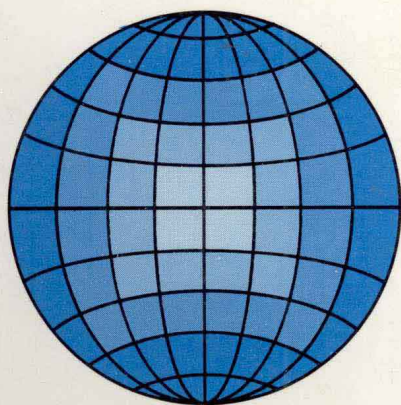


# **WORLD POPULATION AND DEVELOPMENT**

**Challenges and Prospects**



Edited by  
**Philip M. Hauser**

# WORLD POPULATION AND DEVELOPMENT

## Challenges and Prospects

*Edited by*

PHILIP M. HAUSER

Copyright © 1979 by the United Nations Fund for Population Activities

All Rights Reserved

First Edition

Library of Congress Cataloging in Publication Data

Main entry under title:

World population and development.

Includes bibliographies and index.

1. Population—Addresses, essays, lectures.
2. Economic development—Addresses, essays, lectures.

I. Hauser, Philip Morris, 1909–

HB871.W75                      301.32                      79–15471

ISBN 0–8156–2216–3

ISBN 0–8156–2219–8 pbk.

*Manufactured in the United States of America*

## FOREWORD

THE UNITED NATIONS FUND FOR POPULATION ACTIVITIES (UNFPA) has reached a major milestone in its operation. The year 1979 marks the completion of the first decade of its efforts to implement its United Nations mandate to help resolve world population problems. The decade has been characterized by novel problems because before the 1970s population assistance was a relatively uncharted area. Now, however, some of the population problems of the developing world have been forcefully attacked by the nations themselves and to some extent ameliorated in this first ten years of the Fund's existence.

At this juncture in the life of the agency we should take stock, appraise and evaluate, and chart the course to be followed in the coming years. For this purpose I have invited a number of prominent scholars and experts to review the status of the population and development problems with which the Fund is concerned. In this manner I hoped to obtain a firm foundation of fact and judgment which can serve, on the one hand, as a measure against which to judge the impact of the Fund's activities, and, on the other hand, as a springboard for directing the agency's future policies and programs.

I believe that what has been produced is the best the arts and sciences involved can presently accomplish, and that the product can assist UNFPA in evaluating what it has contributed to date and what it should do to improve its impact in the future.

I am grateful to the contributors to this volume which, I hope, will be found instructive not only to the Fund but, also, to the wider audience of readers interested in population and development.

New York  
Spring 1979

Rafael M. Salas  
*Executive Director*  
United Nations Fund  
for Population Activities

## CONTRIBUTORS

**B. KWAKU ADADEVOH** is Vice Chancellor, University of Lagos, Nigeria.

**DILIP AHUJA** is Guest Investigator, Laboratory of Brain Evolution and Behavior, National Institute of Mental Health, Bethesda, Maryland.

**NANCY BIRDSALL** is a doctoral candidate, Department of Economics, Yale University, New Haven, Connecticut.

**MARK BLAUG** is Head, Research Unit in the Economics of Education, University of London Institute of Education, and Lecturer, London School of Economics, London.

**JOHN B. CALHOUN** is Head, Unit for Research on Behavioral Systems, Laboratory of Brain Evolution and Behavior, National Institute of Mental Health, Bethesda, Maryland.

**KRASAE CHANAWONGSE** is Advisor on Health and Rural Development Activities to the Prime Minister, Office of the Prime Minister, Royal Thai Government, Bangkok.

**ZHI-YI CHANG** is Department Director, Institute of Zoology, Chinese Academy of Science, Peking.

**AMITAI ETZIONI** is Professor of Sociology, Columbia University, and Director, Center for Policy Research, New York.

**JOHN FEI** is Professor of Economics, Economic Growth Center, Yale University, New Haven, Connecticut.

**RONALD FREEDMAN** is Professor of Sociology and Associate Director, Population Studies Center, University of Michigan, Ann Arbor, Michigan.

