



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.*

AGRICULTURE IN A TURBULENT WORLD ECONOMY

PROCEEDINGS
OF THE
NINETEENTH
INTERNATIONAL CONFERENCE
OF AGRICULTURAL ECONOMISTS

Held at Málaga, Spain
26 August–4 September 1985

Edited by
Allen Maunder, Institute of Agricultural Economics, University of
Oxford, England
and
Ulf Renborg, Department of Economics and Statistics,
Swedish University of Agricultural Sciences, Uppsala

INTERNATIONAL ASSOCIATION OF
AGRICULTURAL ECONOMISTS
INSTITUTE OF AGRICULTURAL ECONOMICS
UNIVERSITY OF OXFORD

1986

Gower

© The International Association of Agricultural Economists, 1986
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 permission of Gower Publishing Company Limited.

Published by
Gower Publishing Company Limited
Gower House
Croft Road
Aldershot
Hants GU11 3HR
England

Gower Publishing Company
Old Post Road
Brookfield
Vermont 05036
USA

British Library Cataloguing in Publication Data

International Conference of Agricultural Economists
(19th : 1985 : Málaga, Spain)

Agriculture in a turbulent world economy:
proceedings.

1. Agriculture—Economic aspects

I. Title II. Maunder, Allen

III. Renborg, Ulf IV. International Association of
Agricultural Economists

V. University of Oxford, Institute of Agricultural Economists

338.1 HD1415

Library of Congress Cataloging-in-Publication Data

International Conference of Agricultural Economists
(19th : 1985 : Málaga, Spain)

Agriculture in a turbulent world economy.

“International Association of Agricultural Economists.

Institute of Agricultural Economics, University of Oxford.”

Bibliography: p.

1. Agriculture—Economic aspects—Congresses.

2. Food supply—Congresses. 3. Agriculture and state—Congresses.

I. Maunder, A. H. II. Renborg, Ulf. III. Title.

HD1405.I58 1985 338.1 86-14219

ISBN 0-566-05225-3

Typeset by Activity Ltd., Salisbury, Wiltshire

Printed in Great Britain by Blackmore Press, Shaftesbury, Dorset.

CONTENTS

| | |
|--|------|
| Preface | xiii |
| <i>Glenn L. Johnson</i> | |
| Introduction | xv |
| <i>Allen Maunder and Ulf Renborg</i> | |
| OPENING SESSION | |
| Elmhirst Memorial Lecture: Food, economics and entitlements | 3 |
| <i>Amartya Sen</i> | |
| Presidential Address: Scope of agricultural economics | 21 |
| <i>Glenn L. Johnson</i> | |
| SECTION I – FORCES SHAPING THE FUTURE | |
| Poverty and beyond: the forces shaping the future in Asia | 37 |
| <i>Yujiro Hayami</i> | |
| The exploitation and subsidization of agriculture in developing and developed countries | 49 |
| <i>Mancur Olson</i> | |
| Forces that will shape future rural development: the case of Northeastern Brazil | 60 |
| <i>Pedro Sisnando Leite</i> | |
| Panel Discussion | 69 |
| SECTION II – GROWING INTERDEPENDENCIES AND UNCERTAINTIES | |
| Integration of agriculture in the national and world economy: implications for agricultural policies in developing countries | 73 |
| <i>Alain de Janvry</i> | |

| | |
|---|-----|
| The international capital market as a source of instability in international commodity markets <i>G. Edward Schuh</i> | 83 |
| Discussion | 90 |
| Regional co-operation in the food sector among developing countries to improve food security <i>Ulrich Koester</i> | 100 |
| Agriculture in an interdependent and uncertain world: implications for markets and prices <i>Alex F. McCalla and Timothy E. Josling</i> | 114 |
| Discussion | 122 |
| Farming under uncertainty in the 1980s: some lessons from Canada <i>George L. Brinkman</i> | 127 |
| Peasant farms in economic and social crisis: the case of Poland in the 1980s <i>Józef St Zegar</i> | 139 |
| Discussion | 145 |
| The changing structure of Nigeria's agriculture and prospects for the river basin development reorganisation programme <i>Q. B. O. Anthonio and V. O. Akinyosoye</i> | 151 |
| Adjustment of regional agriculture to expected climatic changes <i>Vladimir Iakimets</i> | 160 |
| Discussion | 168 |
| Land resources and distribution of agricultural production in the USSR <i>Victor Nazarenko</i> | 170 |
| The effect of scientific-technological and social progress on development in agrarian labour <i>I. Lukinov</i> | 178 |
| Discussion | 184 |
| SECTION III – BALANCING OVERPRODUCTION AND MALNUTRITION | |
| Dealing with the uncertainty of growing food imbalances: international structures and national policies <i>John W. Mellor</i> | 191 |

