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**PART II**  
**The Research Map**

A REPORT BY THE

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**ECONOMIC AND AGRICULTURAL  
DEVELOPMENT INSTITUTE**

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**MICHIGAN STATE UNIVERSITY**  
East Lansing, Michigan



## TABLE OF CONTENTS

PART I -- SUMMARYPART II -- THE RESEARCH MAP

	page
CHAPTER II ECONOMIC AND FINANCIAL ISSUES	
Preamble	1
A. The Place of Food Aid in Foreign Aid Programs	4
1. The Extent to which Food Aid Substitutes for Dollar Aid	5
2. A Study of the Consequences of Less Liberal Terms for Food For Peace	9
B. Alternative Procedures for Commodity Transfer	12
3. Comprehensive Comparison of Economic Impacts of Alternative Transfer Procedures	13
4. U. S. and Recipient Country Experience with Sales for Local Currency	16
5. The Scope and Applicability of Title II Economic Development Projects	22
6. Possible Effects from Supplying P.L. 480 Commodities as Grants or Long-Term Loans	27
C. International Trade and "Usual Marketing" Problems	31
7. Changes in the Structure and Conditions of Agricultural Trade in Relation to Food For Peace	32
8. The Interpretation of "Similar" Commodities Under Section 101 (a)	36
D. Local Currency: U S. Uses and Disposition of Accumulations	43
9. "Excess" Local Currencies, Effects on Monetary Structure, and the Disposition of the Currency	44
10. A Study of Mandatory "Set-Asides"	48

## CHAPTER II continued:

	page
E. The World Need for U. S. Agricultural Commodities and Food Supplements	51
11. Feasibility and Cost of Enlarging the Range of Commodities Provided under Food For Peace, Including Fortification	52
12. Elasticities of Demand for Food in Selected P.L. 480 Recipient Countries	60
13. Elasticities of Demand Derived from Least Cost Diets	65
14. A Study of the Costs and Benefits to the United States of Major Reductions in P.L. 480	70
15. Reducing the Instability of Supply Through Improved Programming of Shipments	77
F. Incentives and Disincentives to Agricultural Development in Host Countries	82
16. Disincentive Effects on Agriculture in Developing Countries	82
17. The Use of Food For Peace in the Operation of Reserve Stocks to Promote Agricultural Development	89
18. Developmental Impact of Food For Peace Upon Host Country Processing and Marketing Institutions	94
G. Title II Economic Development Projects	97
19. Factors Affecting the Implementation of Food-For-Wages Projects	99
20. The Economic Contribution of Title II Works Projects	103
21. The Welfare Implications of the Sale of P.L. 480 Commodities by Individual Recipients	108
22. The Least Costly Ways in a Title II Program to Bring an Existing Diet up to Specified Nutritional Levels, Without Major Alterations in Customary Food Consumption Patterns	113

## CHAPTER III PUBLIC POLICY ISSUES

	page
Preamble	117
H. Relation of Food For Peace to U. S. Foreign Policy	119
23. Evaluation of the Significance, Extent, and Direction of Food For Peace Impacts on Inter-governmental Relations	122
24. Problems in the Perception and Understanding of Food For Peace Abroad, Including Possible Changes in Attitudes	127
I. Relation of Food For Peace to Host Country National Policy	131
25. Host Country Policies and Objectives at Time of Negotiating Title I Agreements, Compared with Subsequent Events	132
26. The Effects of Food For Peace Upon Agricultural Sector Planning and Plan Implementation	135
J. Interrelations of Food For Peace with U. S. National Policy	138
27. The Interaction of Food For Peace with U. S. Farm Policy and Marketing Institutions	140
28. U. S. Policy Objectives and Expectations in Negotiating Various P.L. 480 Arrangements, Compared with Subsequent Events	144
29. Problems in the Perception and Understanding of Food For Peace in the United States	147
 CHAPTER IV SOCIAL AND HUMANITARIAN ISSUES	
Preamble	151
K. Role and Function of Voluntary Agencies in the Distribution of P.L. 480 Food	154
30. Possible Role Conflicts and Functional Effectiveness of the Several Types of Voluntary Agencies Engaged in Distributing Food	156

## CHAPTER IV continued:

	page
L. The Influence of P.L. 480 Food Distribution Programs on Recipient Country Governmental Units, Institutions, and Communities	160
31. Effects of P.L. 480 Donations, Including Title I, on Schools and Educational Systems	161
32. The Effects, Including Demonstration Effects, of Food Programs Upon the Ability of Organizations to Work Together	163
M. Extent to Which Title II and III Projects have Achieved Their Objectives	165
33. Comprehensive Comparison of the Advantages and Disadvantages of Different Types of Programs	168
34. Evaluation of the School Lunch Program	169
35. Evaluation of the Pre-School Child Feeding Programs	173
36. The Evaluation of the Family Feeding Programs	174
37. The Evaluation of Food-For-Work Programs	176
38. An Evaluation of Feeding Programs for Women	178
N. The Role of Food For Peace in Disasters	180
39. The Role of Food Aid in Natural Disasters	181
40. The Role of Food Aid in Civil Disturbances	183
O. The Socio-Political Effects Due to Termination of Food Programs	186
41. Potential Effects of Withdrawal of Foods on Recipient Individuals of Various Ages, on Families, on Leaders, and on Governmental Units, and Ways to Minimize any Adverse Effects	187
P. The General and Specific Factors Influencing the Introduction of a New Food	188
42. The Social-Psychological Conditions Influencing the Acceptance of a New Food	189
43. Determination of Irrational and Inaccurate Beliefs About the Physical Content of United States Foods, and Ways to Mitigate These Beliefs	193

## CHAPTER IV continued:

	page
44. Determining Appropriate Forms for U. S. Commodities	194
45. Determination of Up-to-Date Information on Ethnic and Stratum Differences in Food Habits	196
46. The Identification and Influence of "Gate-Keepers" on the Adoption of New Foods	198

## CHAPTER V HEALTH AND NUTRITION ISSUES

Preamble	203
Q. Factors Involved in Learning How to Use New Foods to Improve Nutrition Effectively	218
47. Determination of Factors Influencing Appropriate Ways to Prepare New Foods	219
48. Determination of the Most Effective Methods of Teaching the Preparation and Preservation of P.L. 480 Foods	222
R. The Influence of Adequate Food on the Individual's Competence for Social and Economic Development	225
49. Determination of Long-Term Effects of Various Levels of Malnutrition on Learning and on the Ability to Learn	226
50. Effects of Food For Peace on Adult Productivity and Work-Related Attitudes	229
S. Developing Improved Bases for Nutritional Programs	233
51. Determination of Nutrient Content of Foodstuffs	234
52. Control Programs in Nutritional Toxicology Related to Food For Peace	240
53. Determination of the Vitamin B <sub>12</sub> and Folic Acid Requirements of the Young Child	245
54. Continuing Evaluation of Malnutrition in the Pre-School Child in Relation to Ongoing Nutritional and Food For Peace Programs	248



## CHAPTER V continued

	page
T. Programs for Achieving Improved Nutrition	251
55. Technological Changes to Increase the Proportion and Improve the Quality of Protein Consumed	252
56. Assess the Possibilities of Increasing the Production, Improving the Processing, and Expanding the Use of Animal Type Proteins	257
57. Assess the Technical Possibilities and Limitations of Fortified Foods to Supplement Diets Based on Cereal Grains	261
58. Assessment of Educational Approaches in Improving Nutrition of the Pre-School Child, and the Possible Role of Food For Peace	264
59. Evaluation of the Packaging and Storage of Food For Peace Commodities	267

## CHAPTER VI POPULATION AND FOOD SUPPLY

Preamble	273
U. Projections of Food Supply and Population	276
60. Alternative Projections of Population, Food Supply, and the Demand for Food, Especially for Individual Countries	278
61. Means by which the Statistical Bases for Projections and the Projection Techniques Can be Improved	289
V. Possible Accelerations of Agricultural Advance in Relation to Food For Peace	294
62. Comprehensive Analysis of Agricultural Potentials	294
63. Pricing, Production, and Marketing Policies by which Food For Peace Programs can Enhance Agricultural Advance	299
64. Development of Programs Whereby Possible Adverse Effects of Large Title I Imports can be Mitigated	302
65. Evaluation of the Significance of U. S. Nonparticipation in Agricultural Development Programs Which Feature Crops Competitive with Those Exported by the United States	305

## CHAPTER VI continued:

	page
W. Population Movements and Changes that Affect Food For Peace Programming	312
66. Changes in the Food Preferences Held by Migrants	314
67. Exploration of the Relation Between Food For Peace and Population Growth	317

## CHAPTER VII PROGRAM OPERATION

Preamble	323
X. Consistency and Relationships Among Multiple Foreign Policy Objectives	325
68. Integration, Consistency, and Overall Evaluation of Food For Peace Objectives and Accomplishments	327
69. Toward Fuller Integration of Food Aid with Other Foreign Aid Objectives	331
70. Integrating Food For Peace Policies and Strategies in Individual Countries with U. S. Assistance Policy Objectives	335
71. Alternative Strategies in Formulating Food For Peace Programs in Specific Countries	342
Y. Statutory and Other Changes That Would Expedite Administrative Processes	346
72. Developing Improved Procedures for Program Approval and Implementation	348
73. Comparison of Methods of Different Voluntary Agencies	352
74. The Feasibility of Combining Shipment and Handling of Commodities Originating Under Separate Titles or Programs	354
75. The Effect of Markings and Posters Upon the Perception of Food For Peace Held by Food Recipients	358
Z. Problems Resulting From Substantial Program Expansion or Reduction	361
76. Planning Procedures in Case of Program Expansion or Reduction	362

## CHAPTER VII continued:

	page
77. Physical Limitations to Food For Peace Imports, by Titles	366
78. Cultural and Economic Limitations to Food For Peace Imports	369
79. Providing Guidelines on Priorities to Program Developers	372
AA. The Issue of Market Development Effects	377
80. Evaluation of Market Development Programs	378
BB. The Administration of Food For Peace Programs	384
81. Comparative Personnel Costs and Effectiveness Among Titles of P.L. 480	385
82. Changes in the Sophistication and Competencies of Public and Private Administration in the Recipient Country in Food For Peace Activities	388
83. Effects of Food For Peace Upon the Structure and Operations of U. S. Administrative Agencies	391
84. Improving the Knowledge and Effectiveness of Personnel	394

PART III -- ANNOTATED BIBLIOGRAPHY

## CHAPTER II

ECONOMIC AND FINANCIAL ISSUES

## PREAMBLE

The economic issues identified in this chapter for further research and study reflect a number of questions which have arisen in more than ten years of experience with P.L. 480. During this time there has been a vast transfer of resources, in the form of surplus U.S. agricultural commodities, to the underdeveloped regions of the world. This transfer was a response to a range of needs, and took a variety of forms. These needs changed over time as some countries began to succeed in their efforts to develop economically, as some newly independent countries were added to the list of recipients, and as some countries continued to have food problems which were as great, or greater, than they were at the beginning of the program. The agricultural surpluses of the U. S. were also subject to change over time.

There has been both criticism and praise for P.L. 480 and a great deal has been written on the subject. Yet, in looking ahead to the future, it is clear there is ample need for a more thorough sifting of the rich experience gained in operating this past effort, and for research which will furnish responsible officials with the analytical tools and empirical information which permit informed and effective use of the resources from U. S. agricultural production. There is still too little firm agreement or understanding of what really happens in certain critical respects when resources, in the form and of the magnitude of the P.L. 480 commodities, are injected into economies at different stages of the developmental process.

The focus for the economic issues raised here derives from the emerging U. S. policy that agricultural commodities be used as a positive influence in economic development efforts, and not as a passive measure to meet temporary food deficits. Of course, P.L. 480 has other objectives -- both economic and non-economic -- but it is hard to visualize much success for them without some progress in the field of economic development. Economic development is at least a complementary objective with others, and in some instances would be a necessary pre-condition. It is on this basis, therefore, that developmental aspects of Food For Peace have been accorded priority in the attempt in this chapter to delineate the major researchable economic issues.

The issues selected for emphasis (and the research projects which relate to them) can be condensed into four main elements. The first examines the general role of food aid and the viability of using agricultural commodities as a substitute for other means of developmental assistance. It touches upon basic questions concerning the forms which aid should take to provide the greatest development impact, and would properly draw upon the results of research suggested under the other issues in this research map.

A second element might be called the supply side of the problem, referring to both commodities supplied under Food For Peace and those produced by the domestic agricultural sector in the host countries. The issues which arise here include a comparison of the alternative mechanisms available to transfer commodities from the U. S. to other countries, international trade problems, the economies of local currency sales, and the effects of Food For Peace on incentives in the host country.

Taken together, the research recommended should provide a fairly complete picture of the conditions which have influenced supply in the past, and an analysis of the most promising alternative supply policies available for the future.

The demand side constitutes a third element, and calls for study of the food needs in developing countries as they are related to the commodities available (or potentially available) under Food For Peace. Although there is much to indicate that a potential food shortage looms ahead as the world's population increases rapidly, the range of needs and the present knowledge of what the needs will be is still too broad and generalized for careful planning purposes.

The fourth element concerns the economic and administrative aspects of developmental projects which use food as a direct input (primarily as wage goods). If this type of project is to be used more extensively in the future, planners and administrators would benefit from research which looks to the past, and evaluates what has happened in similar developmental projects.

A further word might be added on the location of research projects. Special circumstances exist in the different countries which make it difficult (and unwise) to make generalizations about the research results which cover all countries participating in Food For Peace. On the other hand, it would be exorbitantly expensive to attempt a complete research study of the economic issues as they arise in each country. Moreover, conditions in each country change so that current problems may diminish in importance as new ones take their place. For all these reasons, we have made no firm recommendation on where the research sites should be located. Here and there, issues that have been particularly associated with certain countries, have been noted in the Research Rationale of some projects. Otherwise, the

selection of research sites and justification for the selection have been left to the judgment of those who will submit the actual research proposals. These proposals should contain an explanation of the limits to which generalizations would apply (e.g., a single country, a geographical region, countries with similar agricultural bases, countries at the same stage of development), and the reasons why the research site(s) selected are adequate to support the generalizations which might result.

#### ISSUES AND PROPOSED PROJECTS

##### A. The Place of Food Aid in Foreign Aid Programs

The concept of a Food For Peace program, in its most general form, rests on the assumption that many of the under-developed countries of the world need additional supplies of food, and that U. S. surplus commodities can be fitted into this overall situation in a variety of ways which achieve constructive and worthwhile ends. In fact, as Food For Peace has evolved over time it has come to incorporate a number of programs simultaneously -- for example, adding to the supplies for sale to the general public through sales for local currency, loans and grants for developmental purposes from accumulations of local currency, improved nutrition for special groups within the population, disaster relief, market development for U. S. agricultural commodities, developmental projects using food as one of the direct inputs (as wage goods), and U. S. export expansion through long term loans for the purchase of agricultural commodities. Through more than a decade of experience under P. L. 480 emphases on these different programs have changed, reflecting changes taking place within the recipient countries as well as changes in the U. S.

This section of the research map is devoted to an evaluation of the place of food as an element in an aid program. It is a basic issue because a clear perception of this role is essential for future planning. In keeping with the emphasis placed on economic development in this and other chapters, examination of this issue requires an organized sorting-out of the numerous objectives which have been set for Food For Peace in the past in order to isolate and identify the uses of food aid which do make recognizable contributions to the process of economic development in recipient countries. Thus, future decisions on the use or non-use of food aid can be based on a better understanding of their probable impact on development and can be weighed against alternative policy objectives and alternative forms of developmental assistance.

1. The Extent to Which Food Aid Substitutes for Dollar Aid

a. Research Rationale

In many underdeveloped countries, domestic agriculture does not produce enough to feed the population adequately, and foreign exchange resources are insufficient to import the additional food required, as well as other imports needed for development. U. S. agricultural surpluses would fit into some of these situations on a commercial basis, if foreign exchange were available and if the costs to the importing country were competitive on a world market basis. It does not follow, however, that food aid can be used as a substitute for dollar aid in all developing countries, or that it provides comparable assistance to economic development even in countries which normally must import some foodstuffs. The question here is one of limits, of finding the situations in which the U. S. food aid available fits the requirements for development most closely.



Difficult as it is to answer, the question of limits is the kind of question which must be asked because inappropriate and indiscriminate use of food aid can be costly to both the U. S. and to recipient countries. Developing countries may accept food aid because it is available in addition to dollar aid, but food aid is not necessarily as effective in promoting development. The U. S. may pay more in resources offered through food aid to achieve a given level of development than it would through a dollar loan and technical assistance program. If developing countries were offered the dollar equivalent of aid now received in agricultural commodities, the resulting combination of imports might be quite different (in terms of the mixture of agricultural and non-agricultural commodities), and the developmental impact might also be different. On the other hand, it may be equally possible that food aid constitutes a powerful contribution to development, and that it is also an economical use of U. S. resources. If so, there may be untapped opportunities for expanding this form of aid, even to a point where it requires more than is available in the U. S. surpluses.

The basic rationale for this proposed project is that it would pull together the findings of research recommended in other issues under this chapter and elsewhere in the research map as a basis for judging the above possibilities. Those other projects would examine the various forms of agricultural commodity aid and the needs of the developing countries, and should provide a number of valuable insights into the strengths and weaknesses of the program in its present form. What remains to be done is an assessment of those research findings in the context of a comparison with dollar aid, and this would be the task of this project.

b. Research Completed and In Progress

The consideration of food as a development aid has led to voluminous writings in the P.L. 480 literature which touch upon the subject in some degree. On the whole, however, these writings contain a range of conclusions and reflect little consensus on the role played by food in development. Although the project proposed here would draw primarily upon the research suggested in this research map, a survey of the existing literature would be a necessary first step. Books which deal in some measure with the use of P.L. 480 as a developmental tool include (1), (7), (19), (22), (30), (36), (45), and (72)\*. Journal articles which would be especially helpful include (108), (146), (157), (165), (177), (182), (217), (258), (337), and (395). A review of some of the country studies of P.L. 480 would supplement research findings which may be forthcoming from this research map, and in some instances would provide valuable additional case material. Useful monographs would include (523) and (578).

c. Research Objectives

The major objectives would include:

- (1) Identify host country situations in which there is no substitute for some food imports (i.e. where at least some dollar aid normally would be used for food imports). For such countries, which would be major recipients under Food For Peace, derive minimum estimates of the amounts and kinds of food which would be imported if all aid were in the form of dollars.

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\*The numbers in parentheses in Section b of the projects described in Part II of this report refer to the items listed in the bibliography presented in Part III.

- (2) Determine the extent to which the above estimates match commodities supplied under P.L. 480 in kinds and amounts. This would provide some basis for estimating whether dollar aid would permit importation of a food mix which is preferable to that supplied through surpluses alone.
- (3) Determine situations in which food aid and dollar aid are potential substitutes for each and again derive estimates of import requirements for major recipient countries. These comparisons would probably be most meaningful with individual countries, and would involve such considerations as the benefit-cost ratios of the most efficient public works programs (using food as an input) and the benefit-cost ratios of the most productive agricultural inputs which would be supplied through dollar aid. Other bases for comparison might be used, and other criteria employed, but the objective would be similar. New estimates of U. S. costs to provide food aid may be required for this project, although estimates of this kind are called for in projects 11 and 14 below.
- (4) Based on the findings of objectives 2 and 3 above, determine the extent to which food aid currently falls outside the range of substitution for dollar aid, or conversely, the extent to which there exist opportunities to substitute food aid for dollar aid. The relative costs to the U. S. to supply food aid should be implicit in the findings of objective 3.

d. Recommended Research Personnel

A team composed of a senior agricultural economist and a general economist would provide the professional knowledge required for a study of this kind. Graduate student research assistants could help in organizing the data to be used. It would be preferable to draw upon personnel from the academic community rather than from government agencies, although close cooperation between the research team and government agencies would be required.

e. Priority

This project would have a high priority, but in terms of sequence it should not begin until supporting research proposed in this chapter has been completed and is available for use.

f. Cross References

Since this project would utilize research findings called for elsewhere in the map, the cross references would include projects 3, 4, 5, 6, 7, 8, 11, 12, 14, 16, 17, and 20 in this chapter, project 23 in Chapter III, and projects 68, 69, 70, and 71 in Chapter VII.

2. A Study of the Consequences of Less Liberal Terms for Food For Peace

a. Research Rationale

There has been some trend in recent amendments to P.L. 480 legislation toward less liberal terms to the recipient countries receiving agricultural commodities under the different Titles. The most striking example is probably the limitation which restricts U. S. financing of ocean freight charges to the amount of the differential by which U. S. flag rates exceed foreign flag rates. Other examples would include the stipulation that exchange rates be the highest legally obtainable, the increased convertibility of Title I local

currency subject to the appropriation process, the requirement that Title I local currency loans bear interest at rates no less than the cost of funds to the U. S., and generally greater use of local currencies by U. S. citizens and business firms (e.g. sales to tourists, removal of ceiling on Cooley loans).

The net effect of these various changes must be, to some extent, to reduce the attractiveness of obtaining commodities through P.L. 480 compared to the previous provisions and, perhaps increasingly, compared to other food import opportunities available to recipient countries. While it seems clear that the purpose in this trend is to obtain either reduced costs or greater benefits to the U. S. Government and U. S. citizens and business firms, at some point a trend of this kind could result in decreased shipments of commodities. This could raise the problem of finding alternative ways to dispose of surplus stocks if U. S. production continued to exceed the reduced demand. It could also raise problems with respect to rates of development in recipient countries if they take smaller quantities of agricultural commodities as development assistance, or use larger amounts of their available foreign exchange to import agricultural commodities.

b. Research Completed and in Progress

This study would be concerned with the measurement and interpretation of trends in the flow of P.L. 480 commodities over time, and an analysis of the current negotiations with recipient countries over new agreements under P.L. 480. The published literature on P.L. 480 does not include any study of this kind, partly because such a study would have to deal with the most recent negotiating experience.

It is possible that some estimates of the effects of the latest amendments have been made within U.S. government agencies (USDA, AID), but these are not known.

c. Research Objectives

The purpose of this study would be to survey the most recent experience under P.L. 480 to evaluate the reaction to the less liberal provisions which have been added in new amendments. It would not be concerned with the effects on development in recipient countries, or the cost or other effects on the U.S. through decreased (if any) exports from available stocks of commodities. Rather, it would be an attempt to describe what is happening, and to determine whether shifts in P.L. 480 imports by recipient countries are related to new provisions in the basic law. In more specific terms, the objectives would include:

- (1) A study of recent trends in Food For Peace shipments to major recipient countries, ~~if reductions in exports have occurred~~ analyze the reasons for changes from past levels of shipment.
- (2) A study of the record of new Food For Peace agreements to determine whether quantities decided upon reflect reductions from previous levels and if such reductions are due to the more stringent terms in the recent legislation. Of particular interest in this connection would be the official position of the recipient countries in these negotiations and the extent to which these positions reflect a reaction to the new provisions.

At the conclusion of this study it should be possible to state whether or not the new provisions have been, or are likely to be, related to reductions in the use of P.L. 480 for development purposes. This would largely apply to Title I and IV transactions, but attempts to shift to a larger proportion of Title II projects would also be relevant in the final evaluation.

d. Recommended Research Personnel

Research personnel in AID would have the best access to the kinds of data required for this study. Two economists, working full-time, with clerical assistance, should be able to complete the project within six to twelve months.

e. Priority

This study should provide information useful in considering legislation for continuation of P.L. 480 (now due to expire at the end of 1966). It would therefore have a high priority.

f. Cross References

Cross references to other projects which relate to this one include projects 8 and 10 in this Chapter, project 25 in Chapter III, and project 65 in Chapter VI.

B. Alternative Procedures for Commodity Transfers

Title I of P.L. 480 provides for the sale of surplus agricultural commodities for local (foreign) currencies. Such transactions have applied to a major share of the commodities shipped abroad under P.L. 480, but there has been increasing concern over recent years, in the Congress and in recipient countries, over the accumulation and disbursement of these currencies. Under other Titles, quantitatively less important than sales for local currencies, agricultural commodities are used directly as wage goods in development projects such as rural public works. The U. S. has also supplied some agricultural commodities in the past on a grant basis without local currencies accruing to the account of the U. S., and there remains the further possibility of providing commodities under long term loans at low rates of interest which would be more liberal than the terms provided currently under Title IV.

It is assumed here that the U. S. will continue to provide surplus agricultural commodities, in addition to other forms of economic assistance, to underdeveloped areas of the world. The issue raised here is one of the mechanism(s) or procedure(s) most appropriate and generally effective to transfer commodities to the developing countries and contribute to their economic growth. The resolution of this question involves not only examination of past experience in receiving and disbursing local currencies and providing direct food aid, but also analysis of the probable results of transfer methods which have not been used under P.L. 480. The projects described below suggest research on the major alternatives which could be followed, and should provide a basis for deciding the degree to which one alternative offers a net advantage over others, and the situations in which this advantage is likely.

### 3. Comprehensive Comparison of Economic Impacts of Alternative Transfer Procedures

#### a. Research Rationale

The prefatory statement to this section points out that there are several alternative procedures, or mechanisms, which can be used to transfer agricultural commodities from the U. S. to developing countries which use them. Research projects described below (projects 4, 5, and 6) call for a study of four major procedures -- sales for local currencies, Title II economic development projects using food as a wage good, commodity grants, Title IV loans, and loans repayable in dollars at longer term than provided for under Title IV. Since the body of experience under each of the alternatives varies with circumstances prevailing in different countries, the complexity of a thorough study of any one of them requires that separate research be carried out for each alternative. The results should provide an evaluation of the way in which each alternative transfer procedure, or



mechanism, has served its purpose, particularly what impact each has had on economic development in the recipient countries. The proposed research assumes that the manner in which commodities are transferred from the U.S. to other countries is an important variable, perhaps as important as the commodities themselves, in determining the contribution the commodities will be able to make toward economic development.

The research proposed in this project requires a comprehensive comparison of the results of the other studies to determine which transfer procedure is most appropriate for a given situation. This should provide a basis for policy guidance which rests on careful review and evaluation of actual Food For Peace experience, or, for long term loans, an informed analysis of its potential contribution.

b. Research Completed and in Progress

There appears to be no research which compares the economic impact of alternative transfer procedures under Food For Peace. However, research relating to each of the procedures is cited in projects 4, 5, and 6 below.

c. Research Objectives

The research objectives under this project would include:

- (1) Prepare a comparative evaluation of the major alternative transfer procedures (as contained in the results of projects 4, 5, and 6) which orders the alternatives according to relative contribution to economic development, administrative complexity, and political acceptability (in both the U. S. and recipient countries).

(2) Since it is probable that no single transfer procedure, or mechanism, is suitable for every situation, a further objective would be to establish a classification system which would indicate the conditions under which one alternative would be the most suitable to pursue. Such a classification should be supported (to the extent possible) by actual experience which demonstrates the reasons why one is preferable and the others are inappropriate. This experience would be drawn from the data contained in prior studies under projects 4, 5, and 6. The classification systems would be intended for use as a guide to policy decisions determining the transfer procedure to be adopted in future agreements, and could also serve as a basis for evaluation of programs currently in operation.

d. Suggested Research Personnel

Agricultural economists or general economists would be best equipped to carry out this comprehensive comparison. Because this project would not involve direct field research, it would be preferable if the research staff had prior experience working with development problems in a foreign country.

e. Priority

High. Because of its nature, this project would follow completion of research on projects 4, 5, and 6.

f. Cross References

The most immediate cross reference is to projects 1, 4, 5, and 6, which provide the data for use in this project. However, this project would also benefit from findings developed under projects 9, 10, 16, 19, 20, and 21 in this Chapter, project 33 in Chapter IV, and projects 68, 72, 74, 76, and 81 in Chapter VII.

#### 4. U. S. and Recipient Country Experience with Sales for Local Currency

##### A. Research Rationale

One of the studies must be concerned with the transfer procedure, or mechanism, under which U. S. agricultural commodities are sold for the currency of the recipient country. H.R. Report No. 1767, 88th Congress, 2d Session (Extension and Amendment of Public Law 480) seems to contain implicit recognition that this present mechanism has created certain problems. In particular, it recognizes that sales for local currency do not give rise to U. S. Treasury accumulations of "money" in the form of convertible media of exchange. The Report states: "Most of this currency is not 'money' in the sense that it can be used for goods and services in this country or other countries of the world. Most of it can be spent only in the country of origin and, except for a small degree of convertibility, the agreement with each country so stipulates. The foreign currency is not money in the sense that withholding it from use is going to make the United States richer or save money for the Treasury ...the only question to be resolved, then, is how can we get the greatest benefit to the United States out of the money that has already been spent by the Commodity Credit Corporation to support farm prices by buying and disposing of surplus commodities?" (p.28)

The question which is raised by Congress emphasizes one aspect of the transfer procedure: that, unlike sales for hard currency (in international commerce or under Title IV) local currency sales do not produce convertible media of exchange. As far as a transfer mechanism is concerned, however, the effect is the same in that it brings about a movement of real goods (i.e., agricultural commodities)

from the U. S. to recipient countries. These are added to the supply available in the recipient countries, just as a similar import under a normal commercial purchase, but they do not require a reciprocal exchange of goods and services from the recipient countries. To this extent, the procedure appears to give rise to a transfer of real goods in a manner that is very much like a grant. The payment for the commodities in local currencies brings into operation various monetary adjustments and transactions within the recipient country, and opens a number of options for further disbursements of the local currencies which are received by the U. S.

For example, the intra-governmental financial arrangements within the recipient country will determine whether or not the payments of local currency are allowed to adversely affect normal governmental activities; the effects of U. S. deposits or conversions of local currencies will depend on the host country's banking system and how U. S. holdings are used in it; the effects of releases of local currencies for developmental purposes will partly depend on the administrative arrangements within both U. S. agencies and agencies of the host country, and the ability to coordinate their separate decisions and procedures without undue delay; the size of U. S. holdings of local currency will depend on the U. S. uses for it, the size of past loans to the recipient country which are repayable in local currency, and the extent of agreement on grants or loans for developmental purposes out of proceeds from the sale of agricultural commodities. In principle, these monetary adjustments and transactions should be accommodated without difficulty, but there are indications that this has not always happened. One purpose of the research therefore is to study past experience in order to determine the seriousness of such problems.

The options which the local currency sales open include possibilities to use local currency holdings in ways which exert a constructive influence on a recipient country's developmental program, and opposite possibilities to neutralize or avoid such influence.

From the host country's point of view, purchases of imported commodities in its own currency may free some foreign exchange for other uses, and may foreclose foreign exchange earnings from other sources (e.g. tourist expenditures or expenditures by U. S. agencies). Again, an examination of past experience should indicate how these options were exercised, and should permit an evaluation of the net effects to the U. S. and recipient countries of the actions taken.

Considerations such as these, then, are some of the reasons for a study of sales of U. S. agricultural commodities for local currencies as a transfer procedure. Such a study would seek to determine whether or not this particular mechanism has resulted in net advantages to the U. S. in its efforts to use the resource of agricultural commodities as an aid to economic development.

b. Research Completed and in Progress

Writing on the subject of local currency is found widely throughout the literature on P.L. 480, but a good deal of it tends to be concerned with whether or not such currencies constitute real resources for development, the extent to which they are inflationary, their relationship to the disincentive problem in agriculture, direct sales vs. gifts to the genuinely needy and hungry, and similar problems. Two basic documents (755) and (757) provide a theoretical framework for analyzing the effects of Titles I and IV, and a description of the administrative channels within the U. S. government for receiving

and disbursing local currencies. Other references, useful for background and an understanding of sometimes conflicting interpretations of past experience are (7), (30), (185), (202), (260), (283), (504), (508), (533), (588), (702), (759), and (903). A great deal of material presents information about local currency receipts in different countries, disbursements for different purposes, the kinds of commodities which were shipped abroad, and descriptions of specific programs which have received local currency support. These are scattered throughout the literature, in articles and reports which do not deal with the local currency issue as such. Nevertheless, they would also provide useful background for study of this issue.

While these writings have examined some of the ways in which the handling of local currencies may have had harmful effects, or the general nature of the P.L. 480 contribution, they have given relatively little attention to the working of the mechanism itself. The project proposed here would study these points in much greater detail than other studies have done.

c. Research Objectives

The first requirement would be to select countries where the sales for local currency have caused concern over the degree to which they have been advantageous. These countries may be selected on the basis of recommendations from AID and USDA officials who have had to deal with local currency problems. For example, India and Pakistan are two countries where local currency has been related to their developmental programs, and where doubts about the contribution of this method of payment have been raised from time to time.

Brazil, Chile, and Colombia are countries in Latin America which have had large Title I programs and whose experience could be instructive. In Brazil, for example, inflation greatly reduced the value of local currency accumulations. Korea and Viet Nam would probably not be useful for this particular research project because the local currencies have been used mainly for defense support purposes, not development. The purpose in selecting any three or four countries in which to study the handling of local currencies is to assemble enough experience to support generalizations which might be useful to formulate policy. Therefore, while each country study may represent a separate project in that a separate study team might undertake each one, the different country studies should be coordinated in a manner that would permit ready comparison on specific kinds of findings. There should thus be unified project direction of the three or four study teams who conduct the field work.

Important research objectives would include the following:

- (1) A description and analysis of the way in which the host country finances the payment of local currency for Title I commodities. This would include the role played by the banking system and the effect of U. S. local currency holdings on the availability of credit within the host country, the intra-governmental financial relationships for receiving and disbursing funds, and the budgeting procedures used as compared with those of the U. S..
- (2) A description and analysis of the process by which projects are selected for local currency support. This analysis would apply to both the host government and the U. S. Agencies. It would include not only the reasons for selection, but factors

affecting the time taken to make the funds available for use on the project. There should also be a description and analysis of the timing and location of sales of surplus commodities to the general public, and timing and location of the projects which use local currencies

- (3) A description and analysis of the factors which have led to "excess" holdings of local currencies by the U. S. This should include some basis for estimating the future size of such holdings, and an analysis of the possibilities of ever using them without harmful effects to the host country.
- (4) An estimate of the extent to which the content of the developmental program is influenced by releases of U. S. owned local currency. This would require an analysis of the role of the U. S. in shaping a country's developmental program. It would provide some basis for deciding whether the U. S. does determine in some measure the development program (meaning specific projects), or largely supports projects already decided upon by releasing local currency to finance them.
- (5) Based on these prior objectives, a final need is to assess the results of the research to ascertain the advantages and disadvantages which seem to be associated with the sale of U. S. commodities for local currencies. Since the experience in three or four countries will be included, it will also be necessary to distinguish the extent to which assessments which differ from country to country are due to remediable situations (e.g., changes in intra-governmental financial arrangements, budgetary procedures, etc.) or reflect inherent difficulties which adversely affect the workability of the local currency sales mechanism.



d. Suggested Research Personnel

Personnel in this study would consist largely of economists, preferably persons with a knowledge of financial procedures and the working of monetary and credit systems. Cooperation with economists from host countries would be of great value in acquiring data and in gaining an understanding of governmental budgetary procedures, banking practices, and the like. A team of two U. S. economists, a research associate from the host country, and research assistants should be able to complete a country study within 12 months. It would be preferable to employ academics rather than researchers from government agencies in light of the nature of the project.

e. Priority

Given the importance of understanding the full ramifications of the local currency mechanism, the study should be given a high priority.

f. Cross References

Closely related projects include 1, 3, 6, 9, and 10 in this Chapter, and 71 and 81 in Chapter VII.

