TUMARI JATILEKSONO

EQUITY ACHIEVEMENT IN THE INDONESIAN RICE ECONOMY

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dedicated to the .....

Indonesian rice policy makers

FOREWORD

New technology has been an important instrument in the agricultural development policy in Indonesia, particularly in increasing rice production to achieve food self-sufficiency. The application of the new technology in rice production has been implemented in a nation-wide Rice Intensification Scheme called BIMAS Program.

BIMAS is a package program comprising massive extension, provision of high yielding variety seeds, fertilizers and pesticides as modern technology inputs at subsidized price, provision of farm credits at subsidized interest rates and purchase of the increased rice production at guaranteed floor price.

There have been extensive discussions on the various impact of BIMAS program on the Indonesian rice economy. Some stated that BIMAS has been successful in increasing rice production such that Indonesia achieved rice self-sufficiency in 1985 but at the same time made income distribution worse. Some other mentioned that BIMAS program is a technology neutral instrument of development policy.

In this debate on the various impact of BIMAS as a new technology policy on the Indonesian rice economy, this book, "Equity Achievement in the Indonesian Rice Economy" is a needed and welcome contribution. The book provides a solid empirical analysis on the issue and systematically explore the distribution of benefits gained by both producers and consumers.

The book enriched the limited number of academic literature documenting the impact of various policy instruments in agricultural development.

It is a significant contribution for both student of agricultural

development policy as well as policy makers in formulating and implementing various policy instruments in agricultural development.

In the libraries of agricultural colleges as well as graduate colleges offering topics of agricultural development policy, there is a shortage of books addressing policy issues of Indonesian agricultural development with solid theoretical and empirical analysis. Likewise, in the libraries of agricultural ministry and its regional offices there is a need to have literature documenting the various policy issues of development in a solid scientific way.

Tumari Jatileksono, as a farmer boy who has gone through a rigorous academic training has succeeded in filling those shortages by writing this well needed book.

Very appropriately, he puts in the initial pages of the work, that the book is "dedicated to the Indonesian rice policy makers".

Dr. Tumari Jatileksono has written a book applying an appropriate theoretical concept addressing a current and relevant policy issue of development in the rice economy of Indonesia.

It is a good quality policy oriented scientific book very badly needed in the academic community as well as among policy makers.

June 11, 1987
A. T. Birowo
Economic Adviser to
the Minister of Agriculture

PREFACE

This book is wholly based on my PhD dissertation submitted to the School of economics University of The Philippines at Diliman in April 1986. The original thesis entitled "Equity Implication of Technology Changes and Government Policy in the Indonesian Rice Economy."

I wish to express my sincere gratitude to the following people and institutions who have contributed to the completion of this study: Drs. Casimiro V. Miranda, Jr., Dante B. Canlas, Florian A. Alburo, Raul V. Fabella, and Benjamin E. Diokno for their constructive suggestions; Dr. Cristina C. David for untiring guidance and for arranging support from the International Rice Research Institute (IRRI); The Rockefeller Foundation for awarding full financial support for the entire graduate program, and IRRI for the facilities needed to finish the reasearch; Universitas Gadjah Mada through its Fakultas Pertanian for granting a study leave; Ms. Vee Gonzalvo for patiently typing from the first draft to the final thesis manuscript and Mr. Feliciano C. Jalotjot for carefully drawing the figures.

Finally, I would like to express deep appreciation to my parents, brother, sister, and in-laws for their prayers and love; to my everloving wife, Widya, for her understanding; and to my beloved daughter, Diah, and sons, Wawan and Agung, as inspirations for making this life more meaningful.

Yogyakarta, 1 June 1987

Tumari Jatileksono

ABSTRACT

This study analyzes the impact of technology changes and government policy on the nature of rice production in Indonesia. It quantifies the distribution of benefits generated from technology changes and government policy on rice agriculture between consumers and producers. It also examines the equity implication of technology changes and government policy for different environmental conditions.

Demand and supply framework is applied to measure the changes in cousumers' and producers' surplus due to techonology and policy changes. A close economy model as well as an open economy with government intervention model are developed. But the latter is more appropriate in the case of Indonesia. Rice demand and supply functions are estimated for this purpose.

Price elasticity of demand for rice is estimated to be about —0.64. It is found that rice farmers were price-responsive. With respect to output, rice price elasticity is 0.33 and fertilizer price elasticity is —0.38.

The findings confirm that there was a shift in government rice policy in Indonesia from a consumers-oriented policy in the late 1960s and early 1970s to a producers-oriented policy since the mid 1970s. On the average, rice consumers gained from rice price policy about 38 percent of domestic price in 1969—77, but lost 7 percent of rice price in 1978—83. Producers' net loss occurred in 1969—72 was equivalent to 16 percent of rice price, but then turned to be net gains of about 6 percent, in 1973—77, and 23 percent, in 1978—83, of rice price. The average of the social net gains in recent years was about 10 percent of the domestic rice price.

The study predicts that if there were no technology changes, no additional expenditure on irrigation, and no subsidy on fertilizer and insecticide, rice production in recent years would be only two-thirds of the current figures.

Initially, technology changes worsened income distribution between favorable and unfavorable areas because in the early years modern varieties were suitable and concentrated in the favorable area. But income gap between the two areas was reduced as modern varieties, along with irrigation, expanded in the unfavorable area.

The study finds that the position of the landless farm worker was improving because real wages in rice farming were found to be increasing over time. It is also observed that there was indication of crop diversification as a consequence of advancement in rice technology, from upland rice to commercial crops or other food crops. Moreover, there was no significant evidence of permanent migration of labor from unfavorable area to favorable region since the pattern of migration was the reverse.

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