| | |
|---|-----|
| Undernutrition: extent and distribution of its incidence <i>T. N. Srinivasan</i> | 199 |
| Discussion | 208 |
| Food security policy in sub-Saharan Africa <i>Carl K. Eicher and John M. Staatz</i> | 215 |
| Food insecurity and the foreign exchange constraint in sub-Saharan Africa <i>Colin Kirkpatrick and Dimitris Diakosavvas</i> | 230 |
| Discussion | 239 |
| National agricultural policies, surplus problems and interna- tional instability <i>Jan de Veer</i> | 247 |
| The world economy: resilient for the rich, stubborn for the starving <i>Günther Fischer, Klaus Frohberg, Kirit S. Parikh and Ferenc Rabar</i> | 259 |
| Discussion | 268 |

SECTION IV – PRESSURE ON NATURAL RESOURCES

| | |
|--|-----|
| Natural resource and environmental dimensions of agricultu- ral development <i>Kenneth R. Farrell and Susan M. Capalbo</i> | 273 |
| The pressure on natural resources in Indonesian agricultural development <i>Achmad T. Birowo and Diby Prabowo</i> | 284 |
| Discussion | 293 |
| Land utilisation and agricultural development: the case of Hungary <i>Csaba Csáki</i> | 299 |
| An international overview of soil conservation policy <i>Randall A. Kramer</i> | 307 |
| Discussion | 313 |
| Natural resources and agricultural development in the tropics: is conflict inevitable? <i>Daniel W. Bromley</i> | 319 |

| | |
|--|-----|
| Pressure on the Malaysian fisheries arising from current modernisation programmes and management conditions <i>Nik Hashim Mustapha</i> | 328 |
| Discussion | 337 |
| SECTION V – HUMAN CAPITAL, TECHNOLOGY AND INSTITUTIONS | |
| From the United States to a world system: technological change, international trade, agricultural policy in the twentieth century <i>Jean-Pierre Berlan</i> | 343 |
| Challenge to studies of biotechnology impacts in the social sciences <i>Walter L. Fishel and Martin Kenney</i> | 353 |
| Discussion | 360 |
| The evolution of national agricultural research systems in sub-Saharan Africa <i>Francis S. Idachaba</i> | 368 |
| Agricultural intensification and technical change in sub-Saharan Africa <i>Hans P. Binswanger and Prabhu Pingali</i> | 381 |
| Discussion | 386 |
| The role of institutions in formulation of agricultural policy: their repercussions on the challenges of an agriculture in a turbulent world economy <i>Günther Schmitt</i> | 390 |
| Alternative forms of marketing enterprise for the developing countries <i>John C. Abbott</i> | 404 |
| Discussion | 413 |
| Self-reliance or dependence of agricultural economics research in developing countries <i>Jean Chataigner and Yves Leon</i> | 417 |
| Irrigation investment in Africa: major issues in the design and implementation of large schemes <i>Mulumba Kamuanga</i> | 424 |
| Discussion | 434 |
| Economic reform in rural China <i>Yan Rui-Zhen</i> | 440 |