L. A. PETER GOSLING is Chairman, Department of Geography; Director, Center for South and Southeast Asian Studies; and Associate, Center for Population Planning, University of Michigan, Ann Arbor, Michigan.

ELINA HAAVIO-MANNILA is Acting Professor of Sociology (with tenure as Associate Professor), University of Helsinki, Helsinki.

PHILIP M. HAUSER is Professor Emeritus of Urban Sociology; Director Emeritus, Population Research Center, University of Chicago; Associate, Leo J. Shapiro and Associates, Chicago, Illinois; and Senior Fellow, East-West Population Institute, Honolulu.

KOICHI IIO is Senior Staff Economist, Japan Economic Research Center, Tokyo.

SAGAR C. JAIN is Chairman, Department of Health Administration, School of Public Health, University of North Carolina, Chapel Hill, North Carolina.

FEDERICO JOUBERT is Professor, Instituto de Estudios Superiores de Administración, Caracas, and Consultant to the International Committee on the Management of Population Programmes.

TOSHIO KURODA is Professor of Demography, College of Economics, Nihon University, Tokyo.

SIMON KUZNETS is Professor Emeritus of Economics, Harvard University, Cambridge, Massachusetts, and Senior Consultant, Department of Economics, Economic Growth Center, Yale University, New Haven, Connecticut. He received the Nobel Prize for Economics in 1971.

FERDINAND MÖNCKEBERG is Executive Coordinator, Consejo Nacional para la Alimentación y Nutrición, Santiago.

GAYL D. NESS is Professor of Sociology; Associate Director, Center for South and Southeast Asian Studies; and Associate, Center for Population Planning, University of Michigan, Ann Arbor, Michigan.

YOICHI OKAZAKI is Chief, Division of Migration Research, Institute of Population Problems, Ministry of Health and Welfare, Tokyo.

SABURO OKITA is Chairman, Japan Economic Research Center, and Special Advisor, International Development Center of Japan, Tokyo.

CHRISTINE OPPONG is Senior Research Fellow, Institute of African Studies, University of Ghana, Legon, Accra, and Visiting Professor, Department of Sociology and Anthropology, University of Rhode Island, Kingston, Rhode Island.

DANIEL G. PARTAN is Professor, School of Law, Boston University, Boston, Massachusetts.

GUSTAV RANIS is Professor of Economics, Economic Growth Center, Yale University, New Haven, Connecticut.

RONALD G. RIDKER is Senior Fellow, Resources for the Future, Washington, D.C.

ALLAN ROSENFELD is Director, Center for Population and Family Health, and Professor of Obstetrics and Gynecology and Public Health, College of Physicians and Surgeons, Columbia University, New York.

JAY K. SATIA is Professor, Indian Institute of Management, Ahmedabad.

T. PAUL SCHULTZ is Professor of Economics, Economic Growth Center, Yale University, New Haven, Connecticut.

THEODORE W. SCHULTZ is Professor of Economics, University of Chicago, Chicago, Illinois.

SHELDON J. SEGAL is Director, Population Sciences, The Rockefeller Foundation, New York.

MECHAI VIRAVADYA is Director, Community-Based Family Planning Services, Bangkok.

WALTER B. WATSON is Senior Research Associate, Center for Population and Family Health, College of Physicians and Surgeons, Columbia University, New York.

MASAAKI YASUKAWA is Professor of Demography, Faculty of Economics, Keio University, Tokyo.

## PREFACE

**T**HIS VOLUME was designed to help to commemorate the completion of the first decade of operation of the United Nations Fund for Population Activities (UNFPA). Dr. Rafael M. Salas, Executive Director of UNFPA, invited a distinguished group of scholars to review and to evaluate the status of various aspects of population and of social and economic development, each in the field of his or her own expertise. He also invited me to coordinate and edit this volume—a task made easy by the caliber and product of the individual contributors.