5. The Scope and Applicability of Title II Economic Development Projects

a. Research Rationale

The consideration of alternatives to local currency sales should include more direct uses of agricultural commodities in economic developmental efforts. There is now a body of experience on past performance under the portion of Title II which permits grants "... in order to promote economic and community development in underdeveloped areas in addition to that which can be accomplished under Title I ..."

Sec. 202. The most recent amendments to P.L. 480 raise the

appropriations limit for such purposes to \$450,000,000 annually, and also permit projects of voluntary agencies to receive support under this title. Such grants represent an alternative to local currency sales which can be evaluated, and (to judge by the most recent amendment) this scope will be increased in the future.

While there is little controversy over the need for more public works in the rural areas of the developing countries (e.g., more roads, better drainage, flood protection embankments, school buildings), some countries have been reluctant to commission such projects very extensively.

This reluctance has been due partly to fears that expenditures for this purpose would create inflationary pressures in the rural areas because additional cash income in the hands of laborers employed on the projects would be spent on consumer goods whose supply would not be increased as a result of their labor. There is additional concern that rural works programs would be difficult to administer and control, and would require planning and technical skills that were not available. The purpose of Title II grants would be to supply food which could be used directly as wage payments to laborers employed on rural public works projects. Assuming that a large proportion of any additional income earned by those who would be employed on such projects would normally be spent on food, wage payments in food should be an acceptable substitute for money wages. Moreover, such wages -in-kind would avoid placing any upward pressures on the prices of locally produced foodstuffs, the supply of which would be relatively inelastic in the short run.

The question at issue here is primarily one of the impact of development projects supported by food-for-wages grants under Title II.

If a review and analysis of the experience with these kinds of projects to date shows that they have a significant effect on economic growth, an expansion in the volume of commodities available for this purpose could be considered. On the other hand, study might reveal that a majority of the projects have had little impact, and that the program constitutes little more than a rural feeding program. The Food For Peace program seeks to use food as a resource for development and ultimately must decide which types of transfer procedures offer the greatest promise of achieving that objective. This research project really entails a feasibility study of one of the alternative procedures available to Food For Peace administrators.

b. Research Completed and in Progress

One available study of food-for-wages projects discusses a project at Etawah, India, which was carried out some years ago (50). Food For Peace officers in Korea have prepared cost-benefit ratios for works projects carried out in that country, but these are fairly rough calculations. The AID mission in New Delhi has a few short project reports in its files, primarily on a works project located in Purulia, but the reports deal largely with the administrative control and publicity aspects. Similar reports are probably available in other Missions. However, from what has been surveyed so far, it seems fair to conclude that no thorough research of food-for-wages projects has been carried out. Some discussion of projects is contained in (523) and (557). One is left with the impression that the works projects do produce some benefit to those employed on them and to those living in the area, but there is little basis on which to

to compare the benefits with alternative investments of any kind.

c. Research Objectives

The focus for this research project would be situations in which it is reasonable to conclude that food-for-wages projects are workable (i.e., laborers will accept wage payments in kind). The general objectives would include the following:

- (1) Determine appropriate measures of the benefits which result from such projects (e.g., strata of people affected and the contribution of the food to their nutritional well being, the relationship of the laborers to the objective of the project, the effect of the project on output in the area).
- (2) Determine appropriate measures of the costs of such projects (e.g., costs in food supplied, costs of distribution to the project site, administrative costs, contributions by the recipient country, recurring costs after completion of project).
- (3) Compare the benefit-cost relationships under food-for-wages projects with similar projects where all payments are in money terms. To the extent possible, measures should be devised to compare the benefits and costs which would be applicable if the project were financed out of Title I proceeds from local currency sales. This comparison would involve measures of the costs of distribution under such sales, the strata of the population using the imported commodities, and the extent of their benefit from projects financed from Title I proceeds.
- (4) Estimation of the limits to which food-for-wages projects might be carried (if otherwise workable), and the proportion of the normal imports under Food For Peace which might be used on such projects. In other words, the research could show that food-for-wages projects provide a superior method for using

food to stimulate development up to some point, after which constraints of various kinds (administrative, technical, economic, the need for more food through commercial channels) would lessen their further contribution. This objective would seek guidelines to indicate where and when these constraints become critical.

d. Suggested Research Personnel

A team of two or three economists or agricultural economists, plus assistance from host country personnel, should be able to collect the data on specific projects within a period of 4-5 months. Such researchers should be drawn from the academic community, and should have some familiarity with field work in rural areas.

e. Priority

High. This project should precede project 3.

f. Cross References

The project proposed here suggests an analysis of past experience with food-for-wages projects as a preliminary step in a comparison of this use of food with other procedures which would also have some effect on economic development. Elsewhere in this chapter other projects are proposed which are closely related, but which have different points of emphasis. For example, project 19 calls for an examination of factors which affect food-for-wages projects, and seeks to determine the reasons why some projects appear to be more successful than others. Project 20 is concerned with determining the appropriate role for food-for-wages projects in light of currently divergent views on what they are expected to accomplish. Although the findings

under each of these would be of value to the others, each looks at a slightly different aspect of the problem. Their results should be additive, and would provide a more complete understanding of how food-for-wages projects work, the necessary pre-conditions for planning them, and where their contribution to economic development actually lies. Other cross references include projects 1, 3, 6, and 21 in this chapter, project 37 in Chapter IV, and projects 74, 78, and 81 in Chapter VII.

## 6. Possible Effects From Supplying P.L. 480 Commodities as Grants or Long-Term Loans

### a. Research Rationale

One project in this section proposes an evaluation of commodity sales for local currencies, while another concerns the use of commodities directly (for wages-in-kind projects), presumably on a grant basis as at present. Completion of this body of research would leave two alternatives still to be studied -- supply of Food For Peace commodities on a straight grant basis, and supply of commodities on long-term loans. Already available is a relatively comprehensive analysis of past experience, plus an informed projection of probable future experience, which would permit ready comparison of all the major alternatives. Commodity grants would provide a flow of resources (agricultural commodities) from the U. S. to recipient countries without the requirement of payment. The U. S. could still stipulate the conditions under which the commodities were further distributed within the recipient country, and could also exercise control over the disbursement of any revenues received by the host government from the sale of the commodities. The strength of the U. S. in setting the conditions

depends on the real contribution of the commodities will make to development in recipient countries. Other issues involve the possible disincentives associated with grants, as opposed to transfer procedures which call for reciprocal payment of some kind (e.g., local currency or foreign exchange), and the probable political attitude in the U. S. toward increased use of grants in preference to other methods which are now in use.

Dollar loan terms represent the other end of the range of possible transfer mechanisms. A shift in this direction would call for eventual repayment for commodities in hard currency, and this might diminish the exports of U. S. agricultural commodities. Again, a crucial issue would be the real contribution of such commodities to developmental objectives. There would be some prospect that harder terms (relative to grants or local currency sales) would result in smaller commodity imports and therefore less opportunity for the U. S. to participate in the developmental programs in recipient countries. The research called for in this project would thus be directed toward exploring an array of the probable impacts on future economic development as policy moves from the most lenient terms for commodities to the most stringent (including a variety of terms for dollar loans).

b. Research Completed and In Progress

There is some coverage of grants and loans in the literature, but not in the context suggested for this study. Discussion of loans and grants is found in (25), (580), (626) (709). Specific country studies are given in (30), (202) (508), (533), (629), (630), (753), (759), and (903). which cover the use of P.L. 480 local currencies. (757) gives a theoretical treatment of the probable impact of Titles I and IV under different assumptions about a recipient country's foreign

exchange position.

c. Research Objectives

- (1) One objective would be to consider the theoretical possibilities of a program of straight commodity grants. The assumptions would be that the U. S. would reserve the right to approve expenditures out of proceeds from sales and would retain title to amounts of local currency necessary to cover U. S. uses in the recipient country, but the U. S. would not regard the total proceeds from sales as U. S. government claims (as it does under Title I sales). Given this objective it would be necessary to study the developmental programs of recipient countries to determine the probable uses of proceeds from sales and to estimate the role in developmental policy the U. S. might be able to exercise under different assumptions. In many ways, this research would be highly speculative, but a study of earlier experience (e.g., under the Marshall Plan) might provide a basis for research on the fiscal and administrative procedures employed by recipient countries. Another necessary objective would be to study the reaction to this alternative within the U. S. Opposition to large scale assistance programs, and to grants in particular, may mean that this alternative is not politically feasible. Assessment of the depth of such feelings, even though the real costs of this alternative may be no greater to the U. S. than local currency sales, might therefore be touched upon in this portion of the research.



(2) Long Term dollar loans under Title IV, and on terms more favorable than those used under Title IV, are considered in this portion. The objective would be to undertake some analysis of the possibilities that recipient countries can repay such loans in dollars over a long period; the study involves long range projections of the growth potential of recipient countries. These would be extremely tenuous estimates, but several countries have Perspective Plans stretching over periods of 20 to 25 years, and U. S. AID has carried out Long Range Assistance Strategy studies in a number of countries. These provide a starting point for additional projections. Estimates should also be available for population projections, income elasticities of demand for food-stuffs, and evolving patterns of trade. These would determine if growth and improving export positions will make it possible for repayment of these loans and other hard currency obligations and permit recipient countries to establish sound patterns of development. Analyzing the probable effects of a shift to long term loans would have to take into account the size of future commodity movements and the ramifications for U. S. influence on developmental programs. Finally there would again be the question of domestic U. S. political attitudes toward such long term loans.

d. Suggested Research Personnel

Two economists -- one with some specialization in the monetary field, and one specializing in international trade -- plus research assistants should be able to carry out this study. They should preferably come from the academic community. The research could be done without travel abroad. The researchers should be familiar with the Food For

Peace program, and able to draw readily upon the work done on other projects in making the analyses.

e. Priority

The study would have a high priority and should precede project 3.

f. Cross References

As indicated, this project is related to project 3. It would also benefit from close collaboration in the research carried under projects 1, 4, 5, 9, and 23.

C. International Trade and "Usual Marketing" Problems

The intent of P.L. 480 is to provide commodities in ways which will not displace normal commercial exports of the U. S. or of friendly third countries. This has received considerable attention by the USDA and others interested in the problems of world commodity prices and patterns of trade. But a related issue has been neglected -- namely the effects on developing countries of the treatment of "commercial exports".

Section 101 (a) of Title I states that there shall be "reasonable precautions to safeguard the usual marketings of U. S. agricultural commodities." The wording requires special interpretations of situations in which there is some question of potential damage to "usual marketings," and the results of these interpretations will reflect the assumptions, measurements, and definitions of "usual" and "damage" and whether short or long-run views predominate. The question here is one of how these interpretations have been made in the past. Have they tended to be narrow (as in the definition of "like" commodities) and emphasize short-run U. S. interests in maintaining or expanding commercial markets, or

have they been broad and more concerned with longer run expansion of U. S. commercial markets as a result of overall economic development in recipient countries? The experience of the past several years should contain instances of both kinds of interpretation, and thus provide an opportunity to evaluate their effects.

7. Changes in the Structure and Conditions of Agricultural Trade in Relation to Food For Peace

a. Research Rationale

During the early years of P. L. 480 there was substantial protest from competing export countries that the program was taking commercial markets away from these third countries. Some of this displaced trade was traced to over-aggressive barter arrangements, and some were a natural response to a new program which increased the volume of shipments (for whatever reason) from the United States. In 1957, three developments eased the pressures. First, the barter rules were substantially revised and tightened. Second, the basic P. L. 480 law was amended to include a concern for the exports of other friendly countries along with the continued concern for maintaining U. S. commercial sales. Third, procedures were established whereby third countries with a trade interest in a country with a pending Title I agreement were consulted before the agreement was made final, so that possible protests could be given attention. It is probable that this consultation led to provisions concerning normal marketings that might not have been considered under other circumstances. The consulting procedure has since been extended to other Titles of P.L. 480

The entry of Mainland China into the world grain markets around 1960, the entry of the Soviet Union into several commodity markets the increased activity in commercial markets, and growth in population have also contributed to an expansion of trade and an easing of the problem.

Thus, in addition to Food For Peace, there have been several economic and political developments which have affected the pattern of trade. There is no assurance that future changes will be, on balance, as favorable to a growth of trade as in the last few years. If the trend is unfavorable, it can be expected that Food For Peace will again be charged with responsibility for declining trade. The United States will benefit if a responsible scholarly report is available before that time to assess the reasons for the changes in trade structures, and the probable internal and external benefits.

b. Research Completed and in Progress

Data on agricultural trade statistics are maintained by units of the ERS, USDA, while overall trade figures are provided by the Department of Commerce. Trade data on other countries have also been collected. A number of special tabulations and analyses have been made for the European Economic Community, because of its special importance of U. S. agricultural trade. The ERS also has improved the statistics on "Government Assisted Exports" to a substantial degree since the later 1950's so that Food For Peace shipments can be identified and separated from general exports and from those receiving export payments.

There probably are a number of unpublished documents which attempt to identify, for particular commodities and countries, the possible effects, if any, of Food For Peace shipments, but such reports do not fulfill the public purpose here identified.

One of the published studies, (369), compares Canadian and United States commercial sales to a group of countries in which trade losses were alleged to occur. Hervey and Witt are doing similar research on cotton exports, but with a larger group of countries. Other analyses of general trade patterns include (19), (30), (72), (44), (258), (502), (533), (578).

c. Research Objectives

This project might be done in two stages or even as two projects. In addition there needs to be a continuing improvement of the trade statistics data for day-to-day governmental operations.

- (1) One objective is to provide a comprehensive picture of the changes in the commercial, subsidized commercial, and Food For Peace exports in regions and major countries. This comprehensive picture should go far beyond the tables of exports and imports, and consider the economic and other developments responsible for the changes in the total structure of world trade.
- (2) Within this picture, an analysis is needed which objectively tries to separate and evaluate the role of Food For Peace, the role of foreign aid, and the importance of export payments in bringing about these changes. Programs in other countries with comparable objectives need to be included as well.

(3) The third objective would be to carry the analysis to specific major commodities, such as wheat, cotton, vegetable oils, and feed grains.

d. Suggested Research Personnel

Because one of the major reasons for this research is providing objective analysis of a potential international problem, there would be advantages in having the study done by a trade research institute in a neutral nation. A second possibility is the Economic Division of the UN or the FAO.

The latter two international organizations have available a large volume of trade statistics which are basic to the analysis. This possibility would be more attractive if a group of distinguished general and agricultural economists were brought together from several nations to organize, supervise, and complete such a study. A third alternative, less useful abroad, would be a study by a research group at an American university. This group, however, might draw on international personnel resources.

At the same time, the ERS-USDA should be encouraged to expand its data collection activity and analysis in this area, and thus better serve to identify policy issues within government.

Personnel should include both general and agricultural economists -- people with some knowledge of Food For Peace as well as knowledge of patterns of agricultural policy implementation.

e. Priority

This is not urgent; rather it should be done when the opportunity is available to involve the proper organization in the project. Most of the short term needs can be provided by an expansion of ERS personnel working on trade problems. If trade volumes show signs of significant future decline, the priority of this project should be sharply increased.

f. Cross References

Project 23 proposes a study of the effect of the Food For Peace program on inter-governmental relations. Also see projects 1, 60, and 65.

8. The Interpretation of "Similar" Commodities Under Section 101 (a)

a. Research Rationale

The provisions of Section 101 (a), which deals with the protection of usual marketings of the U. S. and normal trade patterns of friendly countries, are sometimes applied where a country is importing a surplus commodity from the U. S. at the same time it is exporting a similar commodity to world markets. The rationale for invoking Section 101 (a) is that if a recipient country is in a position to compete in world markets by exporting a commodity similar to that which it is receiving, it does not really need the P.L. 480 imports. The recipient can then either do without the P.L. 480 imports, or pay for them in convertible currencies or dollars up to the value (or some proportion of it) of exports of the similar commodity. The exact measure adopted varies with circumstances, but the purpose generally is to discourage

exports where they seem to result from internal displacement of domestically produced commodities by P.L. 480 imports.

The importance of the above is that it may lead to situations where there is a conflict in objectives. The U. S. may wish to expand the markets for its agricultural commodities, and therefore would not like to see increasing competition for them from countries it is assisting. On the other hand, future markets for agricultural or other U. S. goods cannot grow unless countries develop the export capacity with which to buy such goods. The record with respect to the latter point seems clear -- U. S. exports of agricultural goods for cash have grown most impressively in countries which have had the greatest economic development. In several such countries, the availability of P.L. 480 commodities has been an important factor in that development. Consequently, achieving the objective of economic development may have greater long term consequences in expanding U. S. agricultural exports than would a short term attempt to protect existing markets or receive hard currency for commodities which have been provided under P.L. 480.

There is a related aspect which is not tied strictly to market development or protection, but which might involve U. S. resources. Export earnings by a recipient country provide foreign exchange for developmental and other purposes. Even when these earnings are possible largely because of the availability of P. L. 480 commodities, they represent a conversion of U. S. agricultural commodities into (presumably) developmental imports of non-agricultural commodities. It would therefore appear to be the



same thing as a grant by the U. S. of foreign exchange it has earned through the commercial export of agricultural commodities to third countries. Assuming that the developmental needs are unchanged, if this source of foreign exchange earnings is denied (by curtailment of P.L. 480 imports) the U. S. may be asked to provide the developmental imports of the non-agricultural commodities through grants or loans to the recipient country. In short, the drain in U. S. resources as a whole may not be reduced if short run commercial market protection is too heavily emphasized. A similar argument would apply in situations where a country is required to maintain commercial imports under the application of "normal marketing" provisions.

This statement of the issue may appear to pre-judge the results of research. It is not intended to do so. But, it should be clear that the wording of Section 101 (a) encourages a partial analysis of the total problem of assistance to developing countries, and this may conceal some of the major side effects of interpretations which have been applied to specific situations. Further research therefore seems needed to obtain a broader perspective for this particular statutory provision.

The research would have to examine the interpretations which have been made in the past, identifying the kinds of criteria which have been followed in reaching them. It should make some generalization about the nature of these criteria and the trend (or trends) which may have been present in applying the criteria. Since some of these interpretations have had a greater impact than others, a more detailed study of a selected sample of the important ones

should be made. The cases selected may be further broken down by the kind of criteria employed (or general scope of interpretation) into "broad" and "narrow" categories, and by commodities involved.

Where the interpretation has been classified as "broad", the study would be concerned with such questions as the effect on U. S. exports of a commodity (in both the recipient country and in the world markets), the effect on other U. S. agricultural exports to the recipient country, the change in the foreign exchange position of the recipient country, the rate of growth and the relationship of its foreign exchange position to that growth, and the change in U. S. assistance to the recipient country (forms and volume) subsequent to the interpretation.

In the other major category, research would be centered on specific instances in which a country's exports of a "like" commodity had been discouraged (by withholding further P.L. 480 shipments, or imposing payment conditions which eliminated much of the country's ability to retain expected foreign exchange earnings). The study would examine a country's comparative advantage in producing and exporting the commodity in question, local economic development and what effects discouragement of the export had on needs for foreign aid, readjustment of patterns of production, and prospects for economic development without P.L. 480 support.

b Research Completed and in Progress

The files of AID and USDA should contain numerous briefs and analyses from recipient countries where the problem of "similar" commodities has arisen. The Government of Pakistan has forwarded such papers, for example, and rice exports have been a recent issue in Egypt. Market development programs are discussed in (1), (30), (167), (539), (547), (791), (903), (928), and (720) contains some information on normal market requirements. References (184), (185), and (703) deal with disruption of local and world markets by P.L. 480, and further discussion of effects on third country competitors is found in (19), (949), and elsewhere. Comparative advantages are treated somewhat in (17) and (150). In general however, there seems to have been no study of the actual impact of the rulings which have been issued when the problem of identifying "similar" commodities has arisen, and no study that examines the conceptual bases for making such distinctions.

c. Research Objectives

The research objectives would be to analyze a sampling of selective cases for interpretation under Section 101 (a) for the purpose of obtaining answers to questions such as the following:

(1) Is there any sound basis for identifying "similar" commodities?

For example, wheat and rice are both food grains, but they may be quite different in terms of consumer preferences in different areas or in the resources required to raise them.

- (2) Did the U. S. have any strong comparative advantage where exports were affected by the imposition of Sec. 101 (a)? The question here involves some estimate of relative comparative advantages. A country may become an exporter of a commodity in which it has a comparative advantage while it imports a commodity under P.L. 480 in which it does not have a comparative advantage (which the U. S. presumably has if the commodity is a surplus commodity). This example would represent a rational use of resources for developmental purposes, whereas the reverse would not, (i.e., if a country exports a commodity in which it does not have a comparative advantage).
- (3) What happened to export earnings as a result of the application of Section 101 (a), and what happened to commercial and developmental imports as a result of normal marketing requirements? Were potential export earnings reduced, or were other export commodities available which were produced with the same resources? How did this application affect the availability of goods for developmental purposes, e.g., did it increase the need for foreign aid? To what extent was aid available?
- (4) What happened to cropping patterns in the developing country as a result of the imposition of Section 101 (a)? Did the imposition lead to attempts at self-sufficiency in terms of crops which are low-valued, and in which the recipient country had little comparative advantage?

(5) What are the long term prospects for marketing agricultural commodities in which the U. S. has a comparative advantage if the country concerned were to achieve a substantial measure of development and a capacity to earn foreign exchange on products in which it had a comparative advantage? The answer to this question would be useful in assessing the possible increase in short run market competition against the longer term benefits to U. S. agriculture.

The result of this research should be an evaluation of the experience under Section 101 (a) with respect to the way in which it was interpreted (and the nature of any tendency to change the interpretation over time), its effect on U. S. commercial marketings, and its effect on the developmental efforts of recipient countries.

d. Suggested Research Personnel

An agricultural economist and a general economist with a specialization in international trade, plus research assistants, could constitute the basic research team. Because of the nature of this study, these should be drawn from the academic community rather than government. Provision for travel abroad does not seem necessary. It would be very helpful if the researchers had prior experience overseas, and understood the implications of the study from some firsthand knowledge of what was involved. In particular, the agricultural economist should be familiar with the technical problems involved in shifting cropping patterns between major crops in countries to be covered by the study.

e. Priority

Because of the current and continuing importance of this problem to developmental planning in recipient countries, the study should be given a high priority.

f. Cross References

Other projects in the research map dealing with Food For Peace policy decisions include projects 1, 2, and 16 in this Chapter, project 23 in Chapter III, project 65 in Chapter VI, and projects 68 and 76 in Chapter VII.

D. Local Currency: U. S. Uses and Disposition of Accumulations

The most recent amendment to P. L. 480 provides for an increase in the percentage of local currencies subject to the appropriations process, and therefore reserved for U. S. uses. While the purpose of this amendment seems designed to bring about greater U. S. use and control of the local currencies acquired under Title I sales, the full economic and other effects are not readily apparent. Two important problems to administrators in the field are the ultimate disposition of local currencies which have accumulated and the scope for use of mandatory set-asides of local currency such as the Cooley loan provisions. These problems do not

arise in all countries, but where they do (e.g., India and Brazil), they pose difficult and complex questions for those responsible for carrying out policies implicit in the present legislation. The research projects suggested here would help evaluate the experience to date, and would provide an analysis which could guide whatever changes in legislation may be indicated.

9. "Excess" Local Currencies, Effects on Monetary Structure, and The Disposition of the Currency

a. Research Rationale

The requirement, under Title I, that sales of commodities be in local currencies which accrue in the first instance to the U. S. government, and the further trend in recent years both to make these currencies available to recipient countries primarily in the form of loans and to reserve increasing proportions for U. S. uses, means that in certain major P.L. 480 countries the U. S. will acquire substantial claims to foreign currencies which cannot be used (with minor exceptions) outside the recipient country. In addition, earlier DLF "soft loans" are repayable in local currencies with similar restriction on their use.

Thus, these increasing amounts of local currency representing U. S. government claims could lead to situations which affect relations between the U. S. and recipient countries. Economists tend to hold that relending to a host government or to private enterprises in the recipient country out of past local currency accumulations (as opposed to current sales for incoming commodities) does not, as such, represent any new addition to real resources for development. The inflationary or non-inflationary character of such loans depends on what is happening in the rest of the economy at the time, e.g., the infusion of other new, real resources or of compensatory monetary measures. Politically inspired fears of U. S. "control" of the currency through excessively large holdings, no less real for being unjustified and uninformed, may grow as the size of U. S. holdings grows.

Reasons such as these make it necessary that careful study be given to alternative methods by which existing excess holdings of local currencies can be handled. The fact that the U. S. may not have used excess holdings in the past in ways which damaged the economies of host countries does not detract from the fact that the holdings can constitute a source of irritation and friction.

#### Research Completed and In Progress

The "excess currency" problem has not attracted much attention in the professional literature, although it has received popular treatment and is clearly a concern to Congress. The main references are found in (260), (283), (709), and (717). One of the more complete discussions of a specific problem is found in (45).



c. Research Objectives

The objectives of this project will be to examine all possible measures by which U. S. claims to "excess" local currencies can be handled. The research can probably be confined to countries in which this problem is most acute, and the recommendations can be specifically directed toward the resolution of actual situations. India, U. A. R., Tunisia, Poland, and Yugoslavia are among the most important for study, but additions or substitutions to this list may be warranted.

Research would devise alternative methods of dealing with the problem, and analyze the probable effects in each case. This would include at least the following kinds of objectives:

- (1) Analysis of the growth trends in the different economies to determine the likelihood that an export capacity will develop within some reasonable time period [25-50 years?] to enable conversion of some local currencies into dollars. Under these circumstances, the local currency sales would be similar to long term loans with a large grace period.
- (2) The other extreme would be to write off or permanently sterilize U. S. claims to local currencies. Research would be carried out to include this alternative as one possibility for analysis, weighing the tangible and intangible results which might follow such a decision.
- (3) In-between solutions would apply where either (1) or (2) seem unfeasible or inappropriate. The research objective would be to determine ways to use the funds for economic and social development while providing guarantees that they would

not be inflationary and minimizing fears that the U. S. could use the currencies unilaterally for control of the economy or disruption of its development efforts.

- (4) Although the first three objectives implicitly assume a necessity to eliminate the "excess" currency holdings in some way, it would also be desirable to evaluate the economic effects of local currency loans. Another objective under the project would therefore be to examine the history of local currency loans (private and governmental) to determine whether or not lending practices in and of themselves have brought developmental benefits to the recipient country, inflationary impact, effects on the credit structure and institutions, or influence on the emerging structure of industries and sectors of the economy as a whole.

d. Suggested Research Personnel

A team of one monetary economist and one general economist, plus research associates (one at the senior level) from a host country should be able to complete field work in a given country within a reasonable period of time. It would be preferable if this team were drawn from the academic community, although this is not essential. The more important consideration is that the researchers have the time and relative freedom to explore all possibilities inherent in the problem.

e. Priority

Because this is an urgent problem, particularly in India, the study should be given a high priority.

f. Cross References.

Other projects which deal with aspects of local currency sales and alternative transfer mechanisms include projects 3, 4, 6, 10 and 31.

10. A Study of Mandatory "Set-Asides"

a. Research Rationale

Another question arises with the mandatory requirement that local currency be set aside for designated uses. It can be argued that such "set-asides" are not always appropriate. A comprehensive review of this problem by a non-governmental group might remove some of the onus of arguing for an exception, and perhaps would support some modification in the legislation which would permit a more clear categorization of situations. One of the issues debated, between Brazil and the United States for example, is whether discrimination exists against U. S. private business firms sufficient to justify a Cooley loan program discriminating in favor of U. S. business firms. At the moment the decision is that sufficient discrimination to warrant Cooley loans does not exist, although some informal credit arrangements are designed to maintain a non-discriminatory situation.

Other issues arise where the nation operates mainly informal credit arrangements which are designed to maintain a non-discriminatory situation, where the nation operates mainly through government-owned enterprises, or where a country's organization on a commercial market basis is far in the future.

b. Research Completed and in Progress

The research proposed would examine the local currency "set-asides" for specific purposes in accordance with legislation. Two areas of possible conflict can be identified fairly easily: one in which a decision was made for a "set-aside" smaller than specified in the law, but under permissible exception procedures, and a second under which "set-asides" were made but in which the utilization is substantially less than the amounts so set aside. A third area should be sought, namely countries in which normal "set-asides" have been made, and where they have been utilized, but after considerable friction had been generated between the two governments on the matter.

A selection of countries in which one or another of these three areas of conflict and friction exist should be made and examined in some detail. The reasons for friction and its consequences would lead to an examination of the validity of applying the mandatory "set-asides," and possible alternative procedures or policies.

A large number of reports on market developmental activities are associated with the mandatory "set-asides" under Section 104 (a). Two of these reports, (539) and (547), may be useful as independent appraisals of market developmental projects in particular countries. Three reports, (1), (30), and (903), give attention to the uses of Cooley loan funds in Colombia, Israel, and Turkey, respectively. These reports are mainly concerned with the overall impact of P.L. 480, and devote only a chapter or two to Cooley loans. No known published report deals with the problem discussed above, i.e., whether the frictions associated with "set-asides" advance U. S. policy sufficiently to warrant the effort.

c. Research Objectives

Information is needed, as indicated above, on the countries and areas in which frictions arising from local currency "set-asides" exist. The reasons for these frictions need to be established for major (or a representative group of) countries, and related to the legislative objectives of the mandatory "set-asides." The outcomes, in turn, need to be evaluated for consistency or conflicts with overall U. S. foreign policy objectives in the countries selected, and for positive contributions to more specific Food For Peace objectives.

These analyses should lead to policy recommendations for the executive agencies and for possible legislation.

The research objectives would include:

- (1) Identify areas of friction arising from Title I local currency mandatory "set-asides."
- (2) Evaluate the reasons for particular sets of decisions to use, not use, or waive the mandatory allocation of currency.
- (3) Compare these reasons with broad U. S. policy in selected countries, and determine whether exceptions or nonuse of funds should have been more or less prevalent.
- (4) Make recommendations for future policy (and possible legislative changes) on mandatory "set-asides"

d. Suggested Research Personnel

A research team composed of a general economist and a political scientist (possibly with a public administration background), plus a research associate from the host country would provide a balanced

set of research interests and competencies for this study. It appears desirable that they also be drawn from the academic community rather than from governmental agencies.

e. Priority

This study would have a medium-low priority.

f. Cross References

Other projects which deal with local currency locans and/or U. S. uses of local currencies include projects 2, 3, 4, and 9 in this chapter.

E. The World Need for U. S. Agricultural Commodities and Food Supplements

An issue which appears to be increasing in importance is implicit in references to "new concepts" of surplus disposal" or "food as an implement for development." This is reflected, for example, in the President's statement, reported in Food For Peace, No. 21 (Feb.-March 1965), pp. 1-2: "To make this food aid more effective we plan to gear our Food For Peace programs more specifically to the needs of recipient countries and their economic development programs. We may need more flexibility to assure proper nutritional balance in these programs, particularly as they relate to child feeding." Vice President Humphrey was quoted in The New Republic, January 30, 1965, p. 7, as saying: "We can't just depend on accidental surpluses. What kind of military assistance program do you think we'd have if we just depended on what we had left over, as compared to what we really need? There wouldn't be any NATO; there wouldn't be any free world today, if we just depended upon the old guns that we had left over." The same issue (p.7) also reported

that Secretary of Agriculture Freeman has recently observed: "The production of food in this country for use in alleviating the immediate food deficit must be geared to need."

This issue is also related to efforts to develop a positive nutrition program (see Chapter V herein). There the issue involves a possible change in the structure of U. S. surplus production toward the direction of larger quantities of foods selected on the basis of nutritional needs, and a greater variety of foods available for Food For Peace programming. Such an outcome would involve a probable increase in the budget cost of Commodity Credit Corporation commitments as a consequence of more expensive foods (even though tonnage may be reduced), although it could also lead to a reduction of CCC stocks.

The issue includes the possibility of expanding uses for U. S. commodities through such developments as feedgrain conversion in recipient countries. Finally, it would include the possibilities of nutritional fortification of foods shipped overseas. (This aspect would be explored in conjunction with nutritional studies which identify where such fortification is necessary or desirable on nutritional grounds).

11. Feasibility and Cost of Enlarging the Range of Commodities Provided Under Food For Peace, Including Fortification

a. Research Rationale

The origins of P.L. 480 grew out of the convergence in time of two major events -- the accumulation and storage of large quantities of agricultural commodities as a result of U. S. policies toward domestic agriculture, and an enhanced awareness of the critical needs of the underdeveloped countries and the importance of providing them with assistance in their efforts to achieve economic

development. Where underdeveloped countries wanted, and could effectively use, commodities which were "surplus" (in the sense of being withheld from domestic U. S. markets in the interest of maintaining prices), it seemed likely that mutually beneficial arrangements could be made to use "surplus" commodities as one form of assistance. Other objectives have been included over time, but the above remain an essential rationale for the Food For Peace program as a whole.

After ten years of experience it may now be desirable to reconsider this rationale in light of three critical developments.

- (1) The size and composition of the surpluses held by the U. S. Government depend on the domestic policies which are implemented in the field of agriculture, and the success with which they are carried out. The surpluses also depend on what is happening within the domestic agricultural sector, and while this partly reflects the government's policies it also reflects what is happening in other sectors of the economy and the alternatives available there to farmers. It is not necessary to elaborate an analysis of these developments at this stage, but it seems clear that the surplus situation will change.