| | |
|---|-----|
| Pricing system reform for agricultural products and price policy adjustment in China (1979–1984) <i>An Xi-Ji</i> | 449 |
| Discussion | 460 |
| Human capital, structure of production and the basic needs <i>D. P. Chaudhri</i> | 466 |
| Sources of growth of Argentine agriculture and prospects for the 1990s <i>Julio A. Penna</i> | 475 |
| Discussion | 486 |
| SECTION VI – STRUCTURE OF AGRICULTURE AND PEOPLE IN RURAL SOCIETIES | |
| The changing structure of agriculture and the future of rural society <i>Howard Newby</i> | 493 |
| Discussion | 500 |
| Farmers and rural societies in uncertain food production systems <i>Tadeusz Hunek</i> | 505 |
| The rural-urban balance in rural development <i>Hiroyuki Nishimura</i> | 513 |
| Discussion | 526 |
| Changing environment and structural heterogeneity in agriculture <i>Jean-Marc Boussard</i> | 531 |
| Agricultural structure in a service economy <i>Luther Tweeten</i> | 542 |
| Discussion | 550 |
| SECTION VII – MARKETS AND TRADE | |
| International markets and price policy: the instability of agriculture <i>Jaime Lamo de Espinosa</i> | 557 |
| New types of multinational firms in the agribusiness sector: implications of their emergence in the least industrialised world <i>Jean-Claude Dufour, Gérard Ghersi and Robert Saint-Louis</i> | 566 |

| | |
|---|-----|
| Discussion | 577 |
| SECTION VIII – THEORETICAL DEVELOPMENTS | |
| Uncertainty in market analysis <i>Alexander H. Sarris</i> | 585 |
| Instability in agricultural markets: the US experience <i>Gordon C. Rausser, James A. Chalfant and Kostas G. Stamoulis</i> | 595 |
| Discussion | 604 |
| Agricultural growth and the price of food <i>Yair Mundlak</i> | 611 |
| Exchange rates and trade policy: help or hindrance to agricultural growth? <i>Alberto Valdés</i> | 624 |
| Discussion | 633 |
| Farmers and risk <i>Jock R. Anderson, John L. Dillon and J. Brian Hardaker</i> | 638 |
| Measuring production risk using a modified RCRM model <i>John Kerr and K. Kalirajan</i> | 649 |
| The demand for crop insurance <i>W. L. Niewuwoudt and J. B. Bullock</i> | 655 |
| Discussion | 661 |
| Integration of production and financial theory in analysing farm firm behaviour <i>Michael Boehlje and L. Lowenberg-DeBoer</i> | 668 |
| Rationing agricultural credit in developing countries: the role and determinants of transaction costs for borrowers <i>Carlos E. Cuevas and Douglas H. Graham</i> | 680 |
| Discussion | 686 |
| The role of natural resources in regional agricultural growth <i>Clark Edwards</i> | 692 |
| Land fragmentation in developing countries: the optimal choice and policy implications <i>Scott Simons</i> | 703 |
| Discussion | 712 |

| | |
|---|-----|
| Computer-aided farm management systems: will the promise be fulfilled? | 717 |
| <i>Steven T. Sonka</i> | |

| | |
|---|-----|
| Farm-level information systems as an aid to decision-makers | 727 |
| <i>S. B. Harsh, F. Kuhlmann and F. Burg</i> | |

| | |
|---|-----|
| Impact on farmers' decision-making by farm management and computer sciences in the turbulent economy | 734 |
| <i>Yoshihiko Sugai and A. R. Teixeira Filho</i> | |

| | |
|------------|-----|
| Discussion | 741 |
|------------|-----|

SECTION IX – IMPLICATIONS FOR POLICY AND RESEARCH

| | |
|---|-----|
| Balancing overproduction and malnutrition – implications for policy and research | 749 |
| <i>Vijay S. Vyas</i> | |

| | |
|---|-----|
| Pressure on natural resources – implications for research and policy | 754 |
| <i>Günther Weinschenk</i> | |

| | |
|---|-----|
| Changes in human capital, technology, and institutions: implications for policy and research | 769 |
| <i>Wallace E. Huffman</i> | |

| | |
|---|-----|
| The food chain, markets and prices: implications for research and policy | 776 |
| <i>Edward W. Tyrchniewicz</i> | |

| | |
|--|-----|
| Structure of agriculture: implications for research and policy | 781 |
| <i>Philippe Lacombe</i> | |

SYNOPTIC VIEW

| | |
|--|-----|
| The status and the state of agricultural economics | 793 |
| <i>Michel Petit – President Elect</i> | |

| | |
|--|-----|
| Index of institutional attachment of first named authors | 805 |
|--|-----|

| | |
|-------|-----|
| Index | 809 |
|-------|-----|

PALACIO NACIONAL DE CONGRESOS
DE LA COSTA DEL SOL

MÁLAGA – ESPAÑA



PREFACE

This proceedings volume contains the main papers and reports presented at the Nineteenth International Conference of Agricultural Economists. That conference was held from 26 August to 4 September 1985 at Malaga, Spain. An accompanying volume in the occasional paper series of the IAAE will contain the contributed papers presented at the conference after selection by an international panel.

IAAE members greatly appreciated the kind welcome extended to us at this conference and the support provided for it by the Governments of Spain and Andalucia and various agricultural organisations and firms. Welcoming addresses were made by the Mayor of the City of Malaga, Pedro Aparicio; the Vice President of the Junta de Andalucia, Jose Miguel Salinas; and from the Minister of Agriculture, Fisheries and Food, Carlos Romero Herrera. They spoke on behalf of their governmental units and on behalf of the honorary committee presided over by His Majesty King Juan Carlos I.

The professional programme was developed under the intellectual leadership of Ulf Renborg, University of Uppsala, with the assistance of Bruce Greenshields who chaired the contributed paper committee, William Kibler who chaired the discussion groups committee, and Laurent Martens who chaired the 'poster sessions'. The poster sessions were a much appreciated addition to the programme.

The Elmhirst Lecture entitled 'Food, Economics and Entitlements' was delivered by Amartya Sen from the University of Oxford. His paper is a fundamental one which should be read and utilised by all researchers, administrators and teachers concerned with solving problems of hunger around the world. His address both honoured our founding president, Leonard K. Elmhirst, and demonstrated why we, in turn, honoured Amartya Sen with the Elmhirst medal for his own extensive, high-quality accomplishments as an economist.

The Association owes a debt of gratitude to Allen Maunder of the Agricultural Economics Institute, University of Oxford, for his continuing excellent editorial work on the Proceedings of the

Association. Mavis Hunt served us well by making the Cowbell an even more effective means of quick communication at the Conference.

The Association wants especially to recognise the excellent hard work of the Spanish National Organizing Committee under the capable chairmanship of Antonio Herrero Alcon, ably assisted by Jose Luiz Fernandez Cavada. The Spanish National Organizing Committee served all members of the Association attending the conference well, with grace and competence.

GLENN L. JOHNSON
*Immediate Past President,
International Association of
Agricultural Economists*

INTRODUCTION

There were a number of reasons for choosing 'Agriculture in a Turbulent World Economy' as the theme for the Nineteenth International Conference of Agricultural Economists. The next ten to fifteen years of adjustment needed in food producing systems will probably take place in a very turbulent economy. In the 1970s there were a number of shocks in the economy; but unsolved economic and political problems indicate that surprises may well await us in the future also. They stem from the uncertainty regarding answers to questions of the following type: what choices will national states make between protectionism and free international markets; how will countries choose between economic growth and environmental protection; what political and economic consequences will follow from east-west and north-south tensions in the world?

This volume follows closely the programme of the conference and after an initial section, containing the Elmhirst Memorial Lecture and the Presidential Address, begins with a consideration of the forces shaping the future and the interdependencies and uncertainties in the world's food production and distribution systems. Then follow sections on overproduction and malnutrition, on pressures on natural resources, and on human capital, technology and institutions. Subsequent sections deal with the structure of agriculture and people in rural societies and with markets and trade. A separate section is devoted to theoretical developments and, finally, the implications for policy and research of the preceding sections are considered by separate authors under five headings and in the 'synoptic view' of the incoming President.

The editors wish to express their thanks to the authors, openers and rapporteurs of the various papers, particularly those who turned in their contributions on time and of the correct length, and to the editorial staff without whose unstinting help this volume could not have been prepared.

The contributed papers presented at the conference, together with summaries of discussion, will appear as *IAAE Occasional Papers IV*.

The reports of the meetings of Discussion Groups will appear in an *IAAE Members Bulletin*. The views expressed in this book are not necessarily those of the IAAE nor those of the institutions with which the various authors are connected.

ALLEN MAUNDER
*Editor, International Association of
Agricultural Economists*

ULF RENBORG
Vice President Programme