Population has come to be recognized as having a significant impact on a number of world problems. Not all of the interrelationships between the various aspects of population and socioeconomic factors can be expected to be covered in any one volume, but this work, by reason of the subject areas represented and the demonstrated expertise of the authors of the individual chapters, does touch on most of the more important problematic aspects of population. Furthermore, the materials presented have important implications for future international population programs, as will be shown in the Epilogue.

The overview chapter, in part, fills in gaps not covered by the chapters that follow and serves as a framework for them. The brief reference made to the theory of the demographic transition in this preface, for example, is pursued in a broad way by Dr. Ronald Freedman in Chapter 2, "Theories of Fertility Decline: A Reappraisal." With a comprehensive knowledge of the literature and with his own research, Professor Freedman brings both wisdom and empirical evidence to bear on this major theoretical problem in demography. His statement will remain important for some time to come.



In Chapter 3, "Population and Environment: An Evolutionary Perspective to Development," Drs. John B. Calhoun and Dilip Ahuja consider world population retrospectively and prospectively within an evolutionistic time framework. Their conclusions will seem hopeful to some and alarmist to others—but interesting and thought-provoking to all. Especially pertinent in its implications for the UNFPA is the emphasis laid on the importance of the long-term planning and decision-making purposes.

Dr. Ronald G. Ridker explores the relation of both population and economic growth to world resources in Chapter 4, "Resource and Environmental Consequences of Population and Economic Growth," both for the world and for the United States. Especially deserving of attention are the dates presented for "hypothetical exhaustion" of selected minerals and nonrenewable energy sources. His materials may allay the fears of those who believe the world is on the brink of catastrophe in terms of resources, but they may also motivate the appropriate agencies, public and private, to policies and programs to deal realistically with the potential resource crunches that lie ahead.

Dr. Ferdinand Mönckeberg critically examines the relation of population to the world food supply in Chapter 5, "Food and World Population: Future Perspectives." He considers the problem of food shortages and the potential for increasing food production; and he relates the world food problem to the world energy problem. He also raises crucial questions about the interrelations of "have" and "have-not" nations with respect to food production and equitable food distribution.

In Chapter 6, "Health, Population, and Nutrition: Interrelations, Problems, and Possible Solutions," Drs. Walter Watson, Allan Rosenfield, Mechai Viravaidya, and Krasae Chanawongse consider the problem from a medical as well as social and political points of view. The health problems of mothers and children are examined not only in the light of family planning programs, but also parity, age of mothers, birth spacing, and nutrition. The authors see the big problem in this realm as devising ways to get the fruits of scientific advances in health, population, and nutrition to the mass populations in developing countries. Their presentation of possible solutions will be of interest both to policy-makers and to professionals in the field.

Drs. Sheldon J. Segal, B. Kwaku Adadevoh, and Zhi-yi Chang in Chapter 7, "Reproduction, Fertility Regulation, and Infertility," summarize what is known about reproduction and fertility regulation and outline what lies ahead as determined by research already in progress. Although the material is heavily biological in coverage and language, the lay reader will, nevertheless, be able to follow the impressive additions to knowledge about human reproduction mechanisms and processes and fertility control which have been gained through scientific research. The authors clearly

demonstrate the magnitude of research that remains to be done before better means of fertility regulation are developed. Progress in solving problems of infertility is also touched upon.

On the vital relationship between population factors and economic development, a sterling team of economists collaborated to produce Chapter 8, "Demography and Development in the 1980s." In this essay, Nancy Birdsall, John Fei, Simon Kuznets, Gustav Ranis, and T. Paul Schultz combined to make a comprehensive analysis of micro and macro models and present a scheme incorporating demographic and economic interrelations using the family as the primary unit of analysis. While more technical considerations may appeal to econometricians, others will find the essay quite illuminating. Also included in this chapter is an interesting sector on "puzzles and prospects" with consideration of priorities for research.

From the theoretical material in Chapter 8 a team of Japanese scholars turn to an analysis of the relation of population and development in Japan, providing an account of the Japanese experience in Chapter 9. Dr. Saburo Okita provides an overview of the Japanese experience; Dr. Masaaki Yasukawa considers the demographic transition in Japan in relation to economic development. Dr. Yoichi Okazaki considers population increase in relation to economic development; Dr. Koichi Iio analyzes the structure of the labor force and development; and Dr. Toshio Kuroda looks into the interrelation of economic growth and migration. The experience of Japan, although unique in a number of ways, points to desirable pathways for less developed countries.

An important aspect of development only recently emphasized in policy and program is taken up by Professor Theodore W. Schultz in Chapter 10, "Investment in Population Quality Throughout Low-Income Countries." Although some demographers and other noneconomist social scientists may dissent on some matters, all would agree on the necessity of investment in human capital being prerequisite to development as discussed by Dr. Schultz. His account of the extent to which such investment has taken place in the LDCs and is still taking place, while moot at some points, is, nevertheless, heartening.

Chapter 11 complements Chapter 10 by elaborating the role of education, formal and informal, in contributing to population quality. This chapter, "The Quality of Population in Developing Countries, with Particular Reference to Education and Training," by Professor Mark Blaug, raises critical policy questions about the allocation of resources among the various levels and types of education and about the experience of an educated labor force in the LDCs. The relatively high incidence of "educated unemployment" is critically examined, and policies and programs to prevent it while improving LDC population quality are explored.

"Population Redistribution: Patterns, Policies, and Prospects" are

the subjects of Chapter 12. In this series of short essays, Professor L. A. Peter Gosling, in collaboration with his colleagues John F. Oppenheim, Linda Y. C. Lim, Theodore D. Fuller, Abdul Hamid Abdullah, Donald R. Deskins, Jr., Keith C. Clarke, and Maxine E. Olson, extensively reviews the literature of various aspects of this important field. Among the issues discussed are population redistribution in geographic and economic contexts, rural to urban, rural to rural, and urban to rural migration and migration management, and the relation of population redistribution to economic development.

In Chapter 13, Drs. Christine Oppong and Elina Haavio-Mannila consider "Women, Population, and Development." The authors discuss the increasing international focus on the role of women, problems of equality of men and women, indicators of the position of women in different types of society, and levels of economic development. They also discuss the family and the role of women in production and reproduction and present qualitative and quantitative findings tempered with keen insights and useful perspectives.

In Chapter 14, "Human Rights Aspects of Population Programs," Daniel G. Partan touches on a number of complex and emotional aspects of population policies and programs as they affect human rights. He considers such topics as human rights as legal rights, individual versus collective rights, and individual free will and government coercion. Also discussed are human rights standards in the population field and rights to government benefits and services, including incentives and disincentives. The treatment of human rights embraces a series of individual freedoms—the right to life, abortion in relation to the right to life, marriage and the family, family planning, voluntary sterilization, and various aspects of contraceptive and menstrual regulation. Treatment of the right of freedom of movement delves into problems of population distribution and migration. Partan presents recommendations and points to the implication of human rights for UNFPA policy and program.

The next three chapters have special impact for policy and program agencies concerned with population problems, including a number of implications for UNFPA. In Chapter 15, "Beyond Integration, Toward Guidability," Professor Amitai Etzioni examines the interrelations of population policies and programs and general social and economic policies and programs; and he emphasizes the need for integration of these programs. The need for a holistic approach to deal simultaneously and in an integral manner with population problems in the context of social and economic change is stressed. Recognized also is the fact that population policies should embrace many problematic aspects of population, of which high fertility is but one.

In Chapter 16 Dr. Sagar C. Jain, in collaboration with Drs. Federico Joubert and Jay K. Satia, focuses on the management of national population programs. After presenting conceptual issues and problems relating to the training and functioning of managers, they summarize the evolution of population programs, presenting for a number of developing countries the population policy status, the growth of population programs, the birth control methods used, and the sources of funds. They also describe the population activities of the UN specialized agencies. Finally the major managerial concerns of population agencies are considered.

In Chapter 17 Professor Gayl D. Ness critically explores the "Organizational Issues in International Population Assistance," recognizing that "large scale, bureaucratic forms of organization are a dominant factor of life in the modern world." Ness deals with the organizational issues that go beyond problems of structure and function, leadership, resources, and scope of authority—"the common form of much administrative analysis." Drawing on modern theory and research he considers the "environment of action" and the "nature of the technology used." A number of guiding principles for increasing effectiveness in organized population assistance are set forth.

Finally, in the Epilogue the implications of the volume for the future directions of population programs are discussed by the editor of the volume.

All in all, the contents of this volume constitute an inventory, and to some extent an appraisal, of the problems with respect to population and development in the context of a world comprising "have" and "have-not" nations engaged in intense efforts to resolve pressing immediate problems while remaining aware of the even more severe long-run outlook.

Many persons in addition to the authors of the chapters were engaged in this enterprise. A number of seminars and workshops were held in various countries, developed and developing, to consider and discuss the content of individual chapters. The persons involved are too numerous to report here, but their collective and individual contributions were significant. Furthermore, the authors of the individual chapters in a number of instances engaged in research activities in the preparation of their papers which involved other scholars and research assistants, to whom acknowledgment is made in the notes at the beginning of those chapters.

In the coordination and editing work was assigned in many ways which call for acknowledgment. I am indebted to Dr. A. Thavarajah, Chief, Office of Policy Analysis and Statistics (OPAS) of the UNFPA, and to his colleague, Dr. Hirofumi Ando, for wise counsel and implementation of the multitudinous administrative tasks. Thanks are due also to Mrs. Marion O'Connor, Dr. S. L. N. Rao, Mr. A. Kumashiro, and Miss Linda Sherry of OPAS; and Dr. James Collins for their assistance. Valuable

secretarial service was rendered by Ms. Florence Banks, Barbara Bazie, Joanne Bernardi, and Wendy Gadd. I am also indebted to my colleagues at the University of Chicago, especially Drs. Evelyn M. Kitagawa and Teresa A. Sullivan of the Population Research Center, for their patience and tolerance in assisting in teaching and research duties when the work on this volume pre-empted time and attention.

Thanks must also be given to the East-West Population Institute where I served as Senior Fellow from December 1978 to April 1979. It was in this capacity that the work on this volume was completed. Acknowledgment is especially due to Dr. Lee-Jay Cho, Director, who arranged for the Senior Fellowship; and to the Institute's support staff, including Minja Choe, Data Analysis Officer, and her statistical assistants; Alice Harris, Resource Materials Specialist, and her associates; and Lynette Tong, Steno Pool Supervisor, and her group of typists. Acknowledgment must also be made of the assistance of Leo J. Shapiro and Associates, whose facilities helped to expedite the early stages of the editorial and administrative tasks.

Thanks must also be given to Barbara W. Sloane for her valued assistance in copyediting. Finally, I am happy to acknowledge my indebtedness to Professor Ronald Freedman for reviewing Chapter 1 and the Epilogue and for providing insightful and helpful counsel. Needless to say, Dr. Freedman cannot be held accountable for the deficiencies that may still be present in these materials.

Honolulu  
Spring 1979

Philip M. Hauser

**WORLD POPULATION  
AND DEVELOPMENT**

# CONTENTS

	PAGE
Foreword	v
<i>Rafael M. Salas</i>	
Contributors	xiii
Preface	xvii
<i>Philip M. Hauser</i>	
1 Introduction and Overview	1
<i>Philip M. Hauser</i>	
2 Theories of Fertility Decline: A Reappraisal	63
<i>Ronald Freedman</i>	
3 Population and Environment: An Evolutionary Perspective to Development	80
<i>John B. Calhoun and Dilip Ahuja</i>	
4 Resource and Environmental Consequences of Population and Economic Growth	99
<i>Ronald G. Ridker</i>	
5 Food and World Population: Future Perspectives	124
<i>Ferdinand Mönckeberg</i>	
6 Health, Population, and Nutrition: Interrelations, Problems, and Possible Solutions	145
<i>Walter Watson, Allan Rosenfield, Mechai Viravaidya, and Krasae Chanawongse</i>	
7 Reproduction, Fertility Regulation, and Infertility	174
<i>Sheldon J. Segal, B. Kwaku Adadevoh, and Zhi-yi Chang</i>	

8	Demography and Development in the 1980s <i>Nancy Birdsall, John Fei, Simon Kuznets, Gustav Ranis, and T. Paul Schultz</i>	211
9	Population and Development: The Japanese Experience <i>Saburo Okita, Toshio Kuroda, Masaaki Yasukawa, Yoichi Okazaki, and Koichi Iio</i>	296
10	Investment in Population Quality throughout Low-Income Countries <i>Theodore W. Schultz</i>	339
11	The Quality of Population in Developing Countries, with Particular Reference to Education and Training <i>Mark Blaug</i>	361
12	Population Redistribution: Patterns, Policies, and Prospects <i>L. A. Peter Gosling</i>	403
13	Women, Population, and Development <i>Christine Oppong and Elina Haavio-Mannila</i>	440
14	Human Rights Aspects of Population Programs <i>Daniel G. Partan</i>	486
15	Beyond Integration, Toward Guidability <i>Amitai Etzioni</i>	538
16	Management of National Population Programs <i>Sagar C. Jain, Federico Joubert, and Jay K. Satia</i>	566
17	Organizational Issues in International Population Assistance <i>Gayl D. Ness</i>	615
	Epilogue <i>Philip M. Hauser</i>	651
	Index	657



# TABLES

Table 1.1	Model Demographic Profiles under Varying Fertility and Mortality Levels	6
Table 1.2	Demographic Profile of the World Classified by Economic Development, <i>circa</i> 1965–70	7
Table 1.3	Estimates of Past, Present, and Future World Population for More and Less Developed Regions, 1750–2000	13
Table 1.4	Population and GNP, 1970	26
Table 1.5	Population in 2000 under Varying Growth Assumptions for LDCs by Continental Region	30
Table 1.6	GNP Necessary for LDCs to Match the GNP per Capita of Europe, North America, and Mexico under Three Population Growth Assumptions	31
Table 1.7	GNP per Capita as Percent of 1970, Europe, North America, and Mexico GNP per Capita under Assumption of 5% Increase in GNP between 1970 and 2000 and under Three Population Growth Assumptions for the Total LDCs and by Continent	34
Table 1.8	Labor Force Participation Rates by Age and Sex, 1970	57
Table 1.9	Percentage of Work Force in Agriculture, Industry, and Services, by Sex, 1970	59
Table 1.10	Labor Force by Sex, 1970 and Projected to 2000	60
Table 1.11	Labor Force Participation Rates, by Sex, Projected to 2000	61
Table 4.1	Population and Economic Growth, World and Selected Regions, with Projections	101
Table 4.2	World Consumption and Rates of Growth in Consumption of Nonfuel Minerals, 1971, and Projected Growth Rates, Standard Case	102
Table 4.3	World Consumption and Rates of Growth in Consumption of Commercial Energy, Standard Case	102
Table 4.4	Dates of Hypothetical Exhaustion for Selected Minerals, Assuming No Change in Prices, Standard World Case	105
Table 4.5	World Cumulative Demand of Nonrenewable Energy Sources and Percent of Resources Used, 2000 and 2025, Standard Case	108
Table 8.1	Impact of Family Income Distribution on Fertility	265