The most probable course is an overall decrease, with eventual elimination of surpluses in some commodities. Within this trend, surpluses available will probably vary from year to year as government policies and the agricultural sector make imperfect adjustments to price and supply levels which clear the domestic and export markets without accumulation of surpluses



by the government. If this expectation is at all correct, it implies that the availability of agricultural commodities as tied assistance to underdeveloped countries will gradually decline, despite the significance of that assistance to the recipient countries' developmental plans.

- (2) Although the commodities furnished from surplus stocks have, by and large, been useful to the recipient countries, the particular combinations which have been available as surplus were not necessarily the most suited to the recipient countries' needs for developmental purposes. This stands out most clearly in countries whose populations are rice consumers but have had to take wheat, but it also applies to situations such as the dried milk shortage where priority allocations of available supplies resulted in curtailment of some programs of distribution. A different combination of quantities, or larger supplies, would probably have been a greater contribution to development.
- (3) The nutritional value of agricultural commodities, whether surplus or not, can frequently be increased by further processing or by adding nutrient supplements. A greater range of foods would have a similar effect. This has become more important with the growing emphasis on developmental needs for better nutrition in the recipient countries, and not on just more "food" as such. The Food For Peace program in its present form does not include provision for making this kind of adjustment in the commodities it sends abroad.

The point is that the time is approaching when some assessment is necessary to determine the appropriate role for agricultural commodities as part of the U. S. assistance effort. This project will be an exploration of the alternatives, and their costs, to provide amounts and kinds of commodities more closely related to the developmental and nutritional needs of recipient countries.

b. Research Completed and In Progress

A great deal of work has been done on the problem of estimating food requirements for the world as a whole and for individual countries. General references to the problem are found, for example, in (32), (36), (146), (602), (772), (782), (790), (793), and (798). USDA and other projections of supply and demand for individual countries are found in (55), (58), (765), (770), (771), (774), (775), (781), (787), and (788).

The USDA/ERS is currently carrying out studies of a cross section of expenditures by consumers in Pakistan and India (and possibly other countries as well). This would appear to be a fairly extensive base on which to develop estimates of a "need" within the framework of this study, but additional work will probably be needed to refine and reconcile the work that has already been completed. These reports are discussed in more detail under Projections of Population and Food Supply.

Comparative advantages do not seem to have received much attention in the literature -- (150) and (17) are two examples of some statements and discussion of the problems. Also, while some reports

of new processes and nutritional supplements are available, no work has been done on attempting to determine the costs of using these alternatives within the P. L. 480 framework. Finally, the area of transforming P.L. 480 commodities (e.g. . feedgrains) seems relatively neglected. A large body of literature on this subject relevant to developed countries is available, but little is applicable (without substantial modification) to the under-developed areas.

c. Research Objectives

The research objectives fall into three parts, consistent with the points made in the Research Rationale above.

- (1) The research objective under this first part rests on the assumption that surpluses are not inevitable, and will probably decline, even though the potential for excess production will continue for a long period. It further assumes that assistance in kind (i.e., in agricultural commodities) is theoretically justified because it adds needed resources to a developing country over and above what it would otherwise receive through dollar grants and loans.

The research objective itself under this section would be to analyze the agricultural potential in the U. S. to identify the commodities in which U. S. agriculture has a comparative advantage in production. (If the U. S. has a comparative advantage in very few (or none) commodities, it would be doubtful that the U. S. should even consider any alteration of Food For Peace beyond the use of present surplus commodities

for as long as they may be available). For needed commodities in which the U. S. has a comparative advantage, research would next be directed toward an estimate of the costs which would be incurred to acquire supplies of these commodities for shipment abroad as part of an assistance program, without bidding up the prices on the domestic market to do so. This would primarily involve increasing acreage allotments, but it may also involve consideration of other measures. These costs (to the U. S. government) and potential effects on the U. S. economy would then have to be related to the results of making a comparable amount of dollars available for use in world markets to obtain similar commodities. (This estimate would depend on demand requirements to be worked out under the succeeding project). These costs would be net of ocean freight charges, since provision for ocean freight on U. S. vessels under P.L. 480 constitutes a subsidy to U. S. shipping and not the contribution of agriculture as such. Comparisons of cost would then assist in reaching decisions on whether, or to what extent, extension of P.L. 480 legislation to include non-surplus commodities would entail additional costs beyond what might be borne under straight dollar loans or grants for the same purpose.

- (2) The question of "needs" of the recipient countries is a particularly awkward one, because in part, "needs" may not be known very well and they may change radically as new information becomes available. There is additional difficulty in estimating the rate of progress individual recipient countries may make toward increasing agricultural output on their own, or in earning foreign exchange to purchase agricultural commodities on world markets. For example, they may make substantial improvement in some crops but not in

others, for reasons which are not clear. Increasing agricultural output may depend on the level and kinds of foreign assistance which will be available in the years ahead. "Needs" will also depend on the changing size and composition (e.g., urban/rural of the population.

All these reasons suggest that estimates of "needs" cannot be very precise, and one must assume that any estimate for many years will have serious errors. For purposes of research at this time, therefore, it would be justified (and necessary) to rely on information already assembled and analyzed. The research objective in this section would be to use existing data to estimate needs in light of what is known about current food preferences in recipient countries, specific nutritional deficiencies, the most recent projections of agricultural production of specific commodities in recipient countries and population growth projections. "Needs" estimated in this way would be based on some realistic assumptions about minimum dietary requirements (not U. S. standards). "Needs" may or may not be related to income elasticities, depending on whether such information is at hand.

- (3) Estimating the costs of improving the nutritional value of commodities which are currently on the surplus list, or which might be added to the program as indicated in the research results suggested from the first section of this project, is the research objective of this section. This estimate would bring together existing knowledge about the

kinds of additives such as Vitamin A, riboflavin, and animal protein which could be combined with agricultural commodities to provide greater food value in situations known to require supplemental nutrition, and the costs of supplementation. Much of this kind of knowledge is already available; more will result from nutritional research currently in progress or recommended in other sections of the research map. (See cross references).

The results of the research outlined above should provide a basis for deciding which commodities should be provided as a form of assistance to recipient countries, and to what extent assistance should (if at all) extend beyond commodities which may be on the "surplus" list in any given year.

d. Suggested Research Personnel

Since this is a large and comprehensive project, the personnel requirements will be large and diversified. Objective (1) would require a team of two agricultural economists (or possibly the substitution of an international trade specialist for one); Objective (2) would require an economist and a nutritionist; Objective (3) would require an animal husbandry specialist and an agricultural economist. All would probably require research assistants, and for (2) and (3) the study would include personnel of comparable backgrounds from the host countries.

e. Priority

Answers to some of the problems raised in this study are very important to field personnel, who have little time or facilities

to explore these kinds of alternatives to the present Food For Peace program. Since it will also be a relatively lengthy project, it should be given a high priority. Because of requirements for data, it should follow projects 12, 54, 55, and 56.

f. Cross References

The second objective cited above will require information developed under project 12 in this Chapter, and the third objective will require the findings resulting from projects 55, 56, and 57 in Chapter V. See also projects 1, 14, 62, 68, 77, and 78.

12. Elasticities of Demand for Food In Selected P.L. 480 Recipient Countries

Research Rationale

The preceding research project has recommended, as one portion of that study, an estimation of food "needs" in several strategic developing countries. "Need" was expressed in terms of some nutritional standard, estimates of domestic agricultural production, and population growth and changing composition. If carried out, the estimation would provide one dimension of the problem which developing countries will face. For planning purposes, however it would be desirable to have more precise measurements of the probable demand for food under conditions of changing population size and composition, rising incomes, and the introduction of P.L. 480 commodities which are close substitutes for commodities grown domestically in recipient countries. In other words, if possible, there should be some knowledge, for particular countries, of the income and price elasticities relevant to the Food For Peace program.

One part of "success" in the operation of a Food For Peace program is its ability to supply appropriate quantities of a proper combination of commodities at the right time. Failure to do so can lead to crowded port and storage facilities at one extreme, and empty warehouses and disruptive rises in food prices at the other. The process of economic development itself can be retarded if food is not available in quantities consistent with changing demands associated with rising incomes and larger numbers of consumers. Accurate measures of income elasticities of demand for agricultural commodities therefore are an important part of sound planning, whether from the standpoint of what the U. S. will be able to contribute as assistance to development, or from the standpoint of the developing countries in their attempts to anticipate development needs (to be met out of either foreign or domestic resources).

Another planning problem arises in some situations when P.L. 480 commodities, available because they are surplus acquisitions in the U. S., are not the same commodities commonly used in the recipient countries. The degree of substitutability in the mind of the buying public may not be very close, and recipient countries may have to sell imported P.L. 480 commodities at local currency prices below those paid to the U. S. for them. This has occurred in areas where rice is consumed when wheat was provided under P.L. 480, and may also be true for edible oils, dried peas and beans, and feed grains.

The importance of these factors is that while food "needs" (in calories per capita or some other nutritional measure) may be substantial, the absorption of P.L. 480 commodities imported to meet



them may not match the "need" at prices which reflect the full costs to the recipient country. This has serious implications for planning, and may require a re-evaluation of the role which P.L. 480 can play as a resource for development. Lack of knowledge of the true dimensions of this aspect may be responsible for some of the feelings that P.L. 480 has "failed" in certain instances.

#### Research Completed and In Progress

Although a good deal of work has been done on the problems of demand elasticities in developing countries, much of it has dealt with the topic in a general way. The work done points up the importance of knowing in more detail about specific countries, and some of it indicates the possibility of higher income elasticities of demand for food at early stages of development than has been generally assumed in the past. A recently published report provides an excellent base for further work (754). It contains an extensive bibliography on the subject. Other useful references include (217), (224), (234) and (602).

One publication (58) reports research in India sponsored and financed by the U. S. Department of Agriculture. It includes estimates of demand elasticities based on National Sample Survey data and a household consumption survey conducted by its own organization (The National Council of Applied Economic Research). Similar studies in other countries (750) have been completed while some (as in Pakistan) are either in progress or planned in other countries under the sponsorship of the USDA. Again, the availability of this work represents a substantial start on the problem, and a step which will be of great value to those who will pursue the research still further.

Three considerations lend support for the type of study proposed herein. One is that the income elasticities derived in previous studies exhibit fairly wide differences -- to a degree in fact, which minimizes much of their usefulness for planning purposes. The second is that as far as we have been able to determine, little work has been done on cross elasticities between P.L. 480 commodities and domestic commodities in recipient countries. Some informal and unpublished papers have been prepared by members of the Harvard Advisory Group in Pakistan (notably one by Walter P. Falcon and Carl H. Gotsch, dated July 25, 1964), but these were not full-fledged studies of the problem. Finally, while estimates of income elasticities do exist, none has been clearly useful in planning P.L. 480 programs for any of the major recipient countries. A study such as this one, carried out with P.L. 480 primarily in mind, might be an effective way to bring the results more immediately and directly into that planning process.

c. Research Objectives

The objective of this research on demand conditions is to measure income and price elasticities of demand for P.L. 480 commodities. This can be done in selected countries (and important regions within countries) which have been large importers of P.L. 480 commodities in the past, and which are expected to be large importers in the near future. While precise extrapolations cannot be made with assurance, such measures may also be reasonably accurate guides to price and income elasticities in other countries in the same region where food habits and levels of income are roughly

similar. Some of the important questions to be answered by this research would include:

- (1) Measurement of income elasticities for surplus U. S. foodstuffs, in countries where such surplus commodities are normally part of the diet.
- (2) If possible, measurement of price elasticities for surplus U. S. foodstuffs.
- (3) Measurement of cross elasticities of surplus U. S. foodstuffs with locally produced close substitutes.
- (4) Analysis of the implications of findings for specific countries -- estimates of prices necessary to insure absorption of given amounts of imports, estimates of potential effects of substitute commodities on local producers, estimates of potential demand for U. S. surplus foodstuffs under different assumptions of the development which might take place within the recipient country.

d. Suggested Research Personnel

Agricultural economists, with experience in problems of measurement of elasticities of demand for foodstuffs, would be the most suitable personnel for this study. Since the USDA has supported some work of this kind in the past, it may be willing to assign people for further study on this subject. Economists from the academic community might also be used. Either choice would rest on interest and availability of personnel. Past work by the FAO is also closely related and some of this research may be carried out by this organization.

e. Priority

Given the importance of sound estimates of demand elasticities for planning purposes, this study should be given a high priority. Further, this project should precede project 11.

f. Cross References

Project 11 in this Chapter requires data developed here, and projects 1, 13, 14, 61, and 63 deal with related topics.

13. Elasticities of Demand Derived from Least-Cost Diets

a. Research Rationale

To plan successfully to meet the food needs of a country with a rising population, rising income, and changing commodity price patterns (the result of changes in production and import activity) requires knowledge of the price and income elasticities of demand for food in that country. A great deal of work has been done on the statistical and theoretical problems associated with efforts to obtain price and income elasticities from the analysis of records of market experience -- whether from time series or from cross-sectional data. Much has been accomplished, but the range of uncertainty in the results of the usual study of demand elasticities makes alternative approaches to the problem deserving of consideration. If research were expanded to cover this approach to the problem, Food For Peace policy makers would have additional guides to judge the probable course of future demand for foodstuffs under changing conditions in recipient countries.

Normative price and income elasticities of the demand for food can be obtained directly by using linear programming models of least-cost diets to determine what changes in dietary composition will be associated with specified changes in either food prices or in the level of expenditure upon food. Such models are particularly attractive for the purpose of studying cross-elasticities, because the interrelationships between commodities stand out clearly in such models; they show us what would happen if human behavior conformed exactly to the behavioral assumptions that are built into the models, that is, if diets were chosen primarily for their nutritional effectiveness, subject, of course, to certain food customs and preferences. Actual behavioral responses are likely to be much more complex, but these models bring out clearly the implications of a well defined type of behavioral response. The elasticities derived from them may provide boundary values that are useful in evaluating the statistical elasticity figures obtained from observations on market experience. The nature and degree of usefulness of elasticities derived from these models depend upon the extent to which diets are chosen for nutritional effectiveness, whether this choice is conscious or unconscious. Opinions differ on the usefulness, with evidence to support each view. It seems probable that nutritional considerations increase in importance when families have very low incomes.

To illustrate: Suppose linear programming is used to develop a least-cost diet that meets the nutritional levels actually attained by a large group of working-class families in a particular region, and which also conforms to the food customs and preferences

of these people. From this model one can determine how changes in food prices will alter the food-consumption pattern, on the assumption that the dietary objective is to achieve these nutritional levels as cheaply as possible, within the established set of requirements concerning food customs and preferences. The relationships between price changes and changes in the quantities purchased give us all the data needed to determine price elasticities and cross-elasticities for each of the commodities in the diet. In addition, one can also determine cross-elasticities of changes in sets of two or more prices. Because such cross-elasticities are not necessarily derivable from the separate elasticities of separate price changes, this is new information, ordinarily not obtained at all. Price changes in the real world commonly occur in groups, so these composite cross-elasticities may well be more significant for planning purposes than the individual cross-elasticities ordinarily computed.

These models can also be used to determine elasticities that reflect the competitive relationships between the commodities included in the least-cost diet and those that are outside it. Potential elasticity relationships can be computed for commodities that are not now available in the market (new U. S. surplus commodities for instance) by using them in the model and determining at what price the new commodities enter the diet and what commodities are partially or completely replaced by them.

The assumption of these models, that the dietary objective is to achieve nutritional and other goals as cheaply as possible, precludes

the determination of income elasticities except as the nutritional or other goals are allowed to increase. Gradually raising the nutritional levels to be provided by the diet forces the expenditure for food at any given set of prices to rise; thus, one can work out elasticities of demand for particular commodities, where the rising expenditures on food are the result of the higher levels of nutrition to be achieved. We know that rising incomes normally lead to rising expenditures for food and that the level of nutrition, in general, is positively correlated with rising expenditures for food. If we assume that food expenditures increase when incomes rise in order to increase the level of nutrition obtained, the models can be used to show how those increased expenditures for food will be distributed among the various commodities. Of course, expenditures for food may also increase for reasons other than better nutrition alone, but elasticity measures will reflect at least this aspect of the response. If the relationship between incomes and food expenditures is known, these food-expenditure elasticities can be converted into income elasticities that would show the effect of increasing levels of income on the demands for individual foods as a result of the search for higher levels of nutrition at higher income levels.

b. Research Completed and in Progress

The general summary of work on demand elasticities given in Project 12 need not be repeated. While least-cost diets have been developed by means of linear programming, no one has yet attempted to derive demand elasticities from this. This work remains to be done.

c. Research Objectives

- (1) Provide measures of own-price elasticities, crop elasticities, and income elasticities for local food-stuffs and for U. S. surplus commodities that are actual or potential substitutes for these local foods.
- (2) Provide these measures by a method quite distinct from any of those now in use, in order to avoid the difficulties inherent in present methodology and gaps in data and to provide an independent source of support or evaluation for conventional measures.
- (3) Evaluate these elasticities and the elasticities obtained by other investigators using conventional procedures, with particular attention to determining for which specific questions of policy each kind of elasticity measure is best suited.
- (4) Analyze the implications of the findings. For instance, at what prices would given amounts of imports be absorbed? What would be the potential effects on local producers of substitute foodstuffs? How would a subsidy on the consumption of a particular commodity affect the consumption of other commodities?

d. Suggested Research Personnel

This study would require an economist experienced in the application of linear programming to the problem of human diets, a nutritionist with training as a dietitian, and perhaps an agricultural economist interested in supply and demand elasticities. Personnel interested in this type of study are most likely to be found in the academic community, although participation by agencies such as the USDA and



and FAO should also be encouraged. Computer facilities should be available to the researchers.

e. Priority

While this study is quite important from the standpoint of basic science, it does not have the immediate significance from the standpoint of the policy questions to be answered. Other measures of elasticities exist about which we have more knowledge at present, but this study might be undertaken at the same time, in one country, as that proposed in Project 12.

f. Cross References

See projects 12, 14, and 16.

14. A Study of the Costs and Benefits to the United States of Major Reduction in P.L. 480

a. Research Rationale

The studies suggested in this "research map" generally assume that agricultural commodities are an important item of assistance to many of the developing countries of the world, and that such commodities will continue to be available from U. S. surplus stocks (to some degree and in some combination) for several years to come. However, any comparison of U. S. alternatives cannot be complete without some study of the costs and benefits which might result if the P.L. 480 program were terminated. Along with the suggestion that study be made of the feasibility of enlarging the range of commodities offered under P.L. 480 (Project 11), this study would consider the feasibility of eliminating P.L. 480 in its present form.

The "Cash versus Commodity" approach to foreign aid is a question which has grown in recent years. The three-year experimental World Food Program is being reviewed in 1965, with a recommendation that it be continued. A substantial contribution to this program by the United States will be expected, presumably under P.L. 480 authorization. There are pressures that a part of the contribution be made in dollars. Recent shifts in P.L. 480 legislation, mainly in Titles I and IV but also including freight on donated food, make some parts of the program more similar to long-term dollar loans than were earlier operations. Conceivably, further changes in legislation and policy could shift the program to the point where it would be debatable whether or not it represents additional foreign aid resources. Finally, the validity of commodity versus dollar appropriations by the U. S. is challenged in other countries. Their representatives argue that food aid is cumbersome, discriminates against their exports, and causes inefficient programming.

There are two possible ways in which supplies now available for P.L. 480 could be eliminated: one would be to cut back domestic production to a point where the "surpluses" now accumulated would not be generated; the other would be to remove price supports entirely, and leave pricing and output to the play of free market forces.

The first would involve some new costs to the government and possibly to U. S. consumers, but would reduce other costs. The other would reduce the costs connected with a price support program, but could involve social costs for the farm population and,

under some circumstances, higher prices to U. S. consumers. Also some developing countries would require agricultural commodities for their developmental programs, and would look to the U. S. for assistance in obtaining them. To the extent the U. S. was willing to provide assistance, costs in the form of grants and loans would be necessary for this purpose -- e. g., to purchase commodities from U. S. agriculture.

This study is significant because it would provide an estimate of an important alternative to the P.L. 480 method of providing agricultural commodities for developmental purposes. If the costs of supplying such commodities without dependence on "surplus" accumulations are clearly less than they are with dependence, the U. S. would be able to offer assistance in the form of commodities at levels and in the kinds of "need" determined by the recipient countries, but with less drain on total U. S. resources. In other words, this study does not presume an end to agricultural commodities as one of the component parts of the total volume of goods and services transferred to developing countries as a result of assistance programs. Rather, the study is part of a full examination of alternative methods of providing such commodities. Administrative agencies and policy makers need some guidelines to help determine the most feasible and efficient method to follow, and whether conditions warrant a significant effort to relax P.L. 480 specifications or to push for a comprehensive dollar appropriation as part of foreign aid.

b. Research Completed and in Progress

Although there appears to be a growing interest in whether it costs more in some sense to procure and ship for example, a bushel of wheat under P.L. 480, than it costs if recipient countries were free to buy their food requirements directly, little is available in the literature to indicate that this problem has been examined in any depth. At least nothing is known which offers a definitive answer to this question. References which deal with it generally, largely from the standpoint of the desirability of relating food assistance to the domestic price support policy and the surpluses which arise from it, include (7), (38), (144), (185), (329), and (703). The USDA publications (755) and (757) discuss the possible monetary effects of different titles and the financial procedures under P.L. 480, and may provide useful background. On the whole, however, most of the P.L. 480 literature deals with the impact of the programs abroad, examining ways in which emphases and content may be adjusted, and assumes that the surpluses will continue to be available as a result of U. S. domestic policies. There are two references which estimate the price and income implications of a free market situation in agriculture: (733) and (259). These would need to be updated. One reference (61), does suggest a departure from P. L. 480.

c. Research Objectives

The general objective of this study is to assess the full costs incurred in providing agricultural commodities through P.L. 480, and to compare them with the costs which might be incurred if the U. S. did not accumulate surplus stocks for use in a P.L. 480 program.

The first aspect can probably be determined with somewhat more precision than the second, but construction of reasonable approximations in both instances for the purpose of comparison should be possible. The general objective includes at least the following major lines that research could take:

- 1) Determine the extent to which accumulation of surplus commodities in recent years may be influenced by awareness of commitments and the prospect of continuing shipments under the Food For Peace program. Assuming that there are sufficient indications that surpluses are in large measure related to present and future P.L. 480 requirements, determine the costs associated with the generation of such surpluses (e.g., costs of administration, procurement, storage, handling, freight, and other related expenses). (This aspect of the study is very similar to a portion of Project 11 and the two cost estimates should be coordinated to reduce duplication of effort as much as possible. The distinction between the two studies is that Project 11 is concerned with costs of U. S. governmental procurement of a wider range of commodities than are currently on the surplus list; this study is concerned with the costs of procuring the present range of commodities now available under P.L. 480). If, on the other hand, this portion of the study confirms that the stocks of commodities used under P.L. 480 are actual surpluses, which arise because of inherent and uncontrollable difficulties in the operation of the domestic price support program, it may be reasonably assumed that P. L. 480 requirements are not relevant to the surplus problem and that further study of

alternatives is unnecessary. If surpluses are genuine in this sense, the original justification for a Food For Peace program would appear to stand -- subject to modifications in the legislation and implementation which might improve its efficiency and effectiveness.

- (2) A second major area for research is to estimate the costs under a program which would retain controls on production but which would not result in accumulation of surplus stocks by the U. S. government.

This would require estimation of the probable levels of demand for U. S. agricultural commodities from developing countries under different assumptions about the levels of loans and grants which might be available for such purposes (excluding costs of ocean freight) and the most probable levels of support prices. (Estimates of demand for agricultural commodities by developing countries should be coordinated (and consistent) with those developed in Projects 12 and 13). Estimates should also be made of the costs to set controls on production at levels which would clear the markets for domestic sales, commercial exports, and developmental assistance exports (financed by loans and grants). Finally, some estimate is needed of the degree to which production controls would be effective, i.e., whether or not surpluses were still likely to accumulate and the costs to the government which might reasonably be assumed to occur as a result of them. Estimates are also needed of the likelihood that shortages would occur and how prices and the volume of commodities which would be moving to the developing countries

would be affected

- (3) The third area would be concerned with estimation of the possible results from establishment of free market conditions. Here again there would have to be different assumptions about the levels of loans and grants which might be available to developing nations for the purchase of agricultural commodities, as one element in the total demand for different commodities. Such loans and grants would be the primary cost to the U. S. government (excluding ocean freight costs). Most difficult to ascertain would be estimates of the response of U. S. agriculture to the free market conditions -- the production response with the removal of production controls, the effect on prices, the effects of shifts from one crop to another, changes in the structure of agriculture as farmers adjust to the new conditions, and the social costs (portions of which would be borne by government at all levels) resulting from such adjustments. Previous studies would need to be examined and assumptions modified at many points, but the effort would be worth undertaking if only as a first approximation to the situation which might result. Throughout these last two areas of examination the study would be confined to markets for commodities now included in P.L. 480. However, the studies should be carried out so as to include (in demand projections for developing countries receiving loans and grants) possible shifts to commodities which have not been available under P.L. 480.

d. Suggested Research Personnel

This study might be best conducted by two or three senior agricultural economists with thorough familiarity with the major commodity markets and the operations of the price support program. They would require the help of graduate assistants, and should have access to computer facilities. It would also appear advisable that they not be affiliated with governmental agencies. The study would require relatively little new data, and could rely largely on material already published. However, it may require some access to Commodity Credit Corporation data on costs for the first portion of the study.

e. Priority

Medium. This research should follow projects 12 and 13, since data developed there would be needed in this project.

f. Cross References

As noted above, this project is closely related to project 11, and depends on data from projects 12 and 13. Other projects which bear on the subject matter treated here include 1, 41, 76, 77, and 78.

15. Reducing the Instability of Supply Through Improved Programming of Shipments

a. Research Rationale

Probably one of the most difficult elements in the planning process is the uncertainty of the range and volume of commodities available for aggregate and country programming. This applies to some degree to all Titles, but it has been most evident in child feeding and other feeding programs under Title II and III, and to supplies



of nonfat dry milk. One way to resolve this issue is by a decision to produce additional supplies of such commodities as dry milk; some relief would be provided by a revision of the priorities among titles. These are considered under Project 11 and in Chapter VII.

Are there other alternatives available which permit variation in supplies without serious consequences? Several come to mind which might be feasible. Commodities go to a variety of countries with a variety of climates, and with varying time patterns of school terms. In some countries there may be a delay of a month before local programs can be made effective. Also there are seasonal production patterns in the host country so that some local contribution may be made more easily during one season than in another. Thus, there is a possibility that a larger contribution from the host country at certain seasons, a careful scheduling of shipping dates, and close attention to inventories could reduce the amount of commodities in inventory and in pipelines at least temporarily, thus helping to make existing supplies go farther than they do now.

Are there other possible ways to reduce the problem of instability in supply? Perhaps feed grains for milk cows are an effective substitute for dry milk from the U. S. Perhaps wheat imports can be used to encourage desirable production shifts which would increase the supply of other commodities within the recipient country. The extent to which such substitutes might be used, the time needed for their implementation, and the comparative costs of the relevant substitutions in particular countries provide

information for planning which can make the plans less dependent on the particular amounts of commodities available in the United States.

A more conservative approach is to reduce the number of programs, cut down on the volume of commodities, or narrow the range of products programmed. These must be considered as elements of the aggregate U. S. foreign policy, but are not always closely integrated into a comprehensive, consistent, policy. At the country level, the absence of consistency often is more obvious. The major agency-related aspects of policy are broad directives not specifically interrelated with host country objectives. Thus another problem is to decide where to focus attention, given limitations in supplies.

The problems posed here are closely related to the questions of whether U. S. agricultural policy appropriately may be modified to provide a larger volume and variety of the commodities most useful for nutrition and development. Tentative conclusions that the structure of surpluses is to be geared more to conform with overseas needs would reduce the importance of this project proposal, and would shift some of the research emphasis (see Project 11). A conclusion not to influence (any further) the nature of U. S. surplus supplies would place greater emphasis on inventory management, careful planning of the supplies in the pipelines, and agricultural and other changes in the host country by which grains could provide substitute commodities.

b. Research Completed and In Progress

No research is known which deals specifically with this problem; undoubtedly many fragments of the information needed are available in letters, reports, and dispatches between AID/Field and AID/Washington. Also agricultural and biochemical research provides estimates of technical substitution ratios which can be drawn upon.

c. Research Objectives

Several kinds of information are needed. One set would be built on the program (commodity) commitments for a given future period of time. Another set would involve specification of the pattern of end use, that is, the actual distribution in schools, to families, and to wholesale or retail distributors for Title I and Title IV. A third set of data would involve specification of the local food contributions, seasonal patterns of availability, and the presumed periods in which imported supplies were needed; it might be an alternative set of data to the second series. A fourth set would involve time patterns required from U. S. ports to these ultimate consumers, or perhaps to some point in the market channel. Also required would be a realistic projection of available U. S. supplies.

This information should be used in linear programming analysis, with an effort to identify bottlenecks as well as the desirable pattern of programming. On this basis it should seek additional information to identify items which can help reduce the pressures at major bottlenecks.

The research objectives would include:

- (1) Provide, possibly through linear programming techniques, a pattern of shipments, local procurement and overall programs which would optimize the program size in relation to available inputs.
- (2) Identify strategic bottlenecks, the elimination of which would provide substantial increases in program potentials.
- (3) Develop alternative plans which would reduce the importance of such bottlenecks, and to identify the most appropriate alternatives.

d. Suggested Research Personnel

Two economists, one with linear programming experience, plus research assistants. This project might be placed with the USDA to have closer access to data on shipments, seasonal patterns of availability, and scheduling problems.

e. Priority

Medium. Should follow Project 11 in terms of timing, depending on initial results in the other study.

f. Cross References

This research is related to other projects dealing with changes in the size and scope of P.L. 480, such as projects 62 and 64, and with research concerning reserve stores and program procedures in projects 17 and 74.

F. Incentives and Disincentives to Agricultural Development in Host Countries

A policy problem which gravely concerns those engaged in the implementation of the Food For Peace program, both in the U. S. and in the recipient countries, is whether or not the availability of surplus commodities through Food For Peace introduces disincentives in countries which should have favorable long term prospects for agricultural development and need not depend on concessional imports of food to meet internal demands for basic foodstuffs. Some work has already been done on this problem, but it seems necessary to do additional study either to corroborate or to modify the earlier work, much of which comes to contradictory conclusions. This research may provide definitive evidence that disincentives do not operate under Food For Peace as carried out, or that if they exist in certain respects, means by which the disincentives can be eliminated or greatly reduced can be shown. The significant issue is therefore one of examining the validity (and/or the grounds on which there is validity) of the often repeated assertion that Food For Peace does constitute a disincentive to agriculture in the recipient countries.

16. Disincentive Effects on Agriculture in Developing Countries

a. Research Rationale

One of the questions raised most frequently in discussion of the Food For Peace program is that of possible disincentives to domestic agriculture in recipient countries. Assertions that this occurs, and denials that it has this effect, are made with equal vehemence, but in most situations such feelings rest on general impressions or theoretical analyses rather than empirical study of situations in specific countries.

Whether it is true or not, the belief that Food For Peace creates disincentives can have a negative political effect for the U. S. and its foreign policy objectives, but if there are actually disincentives it is important that they be known and understood. Deterrents to growth in domestic agriculture delay economic growth and prolong the time aid of all kinds is necessary. Prospects for eventual self-sufficiency, or the emergence of commercial markets for U. S. agricultural commodities (of the same or different kinds provided under Food For Peace) are also diminished. Clearly the long run Food For Peace objectives will not be met if the program operates at the cost of generating disincentives.

Foreign assistance in any form may bring disincentives with it, for, to the extent that assistance is available, recipient countries are under that much less pressure to mobilize their resources for development. On the other hand, internal developmental efforts may still be hampered by what the populations of underdeveloped countries will allow politically, in taxation or other methods of resource mobilization. Where this happens foreign assistance adds needed resources without reducing efforts to accumulate capital internally. A large part of the difficulty in assessing the impact of Food For Peace on agricultural production is that agriculture in recipient countries tends to be stagnant. The question therefore can become one of asking whether agriculture would have been more progressive, would have shown greater growth, without P.L. 480 imports.

Research Completed and in Progress

The tremendous interest in the possible disincentive effects of P.L. 480 is reflected in the volume of writing on the subject. References in the bibliography which deal with disincentives in one or more countries (many of the citations apply to the same countries) include (30), (45), (64), (78), (588), (113), (114), (508), (202), (217), (258), (261), (903), (506), (549), (577), (630), (629), (753), and (943). More general treatment is found in (38), (122), (185), and (337). In many of these writings the disincentive problem is touched upon in only one portion of a paper or study. The results vary widely. Some authors hold that (in the countries they studied) P.L. 480 has not generated disincentives, but has actually helped to raise agricultural production; others believe that there may be some disincentives, but the overall effects of P.L. 480 have been good; still others believe that P.L. 480 has hurt agriculture in the recipient countries and has hampered development.

Three empirical studies deal to some degree with this problem. The Israeli study indicates that P.L. 480 feed grain imports made it possible to remove price controls which led to higher prices to farmers and increases in production of both feedgrains and animals. In Colombia, internal policies completely insulated local cotton producers from competition from imported cotton and provided many incentives, while for wheat the opposite was true, resulting in production shifts from wheat to barley. A very recent study completed for India under USDA sponsorship (534) concludes that disincentives to Indian agriculture have not been critical.

In light of the vast amount of attention which has been given to this topic, it may seem odd that still another research study is being suggested. The primary reason for this suggestion is that despite all this prior work the issue is not dead. The net result of research that has been done provides little that is conclusive or empirical. Disincentives emerged as an important concern in conversations held with U. S. AID Mission officials, host government officials, and observers of agricultural development in recipient countries. None felt that the evidence in any direction was sufficiently strong to satisfy doubts about the actual effects of P.L. 480. Once again, it may be that scattered research and writing, from different sources, at different times, and dealing with different countries, has been so diffused that planners and policy makers are largely unaware of them. One advantage of the study proposed here is that it would be directed toward resolution of a planning problem under Food For Peace, and would be carried out at the request of the policy-implementing body. It would also study the problem of incentives in considerably greater depth than has been possible in much of the literature cited, and could be concentrated in key countries such as Pakistan, Brazil, India, and the U. A. R. . Finally, research of this kind could serve as a reference base from which to consider programs in other recipient countries. In short, given the economic and political importance of the issue, further empirical research is of utmost importance and urgency.



c. Research Objectives

The problem of disincentives contains more than one element. For example, the disincentive problem would be of greatest concern in recipient countries which have a potential for agricultural development sufficient to provide (in theory) the basic foodstuffs which a growing population will require.

This does not mean that it must provide everything directly -- it could produce surpluses of some agricultural commodities which can be exported, to provide foreign exchange for the import of foods which require greater relative cost in domestic production. Research done on this study should therefore be coordinated with that suggested in Project 8, for disincentives may operate through the implementation of Food For Peace in other respects (e.g., the interpretation under Section 101 (a)) and bring about changes in cropping patterns which emphasize output for which a recipient country has less comparative advantage than in other products.

The first objective of this project is to study whether the import of P.L. 480 commodities has caused disincentives to domestic agriculture in selected countries. This would involve examination of recent agricultural developments, with an attempt to estimate whether performance would have been improved by the absence of P.L. 480 commodities. It would be concerned with questions such as these: Are there measurable ways in which the decisions of individual farmers to produce, or become more productive, have been affected adversely by the importation of Food For Peace commodities? If cropping patterns have changed, have they been toward crops of lower

value? What has been the experience in providing supplies of new and technologically superior agricultural inputs? What have been price relationships of inputs to agricultural commodities, and how have these been established? To what extent have AID agricultural programs been coordinated with Food For Peace agreements? There should also be analysis of prior trends in production, relations to price movements in important market centers, and changes in land use and cropping patterns over time. Countries in this category would include India, Korea, and the U. A. R..

Of possible equal importance would be a second objective to identify reasons why increased supplies of commodities (as a result of P.L. 480 imports), with presumed price-stabilizing effects, did not create a disincentive to agriculture in a recipient country. This objective would apply if the results of the first portion of the research indicated that the agriculture sector had expanded output at a rate consistent with, or better than, performance prior to the time when P.L. 480 imports began to arrive. The questions raised here would be: How is the disincentive problem affected by the existence of a vigorous program to bring productivity-increasing inputs and methods to farmers in the recipient country? How does the availability of Food For Peace commodities affect the priority or sense of urgency within the recipient country to stimulate the performance of the agricultural sector? Successful analysis of this situation would provide information to enable planners to achieve continuing agricultural growth during the period when P.L. 480 commodities are being imported. In brief, it

should indicate what must be done to avoid disincentives.

Countries in this category would include Pakistan, Taiwan, and Israel.

A third objective is to analyze the effects of P.L. 480 on fiscal policies in recipient countries. This would be of greatest significance in countries which depend heavily on P.L. 480 for a large share of their current revenues (e.g., Korea), and where availability may have reduced incentives to accumulate resources for development. The major question would be the extent to which the availability of loans and grants of local currency delay or inhibit a recipient country from making greater efforts at fiscal and financial reform which would increase capacities to accumulate capital internally. This objective would involve careful study of the operation of the fiscal policy, the extent to which requests for P.L. 480 commodities reflect revenue needs or food needs, and estimation of the effects on development from imposition of additional measures to accumulate capital.

d. Suggested Research Personnel

This study should be carried out by two senior agricultural economists, with associates from the host countries, plus an economist with specialization in fiscal and budgeting problems and some experience in development planning. Preference should be given to persons from the academic community.

e. Priority

All indications are that this is one of the most critical problems for P.L. 480. It should therefore be given the highest priority

f. Cross References

While many projects suggested in this research map bear on incentives to some extent, the most useful cross references are to projects 1, 3, 8, 17, and 18 in this Chapter, projects 25 and 26 in Chapter III, and 60, 61, 62, 63, 64, 65, and 69 in Chapter VI:

17. The Use of Food For Peace in the Operation of Research Stocks to Promote Agricultural Development.

a. Research Rationale

Although the immediate purpose of Food For Peace commodity shipments is to provide basic foodstuffs to countries which cannot produce self-sufficient supplies (directly or through exports of agricultural or other goods), there is evidence that the program as a whole has not been incorporated into the agricultural planning programs of recipient countries.

This lack is more important in countries with a potential for agricultural development than for those which will always be deficient in foodstuffs produced domestically. The problem in the former countries has two main aspects: one is to provide adequate supplies in order to prevent widespread misery and discontent from acute shortages; the other is to maintain agricultural prices at a minimum level of stability to provide incentives for increasing agricultural production. The second aspect requires that such minimum assured prices be determined with some accuracy, given the incentives under which farmers actually operate, and that the host government become committed to purchasing and storing commodities at times when domestic supplies threaten to push prices below the minimum level. In short, the most rational use of P.L. 480

commodities would seem to be as an integral part of a governmental program to raise agricultural output, with a policy of accumulations and disbursements of reserve stocks of commodities which assures stable prices at levels which include incentives to farmers.

This kind of approach has not been fully effective to date, partly due to a lack of cooperative planning between U. S. and host country officials toward this end, and partly due to a lack of adequate study and knowledge about the requirements to make such a system workable. Storage, distribution, and handling problems under existing conditions pose large difficulties in minimizing waste in some countries. Where the chances of loss are high, U. S. officials are understandably reluctant to program shipments large enough for adequate reserve stock purposes. Availability of P.L. 480 commodities may cause officials in recipient countries to postpone facing the long-run problem in favor of activities for which outside assistance is less available.

The relative importance of any of these factors cannot be determined without study, but it does seem clear that the supply of P.L. 480 commodities under most country agreements is used largely to meet shortages as they occur, and not as part of a well formulated plan to use commodities in a manner which will build the productivity of the agricultural sector in the recipient countries.

b. Research Completed and in Progress

Most of the specific work having some relevance to this general problem falls in two categories -- feasibility studies prepared

in support of loan applications for construction of storage and handling facilities, and reports of special missions sent to study a particular storage and handling crisis. Both would be found in the files of the U. S. and international aid agencies; they are not generally available to the public at large.

Because the original scope of such investigations has tended to be narrow, and has focused on a particular aspect of the more general problem, the information is of only partial usefulness for this suggested study.

Most closely related to this area are two studies by the FAO (611) and (612), the first of which deals with the operation of a possible world food reserve, while the second is concerned with individual reserve policies in the developing countries. These general approaches should help develop guidelines for Food For Peace policy.

A study of inventories and reserve stock levels appropriate to the U. S. domestic scene may contribute methodological suggestions to this project. (704).

c. Research Objectives

The problem to be researched is most likely to be of importance in India, Pakistan, U. A. R., and Brazil, although countries receiving smaller amounts of food may have equally large needs for the same kind of research effort. Specific recommendations will have to rest on the situation prevailing in a given country, but the approach developed in the countries receiving large amounts of food should be transferable to others.

The overall objective of this research would be to study the feasibility of a comprehensive plan for the assimilation, handling, and distribution of reserve stocks (from both P.L. 480 and domestic agriculture sources) in specific countries. This study would include recommendations for a pricing policy on major commodities, and the estimates of requirements for implementing a reserve stock policy would be related to the effects of such a pricing policy on agricultural output. The study should also include examination of the possibility of using local currency funds for price support payments and construction of storage and handling facilities. Within this general framework the objectives would include the following:

- (1) A survey of the storage requirements to carry out a program, based on quantities to be stored and the kinds of storage facilities most suited to the climatic conditions and kinds of commodities to be stored. Location of storage facilities should fill both functions -- reserve for distribution in time of shortage, and collection from farmers during periods of bumper crops.
- (2) Since storage capacity is costly, location and size should be carefully geared to the transportation system, including its probable future expansion and development, to build in economies of scale in storage and handling capacity.
- (3) A third objective would be to produce recommendations on a pricing policy for domestic agriculture. Meeting this objective will require an understanding of current pricing in agriculture,

and the response of farmers to it. Attention should be given to methods by which administration of farm purchasing policy can be simplified for maximum effectiveness. This may involve substantial change in present accounting and payment regulations by the host government. The research should make clear how and why changes are necessary for an effective program.

d. Suggested Research Personnel

The research team for this study should include an agricultural economist, a transportation economist, and an engineer specializing in storage and handling problems. Cooperation of senior economist from the host country would be desirable. A group of this kind could be most readily assembled by either a university or a private consulting firm, with some slight preference for the former.

e. Priority

More effective use of reserve stocks is an important ingredient in overall agricultural development. The lack of well-organized reserve programs may be one of the critical gaps in the developmental plans in recipient countries. The study therefore deserves a high priority.

f. Cross-References

The establishment of reserve storage programs is clearly related to the incentive problem discussed in project 16, and to the problems of supply instability discussed in project 15. It is also related to projects 1, 18, 62, 63, 64, and 72.



18. Developmental Impact of Food For Peace Upon Host Country Processing and Marketing Institutions

a. Research Rationale

Limited marketing opportunities and limited food processing facilities are characteristic of many of the under-developed areas of the world. Both situations affect the incentives to which producers of agricultural commodities respond by restricting the range of possibilities for profitable production. Most observers therefore regard the improvement of marketing institutions and investment in industries processing farm products as an integral part of any program of agricultural development. The introduction of P.L. 480 commodities (e.g., food, tobacco, cotton) raises questions of two kinds with respect to marketing and processing, and their ultimate contribution to agricultural development.

The first of these questions concerns the actual experience under Food For Peace. It is important to know what impact the imported commodities have had on marketing and processing institutions, and within that general question, to know what the specific effects were in different countries. Examples of these could include whether the increased flows of commodities (from the imports) had forced accommodating changes in the distribution system, whether government supply policies (including establishment of government retail outlets) have tended to replace or diminish private marketing and storage facilities, whether the availability of Food For Peace commodities has been associated with changes in the pattern

or nature of marketing information flows, whether the imported commodities have induced investment in processing plants (e.g., processing wheat into flour, cotton into textiles, soy beans into oil and cake), whether existing marketing regulations or marketing practices have inhibited wider use of the imported commodities or products processed from them. While this part of the research would be concerned with what has happened, it should produce insight into some of the possible indirect effects of Food For Peace on marketing and processing institutions, and therefore on the potential for development.

The second type of question involves future policy. Given the strong probability that Food For Peace commodities will continue to go into the less developed areas, the commodities might be handled in ways which strengthen marketing and processing institutions more than has been true in the past. This portion of the research would draw upon past experience, but would also require analysis of the kinds of obstacles which presently impede improvements in marketing and processing. It would further attempt some imaginative planning of ways in which Food For Peace might contribute to the removal of these obstacles. Some of these ways may require additional foreign resources; some of the ways might be able to use Food For Peace commodities. Processing institutions and investments should be considered from the standpoint of eventual conversion to handling of locally produced agricultural commodities. The focus is consistent with the expressed aim of using Food For Peace as an instrument for development in host countries, and it would be directed toward improvements in areas (e.g., marketing and

processing) which have received less attention than other elements in the developmental process.

b. Research Completed and in Progress

There has been little formal research done on the relationship between Food For Peace and marketing and processing institutions. A small portion of (903) touches upon processing P.L. 480 commodities. Literature on possible price effects and disincentive problems has been cited under project 16 above, and some of this work mentions market institutions in a general way. AID has recently contracted for research on marketing patterns and institutions in some countries (e.g., in Latin America and Nigeria), and may expand this research interest in the future. None of this, however, is specifically related to Food For Peace or to ways in which Food For Peace might contribute to improvement of the marketing institutions. Special reports to AID (e.g., the Cochrane study of agricultural marketing in India) would contain background information which would be extremely useful to any research group undertaking the study proposed here.

c. Research Objectives

The major research objectives of this project would include:

- (1) Determine the nature of the impact of Food For Peace on marketing and processing institutions under present circumstances. This involves study to discover whether the Food For Peace shipments have created additional kinds of problems for existing marketing and processing institutions and thereby have served to diminish their effectiveness, or whether the operation of the program has induced changes, which

strengthened the institutions and rendered them more effective.

- (2) On the basis of the findings under the first objective, determine the kinds of innovations in marketing and processing institutions which are both necessary and feasible, and ways in which Food For Peace-related actions might be used to initiate such innovations.

d. Recommended Research Personnel

An agricultural marketing specialist and a food technologist would be best suited for this type of study. Familiarity with area studies and with the commodities involved would be valuable.

Personnel required would be found in the USDA, consulting firms, or at land grant colleges and universities.

e. Priority

Medium-high

f. Cross References

This research would benefit from coordination with other projects dealing with processing facilities -- projects 55, 56, and 57 -- and those concerned with the pricing and reserve storage problems -- projects 16 and 17. See also projects 32, 62, 63, and 64.

G. Title II Economic Development Projects

In theory, one of the most direct ways food can be used to promote economic development is as wages-in-kind on work projects. This has been done in some countries, and AID Missions in other countries are planning to introduce these programs in the future. Since the success of wages-in-kind programs

has been mixed, planning becomes difficult because there has been no assessment of past programs in ways which provide guidance to the planners.

One major question for example, involves identification of the general kinds of factors in a program which contribute to its success. Or, stated in a negative way, what general kinds of factors seem responsible for failure of wages-in-kind projects? Similar considerations apply to feed grain, slum clearance, and other innovative pilot projects.

This research would take the form of comparative studies of actual programs of public works in which food has been used as wages. Certain generalizations should emerge from this experience, but planners would still have to make careful studies at locations where they propose to start food-for-wages projects. However, the comparative studies would provide them with some guidance on what to look for and take into account in their planning. A comparison of World Food Program policies, procedures and results would also be useful.

Another and broader aspect of this issue is a comparison of cash wages as compared with food wages programs. Some Indian economists (and Jacob Viner), argue that monetization of the economy rather than a continuance of a subsistence and barter economy is desired. The appropriate kind of project to achieve this goal is a valid question, whatever the means of payment. In addition, however, the comparison of cash wages and food wages is needed in specific cultural and economic environments, to more clearly identify the situations in which one or the other is preferable.

19. Factors Affecting the Implementation of Food-For-Wages Projects

a. Research Rationale

The use of food for wages in programs of public works has had varied success throughout the world. In principle, it appears to be a productive use of surplus foods -- it is non-inflationary,\* and it promotes public works which can have an important effect on the economy (construction of roads, irrigation ditches, drainage facilities and the like).

If people are at or near subsistence levels, and are under-employed at off-season times of the year, they should welcome food. It could contribute to health and the productivity of labor. If the projects are truly productive for the economy, they will not only result in short run increases in income and employment (during the life of the project) but they will also add to the longer run income stream of the area where the project has been carried out.

The possibility of using cotton cloth, manufactured from P. L. 480 cotton, might be explored as one element in the wages furnished in kind. This is a somewhat more difficult commodity to use as a wage payment because the distribution of cloth would have to be carefully fitted to the needs and preferences of those who would receive cloth. Cloth distribution would also mean some reliance on barter as the recipients seek to meet their full range of consumption needs out of the limited number of commodities (e.g., food and cloth) which they receive as wages.

For reasons such as the above works programs under Title II and Title III have been given a high priority, and AID Missions in many countries are involved in promoting them or seeking ways to initiate them.

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\*But the cash wages of 30 to 50 percent of total wages, added to the food and the non-wage costs can be inflationary.

The experience has been mixed, however, and it would be important to know more about the conditions which lead to success. There would seem to be little doubt that the purpose of such projects is constructive and desirable, but there is considerable uncertainty about the conditions under which a food-for-wages program can accomplish that purpose.

b. Research Completed and in Progress

Research relevant to this study is similar to that cited in Project 5 above.

c. Research Objectives

The research objectives here will be to develop generalizations about the factors which contribute to a successful food-for-wages program. The research will have to be inter-disciplinary, for the factors which must be studied are not limited to economic factors alone. Sociological and administrative considerations play an important part.

One approach would be to study instances where food-for-wages projects have been successful, and, using the same research framework, study instances in which they have not been successful. Criteria for establishing what constitutes "success" would have to be drawn up, and a minimum of four or five projects should be selected in each of the "success" and "failure" categories. (This may pose some problems because part of the issue would be decided in advance, e.g., if a project is chosen as "successful" it becomes the model against which other projects are judged, and precludes questions on the degree or manner to which it has been successful.)

The objectives would then be to examine certain questions which apply

to all projects under study.

- (1) What are the characteristics of the people who would be employed on the projects? Factors leading to "success" may be related to some special characteristic(s) of those employed, e.g., their status as landless refugees, landless farm labor, small-scale tenant-owners, caste or religion, outsiders to the project area, inhabitants of the project area, or particular age groups.
- (2) What is the contribution of the food paid as wages? Here one would have to study the way in which the food wages fit into the consumption pattern of those employed on the project, and the level of real wages in comparison to similar kinds of employment in the same areas. Any cash wages paid would need to be included. This would include examination of kinds of food received as wages to determine the extent to which they were known to the recipients, were compatible with the normal diet, were easy to prepare and use, were adequate to provide a complete diet, could be supplemented by purchase from other income which was earned (off or on the project), and represented additional consumption above normal diets. Comparison of real wages in similar kinds of employment would indicate whether or not the project was providing the prevalent wage rate for the area. This portion of the study could also examine the extent to which alternative opportunities to find employment (at higher wage rates) were present in projects which were regarded as "failures" It would also be desirable to study different combinations of food and money which have been used to determine what mix of the two is most acceptable. A further



point to be included here would be a study of the past history of wages-in-kind payments in the different project areas selected. Such payments may have been associated with former colonial practices, forced labor arrangements, or other aspects which still convey undesirable overtones.

- (3) What have been the administrative patterns and practices in the different kinds of projects. The way in which a project is selected, planned, and carried out should have an important bearing on its ultimate success. Generalizations on this point may be derived from a study of such features as the degree to which project selection is localized or occurs at higher levels of government, the degree to which project supervisors are responsible to the communities in which the projects take place, the degree to which technical ability is necessary and available, the level of maturity of local governmental institutions and the availability (which would include timeliness) of complementary materials and services (other than food) from governmental bodies (local or higher levels).
- (4) What has been the relative contribution of projects falling in the two kinds of categories? This part of the study would explore the hypothesis that "success" is related to greater expectation of benefit from the completed project, and that apathy and indifference toward a project, or corruption in administering it, are more apt to occur if the people involved do not believe the project will result in some clear measure of benefit to them. Benefit-cost studies, both actual and estimates drawn up prior to the start of the project, might be instructive in gauging the realism that went

into the planning and in providing some guide to the level of benefit-cost ratio necessary for a "successful" project.

d. Suggested Research Personnel

A country research team should include an agricultural economist and a rural sociologist, together with a senior research associate from the host country (from either of the two disciplines). One or more should have some experience in or knowledge of public administration. Given the somewhat academic nature of this study, the research team could probably be drawn most easily from a land-grant university.

e. Priority

The increasing emphasis on works projects under P.L. 480 would tend to place this study in the medium-high category.

f. Cross References

There are several studies in this and other chapters which call for research on works projects which use food for wage payments. Project 5 concerns works projects as one of the transfer mechanisms' available under Food For Peace, and Project 20 considers the economic impact. Others include projects 3, 21, 32, 37, 50 and 68.

20. The Economic Contribution of Title II Works Projects

a. Research Rationale

A number of countries have participated in Title II, Section 202, economic development programs where food is used to part of the

wages to people engaged in various work activities. These activities include road building, school construction, tree planting, cleaning of irrigation ditches, and so on. In Korea, new arable land is created by terracing hillsides or reclamation from the ocean .

There appear to be two views of the economic (and political) justification for this program among AID Mission, Embassy, and Washington personnel. The first emphasizes the capital created through the work program, while the second emphasized the reduction in unemployment.

Theoretically and practically, some argue, individuals who would otherwise be partially or completely unemployed are brought into specific projects which transform their labor into physical capital (and sometimes create conditions to improve human capital) which adds significantly to the productive capacity of the recipient country. Thus the food, donated by the United States, adds measureably to economic development.

The second approach, more commonly argued by those with field experience, states that the work force does make a small contribution to the capital structure, but the major accomplishment is the nation's ability to take a long run view of development and adopt promising, longer term developmental projects without political pressure to provide new industrial and agricultural jobs immediately for people without satisfactory jobs. Thus, the program buys time and reduces the likelihood of political agitation and threats to internal stability.

The differences between the two views is one of emphasis, since an ideal program would both reduce unemployment and create valuable capital investments.

In addition, it appears that there may be significant differences in the benefit-cost ratios among the specific projects within a country and among countries. A systematic analysis of these ratios can indicate the types of projects which are more likely to add a greater amount to future productivity.

If the analysis suggests that the food for wages projects are mainly "make work" projects, and if it is determined that this policy is acceptable, then the principal criterion should be the kind of people to be employed. Little attention and U. S. personnel need to be given to project selection or development. However, if creation of capital does take place, field personnel need guidance on what kinds of work projects are likely to be most productive in this sense, and which ones are less apt to be productive. This would require a more careful selection of specific projects to be supported, and probably will require a large number of U. S. AID personnel.

Tunisia, Korea, and Algeria have substantial programs in this area, but with differences both in projects and in local administration. A significant program appears close to realization in the Brazilian Northeast. A similar program, financed mainly with Title I local currency, has been in operation in East Pakistan. Guidelines developed from perhaps three of these countries would help establish better programs as new projects are implemented.

b. Research Completed and in Progress

No research has been done or is known to be in progress, other than that already cited under Project 5. There is close similarity between this project and Project 5, but this would emphasize the aspects of capital accumulation versus employment of Title II projects

c. Research Objectives

The general techniques of benefit-cost analysis are well established. They have been used extensively in evaluations of potential irrigation projects, but have been extended to other types of public expenditures. Even so, this analysis is complex since it requires estimates of future productivity and the value of the product resulting from present investments. Within this framework a sample of work projects would be analyzed, identifying the cost of food, cash wages, and administration, and comparing this cost with the likely flow of additional income as a consequence of the project. Some of the projects will require an estimation of social returns instead of, or as an addition to, monetary income.

Specific data will be required on a substantial number of work projects. These data will be quite detailed, involving costs of labor and other inputs in planting trees in a locality, in terracing land on hillsides near a village, in clearing irrigation ditches leading from a canal, in building a school. Data also will be needed to project the social, human and economic returns from the investment made.

This approach will provide material which can easily be summarized into a statement of the program accomplishments, e.g., capital investments of a certain size have been created, a specific number of people have been productively employed, and so on.

The main research objectives would include:

- (1) Develop estimated benefit-cost ratios for specific types of Title II projects in Tunisia, Korea, and one or two other countries.
- (2) Compare several types of sub-projects, and identify those which are likely to make the largest contribution to economic and human development.
- (3) Provide a basis for determining whether the projects are mainly a counter-unemployment program, or are a combination of this with the transformation of food and labor into useful capital (mainly within agriculture).
- (4) Suggest general principles by which the average benefit over cost ratio can be increased as new projects are established.
- (5) Evaluate the accomplishments of these programs.

d. Suggested Research Personnel

General and agricultural academic economists with experience in project evaluation would be the most appropriate. A team of at least two would be required for each country studied in order to include as wide a range of projects as possible. Research assistance from the host countries -- possibly one general economist and two or three interpreter-field assistants -- would be needed.

e. Priority

In light of the importance attached to increased use of work projects in AID Missions in several countries, this study would rank as a high priority.

f. Cross References

This research project is related to projects 5 and 19 in this chapter which deal with different aspects of food-for-wages programs.

See also projects 1, 3, 21, 37, 69, and 81.

21. The Welfare Implications of the Sale of P.L. 480 Commodities by Individual Recipients

a. Research Rationale

One of the concerns of Food For Peace officers and others responsible for the administration of Food For Peace has been the problem of diversion. This, in turn, arises from fears that without proper controls the Food For Peace commodities may be misdirected, and the intended beneficiaries would not receive the food (and associated nutritional advantages) the program is designed to provide. The appearance of gift commodities (clearly marked as such) in local markets is sometimes reported in the U. S. press and remarked upon by U. S. travelers returning from abroad as evidence of corruption and abuse in the U. S. aid program. Consequently, a great deal of time and effort is devoted to exercising end-use control, and the cooperation of host governments is elicited in this endeavor. Both in Korea and Egypt a law has been passed making it illegal to sell Food For Peace commodities received as part of project aid, with penalties applying to both buyers and sellers. Effective control

is a formidable task, and in many places it is admittedly less than fully achieved. Nevertheless, it continues to be a problem which occupies the attention of personnel in the field.

In light of the difficulties in achieving a control which insures that the intended recipients actually consume the commodities, it may be fair to ask if the task is worth the effort. Does the continuing incidence of diversion by individual recipients reflect a release mechanism for a system which is essentially unworkable? Do the efforts to control such diversion create frictions between the U. S. and host countries which offset the good will the gifts of food might otherwise bring? Would relaxation of the efforts to control lead to increased welfare for the recipients?

There are some grounds for believing that the welfare of individual recipients would be improved if they were free to use the commodities received in any way they pleased. The Food For Peace commodities are frequently unfamiliar, or represent an "inferior" food in the normal diet of a region. Sometimes the foodstuffs (e.g., wages on works projects) are given in one form only (as wheat or flour), and not as a balanced package. Recipients must add locally purchased food items to render the wages-in-kind receipts usable, or to round out the kinds of meals which could be used with supplementary vegetables, cooking oil, beverages, and the like). If recipients were allowed to see or exchange some (or all) of the food received from Food For Peace programs, they would presumably do so in ways which increase their total satisfaction by obtaining a preferred combination of food items. If exchange is possible, it assumes that someone else is also willing to give up other goods or money for Food For Peace commodities, and such exchange will therefore increase his total satisfaction as well. Considerations such as these provide a prima



facie case for further examination of the present attempts to achieve end use control by the prohibition of sales by individual recipients.

It should be emphasized that this study would be applicable only to individual recipients. There are ample grounds for concern over diversion (by government officials or others) which involves theft and sale of Food For Peace commodities for personal gain, thereby preventing the commodities from reaching the intended recipients. This type of diversion would not be included in the scope of this study.

b. Research Completed and in Progress

Although there are numerous reports and audit statements in AID and GAO files dealing with the problem of diversion and the administrative efforts to control it, there has been no study in the published literature which deals with the problem from the standpoint recommended herein.

Southworth (363) published a theoretical analysis of the food stamp plan which can be drawn upon for conceptual insights. Empirical studies of the U. S. stamp plan in the early 40's (535) and again in the 1960's (748) may provide some suggestions on data needed. Waugh, who helped develop the basis for the food stamp plan, has recently published a comprehensive report on how consumption of surpluses has been utilized. None of these is directly applicable to the Food-For-Wages program. Fitzgerald, in a study for the World Food Program (523), does discuss alternatives to distribution in kind (pp. 46-49).

c. Research Objectives

The research objectives for this study could proceed along several routes. The study itself might be confined to a single country, in particular one where there are many projects utilizing food as direct payment to people employed on works projects. Korea would be one country where these conditions are present; Tunisia and East Pakistan are others.

Results of this kind of study should be applicable in all countries even though the specific kinds of foods used, amounts and so on, may differ. The major objectives would include the following:

- (1) Development of a theoretical analysis of the ways a recipient might maximize his satisfactions given different assumptions about the quantity and nature of the wage-goods received, the alternatives open to him by barter or sale under differing assumptions about prices, the exchange rates for barter, and kinds of commodities available.
- (2) An empirical analysis of the actual opportunities available to recipients in the country selected, with consideration given to the nature of the wage-goods received, their suitability as a complete source of food for the recipient and his family, opportunities for outside income with which to buy supplementary foods, items needed to prepare the wage-goods for final consumption, nonfood expenditures, relation of the wage-goods food to the normal diet and normal budgets of the country, relative prices or barter exchange rates between wage-goods foods, other foodstuffs, and other products, and an estimate of the probable kinds of changes in food consumption which would

(or do) take place through barter or sale of Food For Peace wage-goods foodstuffs. Where the supplemental cash wages are substantial (as in Tunisia), this analysis may not be very useful; where the cash wages are small they need to be compared to the usual non-food and non-wage goods foodstuff expenditures.

- (3) An appraisal of the administrative problems associated with attempts to prevent the sale of food by individual recipients, and an objective evaluation of the actual results.

d. Suggested Research Personnel

One general economist, preferably associated with a university, with a good theoretical background but an interest in empirical research as well, should be assisted by a research associate from the host country. A nutritionist would probably be most familiar with local diet preferences, and might be of greater help than, for example, another economist for the field work portions of the study. A consultant familiar with U. S. food stamp plan studies would be useful. Large sample surveys would not be required, although considerable travel to project areas would be necessary.

e. Priority

Medium-low. This would be interesting and useful information to have for administrative planning purposes. However, relative importance of the problem as compared with others in the "map" is quantitatively less and probably of less urgency.

f. Cross References

This research project is related to other studies of Title II and III programs to the extent that it is concerned with individual and family receipts of P.L. 480 foodstuffs. Examples would include projects 3, 5, 19, 20, 22, 33, 37, 42, and 66.

22. The Least Costly Ways in a Title II Program to Bring an Existing Diet Up to Specified Nutritional Levels, Without Major Alterations in Customary Food Consumption Patterns

a. Research Rationale

If Food For Peace commodities are to be used as part of a positive nutritional program, it is important that they be used with wisdom and economy in order to obtain the maximum nutritional benefit from the commodities available. Therefore one must know how the desired nutritional levels can be reached in the most efficient way, taking into account the commodities available and the alternative uses that exist for those commodities.

By means of linear programming one can determine the least costly ways of bringing deficient diets up to the desired standards in a much more comprehensive and accurate way than has been possible until now.

In a food-for-wages program it is particularly important that planners know what foods are needed to eliminate the deficiencies in the present diets of the potential workers. Sometimes, a judicious mixture of local foods and U. S. surpluses may be much more effective from a nutritional viewpoint than any combination of surplus foods alone. Indeed, the possibility of exchanging

specified quantities of surplus foods for local foods might actually reduce the costs to the United States of providing adequate dietary supplements. This study would supplement Project 21 above in that it would consider a conscious effort to devise a mixture of U. S. and local foods, rather than relying on the choice and preference of individual recipients. Clearly, the results in the two studies should be examined together to compare the alternatives suggested.

b. Research Completed and in Progress

A study (76) has been done to show that linear programming methods can be used to develop diets that are low in cost, meet prescribed nutritional standards, and correspond to customary patterns of food consumption and preference. That study does not, however, deal explicitly with the problem of finding the least costly way in which to move from a diet that provides one set of nutrient quantities to a diet that provides another, subject to the restriction that the basic food consumption pattern be largely preserved. Because dietary changes which result in improved nutritional levels will be more readily accepted by the people concerned if the changes do not require major revisions in consumption patterns, it is important that studies of efficient ways in which to raise dietary nutritional levels be made subject to the requirement that customary consumption patterns be largely maintained. Nothing has yet been done on this subject.

c. Research Objectives

Determine the least costly ways in which diets that are nutritionally inadequate may be raised to adequate levels, subject to the requirement that there be no large changes in the character of the diet.

Several subcases require separate consideration. For commodities available for use in improving the diets:

- (1) Determine the least costly ways of attaining the improved nutritional levels if only native foods are used.
- (2) Determine the least costly ways of attaining the improved nutritional levels if only U. S. surplus foods are available for the purpose.
- (3) Determine the least costly ways if both domestic and U. S. surplus foods are available.

For the criterion of costliness:

- (1) Measure costs in local market prices in local currencies, for these are the relevant costs for the native population.
- (2) When U. S. surplus foods are being considered, measure costs in cost to the United States, for the costs to the United States may be the relevant figure for our policy decisions.

For the requirement that there be no large changes in the character of the diet, several alternative formulations need to be explored:

- (1) The effect of requiring that the foods included in the less nutritious of the two diets shall be included in the more nutritious diet in more or less the same quantities.
- (2) The effect of requiring that the foods to be added to the diet in going to the higher level of nutrition shall conform to customary taboos and preferences.
- (3) The effect of significant relaxations in the various forms of the requirements intended to prevent large changes in the character of the diet. It may be that the advantages to be gained by allowing significant changes in the diet will be so

great that the problem of inducing people to change their habits of consumption will be well worth facing.

d. Suggested Research Personnel

An economist with experience in the application of linear programming methods to the analysis of human diet problems and a nutritionist with experience or training as a dietician are needed. The nutritionist must be willing to accept the idea that mathematical models may be useful in the design of human diets. For maximum convenience, both persons should be at the same institution. A land grant university or the USDA are the most likely places for such a combination of research interests.

e. Priority

This project should have a medium-to-low priority.

f. Cross References

This research is related to projects 21, 37, 51, and 78.

## CHAPTER III

### PUBLIC POLICY ISSUES

#### PREAMBLE

The public policy issues discussed in this chapter, and the projects associated with them, are broadly drawn. They consider the totality of Food For Peace programs as they affect international relations, as they involve the policies of other governments, and as they reflect U. S. domestic policies. Most of the projects in this Research Map have policy implications, but some call mainly for an examination of alternatives to a specific problem or operating program. This chapter is thus not the only one in which policy questions are raised, although the issues included in this chapter are, on the whole, broader than those in other chapters.

The influence of Food For Peace upon intergovernmental relations is one of the issues selected for research. What is known and what can be said about the accumulated experience of these relationships? Some answers have a political orientation, i.e., the changing international political relationships between the United States and recipient countries. Or, changes in the pressures upon U. S. leaders, as they make various national policy decisions, may affect relationships with other countries. It may also be possible to identify changes in the structure of U. S. institutions -- economic, social, or political -- which make new policy alternatives feasible. These changes may stem from revisions in objectives, from modifications in attitudes, from new attitudes of optimism or pessimism toward future events, from changes in internal balances of power, or from changes in productivity.



Similar considerations may affect internal policies of governments. Where the influence of Food For Peace can be identified, it would appear useful to clarify whether the effects of Food For Peace stem from an accurate interpretation of the intentions and objectives of Food For Peace. Thus, for example, an apparent negative psychological impact of Food For Peace might be due to a misinterpretation of intentions and might disappear if the objectives and operation of some Food For Peace programs are accurately understood. Similarly an initial favorable reaction to a Food For Peace program might be based on false expectations. This situation could generate a negative reaction when the actual effects of the program become evident. Since reactions would tend to differ among different interest groups in the host country (e.g., farmers, processors, government officials, consumers), the research would have to distinguish among groups and weight the significance of each group's reactions before arriving at generalized conclusions.

Research on the issues discussed in this chapter is not likely to supply precise, quantitative answers. In some countries the scope of Food For Peace is too small to provide measurable results. Even so, groups of people will have perceptions of the program and attitudes towards it. In some countries, relatively larger programs may still be most important in terms of people and policies, rather than in specific economic changes.

Thus, one task is to assess the relative overall importance of Food For Peace in international relations and in affecting internal policies within countries involved. The direction of the effect needs to be ascertained before attempting a rough approximation of the degree of influence. Inevitably, judgments will be affected by the circumstances of the time period during which the research takes place. While every effort should be made to take account of the longer term there are likely to be differences

of view between research workers and administrators because of the different time spans considered, differences in the sources of information, and differences in the responsiveness of those interviewed. Sensitivity to these problems and the capability to carry out qualitative research would thus be important qualifications for research workers submitting proposals for projects in this area. This sensitivity to the real issues must be tuned both to the American scene and to the international scene, the proportions varying with the project. At the same time, this research must achieve impartiality and objectivity if it is to be useful to the U. S. government. It is therefore essential to exercise care in selecting competent and mature personnel, and in reporting the conclusions of the work.

#### ISSUES AND PROPOSED PROJECTS

##### H. Relation of Food For Peace to U. S. Foreign Policy

The shipment of P.L. 480 commodities to other countries, for whatever reason, becomes an element in United States foreign relations having certain positive or negative effects upon the nations involved. But such shipments constitute more than an overseas disposal program; each shipment and agreement is intended to fulfill objectives which may be economic, political, social, or humanitarian. Unintended or unexpected consequences may occur, some acceptable and others undesirable. The objectives may, or may not, be directly related to the foreign policy interests of the United States, but the use of these commodities appears to be viewed increasingly as an explicit instrument of foreign policy.

Food For Peace may have a variety of impacts. It may contribute to the stability of government and political institutions as marginal increments

or food in the local market reduce prices and thereby decrease the likelihood of urban political unrest which might result from food shortages and rising food prices. On the other hand, there might be rural dissatisfaction and protest against food imports and the consequent lower food prices; or some consumers may protest the benefits available only to other consumer groups. Food For Peace may affect local administration and local political organizations, and thus affect "political modernization". For example, Food For Peace may induce greater participation of local people in the processes of political and governmental decision making, and this may or may not be associated with governmental stability. Food For Peace also becomes one of a variety of issues which is discussed and negotiated between the U. S. government and a recipient country. Sometimes it is one of the few substantive ways in which the two governments cooperate; in most instances however, it is only a part of a large number of relationships between two governments.

What are the directions of Food For Peace influences? Do the results make a positive contribution to U. S. international relations? Under what circumstances may unfortunate consequences result? Consideration should be given to both the longer run impact and the relatively short term effects. Any analysis should include considerations such as political orientation (friendly, neutral, or communist), the level of economic activity, the degree to which the country has a concrete development program, the effectiveness of its public administration, and the extent to which population growth contributes to food supply problems.

The reactions of individuals and important groups in a recipient country are likely to vary with their perception and understanding of Food For Peace. These perceptions may change over time. What can be said about these perceptions? For example, people may believe that, because surpluses are burdensome, their country's acceptance of P.L. 480 commodities is a benefit to the United States. On this basis some may argue for softer terms for Food For Peace commodities. People may believe that the program is primarily a means to obtain food at small foreign exchange cost, and may protest vigorously any U. S. interpretations which limit their foreign exchange earnings through exports, or which direct their foreign exchange expenditures toward continued commercial agricultural imports. Or while the leaders in a host country may view Food For Peace primarily as a way to provide additional food and to improve nutrition, they may not be prepared to commit any significant amount of local resources to make the program more effective.

The two projects suggested below are concerned largely with an assessment of the nature and direction of Food For Peace impact. In most instances the size of Food For Peace relative to other international and national developmental aid programs is too small to permit quantitative studies which precisely identify the impact. In fact, in some countries the results of other attitudes and relationships may seem to outweigh the effects of Food For Peace. If so, are there residual and long-run effects which are likely to emerge at a later date, or are such expectations little more than wishful thinking? The projects which follow deal with these problems.

23. Evaluation of the Significance, Extent, and Direction of Food For Peace Impacts on Intergovernmental Relations

a. Research Rationale

Broadly speaking, this project is directed toward an evaluation of the role of commodity assistance (food) in the international relations of the U. S. and recipient countries. Research on this topic faces serious limitations, however, because Food For Peace constitutes only one of a number of variables which determine the state of intergovernmental relations between the U. S. and the different recipient countries. The research tools available to social scientists cannot achieve the precision required to isolate the effects of one variable (such as Food For Peace) among many. Nevertheless, a careful study of the actual experience of Food For Peace as one element in the complex set of relationships between the U. S. and individual recipient countries could determine the extent to which Food For Peace has been consistent with other elements in the set, and might possibly assess the degree of importance Food For Peace has had in different kinds of situations.

For example, Food For Peace may exert an influence on a recipient country's efforts to attain political modernization by inducing (e.g., as through rural works programs) a larger degree of political participation in the planning and successful implementation of projects. Law and order and governmental stability may be the critical problems in another country, and Food For Peace provides commodities which should have some effect on efforts to achieve stability. Special problems and special interests are

associated with the experience of communist recipient countries (e.g., Yugoslavia and Poland).

A basic assumption of this research is that Food For Peace, like other forms of U. S. foreign assistance, is temporary. It may be required for a long period of time, but the ultimate objective of both the U. S. and recipient countries is self-sufficiency through social, political, and economic development which eliminates the causes of the present dependence. The aim of the program is to reach a point where Food For Peace activities can be reduced because the countries being aided become more self-supporting.

Another broad assumption is implicit in the concept of assistance to developing countries: that nations achieving measurable improvements in standards of living, creating a viable economy with reduced dependence on foreign aid, and building social and political institutions which are conducive to development and growth are also nations which will contribute to peace and the responsible conduct of world affairs.

Given the above assumptions and limitations, an evaluation of Food For Peace impacts on intergovernmental relations would have to assess the contribution of Food For Peace toward the realization of social, political, and economic development in specific recipient countries. This assessment would consider the direction of the contribution and its consistency with other elements in the range of relations (including other types of assistance) between the U. S. and these countries. An evaluation would also

attempt to assess the significance of certain short term aspects of a Food For Peace arrangement, such as the need to reach agreement on the size, terms, and conditions of supply, and the manner in which Food For Peace activities are carried on. These aspects can become the focal point for disagreement and contention between the U. S. and recipient countries, but it is not clear whether these are causes or symptoms of the essential relationships which exist between countries. Studies within the context of examination of the long term contributions of Food For Peace to development achievements, some informed appraisal of these shorter term aspects may be possible.

b. Research Completed and in Progress

There are few publications available which relate Food For Peace to intergovernmental relations. Thus, an examination of general political science materials, or the work of those economists who have given some attention to these problems is necessary.

Many works deal generally with political modernization in the developing nations. Works which have some relevance to the present study include: Joseph J. Spengler (367), David Horowitz (236), Phillips Cutright (152), Ralph Braibanti and J. Spengler (eds.) (11), and Howard W. Beers (507).

Most of the works dealing specifically with P.L. 480 and Food For Peace consider the problem of political modernization only when it overlaps with economic development. Works of this sort which are directly relevant include Bauer (506), Beringer (508), Hall (777), and Adams, et al. (1).

Hamilton and Drummord (537) discuss some of the problems arising between the United States and Canada as a consequence of P.L. 480.

H. Field Haviland, Jr., who is working on a project for the Brookings Institution, deals with the political development of emerging nations. In addition, Gabriel Almond is completing the editing of a volume entitled A Theory Of Political Modernization (to be published by the Princeton University Press) which may assist in conceptualizing the relationship between Food For Peace and political modernization.

Two studies of some importance deal with political stability and instability in underdeveloped nations. Although these studies do not have direct reference to P. L. 480, they provide potentially relevant conceptual frameworks. See Michael Brecher (12), and Robert Gilkey (201).

Several studies relate food supply to social behavior (again, these works do not deal directly with P.L. 480 or Food For Peace). Ancel Keys, et al. (43) indicate clearly the constant preoccupation of very hungry persons with fantasies and thoughts of food -- often to an extent where they are unable to pursue any activity except one connected with obtaining food. A shorter study by J. Brozek (132) reaches the same conclusion as does E. A. Cohen (18). E. C. Banfield (16) points out that, where little more than minimal survival is possible, social action takes place on a very restricted level, usually on-a-face-to-face and family basis.



Several authors focus specifically on the disposal of surplus and Food For Peace in the context of international cooperation: Henry S. Reuss (712), Bruce F. Johnston (253), Hubert H. Humphrey (706), Phillips Foster and Lawrence Witt (531), and Lawrence Witt (949).

c. Research Objectives

- (1) Identify the nature of the impact and linkages of Food For Peace in intergovernmental relations.
- (2) Assess the significance of these effects, using quantitative measurements if the data permit such analysis.
- (3) Evaluate the positive and negative influences of the P.L. 480 program upon relations between the U. S. and specific recipient countries.

It is doubtful that the information and nature of the relationships will permit more than a rough approximation of the second objective and some comments on the third.

d. Suggested Research Personnel

One or two countries should be selected as the focus for this study, and further studies should be postponed until methodology can be developed and evaluated. An experienced political scientist with knowledge and skill in the study of international relations should lead the research group. The additional staff should be determined by the leader on the basis of the country being studied and methodology being used, but probably would include a second political scientist and consultants from the country being studied.

e. Priority

Medium. Additional country studies should wait until one country study has been completed and at least tentative results are available.

f. Cross References

1, 6, 64, 65, 70, and 78.

24. Problems in the Perception and Understanding of Food For Peace Abroad, Including Possible Changes in Attitudes

a. Research Rationale

The behavior of recipient countries may seem inconsistent or even ungrateful to the United States, yet may be understandable from that country's perception of the program's contribution to development, aspirations and expectations, and political commitments to other nations. Perception, in general, is functionally selective, and the meaning of Food For Peace to the host government will rarely, if ever, coincide with U. S. perceptions. Therefore, it is important to understand the frame of reference of the host government regarding Food For Peace.

Conceivably, perceptions of Food For Peace may differ among social strata in each political system. In a noncompetitive political system, the perception of Food For Peace, for all practical purposes, appears to be determined by traditional or new elites (religious, noble, landed aristocratic, and military). In a semi-competitive political system the image of Food For Peace may be shaped by the political regime, which permits the interaction of groups in the decision-making process. In the former, the problem of perception becomes more complex when the relationship between the elites and others is strained. If the elites endorse Food For Peace programs, adverse attitudes toward Food For Peace among others may really reflect attitudes toward the elites of the system. In the latter, the perception of Food For Peace appears to be determined by the

interests of the dominant political groups which do not necessarily favor Food For Peace if it encroaches upon their interests.

The operation of the actual program often is seen piecemeal.

Governmental administrators will have one view, and may perceive it as a means to overcome incipient urban food shortages. Local groups are likely to see the program in a more personal way, and may react on the basis of fairly narrow interests and perspectives.

Reactions to one Food For Peace program may vary with reactions to another. Any view may change as a program gets underway, and as perceived benefits and costs are confirmed or denied. In some instances individuals in a recipient country which has been accepting P.L. 480 commodities for a period of time may perceive the program as humiliation (the country unable to feed its own people), as an injury to the national pride, as an encroachment on national sovereignty (the country is dependent upon U. S. continuance of the program), or as an act of imperialism. Even though the bread an individual consumes contains P.L. 480 wheat, he may fail to grasp the significance of Food For Peace to him personally, or to see it as part of an assistance program.

In the final analysis, the perception of Food For Peace seems to be determined by factors and variables relative to any given political system. These factors may include malnutrition or inadequate supplies of food, ideology, nationalism, anti-colonialism, concepts of social justice, etc. There are likely to be groups in society which gain and groups which lose from Food For Peace. An understanding of perceptions, and how they change with experience, appears to be a

necessary part of any effort to develop reasonable expectations about the consequences of Food For Peace.

These differences make it desirable to study the perception of Food For Peace within various groups and classes in recipient countries, including (1) urban industrial employees, rural farmers and laborers, urban middle classes, and rural landlords, (2) groups with different educational backgrounds, (3) groups classified by age and sex, (4) different ideological orientations, and (5) groups classified by political party preferences or affiliations. There should also be some attempt to sample the views of religious leaders, government officials, party leaders, university and high school students, those controlling the mass media, and others in a position to influence public opinion.

b. Research Completed and in Progress

Studies relevant to this project either deal with the effects of Food For Peace, or discuss the general problem of perception, but do not treat perceptions about Food For Peace.

Four works attempt to relate the images of recipients of U. S. foreign aid to American foreign policy: John H. Kunkel (267), Max F. Millikan and Donald L.M. Blackmer (eds) (53), Rupert Emerson (176), Robert T. Holt and Robert W. van de Velde (40). Both Lucian W. Pye (ed.) (63) and Robert E. Ward (80) are useful for conceptualizing a study as proposed here. Frederick W. Frey (197) provides a history of an attitude study (but not the findings of this study). It is especially useful because it examines the cooperation and interaction between the survey team and AID personnel. Two works have substantive relevance to the trend analysis of recipient attitudes, but neither

of them deal substantially with Food For Peace: H. Gonzales (205) and Braj K. Nehru (301)

Works dealing with P.L. 480 which may be of some use are those which examine the program in recipient countries, particularly Adams, et. al. (1), Ginor (30), Ezekiel (177), and Witt and Eicher (578), the last being an analysis of several reports.

Dankwart A. Rustow is completing a study of the political leadership in emerging countries for the Brookings Institution, Political Development Program, which may have some relevance. In addition, the MIT Center for International Studies, Communications Programs, is currently sponsoring a series of panel surveys of elite opinion in several South American Countries; such information could be useful as background.

### c. Research Objectives

- (1) Accumulate information about the perception of Food For Peace among various groups and classes in the recipient country.
- (2) Analyze the interrelationships of these perceptions among groups and in relation to the official position of the leaders of the group and of the nation. It would also involve analysis of the extent to which perceptions may be influenced by information programs sponsored by the host country and the U. S.
- (3) Where possible, the perception should be compared with the actual effects of the program, as indicated by other research.
- (4) Changes in the perceptions of the program should be assessed, and evaluations made of the reasons for such changes.

d. Suggested Research Personnel

A survey research institute experienced in conducting public opinion surveys in different countries would be appropriate. Presumably people in such an institute would draw heavily on the field of social psychology. Political science experts also will be required, especially in interpreting the significance of the results. The USIS may also wish to conduct studies in depth on this topic.

e. Priority

High

f. Cross References

70, 75, and 82.

I. Relation of Food For Peace to Host Country National Policy

At least some people in every country have certain aspirations for themselves, their community, and their nation. Leaders in the national government have aspirations which are related, at least partially, to the aspirations of groups they deem important. In using available resources, the government establishes policies which explicitly or implicitly take account of these aspirations. Resources from overseas, such as dollar aid and commodity aid, may permit a country to attain a larger proportion of its aspirations than would otherwise be possible.

But the actual effect of these resources on national policy may be different from the expectations of what such resources would accomplish. Subsequent national policy may be affected, in turn, by the perceived effects of similar resources in the past. Title I agreements have provided the bulk of the P.L. 480 commodities, but are not very specific about how the national policy should adjust to the introduction of such resources. Thus, it is of interest to examine the way in which national policies have been influenced by the Title I

programs.

There are substantial difficulties in attempting to compare actual events with possible circumstances in the absence of Title I agreements. Too often the research worker has to second-guess the probable decisions of a major political leader, and sometimes even to speculate about a change in leadership and the policies a successor would have followed. To avoid the hazards of this rather subjective approach, a different approach is suggested.

The policies and objectives of a country at the time it approves a Title I agreement can be related to subsequent events. Such an approach will indicate the country's frame of reference at the time the program began, that is, the problems that Title I was expected to solve. An analysis of subsequent events may indicate the degree to which there was a realistic forecast of projection of the future situation and the probable effect of Title I. The impact on agricultural planning is selected for more detailed analysis, because it is an area very likely to be affected, and an expansion in food production is of rapidly growing importance.

25. Host Country Policy Objectives at Time of Negotiating Title I Agreements, Compared with Subsequent Events

a. Research Rationale

One way to obtain some insight on the degree of relationship between host country policy objectives and expectations for domestic agriculture and the availability of Food For Peace commodities is to reconstruct the experience for some period of time through a series of case studies for different countries. In this way several kinds of relevant information could be collected, and would permit one to see the extent to which events took place as expected. Case studies could also include reference to the range of factors which affected

the flow of events.

One part of a case study could include interviews with host country officials responsible for the formulation and implementation of agricultural policy. These interviews would attempt to bring out the major elements in a host country's agricultural planning, including estimates of the resources required, the sources of developmental inputs, the priorities and timing for different developmental programs, and the targets of the planning operation.

A second part of a case study would be an attempt to reconstruct the expectations when a Title I agreement had been negotiated. This might be done partly during the interviews, which would include some discussion of earlier expectations, and partly by study of position papers and draft agreements prepared for the Title I negotiations. A combination of these two kinds of data would provide some written record to supplement the recollections of those who had engaged in the negotiation and planning phases. Special attention would be given to those aspects of planning and negotiation which explicitly provide for Title I sales as a supplement or complement to agricultural development activities. A lack of any indication that Title I sales were related to developmental plans would also be a significant finding for purposes of this study.

A third part of a case study would be an account of the country's experience subsequent to the signing of the Title I agreement. This experience would then be related to the policies and expectations brought out in the interviews and the study of the negotiation documentation. This account would include, for example, a comparison of



expected commodities with those that actually arrived, expected agricultural output with actual output, expected price effects with actual price movements. The accounts would also document actual changes in agricultural policy, and the reasons for such changes.

Case studies of this kind should produce a historical record of the experience under Title I in a few representative countries where the Title I program has been extensive. The studies may not be able to quantify or isolate the relationship between a Title I program and agricultural policy objectives, but the record (if extensive enough) should provide some hints of the realism of the original expectations, the use made of the Title I commodities, and subsequent changes in agricultural policy which reflect some adjustment to actual events which took place.

b. Research Completed and In Progress

A number of country studies have attempted to identify the impacts, mainly economic, of the Title I programs. These include studies in Israel (30), Colombia (1), Japan (129), Pakistan (630), and Turkey (903). Some aspects of this problem have been studied in India (534).

Studies are underway or nearly complete in Greece and Spain, which reportedly include a fairly systematic analysis of the relevant agricultural policy; the other studies are less complete in this regard.

None of these studies has attempted to define the expectations of the host country at the time of the signing of the Title I Agreement, at least not in the detail necessary for analysis.

c. Research Objectives

- (1) Identify the anticipated role and contribution of Title I commodities in the host countries at the time Title I Agreements were signed. This would refer primarily to host country planners and administrators responsible for agricultural policy and foreign aid agreements.
- (2) Ascertain the objectives of the food and agricultural policy of the host country, and changes in such policy subsequent to a Title I Agreement.
- (3) Analyze the expectations of planners and administrators in the context of changes in agriculture and the subsequent operations under the Title I agreement(s).
- (4) Suggest ways in which expectations and/or policies may be better coordinated with the Title I program.

d. Suggested Research Personnel

A policy oriented agricultural economist would play a key role in this project. Host country personnel with training in political science and a knowledge of agricultural policy appear essential for the effective completion of this research project.

e. Cross References

16, 31, 32, 41, 62, 63, and 64.

26. The Effects of Food For Peace Upon Agricultural Sector Planning and Plan Implementation

A. Research Rationale

One of the possible effects of the Food For Peace program is that it may reduce uncertainty about near future food supplies, and thus

may encourage those responsible for agricultural planning to undertake fundamental, but less certain (in short-term results), programs to develop a modern agricultural sector. A second possible effect would be a reduction in the scope and intensity of agricultural developmental efforts of any kind, because of the supplies received from the United States at small foreign exchange cost to the recipient country. A third possible effect would be a shift within the host country production of agricultural commodities away from commodities available under P.L. 480. A fourth alternative would be to provide price security for host country farmers through governmental price guarantees, and perhaps to build an export industry based upon P.L. 480 commodities (e.g., producing livestock which consume imported feed grains, producing new crops on land formerly used to raise wheat). A fifth alternative could be that planning for the agricultural sector would not be affected by Food For Peace.

The agricultural sector has been given increasing importance in recent years in economic literature, partly because of the continued or rising rates of population growth in developing countries. This importance is partly due also to the recognition that migration from agriculture to industry may well lead to declines in agricultural production, unless more productive technology is introduced into agriculture simultaneously. And in some countries the need for more exports is highlighting the potential of agricultural export.

In any case, there are many who argue that the agricultural sector requires much greater efforts at planning and implementation. Some argue that Food For Peace, at least in the past, has had the effect

of de-emphasizing the importance of investment in the agricultural sector. However, the United States government has indicated a desire to use Title I Agreements during fiscal year 1966 as a means to bring about a greater effort by host countries to make progress in the agricultural sector.

A better understanding of how Food For Peace has affected agricultural planning and investments in the past should make possible the identification of the more crucial areas in which to urge (or require) action by a host country.

b. Research Completed and in Progress

A number of observers have expressed judgments about this effect of Food For Peace in the planning and implementation of developmental programs in the agricultural sector. For most people, however, the best evidence of unsatisfactory performance in this respect is the continued food deficits in the developing world., although these cannot be blamed entirely upon Title I imports alone. Schultz (337) perhaps is the most critical, but he is joined by Fitzgerald (523), and Dandekar (517). Adams (1), Ginor (30), and Witt (412) indicate that the specific situation varies by country, while Sen (355) and another Indian study (534) claim that agricultural planning has not suffered from neglect.

c. Research Objectives

- (1) Identify the effects, if any, of P.L. 480 upon the scope and size of host country developmental efforts in agriculture.

- (2) Advise upon the best ways to adjust and expand planning, investment, and plan implementation in agriculture.
- (3) Recommend policies which the United States might follow in future Title I and IV agreements to provide more emphasis on agricultural planning and implementation.

d. Suggested Research Personnel

An economist or agricultural economist interested in agricultural policy and development probably would be the first preference. A political scientist with interests in agriculture and in economics could make a significant contribution. Consultants in recipient countries will be required.

e. Priority

High, in light of recent U. S. governmental efforts to emphasize host country agricultural development. This research would serve as part of the preparation for negotiating Title I and Title IV Agreements.

f. Cross References

16, 62, 63, 64, 65, 69, 82. This project is related to others which deal with the disincentive problem, but differs in that it deals with disincentives to public policy as opposed to production.

J. Interrelations of Food For Peace with U. S. National Policy

Many supporters of P.L. 480, when it was first passed in 1954, viewed the legislation as providing a temporary inventory disposal program, the first step towards a new farm program which involved fewer governmental price guarantees and reduced control over acreage planted. Other supporters

viewed P L 480 as a technique by which foreign aid could draw (be forced to draw) more heavily upon agricultural commodities in implementing developmental programs. Some argued that the program emphasized a humanitarian concern in the U. S., and thus helped create a more favorable perception of the United States in developing countries. Also, and very important for some, the P.L. 480 program moved part of the flow of U. S. agricultural production overseas, reduced the size and cost of government inventories and thus made the "farm problem" less visible. Without "bulging inventories" there would be less U. S. public pressure to substantially replace the existing U. S. farm program.

The experience of the last decade has frustrated the hopes of those seeking to reduce the role of government in agriculture. But the experience has encouraged the view that a substantial and even expanded Food For Peace program may contribute to less comprehensive production controls, while contributing to economic development in recipient countries. Marketing firms, exporters, and transportation companies enthusiastically support programs which stress larger rather than smaller volumes of agricultural production.

The perception of Food For Peace is influenced by these domestic views, personal interests, and social attitudes. Some aspects of the program, local currency sales for example, are sufficiently confusing so that the real costs of Food For Peace to the United States may not be fully recognized, while the potential benefits to other countries and the actual volume sometimes may be exaggerated. But others overstate the cost to the United States and underestimate the potential benefits in other countries regarding Food For Peace still as basically a program for disposal of surpluses.

Research should make it possible to reduce this range of views and to increase the degree of understanding of the impact of the program at home and abroad.

27. The Interaction of Food For Peace with U. S. Farm Policy and Marketing Institutions.

a. Research Rationale

Food For Peace is one element of a series of policies followed by the U. S. government since 1954 in attempting to cope with excess capacity in U. S. agriculture. The surplus commodities available have not fully matched the commodities desired for concessional sales and donations. Some adjustments in farm policy have altered commodity availabilities so that the P.L. 480 requests were met somewhat more fully, as in the example of soy beans. Additional and substantial adjustments have been proposed to enhance the nutritional contribution of U. S. agriculture through Food For Peace, and some changes to increase the nutritional contribution have already been made, mainly at the technological rather than the farm production level. Purchasing farm commodities to maintain donation programs which improve nutrition was inaugurated on a limited basis in 1965.

United States farm policy has been affected by the continued flow of farm products sent abroad by Food For Peace. An expansion of Food For Peace is urged from time to time. While its overseas impact is viewed positively, some of the supporters of Food For Peace appear to be influenced by the hope that a larger program would preclude, to some degree, pending additional restrictions on acreage. The overseas needs are so great, it is said, that every encouragement to increase production is needed in order to increase the flow of products available for overseas use. If the program is to improve nutrition,

animal production needs to expand. However, results from expansion such as bottlenecks in transportation, storage, and distribution, the possible adverse effects on production in recipient countries, or the possible increase in present costs to U. S. taxpayers, are not fully known.

There are other kinds of interaction. One is that the flow of P.L. 480 shipments is valued like commercial exports in establishing the basis for the next year's crop. Another is the effect which Food For Peace shipments have in providing a demand for additional services from marketing agencies. Exporters and ship owners benefit from the more than \$1.5 billion annual export of commodities under P.L. 480 -- a volume which undoubtedly would be smaller were it not for Food For Peace. Besides the exporter and shipper, merchants, grain elevator operators, flour mills, railroads, and many others benefit from this larger volume of business. It is not necessary to judge the merits of these views; they point out eloquently that there is a relationship between Food For Peace and U. S. domestic agricultural policy.

Thus, the relationship between U. S. agriculture and Food For Peace is one which may influence policy objectives, expectations, and the U. S. understanding of the way in which Food For Peace functions overseas. At a minimum, U. S. domestic agricultural policy is an important variable affecting the commodities given emphasis in Food For Peace. Domestic U. S. surplus problems may, at times, have overshadowed efforts to focus Food For Peace upon economic development abroad or upon improving human nutrition abroad. At the same time, the existence of a surplus capacity in U. S. agriculture has



certainly helped the continuance of Food For Peace.

b. Research Completed or In Progress

Menzie and Crouch (556) assess some of the political interests in P.L. 480 bringing up to date some earlier comments (557). McLellan and Clare (51) also deal with the political elements of P.L. 480, and Joseph Davis (160) writes in a similar vein. Paarlberg (60) and Stern (371) are more concerned with the relationship of P.L. 480 with domestic agricultural policy, while McGovern (52) suggests that U. S. agriculture needs to be expanded and shifted in emphasis to meet program requests. Raushenbush (569) and (940) argues for P.L. 480 exports to reduce storage costs. Many other articles touch peripherally on one or another political and policy problems.

None of these, however, systematically compares the policy operations on the domestic scene as they relate to Food For Peace. There are some suggestions by Menzie et al. (557) that U. S. agricultural policy would be different without P.L. 480, but additional work is needed to sort through the variety of factors which help to make up U. S. domestic agricultural policy and how this policy relates to the commodities and their manner of disposition under Food For Peace.

c. Research Objectives

- (1) Examine U. S. domestic agricultural policy over the past decade in an effort to identify the major elements which have accounted for the size and type of commodity surpluses which have been available for Food For Peace use.
- (2) Study the policy positions of groups with an interest in U. S. domestic agriculture -- farm groups, marketing agencies, commodity exporters, and suppliers of domestic agricultural inputs such

as machinery and fertilizers. Research on this objective may indicate the extent to which such groups include Food For Peace in their conception of the role and function of U. S. domestic agriculture, and may also indicate in a fairly specific way the role and function these groups perceive for Food For Peace in developing nations abroad.

- (3) Objectives (1) and (2) should provide some historical record of the path of domestic agricultural policy and how the historical context has permitted Food For Peace to evolve from its original purpose to its present (and more extensive) variety of programs. However, the findings should also permit some evaluation of the extent to which there are strong differences of opinion (between groups with an interest in U. S. agriculture and those responsible for Food For Peace) over Food For Peace objectives and future directions. For the future, such an evaluation may indicate the feasibility of U. S. domestic farm policy alternatives which incorporate Food For Peace explicitly as a means of developmental assistance abroad -- feasibility here referring to possible political support by groups with an interest in U. S. domestic agriculture.

d. Suggested Research Personnel

The principal research people should include economists and political scientists with backgrounds in the study of U. S. domestic agricultural policy. It should be sponsored and studied by a nongovernmental research unit.

e. Priority

High priority should be given to this project.

Cross References

60.

28. U. S. Policy Objectives and Expectations in Negotiating Various P.L. 480 Arrangements, Compared with Subsequent Eventsa. Research Rationale

The purposes of P.L. 480 are defined in a general way in numerous publications of the USDA and in a number of reports by AID. Publications which report on the objectives of specific country programs are less frequent. Yet, it is in specific agreements with recipient countries that the United States expresses decisions on the volume and variety of commodities it will make available and the conditions under which they will be available. Implicit in these agreements is a set of U. S. objectives and expectations about the likely sequence of events and impacts of the program. These would include contribution to development, host country attitudes and cooperation, volumes required, reaction to U. S. commodities, and similar aspects. To what extent are these expectations actually realized? If not realized, what are the reasons?

In a number of countries the data available for decision-making are very limited. In most instances the information is less than the decision-makers would like to have. Nevertheless, it would be useful to define the sequence of events which follow from over-committing or under-committing commodities relative to requirements as subsequently revealed by actual experience. What can be gained

from this experience to use in future agreements with the same country, or with other countries in similar circumstances?

One part of this research might consist of interviews with several people who have been involved in negotiations of agreements with different countries, and an analysis of their experience. This analysis would provide clues to the ways in which expectations are most likely to be inaccurate, and to the kinds of information needed to avoid repetition of previous mistakes.

Another important element of this research would be to compare the expectations of Food For Peace programs results between non-governmental leadership groups and groups which play leading roles in Food For Peace program formulation. What do the leaders of farm organizations, labor groups, or religious agencies expect Food For Peace to accomplish? How do these expectations compare with the expectations implicit in specific Title I, II, III, and IV agreements? It may also be useful to make similar comparisons among leaders within government, between those close to day-by-day operations and those in contact with the program only occasionally. The first group might be defined, operationally, as those participating in the Inter-Agency Staff Committee or the Food For Peace Policy Committee, while the second group might consist of country desk officers in the Department of State, including AID, domestically-oriented members of the Economic Research Service, USDA, the Staff of Congressional committees, and others who from time to time have some contact with Food For Peace.

b. Research Completed and in Progress

No research is known which deal specifically with this problem. The most relevant items published are by Ripley (321), in which he examines the committee system of allocating foreign aid to India and includes a few references to P.L. 480, and the McGee report (710), which suggests some of the views held by Congressional people concerned with, but not involved in, day-by-day Food For Peace activities.

A substantial number of studies discuss Food For Peace, and justify it or attack it, mainly on the basis of expectations about the program. Perhaps a quarter of the items cited in the Bibliography (Part III of this report) are of this character, even though such items are frequently based only on the fragmentary reports that come back from overseas.

c. Research Objectives

- (1) Identify the results expected by United States administrators at the time particular P.L. 480 agreements were approved.
- (2) Compare these expectations with (a) the actual results of the agreement, and (b) the expectations of different groups in the U. S. (e.g., leadership groups, Food For Peace administrators, government leaders not close to daily operations).
- (3) When the actual results from specific agreements have not been consistent with the results expected at the time of the agreement, ascertain the reasons and suggest ways in which the forecasts of results expected can be improved.
- (4) When expectations among U. S. decision makers are at variance,

clarify the reasons and suggest ways to avoid such differences in the future.

d. Suggested Research Personnel

This work probably is best done by a nongovernmental research group concerned with the processes of government. A social scientist experienced in the study of group behavior and the policy-making process would be required.

e. Priority

Medium

f. Cross References

63, 64, 68, 69, 71, and 83.

29. Problems in the Perception and Understanding of Food For Peace in the United States

a. Research Rationale

This is a companion project to Project 28. While the previous proposal deals with expectations and decision-making among leadership groups in the United States, this project is concerned with general communication problems within the United States.

There are many people who have only a little knowledge about the objectives of Food For Peace. Their ideas may be very vague -- wheat to India, a sharing of our abundance with those less fortunate, or the overseas disposal of farm surpluses. On the other hand, individuals in the United States may expect political and economic returns which they regard as favorable to the U. S., and may be disappointed if Food For Peace fails to be roundly applauded or seems poorly understood abroad. Yet these vague beliefs are part of the

base upon which public opinion rests.

Communication of the overseas effects of various United States programs, public or private, is much less complete than for domestic programs. The sources of information are much more limited. Consequently, there may be a greater probability of significant changes in public opinion as a result of a few positive or negative reports which receive wide circulation.

Research under this project would be directed at the questions: What is the present perception of the program, and what are the kinds and sources of information which seem to be important?

Both questions involve interviews with a sample of people, stratified by such criteria as urban-rural, occupation (producing or marketing farm products versus other groups), ethnic status (recently or far removed from overseas contacts), organizational affiliation, income, and age.

The perception of the program probably will differ substantially from the actual accomplishments in a considerable number of instances. In such circumstances it may be useful to estimate the effect of a fuller understanding of the actual program upon the attitudes of the individual. Is he likely to give more support or more opposition if he had greater understanding, that is, more accurate information? The means by which this information could be provided would be a subsequent question.

This project would provide a better appreciation of the broad U. S. public attitudes and expectations about Food For Peace. This would give some indication of the extent to which there is broad support for Food For Peace. It would also show whether public attitudes are based on realistic understanding of the nature and extent of Food For Peace activities, and possibly, the direction in which public attitudes would change if more complete information were to reach a larger proportion of the population than it does at present.

b. Research Completed or in Progress

No systematic research on this problem is known.

c. Research Objectives

- (1) Ascertain the perception of Food For Peace held by various groups in the United States.
- (2) Estimate the effects of greater understanding upon the attitudes of people.
- (3) Identify the primary sources of information about the purpose and function of Food For Peace.

d. Suggested Research Personnel

A communications research or social research group would seem most appropriate. They will need a technical consultant or a member of the team who is familiar with Food For Peace.

e. Priority

Medium

f. Cross References





## CHAPTER IV

## SOCIAL AND HUMANITARIAN ISSUES

## PREAMBLE

The issues and projects presented in this chapter deal with the social relationships among people, and among institutions which are associated with the Food For Peace program. These issues are largely unexplored, some of the least studied aspects of the Food For Peace program. Much of the attention in this chapter is given to Title II and Title III programs. These programs operate through a number of major institutions, including the schools, the voluntary agencies (often church related), and local governmental administrative agencies, and involve such intangible considerations as cultural patterns, attitudes towards new foods, food habits, and the capacity to organize when crises arise.

These human relationships may be strengthened or weakened, or simply changed, as food resources from outside the community are made available to certain groups of people under particular kinds of arrangements. Of course, it is hoped that these resources have positive social effects as they are distributed and consumed, but the available evidence of these effects is largely fragmentary. The physical effects on the individuals are given greater emphasis in the next chapter on Health and Nutrition. Here the emphasis is more on the individual as a social entity, or on groups of individuals as they work through social institutions or are affected by such institutions. Even so, some projects include research objectives which add physical and technical considerations to the social aspects. For example,

a school lunch program may influence attendance at the school, the alertness of the children, the effectiveness of the learning process, and the relationship of the school to the community and the community to the school. In addition, such studies will be more meaningful if the physical effects of the food distribution program upon the health and nutrition of the children are also determined. Thus, it is possible to bring together social and nutritional effects of the program for specific situations, and to make a more comprehensive evaluation.

In a more systematic way, the proposed projects deal first with the voluntary agencies as distributors of food, and with effects, accomplishments, and problems as these agencies manage such programs. These institutions function in a role involving relationships with the host government, with the U. S. government, and with their directors and financial supporters in the United States. How well do they fulfill the role expected of them? What are the consequences of larger or smaller programs? What are the potentials and problems if the program emphasis is changed? And does past experience suggest that new emphases would be desirable?

The P.L. 480 commodities available are not necessarily the foods that the people in the recipient countries are accustomed to using. Efforts to improve nutritional well being almost inevitably involve new foods and new methods of preparation, and they may be blocked by cultural barriers. Several issues and projects are proposed to deal with such problems.

The food distribution programs can be evaluated according to their effect upon the institutions involved, and they can be studied in relation to specific objectives. Both approaches are used. The major institution is the school, in ways already noted. Even so, other institutions such as national government, local government, and the community are affected; the

ability of these institutions to work together is important to have an effective program, while the program, in turn, will affect the ability of these institutions to cooperate in other activities in the future. The different Food For Peace programs to be evaluated include the school lunch as a major program, but also included are pre-school child feeding, family feeding, Food-For-Work programs, and special programs for women. The emphasis is on the extent to which these programs are attaining their objectives. The question of whether these are appropriate instruments of U. S. foreign policy is not at issue; such questions are considered elsewhere.

Special attention is given to an evaluation of P.L. 480 aid in times of disaster. Attention also is given to the possible effects and ways to minimize the adverse consequences of a reduction or the elimination of food distribution programs. Variations in supply, the disappearance of the factors which created the need for food, or the elimination of surpluses in the United States may require that some programs be terminated or all programs be reduced in size. The consequences of possible choices need to be understood for rational policy making.

The issues and projects proposed in this chapter carry some urgency. There is almost no research that can be drawn on for guidance, except by making drastic assumptions of transitivity across cultural and national boundaries, and even then, the evidence is limited.

The selection, from the entire research map, of two or three projects for immediate implementation, probably should begin with some of the projects suggested in this chapter. In this way, a basis can be laid for improved project design in the future, as additional projects in this chapter are implemented.

## ISSUES AND PROPOSED PROJECTS

K. Role and Function of Voluntary Agencies in the Distribution of P.L. 480 Food

The portion of P.L. 480 commodities distributed through the voluntary agencies is small in proportion to total P.L. 480 shipments, but the programs provide food to a large number of people--over 67 million during 1964. Thus, the programs touch the lives of a great many people, and for some purposes are considered among the most important of the distribution networks used by the United States.

A number of the voluntary agencies are organizations which have existed for many years. When food surpluses became available, these groups urged the overseas distribution of this food and took on the additional function, over and above their traditional duties of supervising the distribution of the food. Some organizations, such as CARE, were brought into being after World War II specifically to help needy people; others, such as the church-related organizations, had been active for many years in underdeveloped areas.

The voluntary agencies were logical organizations to supervise the actual direct distribution of food under P.L. 480, largely because they already had been working in underdeveloped areas with large needy populations; thus they already had part of the organization and necessary local contacts available to handle food distribution. Moreover, since the distribution of food was related to some of their previous objectives, either because they were set up originally as assistance agencies or because they had altruistic goals, they welcomed the opportunity provided by the United States government to handle food distribution on a large scale.

Nevertheless, it is clear that in many instances their goals are not identical with those of the United States government. For example, frequently one of the implicit goals of the U. S. government is to help build local governmental institutions. Thus, there might be good reason to have local governments handle the distribution of food and thereby gain valuable experience in the kinds of inter-organizational activity with which local governments must become involved as social and economic development proceeds. However, the voluntary agencies may provide, at present, a more effective method by which food can be distributed directly to needy people. Moreover, these agencies are changing their objectives as experience is gained, and are broadening their own interrelationships with local institutions. In particular, their role in such areas as education, training, and community development appears to be expanding, and these changes in turn affect their role in the distribution of food.

The total program of these voluntary agencies tends to consider food as a means of attaining social and human development objectives. Yet, in some countries and under some circumstances, the procedures which U. S. or local government agencies must follow may seem to be more concerned with formalities than with development objectives, and thus the procedures actually hamper the effective distribution of P.L. 480 foods. What is needed is a systematic study in various countries of the conditions under which the available voluntary agencies provide the best way to achieve desired objectives and the conditions under which other organizations might serve these objectives better, and also to consider whether changes in the voluntary agencies are making even more vital participants.

The responsibility of distributing food seems to have brought a certain amount of role conflict to some of these organizations and seems to have brought changes within the organizations themselves. In some cases, there appear to have been unanticipated and unfortunate consequences of involvement of the agency in food distribution. It is clear that the services these organizations have rendered have been great. Even so, it would be worth while to investigate some of the difficulties encountered by voluntary agencies and by others in working with voluntary agencies, and by them in working with government.

30. Possible Role Conflicts and Functional Effectiveness of the Several Types of Voluntary Agencies Engaged in Distributing Food

a. Research Rationale

Some of the voluntary agencies appear to be carrying out roles in food distribution which are more or less like those for which they were established in the first place. Others are fulfilling roles in food distribution which are quite different from their traditional activities and are welcoming this opportunity to be of service. Still, the changes are incomplete and may be resisted by some individuals and voluntary agencies. We need to examine changes in roles and identify whether role conflicts are persisting or are being resolved by individual voluntary agencies. The church-related agencies may be subject to a different kind of role conflict problem than the non-religious agencies, but both groups have points of difference with governments (U. S. and local) which can be resolved better if systematically examined.

It is easily possible to overstate the nature of the problem. The U. S. government and the voluntary agencies have been working together over a period of nearly two decades and have been developing a program which does distribute substantial amounts of food to needy people. We do need to recognize that some objectives of each are emphasized in this cooperation while other objectives are submerged. The programs have tended to shift into countries and to people who follow religious faiths different from those prevalent in the United States. These shifts make certain relationships more difficult as do any sets of economic, social and political programs which involve two countries with different cultural heritages. This project proposes to examine some of these relationships with respect to voluntary agencies.

Foreign religious missions are sometimes resented, or barely tolerated, in countries where contrary religious views are widely and strongly held, particularly in Moslem countries. Under such circumstances the activities of missionaries can be severely limited and their movements regarded with suspicion. If their overall position is strengthened by virtue of their participation in the distribution of U. S. commodities, observers can conclude that the United States is promoting religious teaching by giving the missions a greater scope of activity than they would otherwise have. At the same time, U. S. government requirements sometimes may make adaptation more difficult. Recent efforts to remove such problems need to be evaluated.

In most cases, several voluntary agencies operate in the same country. Both strengths and weaknesses are associated with the existence of



two or more programs. They can both complement and compete with each other. The ways in which these problems have been worked out, or persist, in different countries are valid questions for examination, including consideration of the role played by the host government.

Sometimes the organization must increase its personnel greatly in order to handle the food. The structure of the organization is changed and a group of people are added who have a personal interest in the continuance of the voluntary agency's participation in the Food For Peace program. This may change the view the overseas mission has of its function, but it also increases the opportunities for effective service.

The role and functional effectiveness of the several voluntary agencies need to be examined and compared. Such information should be useful to both the U. S. government and to the agencies themselves. It is suggested that one such study be made in Latin America, followed by a second in South Asia.

b. Research Completed and in Progress

The Agency for International Development, the Economic Research Service of the U. S. Department of Agriculture, and the Food For Peace offices themselves have compiled a great deal of literature on the extent of voluntary agency participation in P.L. 480 programs (808, 712, 720, 807). This statistical information is detailed and specifies the number of persons who are fed by each type of program for each country in which voluntary agencies are operating.

Moreover, Church World Services has prepared a ten year review of their activities, based on a questionnaire of minister-directors who are serving abroad (906). In general, the data show that the missionaries who responded to the questionnaire highly favored the idea of distributing food under P.L. 480. The summary suggests a number of problems, but difficulties in the way the questions were worded and in the percentages of nonresponses make it impossible to draw comprehensive, well-founded conclusions about role conflict, or the lack of it in the church related programs. Moreover, not all religious voluntary agencies are represented in the report. So far as the writers have been able to discover, no carefully documented information is available on the extent and types of role conflict experienced by the different voluntary agencies.

A doctoral thesis is reported to be near publication, dealing particularly with the direct distribution of food in India.

c. Research Objectives

- (1) To identify the ways in which other organizational goals influence the distribution of P.L. 480 foods in each voluntary agency.
- (2) To identify the extent to which Public Law 480 Food Distribution Programs complement or compete with the effective conduct of other organizational goals in each major voluntary agency.
- (3) To determine whether the availability of U. S. commodities has encouraged the establishment of welfare institutions which cannot become self-supporting over time and which will continue to require outside assistance.

(4) To determine whether the distribution of food has influenced institutions in the recipient countries toward a greater concern with human welfare, a characteristic which may persist as a permanent consequence of the voluntary agency food distribution program.

d. Suggested Research Personnel

These problems could be approached in a variety of ways; perhaps the best would be with people with experience in public administration and with voluntary agency experience, and who have interviewing skills. Local officials and AID officials will need to be interviewed along with people in and close to the voluntary agencies. One member of the team should be familiar with the methods of study of large scale organizations. This knowledge should be joined to talents in sociology and public administration.

e. Priority

Medium

f. Cross References

33, 72, 73, 74, 81, and 83

L. The Influence of P.L. 480 Food Distribution Programs on Recipient Country Governmental Units, Institutions, and Communities

In countries where the P.L. 480 food distribution programs are very large, they have had substantial impacts in the areas they have served. It would be impossible to document all of these impacts. The best we can hope to do is to suggest project proposals which will assess the major effects they have had in some countries. Usually, these projects should be carried out on a cross-cultural basis so that the generalizations will refer to a base broader

than that of only one society. Also, where possible, they should be carried out experimentally, in given communities with comparisons with communities without programs.

31. Effects of P.L. 480 Food Donations, Including Title I, on Schools and Educational Systems

a. Research Rationale

Recently economists have given much attention to the influence of education on the economy of the society. In general, they believe that investment in education is, for the society, a profitable capital outlay (151). Thus, the study of the effects of P.L. 480 programs, many of which are administered through schools and many of which are directed toward increasing educational facilities, is important in analyzing the effects of P.L. 480 Food Distribution Programs on institutions. These P.L. 480 programs can influence schools and educational systems in a variety of ways. For one, Title I money has often been used to build schools or to train teachers. Other schools are built or improved under Title II, Food as Wages Programs. In addition, the program operates on the basis of the belief that school lunch programs have increased attendance and have changed a number of other educational variables. Parent's groups may assist in preparing or organizing the school lunch, with perhaps changes in attitudes by both parents and teachers.

b. Research Completed and in Progress

There appears to be no published research on the subtle aspects of P.L. 480 influences on schools and school systems. There are, however, a good many documents compiled by AID and other agencies of

the United States on the contributions of Title I currency to school building programs (808); consequently, it should be possible to compile a list of the number of schools and school rooms built with local currency or with work projects for each country where such work has been carried on. This should provide a basis for judging whether there has been a net addition in the number of schools provided in the country.

c. Research Objectives

- (1) To determine the relationship between Title I funds and Title II work projects and the implementation of national planning objectives in education, including building schools, training and paying teachers.
- (2) To assess the specific effects of school lunch programs on the in-school educational programs, including attendance, drop-out rates, learning processes, teaching accomplishments, and measured intelligence. In some cases it may be useful to incorporate an analysis of other programs to feed children.
- (3) To measure the effects of additional school buildings, if any, and school lunch programs on the attitudes of parents, teachers, and school officials toward education.

d. Suggested Research Personnel

This research should be carried out by a team of sociologists and psychologists, who have experience in educational research. It should be cross-cultural, selecting cultural areas which differ greatly from each other, and it should utilize field experimental research methods and field survey research methods. Interviewing skills and other supporting knowledge are needed.

Each of the three objectives indicated above could serve as the basis for a sub-project. The first can be done without involving the second and third, but the latter two require at least some general knowledge of the first. The second and third objectives probably can be most efficiently completed as a joint project.

e. Priority

High

f. Cross References

9, 25, and 34.

32. The Effects, Including Demonstration Effects, of Food Programs upon the Ability of Organizations to Work Together

a. Research Rationale

Intra-organizational cooperation is one of the more important social characteristics of developed nations. Effective cooperation and communication among such agencies either within communities or among, say, parent offices in central cities and branch offices in outlying areas, doubtless facilitates economic development. A lack of cooperative activity is noted by sociologists familiar with the problems of underdeveloped areas and some view this absence as one of the factors impeding necessary economic development. Programs to distribute food often offer unusual opportunities to bring together people in different organizations within the same community, or in organizations in various communities. Governmental units frequently work with church organizations; the central offices of the church frequently make decisions or suggestions that have impacts on the local churches. The local churches frequently need to report

on their own special conditions to the central offices. Local governments and state or provincial governments frequently need to cooperate in order to utilize each others' facilities in the distribution of food and in administrative problems. However plausible this may sound, we do not know whether, in fact, P.L. 480 programs do increase the ability of organizations to work together. Nor do we know whether this increased capacity, if present, carries over into other aspects of public administration.

The development of programs to distribute food has led to a series of changes in budgets. In many of the recipient countries or smaller subdivisions such as states or provinces, small budgets allocated for welfare may be used completely to help defray the local cost of distributing food in the recipient countries. Sometimes these budgets have had to be increased even to carry the costs of school lunch or other food distribution programs. Some contributions have come from transportation services provided by the local municipality, or containers provided by industry within the city, and to a substantial degree from voluntary assistance of individuals (often women) who donate their services to assist in the distribution of food. Even without a comprehensive model or an imitation of the U. S. program, there still may be a significant change in attitudes or philosophy toward the welfare of those less privileged. These attitudes and experiences may possibly lead to new kinds of programs and activities even after the P.L. 480 commodities cease to be available. New food programs may develop at the same time, simply as a consequence of the experiences and exchange of views of leaders and others who contribute to these programs.

b. Research Completed and in Progress

There appears to be no documentation of these problems with respect to food.

c. Research Objectives

- (1) To determine whether large programs to distribute food increase intra- and extra-community communication and cooperation among organizations involved in food distribution.
- (2) To identify the characteristics or programs which maximize intra-organizational cooperative skills.
- (3) To compare the effects on governmental units with the effects on voluntary and community organizations.

d. Suggested Research Personnel

This project will require the services of a sociologist familiar with organizational analysis and community research. It should be carried on in communities in more than one country. A public administration specialist with interest in local government may be needed.

e. Priority

Medium

f. Cross References

18, 19, 25, 34, 41, and 76.

M. Extent to Which Title II and III Projects Have Achieved Their Objectives

As Food For Peace programs have developed, a number of routine systems and objectives have been formulated to serve as a basis for distributing food to needy groups. One set of routines concerns the organizations which handle



the food; the so-called voluntary agencies have been identified as groups that can be counted on to carry out much of the work. Another major set of routines concerns the type of program. These types of programs are generally the same from country to country and seem not to vary substantially from agency to agency. Examples of these are the school lunch programs, programs of feeding preschool children, feeding programs for entire families, etc. These routinized programs have been, and will be, some of the major systems for handling distribution of foods under Title II and Title III. To illustrate: Brazil has one of the largest and most varied of the Food For Peace programs, one that depends perhaps less on some of the relatively standard food distribution programs than do other countries. Yet, relatively routine programs of school lunches, child feeding, and food-for-work accounted for about 80 percent of the dollar value of all Title II food distribution programs considered or in use in Brazil as of December, 1964.

In general, because these programs have been developed over a number of years and have utilized routine procedures which are relatively simple to follow, they are probably among the better methods available for handling distribution of foods. Yet, practically no evidence exists on the most elemental aspects. Each has its own specific kinds of goals, although all contribute to the general goal of making life better for needy people. A careful specification is needed of the particular goals of each of a series of major multi-country programs together with research to determine the extent to which the programs accomplish their goals. This type of evaluative research should not be considered a test of the way a certain program works in Country X or an evaluation of the personnel involved at any level. Rather, this research should be thought of as general tests of the way programs of the type under study tend to operate irrespective of the particular countries

in which they are found. That is, we should evaluate, in general, the degree to which school lunch programs tend to achieve the goals which are characteristic of them, and the degree to which family feeding programs tend to accomplish the goals which are characteristic of them, etc. Comparisons may suggest which ones are more effective, and why.

The following projects have in common the aim of assessing the degree to which such programs do, in fact, tend to achieve the goals which are appropriate to them. While there are slight variations among these proposals, according to the nature of the particular programs, the general characteristics of research needed to test their effectiveness are quite similar from program to program. They all require a combination of experimental and non-experimental field research in two or three cultures in which data on their respective sampling units are systematically collected, and in which the presumed effects on the variables which describe the possible levels of program goal achievement are measured. These research projects might logically be treated separately, each as its own individual project. Similarly, they might be conducted without regard to research on social and humanitarian consequences of the Food For Peace program which is listed under other issues. However, in the writer's opinion, substantial savings could be made by combining many of these projects into a single experimental and nonexperimental field research project and, perhaps, utilizing information drawn from research on other issues. Similarly, research on other issues might include variables drawn from these issues (even though they might be irrelevant for the issue toward which the research is formally directed) so as to contribute information which could be utilized to evaluate the relatively routine systems of handling food distribution.

33. Comprehensive Comparison of the Advantages and Disadvantages of Different Types of Programs

a. Research Rationale

Projects 34 to 38 have a great deal in common. That is, there is considerable overlap among them in the populations they are designed to serve and in the variables they are expected to change. Yet each of these programs has specific objectives and differs both in technique and audience. If these projects are carried out on a comparable basis from project to project and culture area to culture area, they should be a rich source of data by which to identify the specific types of programs which are most appropriate for achieving the objectives shared by two or more programs. In turn, this should give administrators and other professionals working with Titles II and III programs a better basis for deciding which of the standardized programs is most appropriate for achieving a particular objective in new programs which are under consideration. Thus, some programs may be expanded because they effectively reach the desired audience, and others may be reduced or eliminated, as objectives and effectiveness are evaluated.

b. Research Completed and in Progress

Careful research in which Food For Peace programs are evaluated according to the changes they produce on specific variables (measured in comparable ways) in a number of cultures is not available.

c. Research Objectives

- (1) To identify the items regarding which changes are expected, and to determine which of the major food distribution programs most fully attain them.

(2) To utilize the data collected and conclusions drawn in each of several types of major food distribution programs, (Projects 34 to 38) in determining which types of programs are the most appropriate for accomplishing ends shared by more than one program.

d. Suggested Research Personnel

This is mainly a problem of reading and analyzing the results of other research, as well as advising on the design of this research, in order to make comparisons among types of programs. It would require the skills ordinarily possessed by sociologists trained in quantitative research methods. One experienced person should suffice.

e. Priority

High; several of the projects which follow have a lower priority, but as a part of this project all should receive a "high" priority.

f. Cross References

In addition to Projects 34-38 which follow, use may be made of other projects: 3, 21, 30, 68, 72, 73, and 81.

34. Evaluation of the School Lunch Program

a. Research Rationale

One of the most widely used techniques of distributing food is the so-called school lunch program, in which P.L. 480 commodities are distributed to children in schools. The basic reasons for this program are simple. A great many children in this world need food, and schools provide a convenient distribution point. Food

For Peace officials hope that if the child receives a small, well-prepared luncheon, it will have substantial effects on at least the following variables: attendance in school, attentiveness in school, learning of specific subject matter in school, ability to learn, alertness, physical growth and development, decreased incidence of disease, and the attitudes of the parents toward, and their knowledge of, each of the donors involved in the distribution of the food (the school, the distributing agency and the United States). Many of these effects, it is hoped, are directly a response to improved nutrition, but the actual change in nutrition, if any, should be evaluated specifically.

Measurements for each student should be taken on each of these variables in a series of programs in different communities. Some of these programs should be experimentally contrived to test whether, under ideal conditions, the programs tend to have the effects predicted for them. Other measurements should be conducted for programs which have been going for a substantial period of time. These latter studies should compare the children in a series of objectively similar communities, some of which have had programs and some of which have not. The research should be conducted in two or three different societies having very different cultures and types of government.

b. Research Completed and in Progress

There has been no research of this nature conducted to the knowledge of the writers, although there is at least one authoritative article on the subject (340).

There have been a number of references to studies or experiences in Puerto Rico, in Central America, and in Yugoslavia, but we are unable to provide specific citations. The reports on the several experiences are confusing; some suggest that there is no evidence that the nutrition of children has improved as a consequence of the school lunch program, while others suggest that there have been positive accomplishments. To provide clearcut answers it will be necessary to establish research programs which have controls which can be used as a base for comparison with the schools and school children who participate in school lunch programs.

A research project on school lunches, which may contribute to an understanding of this issue, is underway in the highlands of Peru. In this project there are three pairs of schools, one of each of the three pairs being a participant in the school lunch program. Medical and nutritional evaluations are being carried out by technically trained people according to some of the most recent techniques available for assessment and evaluation of nutritional levels. Preliminary results should be available soon to serve as a base for another project in another culture.

Projects 31 and 32 also deal with school lunches, but emphasize mainly the effects of lunch programs upon the schools, community, and host country government. The work in these projects will complement or supplement the work outlined here, and coordination among projects is needed. The project described here focuses primarily on evaluating the degree to which the results of the program are consistent with U. S. objectives in school lunch programs.

c. Research Objectives

- (1) To evaluate the level of nutrition of children participating in the school lunch program as compared with children who do not participate.
- (2) To test whether the school lunch program concept as practiced actually influences the items listed in the first paragraph under (a), and if so, to what degree.
- (3) To relate these results to the U. S. objectives in school lunch programs.
- (4) To suggest ways in which the school lunch program concept might be improved to have a greater positive effect on the children and their parents and on the educational system.

d. Suggested Research Personnel

This project will require a combination of skills. Specific studies in a few carefully selected schools, with controls, should be done by nutritional, medical, and other specialists to identify the nutritional differences. A larger sample will be required to provide social and psychological evaluations, and will need people with a knowledge of experimental and nonexperimental field social research.

e. Priority

High

f. Cross References

Projects 31 and 32 are directly related to this project. A certain duplication of research objectives exists between Projects 31 and 34. The way to benefit most from these two projects is to

conduct them in separate countries and cultural areas. At the same time, the differences in the projects will provide information which is complementary.

Other related projects include 33, 49, 53, 58, and 73.

35. Evaluation of the Pre-school Child Feeding Programs

a. Research Rationale

Just as we need tests of the effects of the school lunch programs on the child and his parents, so also do we need a test of the effect of feeding programs for the pre-school child using the same general classes of variables. The number of calories and amount of protein available should be ascertained for each pre-school child. There may be several different ways in which child feeding programs have been developed--nursery school feeding, on the one hand, and educating the mother to nutritional needs on the other. Using the amount of food intake and the specific type of child-feeding program as criteria, we should assess a sample of typical programs in various communities in several widely different societies. Measurements of physical development and growth, alertness, incidence of disease, the effects on parents' attitudes toward, and knowledge of, the various levels of donors, and effects on death rates should be included in the analysis. A combination of both experimental and nonexperimental field research should be used. Attention should be given to differences in need and availability of food within the family.



b. Research Completed and in Progress

No evaluative research has been found on the topic, although there are reports specifying the reasons why such programs are needed (218, 340).

c. Research Objectives

- (1) To test the practical effects of the pre-school child-feeding program concept on selected variables concerning the health and nutrition of the child and the impact of the program.
- (2) To compare the several approaches in pre-school child feeding, including the cost of reaching the children, the effectiveness of the program, and the problems in substantially expanding the program to include a larger proportion of the very young children who are the least well nourished members of the population.
- (3) To suggest new approaches to pre-school child feeding.

d. Suggested Research Personnel

These are essentially the same as listed in Project 34.

e. Priority

High

f. Cross References

33, 53, 54, and 58.

36. The Evaluation of the Family Feeding Programs

a. Research Rationale

A variety of specific programs, many of which are administered by church-related voluntary organizations, have as their objective the bringing of food to needy families as a whole. Officials who have

worked with these programs hope that, more specifically, they will improve the development and growth of the child, improve the general state of health of adults, decrease malnutrition, disease, and mortality rates, increase family solidarity, and produce favorable attitudes toward and knowledge of the various donors involved in the program, including the United States.

Some people doubt that the programs to feed families have many effects. They also believe that the self-esteem of the recipient adults may be adversely affected. More specifically, they agree that adults who receive free food feel inferior because they are not able to supply their own needs. Since they are unable to make even a token gift in return, they might dislike the donors for placing them in this psychologically inferior position. The question then is what are the factors that affect the acceptance or rejection of food by various sub-groups, and what kinds of attitudes are associated.

The possible attitudes toward work on the part of the adults who participate in this program need to be determined. Is there any evidence that the existence of this program has reduced the family's efforts to raise its own food or to find work to earn money to buy this food? And also, is there any evidence of a decrease in cash food purchases during the period when food donations are available?

b. Research Completed and in Progress

There appears to be no research on this subject.

c. Research Objectives

- (1) To identify how the family feeding program affects the level of food intake and quality of the diet of the participants in comparison with non-participants.
- (2) To compare, if possible, the nutritional effects upon different members of the family: the father, the mother, and the children and other family members.
- (3) To determine the social and psychological attitudes which had been engendered by the family feeding programs.
- (4) To suggest ways in which the program may be improved.

d. Suggested Research Personnel

Same as Project 34, though perhaps with less emphasis on nutritional studies.

e. Priority

Low

f. Cross References

33.

37. The Evaluation of Food-for-Work Programs

a. Research Rationale

Another technique of distributing food, which combines the need for public works and investment with the need for feeding hungry people, is the so-called "Food-for-Work" system. Here again, relatively routine procedures have been worked out for handling Food-for-Work proposals, even though there are sometimes quite different specific objectives for them. The extent to which economic

objectives are attained is considered in other projects, including the possible effects on levels of unemployment. There are other effects, side effects so to speak, which involve social and political development, work habits, aggressiveness in seeking work, community organization, knowledge about the donors, and similar considerations. As part of an overall evaluation, knowledge of these results will be useful.

More directly relevant to the principal objectives of the program is an analysis of the effect of the food-for-wages program upon the nutritional status and pattern of food consumption of the recipients. Has the diet improved? Is it a diet with greater emphasis on cereals than other diets in the community?

Because it appears to have all of the advantages of normal food distribution programs, while at the same time contributing to economic development through public works and also avoiding the presumed disadvantages of direct distribution programs, the Food-for-Work concept appears to have unusual promise. At the same time it is a fairly cumbersome procedure. It needs the same careful evaluation that is given to other food distribution programs.

#### Research Completed and in Progress

To the writers' knowledge there is no systematic research on this subject. There are two descriptive reports on the program, one in Menzie, et al., (557) and in Fitzgerald's Study for the World Food Program (523).

c. Research Objectives

- (1) To test the effects of the Food-For-Work program on social and political development in the participating communities.
- (2) To determine the effect of the program upon the nutritional status and pattern of consumption of the participants.
- (3) To determine in what societies or under what conditions Food-For-Work projects are psychologically acceptable to workers and to the community, in contrast to, for example, wage payments in cash.

d. Suggested Research Personnel

Same as Project 34.

e. Priority

Low

f. Cross References

5, 19, 20, 21, and 33.

38. An Evaluation of Feeding Programs for Womena. Research Rationale

While beyond a certain low minimum level the food intake of the mother seems to have relatively little influence on the level of development of the fetus and new born child, still while the mother is providing the fetus or the neonate with all of its food, her general health might well be impaired if her overall food intake level was quite low. Perhaps for this reason and perhaps because pregnant women who come in to doctors' offices or clinics are relatively accessible, a few programs have concentrated on food for

the pregnant woman. The literature on human nutrition treats the biological aspects of this issue.

This project proposal suggests that careful field experimental and field survey research projects be carried out to test whether in practice the distribution systems which have been set up to carry out the program have the effects that would be expected of them if they were to work well. Some of these effects are social and some are biological. Specifically, we need to know the consequences of this type of program upon the health of the mother, the health of the neonate, including the possible changes in infant mortality rates which might be a result of the program, as well as the incidence of cases of extreme malnutrition (Kwashiorkor or Marasmus), the tendency of the family to adopt family planning practices, and the solidarity of the family, including the mother's attitudes toward the father and the father's own self-esteem. Such a study should include some references to women with older children and childless women for comparative purposes. These projects should be carried out cross-culturally and experimentally in areas where extreme malnutrition is prevalent.

b. Research Completed and in Progress

So far as the writers have been able to discover, there is very little research published on this topic for women in developing nations, and none that deals with the effects of Food For Peace programs, although at least two authors have looked into the issue of beliefs and food habits during pregnancy (352, 385).

c. Research Objectives

- (1) To evaluate under field conditions the feeding programs for pregnant women, testing for effects on the health of the mother and child as well as the effects on attitudes and social relations within the family.
- (2) To compare alternative programs for reaching these women, and to suggest improved methods of providing food supplements to pregnant women.

d. Suggested Research Personnel

Same as Project 34.

e. Priority

Medium

f. Cross References

33.

N. The Role of Food For Peace in Disasters

P.L. 480 commodities have been used on a large scale to alleviate human suffering during periods of crisis, such as those caused by earthquakes, typhoons, and the like, as well as by revolutions and other violent changes of government. In general, there is every reason to believe that these food donations have been of great importance to people in almost every region of the world. In the opinion of the writers, a careful documentation of the role of P.L. 480 in meeting the needs that result from these tragic events would serve well the twin purposes of assisting in the evaluation of P.L. 480 and in suggesting minor modifications which might improve it.

For convenience we shall divide this issue into two proposals--one dealing with natural disasters and the other with man-made disasters, although they might easily be treated as one research project. The basic difference between these two classes of disasters is that the first, natural disasters, does not usually involve a major breakdown in the social and institutional structure on which the population depends, while civil disturbances consist primarily of such a breakdown.

39. The Role of Food Aid in Natural Disasters

a. Research Rationale

Most natural disasters occur suddenly and without warning, and though they may harm a great many people and seriously disrupt the lives of a great many more, their social effects tend to be short-lived. The need for food in these cases is as sudden as is the disaster itself, and it is as great as the magnitude of the human suffering the event causes. Consequently, in these cases, the response of P.L. 480 officials and of the recipient country's institutions must be swift, and effective in spite of great obstacles.

b. Research Completed and in Progress

While there is little research, as such, on this topic, AID and P.L. 480 files in Washington, D.C. have a great many documents which could serve as background information, particularly in determining the amount of food commodities which have been distributed for various disasters and the number and extent of the disasters involved (808). Also included in this would be the AID Emergency Disaster Relief System Study, TCR/RA of September 3, 1965. From such materials, Fitzgerald (523) has tabulated the time required between



initiation of the request and arrival of the shipment following a disaster.

During the past few years, a number of studies of the impact and response to natural disasters have been made. The Department of Sociology at Michigan State University has information dealing with a tornado disaster in Flint, and with the differential impacts of a Rio Grande flood on the nearby communities in Mexico and the United States. The Department of Sociology and the Disaster Research Center at Ohio State University are currently studying the impact of disasters. Other sources for disaster information would include the ICY National Citizens Commission Report of December 1, 1965, the disaster studies of the National Science Foundation, the Freedom From Hunger Foundation, and the Resolution on World Hunger by the National Council of Churches of Christ, Church World Service.

Further, a part of the food available to the World Food Program (United Nations and the Food and Agricultural Organization) is designated for disaster relief. Some of the work accomplished under this Program might also be included in this project for comparative study.

c. Research Objectives

- (1) Document the specific effects of aid from P.L. 480 food in a small sample of experiences after natural disasters. This would include careful on-site studies (using interviews not only with AID and local governmental officials, but also with families affected by the disasters).

- (2) Identify problems and possible solutions encountered in the rapid distribution of large quantities of food.
- (3) Describe the various devices used to provide food promptly (diversion at sea, borrowing and replacement, etc.) and identify those which appear to be most effective under specific circumstances.
- (4) Establish the reasons for the range in the time between the recognition of the disaster and the arrival of imported food, either under Food For Peace or the World Food Program.
- (5) Suggest possible ways to expedite operations in future natural disasters.

d. Suggested Research Personnel

This project could be carried out by a person trained in any of several social sciences, as well as by administrators. A knowledge of historical research methods would be helpful.

e. Priority

Medium to high

f. Cross References

40.

40. The Role of Food Aid in Civil Disturbances

a. Research Rationale

Man-made disasters of a magnitude requiring aid in food are usually those brought on by wars, revolutions, and other changes in government. They may develop slowly or swiftly. Unlike most natural disasters, the breakdown in normal services, including

the supply of food, may continue for very long periods of time. For example, the economic alternatives available to Tunisia were modified as France withdrew most of its support when Tunisia became independent. A certain amount of unemployment was a direct result. There also was an attempt to create more opportunity for the underemployed, and there were certain problems as the structure of the economy changed. It is not clear whether this should be labeled a food crisis, but today--a number of years later--there continues to be a problem, even though it is perhaps less serious than it was originally.

Another more drastic and persistent example occurred in the Middle East. Many Arabs chose to leave Palestine when the Israelis took over the government. These Arabs and their supporters in the Arab nations generally believe that the property that they once owned in Palestine is still rightfully theirs. Since 1948, many of these people have lived in refugee camps in the Arab nations bordering on Israel without work, with little hope, with little food other than the outside supplies. The P.L. 480 program has helped them stay alive.

For a third example, the conflict in Vietnam is responsible for the continued dislocation of large numbers of people and for a disruption of agricultural production as well as the transportation of foodstuffs. Here again, P.L. 480 commodities have helped alleviate human suffering, and here again the need has continued for many years.

A complete evaluation of the social and humanitarian consequences of P.L. 480 should not omit careful documentation of the aid in time of disaster. Moreover, efforts to improve P.L. 480 should be based upon a detailed understanding of the actual ways in which P.L. 480 programs have worked in such disasters. In these cases a rapid response is of significance, but the effectiveness of the continuing operation is much more important than for natural disasters, where the typical pattern is a short term program.

b. Research Completed and in Progress

Again there is a great deal of information to document the number and extent of such crises as well as the extent of foods consigned to help suffering families (808). Little information is available to evaluate the programs carefully, or to document objectively the beneficial consequences of the programs. An in-house study in AID has assembled the program statistics.

c. Research Objectives

- (1) To draw on program data for information on the countries and conditions that are most likely to be involved.
- (2) To identify problems in P.L. 480 response to the need for food in man-made disasters.
- (3) To evaluate the effectiveness of the continuing operations, particularly the contribution of food to the eventual solution of the problem.

d. Suggested Research Personnel

This work might well be carried out by a political scientist or historian, although persons trained in the other social sciences

10 to 20 months, together with supporting help, should be sufficient to carry out the project. The time includes writing a report on the effects of P.L. 480 in man-made disasters.

e. Priority

Medium

f. Cross References

39.

0. The Socio-Political Effects Due to Termination of Food Programs

There is considerable evidence that some of the major types of food surpluses produced in the United States may be in relatively short supply in the future. Unless there is a major change in the way in which foods are provided for P.L. 480 programs, with shifts in the types of food available, it may be necessary to abandon or curtail certain programs. If this happens and if there are no substitute programs in the areas affected, substantial nutritional shortages are likely. Clearly, studies of the biological consequences of the withdrawal of food are needed and should be carried out under the auspices of the Food For Peace program. Not so obvious, however, are the social consequences of large-scale termination of food programs, but these too deserve research attention. There could be important social and consequent political repercussions of massive and sudden breaks in the supply of particular commodities to which people have become accustomed. We need to learn what these probable consequences are and how to overcome them. That is the purpose of the following projects.

Potential Effects of Withdrawal of Foods on Recipient Individuals of Various Ages, on Families, on Leaders, and on Governmental Units, and Ways to Minimize Any Adverse Effects

a. Research Rationale

A study should be made of cases, if they exist, in which large-scale programs to distribute food have been suddenly abandoned. Special attention should be paid to disruptions in family and community solidarity and in changes in attitudes of recipient people, government officials, party leaders, et cetera, toward the various donating and distributing agencies. Also, systematic information should be collected on probable consequences of withdrawal of major food programs, even where cases have not yet occurred, by interviewing knowledgeable officials in United States government missions, in voluntary agencies, and in host governments.

In short, one aim of this study would be to discover what has happened in the past when the flow of food commodities has been reduced and to compile the judgment of knowledgeable people concerning the probable consequences of such reductions or discontinuance of availabilities of food.

A second aim would build on the information gathered to make recommendations that would enable P.L. 480 officials to adapt programs to this type of major change.

b. Research Completed and in Progress

The writers know of no research on this topic.

c. Research Objectives

- (1) To study cases in which large-scale food distribution programs have been stopped suddenly, in order to determine the effects they have had on such variables as family and community

solidarity and on attitudes towards officials in local government, and toward the various agencies involved in distribution of the foods.

- (2) To collect and collate data on officials' judgments concerning the possible consequences that would occur if existing large scale distribution programs were stopped suddenly.
- (3) To examine and compare these consequences with situations in which gradual withdrawal has occurred.
- (4) To provide guidelines on how best to deal with such situations.

d. Suggested Research Personnel

This project could be carried out by administrators or experienced social scientists. It would probably require the time of only one person, plus a little supporting help from three to six months.

e. Priority

Medium

f. Cross References

14, 25, 76, and 78.

P. The General and Specific Factors Influencing the Introduction of a New Food

A number of important human factors are involved in the acceptability of food practices in given areas. Some of these factors are general in the sense that they cut across cultures, and some are particular to given cultures and to ethnic groups and strata within a single society. For policy and planning purposes, we need to know a great deal more about the general factors which influence the acceptability of new food practices in an area.

The foods available under present P.L. 480 legislation do not fit into the customary patterns of consumption in most recipient countries. These differences can be bridged by trying to change the types of food available for donation or by shifting the patterns of consumption to fit the commodities available. If we have, for example, a set of general rules which tells us the conditions under which a new food will be readily accepted or will be rejected, or the main factors to look for when new foods are rejected, we will be better able to draw up effective policies for gaining the introduction of new foods where they are needed.

In any one country a number of culturally unique issues influence the acceptability of Food For Peace foods. When officials attempt to introduce a new food, they may well be unsuccessful because of adverse local cultural factors, unless they are aware of them and take measures to overcome them. Such adverse cultural factors often are not obvious, even after the failure. The following proposals may aid in guiding within-country studies aimed at specifying some of these factors.

42. The Social-Psychological Conditions Influencing the Acceptance of a New Food

a. Research Rationale

This project aims basically at determining the kind of meaning the new food has to the individual and if he knows how to prepare it. If the hypothesis (listed below) is correct, this research will tell us whether, other conditions being equal, a certain group will be willing to utilize a new food or whether the food will have to be reconstituted to a more familiar form. The basic hypothesis is that variations in the receptivity of the new food



will be influenced by the meaning it has for the individual:

(a) if the new food is viewed as a member of a class of foods with which the person is familiar, he will accept it if the class is favorably defined and if he knows how to prepare it; (b) if the new food is viewed as a member of a class of foods with which the person is familiar but which is unfavorably defined, he will reject it; (c) if he has no classification for the food, he will accept it if he likes it and is taught how to prepare it; (d) the acceptability of an unclassified food will be enhanced if it can be defined for him as a member of a favorably evaluated class of foods by preparing it in mixtures of foods he knows and likes. A second element of this same issue is whether a new food (or other innovation) makes other new foods more acceptable.

b. Research Completed and in Progress

General information on food habits in relation to culture and social-psychological patterns is provided in reports brought together by Margaret Mead (289, 534).

To the writer's knowledge, however, no information is available on the spread of food innovations, although an extensive body of literature on innovations is available. Nor is there any research which analyzes the receptivity to the new foods provided under the Food For Peace program, despite a variety of such experiences.

The most pertinent literature is that dealing with attitude change (fairly well summarized in 601) and on diffusion of new ideas (47, 66, 526); it might be well to peruse material on the introduction of food habits (such as 21, 28, 40, 75, 84, 134, 186, 295, 310, 335, 554, 562, 563, 564, and 614).

Much is already known about the diffusion of new information. Rogers (66) has explored many of the issues involved in the diffusion of new ideas and Lionberger (47) has presented an extensive annotated bibliography on the same topic. In general, the American experience, both in the diffusion of farm practices and in the diffusion of antibiotics among doctors, is that the first innovation spreads very slowly throughout the population, but additional examples spread with great speed. For example, when hybrid corn was first introduced in Iowa, the great majority of Iowa farmers adopted it in less than 10 years, though somewhat longer for other corn growing areas. But, the second variety of hybrid corn was adopted more rapidly, and the rate of diffusion of the third, and the fourth, and later varieties of hybrid corn, continued to accelerate also.

The same pattern occurred with the first of the antibiotics. The first one was diffused extremely slowly throughout the medical population; the antibiotics that followed were adopted at much greater speed. There is every reason to believe that the same occurs with the diffusion of new foods, but the hypothesis needs to be tested.

c. Research Objectives

- (1) To test under field conditions the hypothesis presented in the Research Rationale.
- (2) To test the hypothesis that the successful diffusion of one new food within a population group facilitates the more rapid diffusion of succeeding foods within the same group.

d. Suggested Research Personnel

A social psychologist with detailed familiarity with the diffusion literature in agriculture and in medicine is needed. The host country can provide interviewers and other technical personnel, but the main leadership will have to be provided by the type of person mentioned.

The countries should be selected to provide several different cultural settings for testing the hypothesis. Not many social psychologists living in underdeveloped countries will be able to handle this problem themselves, although institutes in any number of countries might provide trained personnel to help with interviewing. Some aspects of this project might be interesting, not only to social psychologists, but also to home economics departments in American universities, or to people working in nutrition programs in a variety of countries.

e. Priority

This project has a high priority in certain countries where the foods usually eaten do not coincide with P.L. 480 foods available. This research could be carried out in almost any less developed country in which it is legally possible to conduct extensive field research.

Some of the costs incurred would be in dollars for travel for the American research worker, and in salary for him and for perhaps one assistant. But interviewing and other costs could be paid in local currency.

After evaluations have been made in several countries, a review of this area of work would be necessary to evaluate whether the results can be generalized or whether more information specific to a culture is needed.

f. Cross References

21, 45, 48, 49, 50, 66, and 78.

43. Determination of Irrational and Inaccurate Beliefs About the Physical Content of United States Foods and Ways to Mitigate These Beliefs

a. Research Rationale

In their site visits, the writers heard a variety of objections concerning the Food For Peace program. Some of these objections were voiced by officials in the recipient countries, some by "men in the street," and some were passed along by U. S. government officials who happened to hear them. Some are illogical and inaccurate; some are seemingly logical but still inaccurate; and others, while based on fact, are misleading. For example, in some countries it is quite commonly believed that the United States attempts to give away its poorest quality food, that Food For Peace food is worse than that which is already available. In some instances it is said that, while the food is perfectly good, its objective is to make the recipient country economically dependent upon American "business imperialism." Or it is argued that the use of the food has effects on morbidity or mortality.

b. Research Completed and in Progress

This is an issue which must be taken up in each country because the particular sets of beliefs will vary from country to country.

c. Research Objectives

- (1) To identify the more prevalent and detrimental irrational, inaccurate, or misleading beliefs in particular recipient countries concerning United States Food For Peace commodities.
- (2) To develop in the more important countries, and in countries where the beliefs are more viciously detrimental to the United States, the actual technical facts and to make them readily available.
- (3) To develop and provide guidelines whereby the existence of inaccurate beliefs can be solved or reduced in importance.

d. Suggested Research Personnel

These projects could be carried out by sociologists or communication specialists in the first instance, possibly even those working on masters and doctoral degrees. Some part of these studies might be carried out by local institutions with similar personnel. Other technicians will be required in helping to clarify the factual situation.

e. Priority

Medium

f. Cross References

44 and 48.

44. Determining Appropriate Forms for U. S. Commodities

a. Research Rationale

This project proposal is, in some ways, closely related to the previous one. It focuses on beliefs about foods from the United

States, and the way they are interpreted as foods within the local culture. In other words, the objectives of this project are to determine which of the various P.L. 480 foods are more or less acceptable as food in their present forms, which may be changed, in what forms they would be acceptable if changed, and which might not be acceptable under any conditions.

It is not possible to identify at this time the specific countries in which this project should be operative. USDA and Food For Peace officials can be drawn on to identify countries in which there is a substantial gap between preferred foods and the foods available under P.L. 480. In other words, within this project the country and priority should come as the result of serious problems in a particular country.

b. Research Completed and in Progress

This would have to be determined in each country.

c. Research Objectives

- (1) Determination of the degree to which each of the various P.L. 480 commodities presently fits local customs.
- (2) Determining religious and other cultural taboos which act against P.L. 480 foods and which may or may not be overcome by reconstitution of the foods.
- (3) Determination of acceptable forms into which P.L. 480 foods might be reconstituted.

d. Suggested Research Personnel

Sociologists or anthropologists at or above roughly the MA level who may possibly conduct this research as thesis material. Local

sociological or anthropological research institutes might well carry on this type of work. Objective 3 would require technical consultants.

e. Priority

Low to medium

f. Cross References

43, 46, 47, 57, 59, and 66.

45. Determination of Up-to-Date Information on Ethnic and Stratum Differences in Food Habits

a. Research Rationale

Almost by definition, the major subcultural groups within a society have relatively unique food preferences and preferred modes of preparation of these foods. Perhaps the major bases for these subcultures are the ethnic groups or the different strata in the social hierarchy. In some countries, the ethnic groups are the tribes, each with its own particular culture. In others, such as in Egypt, for example, the Bedouin who live in outlying desert areas are the main local ethnic groups. In others, such as the United States and many other countries with recent immigrants, the German, the Polish, the Jewish, the Italian, etc. enclaves are the relevant ethnic groups.

Stratum differences, of course, refer to differences in social level with the rich, well-to-do, and cultured constituting one extreme and the poverty-stricken and ignorant the opposite extreme.

The impression of the writers, based on their site visits, is that government officials in recipient countries are very much

concerned with identifying variations in food habits among ethnic groups and strata, and attempting to utilize both U. S. and locally grown commodities which are appropriate to the various subcultural groups. Obviously, this is a problem for within-country research; as a matter of fact, apparently some countries are doing such research. In specific countries this project could easily be combined with project 69.

b. Research Completed and in Progress

The literature on this subject is fairly extensive. We will attempt only to list a small part of it here. There are some general citations which, though sometimes based on studies in a local area, are concerned with very broad issues such as the following: 133, 134, 404. In addition, there are great many studies of food habits in particular countries (3, 107, 200, 206, 215, 223, 225, 284, 324, 377, 392, 407, 515, 524).

c. Research Objectives

- (1) To determine the major ethnic groups and social strata in a given country.
- (2) To determine the food habits and preparation practices characteristic of each of the ethnic groups and strata in the country.
- (3) To recommend possible changes in food presentation and distribution practices to local Food For Peace personnel and others involved in the distribution of P.L. 480 foods.

d. Suggested Research Personnel

This will require primarily the skills of anthropologists or sociologists and, secondarily, experts in nutrition. Much of the research might be done at the Master's thesis level or at the



Doctor's dissertation level, and there is no reason why a great deal of it cannot be done by local research institutes.

e. Priority

Low

f. Cross References

42, 47, 51, 57, and 66.

46. The Identification and Influence of "Gate-Keepers" on the Adoption of New Foods

a. Research Rationale

Conversations with various AID officials and with other people involved with P.L. 480 "Commodity Distribution" have made it quite clear that the decision to adopt or not adopt--to eat or not eat-- a new food is not an individual action in and of itself; nor is it exclusively a matter of cultural influence on preferences for food, at least in the usual senses. Rather, there is reason to believe that the individual's decision regarding a new food-- indeed whether he even has the opportunity to make a decision-- depends to a large extent on what other people decide for him. In the social science literature, when one person or group has control over the information which is necessary for decision making or controls the decision itself for another, the first is referred to as a "gate-keeper." United Nations and AID officials report, for example, that starving people will eat almost anything that is given to them, yet government officials, who have the power to accept or reject commodities for the country or for regions, may believe that a certain needy group will not accept the food which

is offered; therefore, the food may be rejected at a governmental level long before the needy people can even gain the knowledge of the existence of the food.

These gate-keepers may range in social level from major officials in government, who decide whether or not to accept a type of commodity or how much to accept, to the mother of the child who decides what the child should eat.

Some types of gate-keepers will be relatively unique to a given society. The officials of Food For Peace need to know who the major gate-keepers are and their reasons for appraising or favoring the introduction of specific new foods. For if they know who the gate-keepers are and why they think the way they do, Food For Peace officials will know how to prepare themselves to meet objections to the introduction of specific new foods.

At a simpler level, when a choice is available, those who take care of the child decide what the child will eat. He often has very little to say about the matter. This is another instance of a "gate-keeper" controlling a decision of another person. These examples serve to illustrate at two extremely different levels the influence of "gate-keepers" on decision making.

More precisely, the existence and function of "gate-keepers" on the flow of knowledge or new ideas has been demonstrated in a number of areas. Observers believe that the same process is involved in the adoption of P.L. 480 foods, but this has not been demonstrated. Research should be conducted to show the kinds of

gate-keepers who appear to influence the possible adoption of new foods at all levels of under-developed societies, and what the typical kinds of rationales are which form the bases for these decisions.

b. Research Completed and in Progress

The general gate-keeper phenomenon has been known for many years. Indeed, it was perhaps first noted in research on food habits conducted during World War II by Kurt Lewin (551) when the United States government was interested in changing food habits of the American people away from items which were scarce because of wartime shortages. However, the writers are not aware of any systematic research on identifying the kinds of gate-keepers typically functioning in food decisions in underdeveloped areas.

c. Research Objectives

- (1) To identify, in particular countries, those who typically play the role of gate-keepers on the adoption of new foods, at all levels of the society.
- (2) To determine the reasons why the "gate-keepers" oppose or favor the introduction of specific commodities.
- (3) To identify situations in which P.L. 480 commodities are not utilized even though population groups would accept them, and suggest procedures to encourage adoption of such foods by host country leaders.

d. Suggested Research Personnel

Since some of this research would have to deal with high government officials it follows that AID itself or some other American

group working closely with AID would have to conduct at least part of the research. Other parts could be carried out by local institutions. The research skills necessary are mainly anthropological and sociological.

e. Priority

Medium to low

f. Cross References

44, 47, 63, and 82.



## CHAPTER V

HEALTH AND NUTRITION ISSUES

## PREAMBLE

Starvation of severe degree probably afflicts less than 10 percent of the world's population, but malnutrition combined with undernutrition affects 50 to 70 percent of mankind. These two forms of health impairment constitute a major public health problem in all developing countries in the major areas of Asia, Africa, South and Central America and Oceania. It cannot be overemphasized that malnutrition is seldom the lack of sufficient amounts of a single nutrient in the diet; in most cases, whether it is called by one name or not, malnutrition is a multiple deficiency syndrome whose correction needs recognition of all facets.

## Nutritional Deficiency Diseases

The most common diseases of malnutrition are protein-calorie deficiency (kwashiorkor, marasmus) of the infant, avitaminosis A (night blindness, xerophthalmia, keratomalacia), beriberi including infantile beriberi, anemias, rickets and osteomalacia, goiter, pellagra, arboflavinosis, and mineral deficiencies, including those of calcium and iron.

A most widespread and severe type of malnutrition is protein-calorie deficiency, a disease of the weanling and preschool child. One form of this condition aptly is described as kwashiorkor, a Ghanaian word meaning "a child who has been displaced" from the mother's breast by a younger sibling and who, therefore, has not received appropriate transitional foods adequate in

good quality proteins, calories, and often other nutrients for maintaining health. The child is sickly, peevish, or apathetic and has lesions of the skin which resemble severely burned areas. The limbs, body, and face are swollen due to edema and there is abdominal enlargement, thinning and discoloration of the hair, diarrhea and, most usually, associated infections such as respiratory diseases. If the edema disappears the child will be seen to be extremely emaciated -- "skin and bones". The less severely depleted child who may not show the full-blown disease is retarded in growth, short of stature, thin and underweight. Protein-calorie malnutrition not only frequently proves fatal itself, but also is a contributing factor to mortality because it results in a lowered resistance to many of the common communicable diseases of childhood, such as measles and chickenpox.

The severest examples of vitamin A deficiency are often seen in association with protein-calorie malnutrition in the young preschool child. There is drying of the eye, a cloudiness of the clear cornea, and, if unrelieved, a destruction of the cornea, subsequent infection, blindness, or death. Less severe deficiency of vitamin A among children and adults leads to night blindness, changes of the skin and other recognized evidence of malnutrition. Recent studies by World Health Organization have emphasized the widespread occurrence of avitaminosis A throughout Southeast Asia, the Middle East, Africa, and Latin America. Seventeen thousand known cases of blindness were reported by the World Health Organization in Taiwan. Studies in the Middle East have demonstrated that the mortality of children with severe avitaminosis A is excessively high, even greater than that of those with protein-calorie malnutrition alone. Hence, the number of residual cases of preventable blindness within a population represents but a small portion of those infants who suffered from vitamin A deficiency, many of whom die as infants.

A worldwide investigation of anemia is being undertaken by the World Health Organization, supported in part by a grant from the National Institutes of Health. This study has emphasized the widespread prevalence of nutritional anemia and the multiple effects and etiologies of anemia due to malnutrition. The deficiency of iron, either from inadequate intake or loss of blood, is a cause of a major portion of the anemia, but lack of folic acid, vitamin B<sub>12</sub> and other factors usually supplied by an adequate diet are also important. In Mauritius in 1953 anemia was second only to accidents among the causes of hospital admission. Many cases of this anemia were extremely severe, five percent of these individuals having less than 3.5 gm of hemoglobin per 100 ml (in contrast to normal levels of 14 to 15 gm of hemoglobin per 100 ml). Death rates from anemia in many of the Central and South American countries have been estimated by the World Health Organization to be 6 to 16 times those in the United States.

Hemoglobin levels less than 10 gm percent (a level which does not permit normal activity) have been found in 18 percent of children and 31 percent of adult females in Thailand, in 5 percent of children in Lebanon and 7 percent of adult women, and in 15 percent of children in Ecuador. In children under five in Venezuela, 10 percent had hemoglobin levels below 10 gm percent. In the West Indies, in Trinidad and Tobago, about 8 percent of all male and nearly 40 percent of female adults had hemoglobin levels less than 12 gm per 100 ml. Particularly low hemoglobin levels were encountered among children in these islands. For those less than two years of age the mean values were all less than 10 gm percent. In Burma, 19 percent of children and nonpregnant, nonlactating women among dependents of military personnel had hemoglobin levels less than 10 gm percent, and 18 percent of pregnant and lactating women had such low levels.



Goiter, due to a deficiency of iodine, probably is the deficiency disease concerning which we have the best statistics on prevalence. In a World Health Organization monograph it has been estimated that some 200 million individuals in the world are afflicted with goiter. In goitrous populations cretinism, mental retardation and deaf-mutism likewise occur. Prevalence of goiter has been found to be as much as 40 to 50 percent in Colombia, 10 to 20 percent in Ecuador, 30 to 50 percent in Lebanon, and 18 percent (in children) and 43 percent (in adult women) in Thailand. Goiter occurs classically in mountainous regions, but it is also found in lowlands and even along the seacoast.

It is possible by iodization of salt or some other effective means of distributing iodine to prevent endemic goiter. Many technical problems require solutions for practical application of iodization programs in developing countries.

The surveys of the U. S. Interdepartmental Committee of Nutrition for National Defense\* have recorded riboflavin deficiency as the most frequently encountered generalized nutritional disease affecting all population groups in the first 22 countries studied. This deficiency occurs among those whose cereal-based marginal diet is low in animal products and leafy vegetables. The full-blown clinical deficiency state is categorized by skin lesions of the face and scrotum, fissures of the corners of the mouth, and lesions of the eyes, manifested by excessive sensitivity to light (photophobia) and tearing (excessive lacrymation). While effective procedures for enrichment of cereal products (maize, wheat, rice), have been evolved, their public health application and acceptance in most of the developing economies have not yet been accomplished.

\* ICNND; since July 1965 this organization has been designated the Nutrition Section, Office of International Research, National Institute of Health.

The most severe forms of thiamine deficiency are manifested as beriberi and occur chiefly in populations in the Far East where the diet is predominantly based on highly polished rice. Beriberi affects especially mothers and infants. Infantile beriberi occurs particularly in breast-fed infants of thiamine-deficient mothers and contributes heavily to an excessively high death rate for infants between the ages of two and five months. In 1959 beriberi was assigned as the cause of death in over 10,000 instances in the Philippines, and in the same year, 42,000 cases were reported in Vietnam. In Thailand 10 percent of a group of 2,355 pregnant women studied showed evidence of beriberi. Many factors influence the occurrence of beriberi within a country: the extent and degree of milling of rice, the prestige value of white rice, and numerous cultural beliefs regarding food practices, particularly those relative to the period of childbirth and early lactation.

Rickets, a disease affecting bone growth, and due to a deficiency of vitamin D, is revealed to be unexpectedly common among preschool children in the Middle East and even in the tropics, for example in Nigeria. Since appropriate exposure of the child to sunlight can meet the child's requirement for vitamin D (due to promotion of synthesis of the vitamin in the skin) prevention is in part accomplished by correction of the mother's beliefs and practices concerning infant hygiene, as well as assuring improved dietary intake of the missing vitamins.

In many economies in which maize constitutes over 60 percent of the caloric intake the deficiency disease of pellagra is common, for example in parts of Egypt, Yugoslavia, Basutoland, and Southern Rhodesia. Pellagra is manifested by extensive skin lesions (hands, arms, face, feet, neck), sore mouth and tongue, diarrhea and mental changes. When it was common in the United States it was estimated that 50 percent of the patients in mental institutions of the South were there because of this deficiency disease.

Fat is another nutrient which is frequently low in the diets of the populations of developing regions. Fat is important not only as a source of calories, but also as a vehicle for transporting fat-soluble nutrients, particularly vitamins A, D, E, and K. The proper utilization of these vitamins requires the presence of sufficient fat in the diet. Fat also contributes to the satiety value of foods.

#### Importance of Malnutrition

Malnutrition, together with undernutrition, constitutes one of the critical health problems of the world. Those most vulnerable to the detrimental effects of malnutrition are people who are subject to physiological stresses: pregnant and lactating women and the growing child, particularly the post-nursing child up to about six years of age. In developing countries as many as 70 percent of this latter group are malnourished or undernourished. Children of this age comprise about 15 percent of the total population in developing countries.

In these countries the cumulative death rates for children under six are as much as 40 times those in the United States. Most of these deaths occur in the second and third year of life, at a time most critical for the child since the mother has ceased to breast-feed him and he must subsist on available family foods or those that local customs and beliefs permit him to receive.

It is not possible to obtain accurate world wide estimates of the total number of children affected by these conditions. However, some examples are an indication of the extent of the problem. In South India 1 percent of the children under five years of age were found to show gross evidence of kwashiorkor. For each such case, there were also two cases of marasmus, three to five of vitamin deficiency, and five of anemia.

In Trinidad malnutrition was the sole cause of death in one-third of the children one to twelve months of age, and a contributory factor in another third. In Guatemalan villages which were studied intensively 37 percent of the deaths in the age group one to four years were due to severe malnutrition, and malnutrition probably contributed directly to an appreciable percentage of the remainder of the deaths. Surveys by the ICNND repeatedly have borne out the widespread occurrence and importance of this form of malnutrition in the preschool child.

It is significant that in the developing countries approximately 50 percent of the deaths throughout the population occur before the age of five years, and 50 percent of the children die before the age of ten years. Indeed, the infant death rate (up to one year of age) is 16 to 30 per 1,000 in 15 percent of the world's population, but 62 to over 150 per 1,000 in 77 percent. Furthermore, one-half to three-fourths of the children fail to grow in stature at a rate considered normal in the United States.

Associated with growth retardation in the protein-calorie starved child may be a decreased learning capacity. Frequently also associated with protein-calorie malnutrition one finds the blindness produced by lack of vitamin A. These conditions occur within populations in which the chief sources of calories are cereals or tubers, such as polished rice or manioc (cassava), and where the protein intake is low and primarily from plant sources, with a negligible consumption of animal proteins.

That the postweaning period is one of deprivation in many instances is reflected by comparing the growth of children in developing areas with a reference standard. Recorded average birth weights of infants are comparable to those of newborn babies in the U. S., but growth in length and weight begins to fall below the reference measure about the middle of the first year of life. Later retardation may be as much as three to four years behind the

U. S. yardstick.

That these effects are not due solely to racial differences is demonstrated by comparisons of growth and development of Japanese children in recent years with those of similar age approximately ten years earlier when the Japanese food supply had not reached its present abundance.

Recent evidence has accumulated which is strongly suggestive that prolonged malnutrition or food deprivation in early infancy may cause permanent, irreversible mental, physiological, and neuromuscular retardation in children. It has been estimated that a mental retardation 10 to 25 percent below the expected norm is caused by kwashiorkor or marasmus in the child in the early months of life.

It is well-known that undernutrition and malnutrition lower resistance to infections and the infections in turn frequently interfere with food ingestion or digestion, contributing further to a descending spiral of health and well-being. Infectious diseases in malnourished children in developing countries kill a much higher proportion of those between birth and five years of age than do similar diseases in the developed areas.

The drain of such incapacitation upon the potential of human capital in evolving economies is obvious. The impact of chronic ill health due to malnutrition on economic development is suggested in a background report prepared by the Food and Agriculture Organization for the Freedom From Hunger Campaign. Noting that one of the most prominent symptoms of prolonged lack of food is an obvious loss of working capacity, with an appearance of less energy and sluggishness and slow, infrequent movement interrupted by long pauses, this report cites the effects and a number of experiments on work efficiency as influenced by dietary intakes.

Studies of German coal miners and steel workers during World War II indicated that as ration calories decreased, work output also decreased. Conversely, recent provision of adequate meals to workers in factories or on farms in developing countries has increased productivity by an estimated 30 percent in one area, reduced turnover of employees from 60 to 6 percent in another, and increased work output by 50 percent in a rubber plantation. The improved efficiency of agricultural workers more than compensated for the cost of the meals.

In order to achieve satisfactory nutritional status of individuals, an adequate intake of all essential nutrients is required. In any program designed to improve the nutritional health of populations, efforts must be made to ensure that adequate levels of all essential nutrients are provided, as partial supplementation of diets may actually result in even greater problems in some instances.

Assessments of nutritional status of populations in developing areas have been made by the United Nations agencies and private groups from Western nations, as well as by groups within the countries for a number of years. The ICNND has been especially active in making national assessments of nutrition and has conducted such surveys in some 29 countries to date. Much of the supporting data for the present report has been obtained from these ICNND surveys. The ICNND studies have been made in three world regions whose populations can be characterized generally as rice-eating (the Far East), wheat-eating (the Middle East and Mediterranean), and corn-eating (Latin America). (In the tropical, coastal regions of Latin America rice is a principal cereal, while wheat is eaten in the more temperate countries of Latin America). These categorizations apply well for general diet patterns in these regions, since cereals are the staple food of most peoples.

Usual methods of processing grains remove much of the nutritional value of cereal. This is an important fact to be considered by those who plan nutritional improvement for groups whose chief staples are cereals. (In certain regions the staple foods are roots and tubers such as potatoes and cassava or manioc. These foods are essentially starch, providing so-called "empty" calories.)

Although world food production is increasing at rates nearly parallel with population growth, individual countries are subjected to increasingly inadequate food supplies. Moreover, the distribution of income is such that sizable groups have an inadequate food supply; extreme poverty depresses their economic demand for food to less than the level of nutritional requirements. Thus there is a social need for more food and more of the right kinds of food at prices within the reach of the consumer (as well as steps to improve the purchasing power of less advantaged groups). Changes in agricultural practices and food habits, and associated integration of programs of food technology, agriculture, and nutrition, can help improve the food supply and make a sizable contribution to raising economic levels in developing countries.

Food technology in this context is understood to mean all methods of handling food from harvest to consumption, and includes processing, packaging, storage, transport, and distribution. Food technology can contribute to an increased food supply by reducing losses from waste and spoilage. Such losses have been estimated to be as high as 25 percent in developing countries. They are due partly to poor methods of storage and transportation and partly to inadequate processing and packaging. Fruit produced in excess of local needs is lost when canning facilities are lacking.

Food processing is a logical springboard for industrial expansion in countries where half the raw material and three-quarters of the exports are agricultural products. Food technology can contribute substantially to economic development by providing products for urban and foreign markets. Food processing plants can provide off-farm employment for many workers. The beginnings of food processing already exist in every developing country and centers for research and training in food technology are being established in many locations.

Food technology may be considered the final step in agricultural production. The establishment of processing plants requires integration of programs in agricultural research and extension and in food technology and marketing. Without such close collaboration a new processing plant may fail for lack of sufficient raw material or lack of customers.

Food technology can make a greater contribution to nutritional improvement through the incorporation of protein concentrates into foods that are attractive and low in cost. An attractive possibility exists by increasing the use of oilseeds after extraction of the oil. The resulting press cakes or meals are not presently used extensively for human consumption. Large amounts of good protein could result from increases in oilseed use in a number of countries. Other foods such as soybeans have been used for human food for centuries in the Orient and they offer promise of wider usefulness.

Since a successful program for improving nutrition will reduce mortality among children it will accentuate the growth of the population. Humanitarian considerations urge that children now living should be helped to obtain the food they need. As they mature they increase the working population and can help produce this food. FAO estimates that there are still substantial opportunities, with appropriate revision of production methods, to increase the volume of food production in most regions of the world.



Birth rates still must be lowered, however, so as to stay with the declining death rate, or the problems of malnutrition and nutrition-related diseases will become even more difficult.

It is clear that contributions of U.S. surpluses can meet only a small part of the nutritional needs of the world's hungry children. For the most part the foods must come from indigenous sources and be distributed through commercial channels. Attaining success in this tremendous undertaking will depend on the combined efforts of many in government, industry and educational institutions. Applications of knowledge in agriculture, food technology and nutrition will be needed for a solution to the world's food problems.

#### Research Needs for Improving Nutrition

If the nutrient status of their population is to be improved, food supplies of developing countries must be increased, and modifications in food production made to help meet the nutritional needs of the people. Consideration must be given to the problem of the economic need of many countries to export agricultural products whose consumption at home would be beneficial. Much research is needed in the field of tropical agriculture, an area in which relatively little is known, despite the fact that most of the less developed countries are in this climate belt. New and special varieties of crops need to be developed. The relations of malnutrition and health should be further studied. There is a great international need for more trained personnel to engage in these research problems. At all levels and in all locations education should accompany research and be an integral part of it.

Improved and more efficient procedures need to be developed for obtaining adequate information on diet and meal patterns; how food is distributed among family members, how frequently certain foods or groups of foods are consumed, how much is wasted or lost in cooking and other preparations; and how cooking practices affect the nutrient content of the foods served. Eating habits and beliefs regarding foods need to be determined, particularly with regard to child feeding and weaning practices and to diet during pregnancy and lactation. One cannot assume that attitudes and customs of one culture, region, or ethnic or religious group will resemble those of another. People native to a country and familiar with its customs are especially useful in obtaining accurate and reliable data of this kind.

A great deal of research can be usefully expended on determination of local and regional indigenous foods having high protein and vitamin contents. Indigenous foods are already part of the accepted diet and their use can, therefore, readily be extended into a program for nutritional improvement with suitable introduction and education. Similar research projects on fortified low-cost combinations of foods or fortified conventional foods should be conducted to determine their usefulness as supplements for young children.

Plans for long-range permanent betterment of nutrition and health status, essential to economic development, must include, as a major component, the improvement of agricultural production. Production of protective foods can be increased through development of new varieties suitable to a region by scientific use of plant genetics. Intensive work is necessary in many areas to enhance production of pulse crops which grow well or are high-yielding in tropical regions. Pulses are particularly important because they provide (at relatively low cost) a considerable amount of protein, minerals, and B vitamins.

Economic advancement and development of a food industry interact closely. Both contribute substantially to health and productivity, and this extends to political stability. Research is needed in all aspects of food processing and distribution in order to make them most effective and to insure the high nutrient content of the agricultural product reaching the consumer, with efficient retention of nutrient value at harvest or slaughter. Studies are needed on desirable storage conditions, including protection against insects, pests and rodents as well as extremes of temperature, especially heat. Rodents especially cause enormous losses of available food energy -- one rat and its offspring (six litters a year with 12 rats per litter) can destroy enough food for 35 people.

Research is needed on proper types of packaging of food for optimal retention of nutrients under variable storage conditions. The development of a food processing industry opens new markets to the farmer, prevents waste of salable production, and provides the consumer with out-of-season foods at a minimal cost.

In most emerging nations research is needed on food standards, on the possibility of contamination by mycotoxins or other harmful materials of foodstuffs, on rancidity, and on nutrient stability. Maximal levels of any additive made to processed foods need to be determined through animal experimentation. New food products must be subjected to laboratory examinations before they are put on the market for distribution.

Research is needed to determine the most effective media and methods for educating the public to accept new foods in a given area. Choice of promotional methods to be used can perhaps best be determined by tests under simulated or controlled conditions on the site.

There is a need to explore new methods for educating lay people, and to determine how people in villages may effectively be taught health and nutrition along with improved agricultural practices. Training and research will interact and reinforce one another; the teacher who educates the villager will in turn be educated.

Many of these research needs are expressed in a series of projects described in the sections which follow. The projects are combined under the issues which seem most relevant to Food For Peace and the kinds of programs it does, or might, carry out in the underdeveloped areas of the world. Although there may appear to be overlapping in some cases, this is not as extensive as it seems at first glance. For example, similar kinds of benchmark data may be needed for quite dissimilar projects

Three general considerations have been kept in mind in formulating the proposals included in this chapter of the research map, and are stated here to indicate the emphasis intended:

(1) The research should emphasize post-nursing pre-school children wherever possible because they constitute the most vulnerable and least accessible segment of an undernourished population.

(2) The problems of nutrition are complex. The projects selected below are designed to illustrate important problem areas in the framework of the Food For Peace programs abroad. In the process of making this selection, many important nutritional research areas have had to be omitted, but this should not be regarded as a negative evaluation of the merits of other nutritional research. Inclusion here reflects only a judgment on the relevance of research to Food For Peace planning and operational needs.

(3) The performance of research requires highly trained people. It is assumed that the cooperation of people of many varied skills from U. S. universities and industry will be necessary, and that counterpart personnel from host countries will be identified and trained to participate in the research to the fullest possible extent.

#### ISSUES AND PROPOSED PROJECTS

Q. Factors Involved in Learning How to Use New Foods To Improve Nutrition Effectively

The Food For Peace program contributions of surplus U. S. agricultural commodities are designed to reach people in the less developed countries who would suffer from malnutrition or under-nourishment in the absence of such additional food supplies. It is clear that the Food For Peace program does accomplish this to a large extent. However, there are also indications that the full nutritional effectiveness of the program is not always realized under its various Titles because the surplus U. S. commodities are unfamiliar, or reach the ultimate consumer in a form or under circumstances which make them difficult to use.

The significance of this issue varies between recipient countries, and research should therefore begin in places where these kinds of problems are of greatest concern to those administering Food For Peace programs. Reports from field personnel should provide a good basis for making such a selection of research sites. Administrators should find it extremely useful to know, for example, what cultural and social factors determine the way in which recipients view the commodities being offered, and how the commodities (as they are received) relate to the normal diet and food

preparation patterns. It would also be valuable for them to know what kinds of educational or informative techniques would be the most successful in increasing the receptivity to, and effective use of, the commodities being supplied.

47. Determination of Factors Influencing Appropriate Ways to Prepare New Foods

a. Research Rationale

When Food For Peace program recipients obtain a surplus commodity, whether by gift or through purchase, there may be one or more of several possible reasons why they fail to take full advantage of it. The measure of this type of reaction would be attempts to barter or sell the food received, or simple refusal to use it. If the food is used, it may be prepared in some relatively unpalatable or wasteful fashion which reduces the quantity consumed or its nutritive value. Research which could identify both the reasons for such reactions and ways to bring about more positive acceptance and effective use should help to improve the nutritional contribution of Food For Peace foods. A related side effect could be an increased awareness in recipient countries of the value of the Food For Peace program to general well-being and potential development.

As examples of the kinds of problems involved in this issue, wheat may be shipped to predominantly rice-consuming areas, soybean oil distributed in places where there are strong local preferences for heavily flavored cooking oils such as mustard oil, or hard wheat may be sent to areas where people are familiar only with local soft wheat. In some cases, e.g., where a single

commodity is given as wages-in-kind, effective use of the commodity may depend on the recipients' ability to buy complementary or other necessary foods or cooking materials, but this additional purchasing power is lacking. All such conditions affect the way in which recipients regard the commodities being offered, but they are far from being an exhaustive list of examples. In any given country or region, research should be directed toward uncovering which factor(s) are of greatest importance, and this should be followed with research on means to overcome or work around them.

b. Research Completed and In Progress

No formal research appears to have been done on this problem, although limited local efforts have been made in some areas. Wheat Associates, Inc. have used mobile teams to demonstrate simple and economical ways to use Food For Peace wheat, and have done some experimentation on ways to give hard wheat the taste and texture of soft wheat in local foods. A noodle made from flour mixed with ground fish has been devised in Korea, which when used in soup gives a taste similar to a familiar Korean dish. Its use, however, has not been widespread, and it is not part of the normal wheat distribution in that country, Food For Peace field staffs are usually aware of many of the local attitudes toward the commodities being issued, but do not have the time or resources to study the problem or its possible solutions. Reports on file with AID or the voluntary agencies may contain recommendations or suggested lines of inquiry, and these sources should be explored prior to actual field research

in a particular location.

c. Research Objectives

Research on this problem would have the following objectives:

- (1) Where there is reason to believe that people are dissatisfied with the commodities they receive through Food For Peace, or are not using them properly, determine the factors primarily responsible. These may include cultural factors, ignorance of proper cooking techniques, the form and manner in which commodities are received, or may be simply a matter of pricing relative to local foods.
- (2) Depending on the results obtained under the first objective, research would be directed toward uncovering ways to counter the negative reaction of recipients. As an illustration, a finding that a commodity (e.g., bulgar wheat) is quite unlike any food that is familiar in an area would lead to research on recipes or alternative ways of processing wheat which would render it more similar to the usual diet.

d. Suggested Research Personnel

A sociologist or anthropologist with knowledge of, or training in, nutrition would be best suited to conduct research on factors affecting the way in which foods are perceived, but the researcher should be able to distinguish economic as well as cultural factors in making this study. Research on alternative methods of food preparation or processing should be carried out by a home economist with a strong background in nutrition.



Since there is need to be thoroughly familiar with the local diet and with preferences in terms of taste, food texture, and compatibility of foods within that diet, the most suitable person would be a well-trained home economist from the area in which the research is to take place.

e. Priority

Medium-high.

f. Cross References

Research projects which concern related aspects of this problem include 44, 45, 48, and 78

48. Determination of the Most Effective Methods of Teaching the Preparation and Preservation of P.L. 480 Foods

a. Research Rationale

Of all the ways available for teaching people how to utilize new foods, the most direct and probably the simplest is to teach those who actually distribute the commodities. This is being done to some extent. In some countries, U. S. Food For Peace officers and their employees work directly with voluntary agencies and with distributing governmental units to show recipients how to prepare their foods. In other cases, recipes are distributed, but it is by no means clear that the potential for instruction is used to its fullest. There may be other methods of teaching and demonstration which would be more effective. The purpose of the research, therefore, would be to determine the relative efficiency of different teaching methods so that programs can be adjusted, where necessary, to incorporate the improvements which seem indicated by the research. In countries,

or areas within countries, where there is some reason to believe teaching and demonstration techniques were ineffective, personal interviews with small samples among recipients should determine whether these techniques are accomplishing their purpose, and additional observation and interviews should supplement these findings with an evaluation of the manner in which the techniques are actually applied. It may be emphasized that the instructional effort can involve both methods of food preparation and ways to preserve the commodities which are being distributed.

b. Research Completed and in Progress

There has been no formal research on this problem as it relates to the Food For Peace operations in the field, although the field of communications generally has included research on methods to improve cross cultural transfers of information. See, for example, (13), (133), (218), (245), (310), and (551). Field personnel do file reports which cover some aspects of this kind of educational activity in their areas, and this should provide a starting basis for the actual research.

c. Research Objectives

The major objectives of this research project would include the following:

- (1) Determine the extent and nature of the knowledge about food preparation and preservation on the part of those responsible for disseminating such information, and evaluate this in relation to the most appropriate knowledge on these subjects for the area concerned.

- (2) Determine the effectiveness of the instructional techniques in terms of the degree to which the suggested food preparation and preservation methods presented are being adopted by the recipients.
- (3) Evaluate the relative satisfaction with the commodities on the part of those applying the suggested preparation and preservation techniques, as contrasted with those who use other methods.
- (4) Explore alternative means for presenting the appropriate knowledge on preparation and preservation in cases where existing techniques are failing to achieve significant results.
- (5) Frame the research findings to provide guidelines for Food For Peace field personnel to adjust existing programs where necessary or to determine additional requirements for making the educational and demonstration activities more effective.

d. Suggested Research Personnel

This research could be carried out by field personnel or by research institutions in the host countries. However, the research would benefit from participation by specialists familiar with educational and demonstration techniques as they have been applied in different countries -- probably someone from the field of communication arts. Such a person may be used to assist in setting up the research design to be followed, and in analysis of the findings.

Priority

This research should follow that under project 47 so that the findings relative to cultural or other factors can be incorporated in pursuing

the first research objective cited in this project. The knowledge of factors which affect the way in which people view Food For Peace commodities would be necessary in any evaluation of the appropriateness of the education or demonstration activities in an area.

f. Cross References

Other projects dealing with aspects of nutritional education include 42, 43, 47, 58, and 78.

The Influence of Adequate Food on the Individual's Competence for Social and Economic Development

The literature on economic development contains increasing references to the role played by "human capital", or the acquired skills and competencies which are complementary to investment in capital goods. Improvement in the stock of "human capital" depends, in part, on the health and capacity for learning inherent in the population, and will be more rapid to the extent there is general good health and mental alertness. Since proper nutrition is necessary to good health, food may contribute to economic development via its effects on the potential for improving the stock of "human capital."

There is also a relationship between mental alertness and the capacity for social development, in the sense that social development depends on the individual's ability to adapt to new types of social organization associated with a changing and developing economy. There is probably a social dimension to the early growth process such that mental retardation and inability to learn may be influenced by factors in addition to nutrition. The issue is, therefore, one of determining the influence of nutrition and other environmental factors on individual competencies.

9. Determination of Long-Term Effects of Various Levels of Malnutrition on Learning and on the Ability to Learn

a. Research Rationale

Malnutrition at an early age can impair physical development later in life, and there is strong evidence that mental development is also impaired. However, during the acute phases of post-weaning malnutrition there are also signs that the child adapts to a lowered nutrient intake and there is no scientific explanation as yet for such adaptation. Children on unsatisfactory diets are retarded in growth, compared to better nourished children; they frequently succumb in greater percentages to infectious diseases than do well-fed children in the same age groups.

Poverty, malnutrition, and cultural deprivation tend to occur together. There is evidence to indicate that, among the poor and in crowded families, cultural deprivation can also lead to reduced capacity to learn or adjust to social institutions in the environment. It seems theoretically possible that learning and adjustment problems may be linked to both cultural factors and nutritional factors. This project would be directed toward better understanding of the underlying causal relationships in specific nutritional and cultural settings.

b. Research Completed and in Progress

It has been shown by Robertson et al. (322) that the learning behavior of rats is affected by early protein-calorie malnutrition. Schrimshaw (344), (345) and (346), and Coursin (148), have examined current research on the subject as it applies to humans. See also

(103), (107), (149), (164), (169), (246), (249), (269), (376), and (922). Extreme malnutrition results in permanent mental retardation but the effect of undernourishment and the phenomenon of early adaptation to malnutrition are not understood and little research has been done on these factors. Better understanding of the adaptation process could clarify the relationship between malnutrition and permanent mental retardation because the present conflicting views might be a reflection of the presence or absence of such adaptation. The work with primates by Harlow, Sackett and others at the University of Wisconsin indicates that early environment differences can affect social behavior, including the willingness to respond to generally complex stimulation. On the whole, however, it would be fair to say that research done to date does not offer program planners sufficient guidance to deal with the possible interaction of malnutrition and cultural deprivation, or to identify the critical areas for program emphasis.

c. Research Objectives

The objectives of this project would include the following:

- (1) Examination of the process of adaptation to low levels of nutrient intake in children to determine the physiological changes which take place, the factors responsible for adaptation (including minimum nutrient requirements), and whether adaptation is associated with significant differences in mental alertness compared to well-nourished children and those who have not adapted.

(2) Examination of the possible relation between mental alertness and the cultural environment to test the hypothesis that cultural deprivation or neglect can cause mental retardation in well-nourished children.

(3) Reconcile the findings under the first two objectives to obtain some indicators of minimum dietary needs and cultural enrichment factors necessary for health and normal degree of mental alertness and ability to learn.

d. Suggested Research Personnel

The research team, which should be working closely together in each area selected for study, should contain a nutritionist and a psychologist or social psychologist plus research assistants to help conduct field work. The latter, with perhaps a senior colleague, might come from universities in the host country when suitable trained people are available. The social science member of the team should be familiar with techniques and problems connected with measurement of learning capacity in a cross-cultural situation.

e. Priority

High

f. Cross References

See also projects 34 and 42

50. Effects of Food For Peace on Adult Productivity and Work-Related Attitudes

a. Research Rationale

Food donation programs associated with work projects could affect those receiving food in a number of ways. The assumption behind these projects is that the net effects will be beneficial, and on a priori grounds this would appear to be a reasonable assumption. For example, by providing work where little was available normally, the laborers (and food recipients) would perhaps begin to feel somewhat more hopeful about the future and develop feelings of pride as earners of additional income; the local improvements brought about by the project could make the work itself seem more directly relevant to the laborers' ultimate personal interests and be another source of pride in accomplishment through the labor effort expended; the food donations, by adding to the otherwise inadequate diet, could bring a larger measure of health and strength so that recipients would be able to perform well; the labor productivity of well-nourished labor could be higher than that of those lacking the additional supplement of nutritious food; positive attitudes generated by better health and good work performance on a food donation project could carry over into new attitudes toward work in subsequent opportunities for employment which might arise.

An important element in any understanding of the effect of Food For Peace on productivity and work attitudes is knowledge of the productive capacity of the laborers given the laborers' nutritional intake. Related to this would be knowledge of the additional



nutritional intake required to improve productive capacity.

Evaluation of the nutritional status of the laborers is a critical part of any project which seeks to study the effects of the food supplied under works projects because such an evaluation would provide a nutritional foundation to which other measures of productivity and work attitudes can be related.

On the other hand, none of the beneficial effects may be discernible in the experience to date with work projects. In fact, it is possible to hypothesize outcomes which are, on balance, non-beneficial. Included in this category would be a "dole mentality" under which people come to expect that food will be provided in exchange for token efforts on small projects, and because this meets their minimum needs they are disinterested in seeking work elsewhere or building on the opportunities which the project may have created; the amount and kind of food provided for laborers on projects may not be adequate to improve health or work attitudes; labor productivity on food donation projects may be no higher than elsewhere because of the "dole mentality", indifference to the projects and their contribution to the local communities, or some combination of these and other reasons. Again, the nutritional status of the laborers would be an important element in reaching overall conclusions on the effects of projects.

Since there is a body of experience, in the form of on-going works projects supported wholly or in part by food donations, and new programs are being planned for coming years, it would be both feasible and useful to study this experience from the standpoint

of the observable effects on adult attitudes toward work in this context. An evaluation of this kind would provide program planners and administrators with an objective body of empirical evidence on issues which are currently debated on the basis of fragmentary and subjective opinions.

b. Research Completed and in Progress

Aside from field progress reports on projects, there appears to be little organized research on the aspects of work projects touched upon under this research rationale. One reference which deals with working efficiency is (614).

c. Research Objectives

Although this project is concerned with some measurement of work attitudes as they may be related to Food For Peace programs, the objectives should be framed in ways which minimize the subjective element in evaluating results. The ways in which this can be done may vary from place to place, and actual research projects should, therefore, be tailored to some degree to meet specific situations. Examples of objectives, however, might include the following:

- (1) Evaluate the nutritional status of laborers on works projects and those in occupations similar to works projects, and attempt to assess the productive capacities likely to be associated with both kinds of activities. The purpose of the evaluation would be to determine whether the nutrient intake available to those on the Food For Peace works projects is adequate, on nutritional grounds, to permit an increase in productivity. Clinical examinations should be made to supplement the findings of the evaluation of nutrient intake.

- (2) A survey of typical work attitudes in a society, classified by strata within the society, and including a compilation of standard conditions of working such as hours-per-day by class of occupation, wage differentials based on kinds of work performed, and prevailing attitudes toward different categories of work. The survey should also include some attempt to determine the norms of performance by labor in different kinds of occupations, such as the output per day in terms of cubic feet of earth moved, and the general quality of the work that is done. In general, the objective of this portion of the research would be to establish some benchmarks against which to measure performance in projects related to Food For Peace.
- (3) For the selected Food For Peace projects, measure the quantity of work performed per laborer for comparison against normal performance in jobs requiring similar skills and similar equipment. Findings of improved performance would not necessarily indicate changes in work attitudes, but would at least be consistent with this hypothesis.
- (4) By using appropriate techniques, attempt to determine whether laborers and their families give evidence of attitudes toward work, their future, or the projects which are significantly different from similar questioning of control groups at the same levels of the society.
- (5) Evaluate communities after completion of a works project for signs of a change in the tempo of community life with respect to such things as more active interest in further self-help activities, increased use of opportunities provided by the works projects, higher levels of labor productivity in normal,

non-project work. Such evaluation should also enable determination of opposite kinds of effects, such as tendencies to regard the works projects as "make-work" efforts, or the prevalence of expectations that further external infusions of food and funds will be forthcoming.

d. Suggested Research Personnel

This kind of research project would require the efforts of nutritionists, anthropologists or rural sociologists, and social psychologists. It would benefit from cooperative work between U. S. scientists and colleagues from the host countries because evaluation of results and selection of appropriate techniques for getting at attitudes requires thorough familiarity with the culture being studied.

e. Priority

Medium high.

f. Cross References

Other projects which deal with research on works projects include 19 in Chapter II and 42 in Chapter IV.

S. Developing Improved Bases for Nutritional Programs

While much work has been done in the field of nutrition to identify the factors affecting health and mental development, there is room for more research in all areas. In a general sense, the Food For Peace program would derive benefit from basic research of many kinds. A research map such as this, concerned with projects which can be of importance to those charged with responsibility for devising and administering Food For Peace programs, cannot include all that might be done in any field. Some selection must take place, and this

has been based on the relevance of the research to Food For Peace needs. Greater knowledge about the nutrient content of foodstuffs consumed in recipient countries would be important in judging the nutritional contribution of Food For Peace commodities, as well as providing basic nutritional information. Better understanding of the conditions under which Food For Peace commodities might become unsuited for human consumption could enhance the overall contribution to human well being, and should also assist Food For Peace officials in their handling of complaints from recipient countries about the quality of the commodities which are being shipped. Finally, basic research is needed to improve the Food For Peace programs which are aimed at problems of malnourishment among pre-school children in the developing countries.

51. Determination of Nutrient Content of Foodstuffs

a. Research Rationale

Basic information on nutrient composition of foods is urgently needed for assessing the adequacy of diets, for formulation of food policies, and for stimulating increased production of those local foods that are good sources of protective nutrients, but frequently are used in only limited quantities in their diet. Moreover, foods produced and prepared, and the parts considered edible, vary from region to region. Foods which contribute essential nutrients to the diets of one region may not be practical for use by people in other parts of the world. Some foods show marked differences in nutrient content from similar foods grown in other areas. Thus there is a need for tables of the nutritive content of foods grown or processed in specific areas or regions.

Knowledge of the nutrient content of foods is essential for the development of agricultural, industrial and health projects to improve the nutritional health of the world's populations. The identification of nutritional diseases in itself will not contribute to alleviation of this serious problem. Eradication of malnutrition must rely upon the production of foods which will supply the necessary nutrients.

Once the nutrient content of foodstuffs is better known, there are various nutritional needs of recipient nations -- addition of nutritional supplements, providing additional processing that increases the nutritional value, and even developing new foods (based upon combinations of existing agricultural products) that are specifically designed to meet known nutritional needs or to appeal to national taste preferences or dietary customs. Many such activities have already shown themselves to be extremely promising.

Whether or not an activity of this sort is economically justifiable depends not only upon its own cost, but also upon the cost of achieving the same objective by other means. This project would therefore also measure the cost of achieving the same nutritional objective as is to be achieved by fortification, processing, etc., by means of adjustments in the composition of existing diets, using the ordinary foods that are available in the markets (plus unmodified U. S. surplus commodities when relevant). For instance, if small adjustments in the quantities of ordinary foods purchased will increase the amount of riboflavin in the diet by one milligram at

a cost of 1/10 of a cent, it would not be economically justifiable to add riboflavin in the form of a nutritional supplement if doing the latter were to cost 1/4 of a cent per milligram.

Measurements of the least cost of adding individual nutrients to existing diets by adjustments in the quantities of foods purchased have not been possible until recently. Now, however, measurements can be made by linear programming. Thus, it is possible to determine the cost measures needed in order to ascertain the economic justification for fortifying foods, inventing new foods, or extending the processing of existing foods.

b. Research Completed or in Progress

A food composition table for Latin America in English and in Spanish was developed collaboratively by the Institute of Nutrition of Central America and Panama (INCAP) and the Interdepartmental Committee on Nutrition for National Defense (ICNND) in 1961 (707). This table has proved to be of significant value not only to nutritionists, agriculturists, home economists, dietitians, public health officers, and local nutrition institutes in Latin America, but also to workers in other areas. This table has been widely used by personnel sent abroad by U. S. Government agencies and by field workers of United Nations organizations, and various private institutions including exchange educators.

Prior to the publication of this table, numerous sporadic, incomplete publications were issued by research laboratories throughout Latin America. The compilation of the data in this table presented nutrient composition of more than 700 individual foods in use and

available throughout Latin America. Furthermore, it revealed the paucity of information on many foods which hold great promise for improving the nutrition of these populations. The data available indicate there is need to expand such tables to include a better understanding of the broad term "protein content" by encouraging research and developing tables on amino acids especially for those foods which contribute the major portion of protein to the diets of these populations. In addition, there is a lack of data on such important nutrients as pyridoxine, vitamin B<sub>12</sub>, folic acid, vitamin E, and many of the trace minerals such as zinc, selenium, iodine, etc.

The ICNND, in collaboration with FAO, is now developing a food composition table for Africa. Progress to date indicates a great need for nutrient analyses of many foods used throughout Africa.

The use of linear programming in evaluating the cost of achieving a change in nutritional levels by diet adjustment rather than by fortification of food, or the use of synthetic vitamins has been discussed and illustrated (76). However, no application to a concrete problem in this area has yet been made.

#### Research Objectives

- (1) Assemble and evaluate data available on nutrient composition of foods produced or consumed in respective areas in significant quantities which, after critical evaluation, appear to be representative and accurate. Initial priorities would be given to food composition tables for the Far East and Near East.



- (2) Identify those indigenous foods of high nutritive value.
- (3) Extend knowledge concerning the nutritional value of foods where data are incomplete.
- (4) Elaborate, with the data so obtained and selected, a food composition table designed in such a way as to be a source of the best information on nutrient content of these foods, and presented in a form which will make it a useful working tool for agriculturists, nutritionists, home economists, dietitians, public health personnel, and workers in related fields.
- (5) Explore the knowledge of food science throughout the world through national and international cooperative enterprises.
- (6) Provide, as far as possible, bibliographic references relating to food composition in each region.
- (7) Determine the cost of achieving the same nutritional benefit as might be expected from a fortified food, a highly processed food, or a newly developed food, by making adjustments in the composition of existing diets, (1) using the ordinary foods of the region, and (2) using the ordinary foods of the region plus unmodified U. S. surplus foods. This determination is to be made subject to the requirement that the usual dietary practices and preferences of the region be observed in the modified diet and also under circumstances that allow modification of those practices or preferences.
- (8) Determine the net cost of adding one of the new fortified, processed or synthetic foods to an existing diet. This will presumably be less than the price paid for the new food because the new food ordinarily replaces some food previously purchased.

d. Suggested Research Personnel

The Nutrition Section, Office of International Research, National Institutes of Health, has established a world food composition unit which has developed a food composition table for Latin America.

The Nutrition Division, Food and Agriculture Organization of the United Nations has compiled such tables in the past, and would collaborate in preparation of future tables. An agricultural ethnobotanist is needed to identify plant foods. A research staff is required to analyze foods not yet so examined.

The linear programming portion of this research requires the cooperation of an economist experienced in the development of linear programming models for use in the analysis of human diets, and a nutritionist with experience or training as a dietician.

e. Priority

The determination of the nutrient content of foodstuffs would be the initial phase of this project, and would have a high priority. The linear programming portion would follow this initial phase. Because the analytical tool of linear programming has not been widely used in the field of nutrition, one country might be selected as a pilot study area to see whether wider application will be feasible. The second phase might also be delayed until the data called for in project 57 have been assembled.

f. Cross References

Projects related to the initial phase include 45 and 66. Another linear programming project is suggested in project 22 in Chapter II, and a project to study feasibility and costs of fortification is suggested in project 57 in this same chapter.

## 52. Control Programs in Nutritional Toxicology Related to Food For Peace

### a. Research Rationale

In order to make wise and efficient use of food resources it is essential to develop additional knowledge of nutritional toxicology, including the naturally occurring toxicants in foods, food additives, residues such as pesticides and other chemicals used in agricultural production, feed additives, toxins from bacteria and molds, allergens such as those in the fava bean and the factor(s) in wheat responsible for gluten sensitivity.

In animal husbandry it has long been recognized that numerous potential feedstuffs may contain toxic materials, for example, gossypol in cottonseed meal, antitrypsin in soya, aflatoxins in groundnut presscakes, goitrogens in peanuts and members of the cabbage family, poisonous fish, and the like. Recent interest in the conversion of protein concentrates to suitable human foods, especially for use in feeding infants and children, has centered on many of the products which may be associated with toxic agents. These include cottonseed meal, peanut flour, and fish protein concentrates.

Modern agricultural production takes advantage of a large number of useful chemicals such as pesticides, herbicides, fumigants, rodenticides, metabolic alternatives and antibiotics. Residues of these substances may remain in foodstuffs under certain circumstances. Whenever such residues are potentially harmful or undesirable, appropriate control measures must be devised, including methods of ready identification. With other foods or feeds procedures must

be developed to prevent the appearance of undesirable toxins. Thus certain foods are dried to prevent molds from growing and introducing mycotoxins, while others are processed to avoid viable bacteria which might produce toxins in foodstuffs.

It is important to know more about the nutritional toxicology of the commodities being used under Food For Peace because they reach so many countries and are handled and stored under a wide range of conditions. The success of Food For Peace in its various objectives depends, in large measure, on a continuing record of providing commodities which are free of influences or substances which adversely affect the health of the people who will consume the commodities.

b. Research Completed and in Progress

Evidence is accumulating that the gluten sensitivity syndrome is more widespread than was initially believed. This syndrome is characterized by a sprue-like condition with diarrhea, steatorrhea (excessive fat in the stool), change in the gastrointestinal tract and its absorptive capacity, anemia, etc. The condition is due to sensitivity to a factor present in wheat gluten. Of late a somewhat similar milk-induced allergy involving the gastrointestinal tract has been described in young infants and children. In this instance sensitivity to milk is manifested by bleeding from the gastrointestinal tract, which results in the development of the hypochromic, microcytic anemia of iron deficiency. Clearly, methods of removing or inactivating such allergens are needed.

Antioxidants, antibiotics and newer chemical preservatives offer many advantages in the preservation of foodstuffs, especially in the absence of widespread refrigeration or other storage facilities. The needs for usefulness and acceptability of various chemicals in the production, processing or manufacture of foods varies greatly from one country or region to another. Similarly, there is considerable variation in the justification for their use and in the judgment and perhaps criteria of assessment of safety of their use. It is evident that no country can reproduce all of the informational material necessary on all potential toxins in foods. Accordingly, there has developed widespread international interest in this subject and in considerations growing out of nutritional toxicology. This international interest is exemplified by the joint program of the WHO/FAO on chemical additives which has led to the convening of several Joint Expert Committees to consider aspects of these developments; the sponsorship by WHO/FAO of the Codex Alimentarius; the development of the Latin American Codex of Food Additives; the Food Chemicals Codex currently nearing completion under the auspices of the Food Protection Committee of the National Academy of Sciences-National Research Council in the United States; and the active concern of the Protein Advisory Group of WHO/FAO/UNICEF for the safety of protein concentrates which prove to be useful in infant and child feeding programs.

Much leadership in this area resides in the U. S., particularly in the Food and Drug Administration and the laboratories of the American food and chemical industries. The Food Protection Committee

of the Food and Nutrition Board of the National Academy of Sciences-National Research Council has been especially active in policy matters pertaining to food toxicology since 1950. The Food Law Institute has similarly given much attention to related legal considerations. The U. S. Department of Agriculture has long been concerned in both research and regulation of numerous aspects in this field, and the National Institutes of Health and the U. S. Public Health Service are also concerned.

The demonstrated or even suspected presence of unacceptable amounts of toxic materials in food or feedstuffs may have tremendous economic impact. In the United States the problem of cranberries contaminated with a herbicide a few years ago and the toxic smoked whitefish which caused sickness and some deaths in 1964 exemplify the economic loss which may occur in a single industry. Other examples are the recent milk loss in the South and West and the endangering of the groundnut economy in Nigeria because of aflatoxins. Uncertainty concerning acceptable levels of gossypol in human food and of methods for reducing its level in cottonseed have limited the utilization of cottonseed flour. Severe economic losses frequently have been encountered due to contamination which exceeds tolerances, particularly in the movement of foodstuffs in international trade.

c. Research Objectives

- (1) Prepare world maps of food toxicology.
- (2) Develop information on the health significance of toxins and requirements for control.

- (3) Provide a scientific basis for control at national and international levels, which will permit sound, economical food production for domestic consumption and export utilizing modern scientific methods and aids.
- (4) Provide appropriate training for scientists from developing countries to educate staff for establishment of needed control and research laboratories within the developing countries.
- (5) Undertake epidemiologic and clinical studies in countries or regions receiving Food For Peace commodities in which (a) widespread significant levels of consumption of recognized toxins are detected or (b) where evidence indicates an unexplained food-related syndrome such as the "ilesha shakes," or the slowly developing neuropathy described by the ICNND team during the course of the nutrition survey in Nigeria.

#### Suggested Research Personnel

The following types of competencies need to be drawn upon for actual research or for actual evaluation and appraisal: chemists (analytical), mycologists, biochemists, toxicologists, botanists, food scientists, pathologists, and microbiologists. The research setting should be a university or a laboratory of food control, food science, public health, or agricultural research.

One desirable procedure would be to establish a long-term contract with a U. S. university for the development of an internationally oriented center through which secondary contracts financed by AID or other organizations would have relationships to individual countries as recognition of the need arose. Scientific analysis

of foods and feedstuffs obtained from all parts of the world would be undertaken in order to provide the proposed mapping of food toxicology, to develop methods of detection, to ascertain consumption levels and, through subsequent field studies, to provide information useful in interpreting the health significance of human consumption levels of food additives or toxins. The latter would allow for an improved scientific basis for setting of tolerances and be invaluable to both developing and developed societies alike.

e. Priority

This project would have a high priority.

f. Cross References

The project would be related to the study of packaging and storing problems suggested in project 59.

53. Determination of the Vitamin B<sub>12</sub> and Folic Acid Requirements of the Young Child

a. Research Rationale

Vitamin B<sub>12</sub> and folic acid are essential nutrients for man, and much evidence concerning the quantitative nature of adult requirements for these vitamins has accumulated. The quantitative requirements for folic acid by infants and young children have not been established despite long-standing evidence of a widespread deficiency of folic acid in infants and young children manifested as "megaloblastic anemia of infancy," or as one of the macrocytic anemias associated with protein-calorie malnutrition. Vitamin B<sub>12</sub>-responsive anemias in infants and young children are less frequently encountered than are those responsive to folic acid. Despite this, anemia in



infants which responds to vitamin B<sub>12</sub> administration is well established. In other work in animals a deficiency of either of these vitamins results not only in anemia, but also in growth failure and death.

Vitamin B<sub>12</sub> in foodstuffs is usually associated with animal protein, and indeed this vitamin was at one time designated as an "animal protein factor." Dietary vitamin B<sub>12</sub> deficiency is a well-recognized syndrome among persons who subsist solely on food of vegetable origin. Again, the bulk of evidence pertaining to dietary deficiency of vitamin B<sub>12</sub> concerns the development of a pernicious anemia-like syndrome in adults. In order to plan adequate dietaries, particularly those which are based on cereals, all-vegetable, or cereal formulae, it is essential to have information pertaining to the quantitative requirements of these nutrients, both the minimal requirements necessary to cure and prevent the anemias resulting from a lack of those hemopoietic substances, and the requirement for growth. