa Rica
CAEC	Central American Economic Council
CAED	Center for Agricultural and Economic Development. ISU, Ames
CAP	Common Agricultural Policy. EC
CARDEN	Centre d'Analyse et de Recherche Documentaires pour l'Afrique Noire (Documentary Analysis and Research Center for Africa). Paris
CCMEP	Marketing and Price Stabilization Commission under CAEC
CD	Community Development
CEA	Commission Economique de l'Afrique des Nations-Unies (UN Economic Commission for Africa). Addis Ababa
CEDEAL	Centro Documentación Económica para América Latina (Economic Documentation Center for Latin America)
CEEMAT	Centre d'Études et d'Experimentation de Machinisme Agricole Tropicale (Center for Studies and Experimentation on Tropical Agricultural Machinery). Antony, France
CEPAL	Comisión Económica para a América Latina (Economic Commission for Latin America). Santiago, Chile (Same as ECLA)

CEPE	Centro de Estudios en la Pesquisa Económica (Center for Studies in Economic Research). Bogotá, Colombia
CEPE	Centro de Pesquisa em Educação (Center for Research in Education). Ministério de Educação, Brasília, Brazil
CEPI	Centre d'Étude et de Promotion Industrielle (Center for the Study of Industrial Promotion)
CERES	FAO magazine
CES	Constant Elasticity of Substitution
CFDT	Compagnie Française pour le Développement de Fibres Textiles (French Society for the Development of Textile Fibers). Paris
CFP	Companhia Para o Financiamento de Produção (Company for the Financing of Production). Brasília, Brazil
CGIAR	Consultative Group on International Agricultural Research. World Bank, Washington
CGPRT	Centre for Research and Development of Coarse Grains, Pulses, Roots and Tuber Crops in the Humid Tropics of Asia and the Pacific. Bogor, Indonesia
CGT	Confederación General del Trabajo (General Confederation of Labor). Argentina
CHAC	Model: a study of the Mexican agricultural sector using LP and a partial equilibrium framework
CIA	United States Central Intelligence Agency
CIAT	Centro Internacional do Agricultura Tropical (International Center for Tropical Agriculture). Cali, Colombia
CIDA	Comité Interamericano de Desarrollo Agrícola (Interamerican Committee for Agricultural Development). Pan American Union, Washington
CIF	Cost, Insurance and Freight
CILSS	Comité Permanent Inter-États de Lutte contre la Sécheresse au Sahel (Permanent Interstate Committee of Drought Control in the Sahel). Ouagadougou, Burkina Faso
CIMMYT	Centro Internacional de Mejoramiento de Maiz y Trigo (International Center for the Improvement of Maize and Wheat). Mexico, DF
CIP	Centro Internacional de la Papa (International Potato Center). Lima, Peru
CISEPA	Centro de Investigaciones Sociales, Economicas, Politicas y Antropologicas (Center for Social, Economic, Political and Anthropological Investigations). Lima, Peru
CMA	Center for Management in Agriculture. IIM, Ahmedabad, India
CMT	Corbo, de Melo, Tybout

CNRA	Centre National de Recherches Agronomiques (National Center for Agronomic Research). Dakar, Senegal
CO	Colorado, United States
CODESRIA	Council for the Development of Economic and Social Research in Africa. Dakar, Senegal
CODEVASP	Compania de Desenvolvimento do Vale do São Francisco (Valley of São Francisco Development Co.). Brasília, Brazil
CONASUPO	Compañía Nacional del Subsistencia Popular (National Council for Popular Subsistence). Mexico, DF
CORA	Agrarian Reform Corporation. Chile
CRED	Center for Research on Economic Development. Univ. of Michigan, Ann Arbor
CS	Consumer Surplus
CT	Connecticut, United States
CTA	Technical Centre for Agriculture and Rural Cooperation. Wageningen, Netherlands
DAE	Department of Agricultural Economics
DC	Developed Country
DEA	Departamento de Economía Agraria (Department of Agrarian Economics). Univ. Católica de Chile, Santiago
DMA	Division de Machinism Agricole (Agricultural Mechanization Division). Bamako, Mali
DRC	Domestic Resource Costs
DSE	Deutsch Stiftung für Internationale Entwicklung (German Foundation for International Development). Berlin
EAC	East African Community
EAP	Economically Active Population
EC	European Community
ECA	United Nations, Economic Commission for Africa. Addis Ababa, Ethiopia
ECIEL	Estudios Conjuntos sobre Integración Económica Latino-Americana (Joint Studies on Latin American Integration). Washington, D.C.
ECLA	United Nations Economic Commission for Latin America. Santiago, Chile (Same as CEPAL)
ECOWAS	Economic Community of West Africa States. Lagos, Nigeria
EDF	European Development Fund. EEC, Brussels
EDI	Economic Development Institute. World Bank, Washington
EEC	European Economic Community
EFSAIP	Evaluation of Farming Systems and Implements Project

