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PROGRESS REPORT

CONTRACT NO. AID 2163

WITH IOWA STATE UNIVERSITY

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Iowa State University
Center for Agricultural and
Rural Development

December 1971

Introduction

This contract is in its final stages of completion. Completion is set for July 1, 1972, which utilizes the one year time extension necessitated by the late start in initiating the contract in June 1968. The late notice of project approval is of substantial importance since six months planning horizon is essential for meshing a project of this size and complexity into a university with staff already fully employed.

The report below outlines the final steps which are underway on this project. During the last six months period, two major studies have been submitted to AID/Washington for their use in operating food aid programs. One report evaluated the impact of past food aid shipments on India. This research found significant less impact than past study estimates. Another report delved at great length into the massive set of activities necessary if the concept of self help assistance is to be effective in recipient countries. Self help implies agricultural development, a complex and vexing problem for most underdeveloped countries. The report places this problem in better perspective and should allow a more meaningful effort toward its solution.

Seven studies have been completed and submitted to AID/Washington.

| Report No. | Author | Report Title |
|------------|-------------------|---|
| 1. | Uma K. Srivastava | Impact of P.L. 480 aid on India's supply and balance of payments position: a look ahead |

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| 2. | Leo V. Mayer | An analysis of costs incurred and prices charged for food shipments under Public Law 480 |
| 3. | National Council of Applied Economic Research | Demand and supply projections of food grains for India, 1971-1986 |
| 4. | Walter W. Haessel | An intersectoral model of agricultural development for a dual economy |
| 5. | Lee Blakeslee, Charles Framingham and Earl O. Heady | Projections of World Food Demand and Production Potentials, 1970, 1985 and 2000 |
| 6. | Keith D. Rogers | Utilization of Food Aid in Economic Development |
| 7. | Roger W. Hexem | Factors affecting the Economic and Social Well-being of Agriculturalists in Less Developed Countries |

Ongoing Projects

Two final projects are underway. One project is directed toward an evaluation of weather fluctuation and the effect on India's food supplies. This project is under the direct supervision of Professor A. M. Khusro at the Institute of Economic Growth at Delhi University. The outline for the study is given below.

- Chapter 1 Exposition of the Problem
 - 1.1 Introduction
- Part A: Government Operations in Foodgrains: A Critical Review
 - 1.2 Trend in Government Operations
 - 1.3 Effect on Consumers
 - 1.4 Effect on Producers
 - 1.5 Effect on Market Prices
 - 1.6 Lacuna in Government Foodgrains Operation

- Part B: Dimensions of India's Future Food Problems
 - 1.7 Prospects of Self-Sufficiency in Foodgrains
 - 1.8 Regional Growths in Foodgrains Demand
 - 1.9 Regional Growths in Production Under Overall Self-sufficiency Assumption
- Part C: An Approach to the Problem
 - 1.10 Future Problems in Food Management
 - 1.11 A Systems Approach for Buffer Stocks Operatio
- Chapter 1: Stabilizations Through Buffer Stocks Program
 - 2.1 Introduction
 - 2.2 Necessary Conditions for Price Stability
 - 2.3 Conditions for a Successful Buffer Stocks Program
 - 2.4 Justification for a Buffer Stocks Program: Empirical Evidences
 - 2.5 Determinants of the Level of Stabilizations
 - 2.6 Economics of Buffer Stocks Operation
 - 2.7 Administration of the Buffer Stocks Program: Fair Price Shops
- Chapter 3: Weather and Reserve Stocks for Foodgrains
 - 3.1 Introduction
 - Part A: Relative Importance of Various Climatic Factor
 - 3.2 Causes of Production Fluctuation
 - 3.3 Economic Geography of Indian Agriculture
 - Part B: Rainfall Distribution and Its Effect on Produc
 - 3.4 Rainfall Indices
 - 3.5 Effect of Rainfall on Aggregate Production
 - 3.6 State-wise Effect of Rainfall on Production
 - 3.7 Distribution of Rainfall Indices
 - Part C: Reserve Stocks for Foodgrains
 - 3.8 Probable Changes in the Estimating Parameters
 - 3.9 Technical Size of Buffer Stocks
- Chapter 4: Evaluating Buffer Stocks Program: An Experiment in Reality
- Chapter 5: Conclusions.

This study is nearing completion with a final work to be submitted to AID before June 1, 1972.

A second study is aimed at providing a broader insight into the analysis of policy of planning for and the effects of U.S. P.L. 480 food imports upon the recipient countries. It will use a simple, but proven, general equilibrium model of input-output to analyze both direct and indirect effects of food aid under Titles I, II, and III. In

addition to the direct and indirect effects of food aid, there is also the effects resulting from the use of funds generated by the various forms of the grants or concessional sales. These effects have been analyzed separately but the use of basic input-output and its associated techniques will permit employing the same model as a foundation to study the two effects and thus hopefully linking the effects together to show the total final effect. The use of input-output for analyzing funds from food aid then really becomes a development programming model for the recipient country. United Nations Input-Output Bibliography lists entries for 50 countries under "National Studies" which received \$15,661.4 millions, 86.1% of the total, of P.L. 480 imports between 1954-55 and 1968-69 inclusive. The methods of analyzing food aid developed through this project will permit the use of this wealth of data.

Current work on the project is on formulation of methods for using the basic standard input-output tableau to show the effects of food aid. In addition to the analysis of the effects of a particular quantity of aid, the methods are such that various quantities of aid can be specified and their corresponding results compared. This it seems would prove most useful for a recipient country to determine the level of food aid it wished to receive.

The next step in the study will be to incorporate potential methods for analyzing the investment of funds which become available for the use of the recipient country. These methods will be naive in that the model per se will not be optimizing but only of a consistency nature. Next, it is planned to improve upon the basic model by refining it. Data is not

available to apply all the refinements to a particular country, but the methods will be shown so they could be applied given the data. Otherwise, data for a specific country will be used to illustrate as many of the techniques as possible.

A few months will be required to complete the methodology of the study. The literature of all areas has been surveyed so very little "starting" time will be required to begin to formulate the remaining methods. Upon the completion of the methodology, data of a specific country will be used to illustrate the various analytical methods introduced. Since the necessary data for a particular country will not be readily available to illustrate all the methods, some of the empirical results will of necessity be illustrative rather than actual. The time required to do the empirical work will depend upon the country chosen for illustration, but it is planned to restrain this time to a maximum of two or three months.

Project Summary

To complete this contract, the contractor is currently working on a summary statement of the major issues which have received research attention. The statement will draw together the massive amount of research data and conclusions into a straightforward elaboration of long term needs and prospects for food aid under P.L. 480 programs. It is not intended that this statement will solve day-to-day administrative problems related to P.L. 480 but rather that such a statement can assist this nation in planning appropriate public resource allocations on programs that greatly affect the welfare of millions of persons both in the United States and in other countries around the world.