EFTA	European Free Trade Association. Geneva
EMBRAPA	Emprésa Brasileira de Pesquisa Agropecuária (Brazilian Corporation for Agricultural Research). Brasília, Brazil
EMENA	Europe, Middle East and North Africa Region. World Bank, Washington
ENDEF	Estudo Nacional de Despesa Familiar (National Study of Family Expenditures). Rio de Janeiro, Brazil
EPC	Effective Protection Coefficient
EPGE	Escola de Pós-Graduação em Economia (Graduate School of Economics). FGV, Rio de Janeiro, Brazil
EPR	Effective Protection Rate
ERP	Effective Rate of Protection
ERS	Economic Research Service. USDA, Washington
ERS	Effective Rate of Subsidy
ESCAP	UN Economic and Social Commission for Asia and the Pacific. Bangkok
ESS	Economics and Statistics Service. USDA, Washington
ETENE	Escritório Técnico de Estudos Econômica do Nordeste (Technical Report on Studies of the Economy of the Northeast). Fortaleza, Brazil
ETTESS	École des Hautes Études in Sciences Sociales (School of Advanced Studies in Social Sciences). Paris
FAER	Foreign Agricultural Economic Report, issued by USDA
FAI	Fertilizer Association of India
FAO	Food and Agriculture Organization of the United Nations. Rome
FOA	Fund de Développement Agricole (Agricultural Development Foundation)
FGV	Fundação Getulio Vargas (Getulio Vargas Foundation). Rio de Janeiro, Brazil
FIPE	Fundação Instituto de Pesquisas Economicas (Foundation for the Institute of Economic Research). São Paulo, Brazil
FL	Florida, United States
FOB	Free on board
FSR	Farming Systems Research
FTC	Farmer Training Center
GATT	General Agreement on Tariffs and Trade. Geneva
GDP	Gross Domestic Product
GNFP	Gross National Farm Product
GNP	Gross National Product
GPO	United States Government Printing Office. Washington

HIID	Harvard Institute of International Development. Harvard Univ. Cambridge, MA
HMSO	Her Majesty's Stationery Office. London
HYV	High-Yielding Variety
IAAE	International Association of Agricultural Economists
IADB	Inter-American Development Bank. Washington
IADS	International Agricultural Development Service. Washington (Now part of Winrock International)
IAR	Institute for Agricultural Research. Ahmadu Bello Univ., Zaria, Nigeria
IARC	International Agricultural Research Center
IBGE	Instituto Brasileiro de Geografia Estatísticas (Brazilian Institute of Geography and Statistics). Rio de Janeiro, Brazil
IBRD	International Bank for Reconstruction and Development. Washington (Same as World Bank)
ICAE	International Council of Agricultural Economists
ICAR	Indian Council on Agricultural Research. New Delhi
ICIRA	Instituto de Capacitación e Investigación en Reforma Agraria (Institute Authorized to Investigate Agrarian Reform). Santiago, Chile
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics. Hyderabad, India
ICS	Institute for Contemporary Studies. San Francisco, CA
IDE	Institute of Developing Economies. Tokyo
IDEMA	Marketing Agency. Colombia
IDRC	International Development Research Center. Ottawa, Canada
IDS	Institute for Development Studies. Univ. of Nairobi. Kenya
IEA	Instituto de Economia Agrícola (Institute of Agricultural Economics). São Paulo, Brazil
IED	International Economics Division. USDA. Washington, D.C.
IEMVT	Institut d'Élevage et de Médecin Vétérinaire de Pays Tropicaux (Institute of Livestock and Veterinary Medicine for Tropical Countries). Maisons-Alfort, France
IER	Institut d'Économie Rurale (Institute of Rural Economy). Bamako, Mali
IER	Instituto de Economia Rural (Institute of Rural Economics)
IFDC	International Fertilizer Development Center. Muscle Shoals, AL
IFO	Institut für Land Wirtschaftsforschung (Institute for Agricultural Research). Munich, West Germany

IFPRI	International Food Policy Research Institute. Washington
IICA	Instituto Interamericano de Cooperación para la Agricultura (Interamerican Institute for Agricultural Cooperation). San José, Costa Rica
IIM	Indian Institute of Management. Ahmedabad, India
IIMI	International Irrigation Management Institute. Kandy, Sri Lanka
IITA	International Institute of Tropical Agriculture. Ibadan, Nigeria
IL	Illinois, United States
ILO	United Nations International Labor Office. Geneva
ILCA	International Livestock Centre for Africa. Addis Ababa
ILPES	Instituto Latino Americano de Planificación Económica y Social (Latin American Institute of Economic and Social Planning). Santiago, Chile
ILRAD	International Laboratory for Research on Animal Diseases. Nairobi, Kenya
IMF	UN International Monetary Fund. Washington
IN	Indiana, United States
INCAP	Instituto de Nutrición de Centro Americano y Panamericano (Institute of Nutrition of Central America and Panama). Guatemala City
INCORA	Instituto Colombiano de Reforma Agraria (Colombian Institute of Agrarian Reform). Bogota, Columbia
INEAC	Institut National pour l'Étude Agronomique de Congo (National Institute for Agronomic Study in the Congo). Yangambi, Zaire (formerly Belgian Congo)
INESPRE	Instituto de Estabilización de Precios (Institute of Price Stabilization). Santo Domingo, Dominican Republic
INPES	Instituto de Pesquisas Econômicas e Sociais do IPEA (Institute of Economic and Social Research of IPEA). Rio de Janeiro, Brazil
INSEE	Institut National de la Statistique et des Études Économiques (National Institute of Statistics and Economic Studies). Paris
IPC	Innovation Possibility Curve
IPE	Instituto de Pesquisas Econômicas (Institute of Economic Research). Univ. of São Paulo, Brazil
IPEA	Instituto de Planejamento Econômico e Social (Institute of Economic and Social Planning). Rio de Janeiro, Brazil
IPES	Instituto de Pesquisas Econômicas e Sociais (Institute of Economic and Social Research)
IRAT	Institut de Recherches Agronomiques Tropicales et des Cul-

	tives Vivrières (Institute of Tropical Agronomic Research and Food Crops). Montpellier, France
IRCT	Institut de Recherche de Coton et des Textiles Exotiques (Institute for Research in Cotton and Synthetic Textiles). Paris
IRD	Integrated Rural Development
IRD P	Integrated Rural Development Program
IRRI	International Rice Research Institute. Los Baños, Philippines
ISAE	Indian Society of Agricultural Economics
ISNAR	International Service for National Agricultural Research. The Hague, Netherlands
ISRA	Institut Sénégalais de Recherche Agricoles (Senegalese Institute of Agricultural Research). Dakar, Senegal
ISSER	Institute of Statistical, Social and Economic Research. Univ. of Ghana. Legon
ISU	Iowa State University. Ames
ITO	International Trade Organization
JASPA	Jobs and Skills Program for Africa
JCRR	Joint Commission on Rural Reconstruction. Taipei, Taiwan
K	Potassium (K_2O)
KDTA	Kenyan Tea Development Authority. Nairobi, Kenya
LACM	Latin American Common Market
LAFTA	Latin American Free Trade Association
LASC	Latin American Studies Center. MSU, East Lansing
LDC	Less Developed Country
LNL	Landless and Nearlandless
LP	Linear Programming
LSMS	Living Standards Measurement Study. Development Research Department, World Bank. Washington
LTC	Land Tenure Center. Univ. of Wisconsin. Madison
MA	Massachusetts, United States
MD	Maryland, United States
MFC	Marginal Factor Cost
MI	Michigan, United States
MIT	Massachusetts Institute of Technology. Cambridge, MA
MOTAD	LP technique to account for risk
MPP	Marginal Physical Product
MSU	Michigan State Univ. East Lansing
MTN	Multilateral Trade Negotiations
MVP	Marginal Value Product
N	Nitrogen
NARI	National Agricultural Research Institute

NBER	National Bureau of Economic Research. New York
NCAER	National Council of Applied Economic Research. New Delhi
NEDA	National Economic Development Authority. Government of the Philippines. Manila
NERP	Net Effective Rate of Protection
NERP3	NERP, Technology 3
NERP4	NERP, Technology 4
NERS	Net Effective Rate of Subsidy
NERS3	NERS, Technology 3
NERS4	NERS, Technology 4
NERS5	NERS, Technology 5
NESDB	National Economic and Social Development Board. Thailand
NIC	Newly Industrialized Country
NISER	Nigerian Institute of Social and Economic Research. Ibadan
NJ	New Jersey, United States
NNRP	Net Nominal Rate of Protection
NORAD	Norwegian Agency for Development. Oslo
NPC	Nominal Protection Coefficient
NRC	National Research Council. Washington
NRP	Nominal Rate of Protection
NS	New Series
NSF	National Science Foundation. Washington
NSS	National Sample Survey. Government of India. New Delhi
NY	New York, United States
OACV	Operation Arachide et Culturas Vivrières (Groundnuts and Food Crops Operation)
OAS	Organization of American States. Washington
OAU	Organization of African Unity. Addis Ababa, Ethiopia
ODA	Official Development Assistance
ODC	Overseas Development Council. Washington
ODI	Overseas Development Institute. London
ODU	Yoruba (Nigeria): name of a defunct journal
OEA	Organización de los Estados Americanos (Organization of American States). San José, Costa Rica (Same as OAS)
OECD	Organization for Economic Cooperation and Development. Paris
OLC	Overseas Liaison Committee
OMVS	Organisation pour la Mise en Valeur de Fleuve Senegal (Senegal River Development Authority). Dakar, Senegal
ONAREST	Office National de la Recherche Scientifique et Technique (National Office for Scientific and Technical Research)

ONCAD	Office National de la Coopération et d'Assistance pour le Développement (National Office of Cooperation and Development Assistance). Dakar, Senegal
OPEC	Organization of Petroleum Exporting Countries. Vienna
ORD	Organisme Regional de Développement (Regional Development Organization). Burkina Faso
ORSTOM	Office de la Recherche Scientifique e Technique Outre-Mer (Overseas Scientific and Technical Research Office). Paris
OTA	Office of Technology Assessment. United States Congress. Washington
P	Phosphorus (P ₂ O ₅)
PA	Pennsylvania, United States
PAN	Programa de Alimentación Nacional (National Food Program). Argentina
PCARR	Philippine Council for Agriculture and Resources Research. Los Baños
PCARRD	Philippine Council for Agriculture and Resource Research and Development. Los Baños
PHN	Population, Health and Nutrition. World Bank. Washington
PIDE	Pakistan Institute of Development Economics
PIDS	Philippine Institute for Development Studies
PIMA	Personnel of the Integrated Program of Agricultural Marketing. MSU, East Lansing
PLANALC	Plan de Acción Conjunta para la Reactivación Agropecuaria en América Latina y el Caribe (Joint Action Plan for Reactivation of Crops and Livestock in Latin America and the Caribbean). San José, Costa Rica
PL-480	United States Public Law 480
PRC	People's Republic of China
RFF	Resources for the Future. Washington
RISD	UN Research Institute for Social Development. Geneva
SA	Secretariat da Agricultura (Secretary of Agriculture)
SADCC	Southern Africa Development Coordination Conference. Gaborone, Botswana
SAFGRAD	Semi-Arid Food Grain Research and Development. Ouagadougou, Burkina Faso
SAM	Mexican Food Supply System
SAREC	Swedish Agency for Research Cooperation with Developing Countries. Stockholm
SC	Supervised Credit

SEARCA	Southeast Asian Regional Center for Graduate Study and Research in Agriculture. Laguna, Philippines
SECAL	Société d'Études pour le Développement Économique et Social (Economic and Social Development Studies Corporation). Paris
SIAS	Scandinavian Institute of African Studies. Uppsala, Sweden
SIDA	Swedish International Development Authority. Stockholm
SOBER	Sociedade Brasileira de Economica Rural (Brazilian Society of Rural Economics). Brasilia, Brazil
SSI	Small-Scale Industry
SSRC	Social Science Research Council. New York
STABEX	Revenue Stabilization Scheme for Exports from Africa, Caribbean and Pacific Countries to EEC Countries. Funded by EEC
STRC	Scientific, Technical and Research Commission. OAU. Lagos, Nigeria
SUDENE	Superintendência para o Desenvolvimento do Nordeste (Superintendent for the Development of the Northeast). Recife, Brazil
SUNAB	Superintendência Nacional de Abastecimento (National Superintendent of Supply). Brasilia, Brazil
TAC	Technical Advisory Committee. CGIAR
TCA	Technical Cooperation Administration. Washington (A predecessor of AID)
UN	United Nations. New York
UNCTAD	United Nations Conference on Trade and Development. Geneva
UNDP	United Nations Development Plan. New York
UNESCO	United Nations Educational, Scientific, and Cultural Organization. Paris
UNICEF	United Nations Children's Fund. New York
UNZALPI	Universities of Nottingham and Zambia, Agricultural Labor Productivity Investigation
UP	Uttar Pradesh, India
U.S.	United States of America
USDA	United States Department of Agriculture. Washington
VEW	Village Extension Workers
VT	Vermont, United States
WARDA	West African Rice Development Association. Boace, Côte d'Ivoire. (formerly in Liberia)
WHO	United Nations World Health Organization. Geneva
WIDER	World Institute for Development Economics Research. Helsinki, Finland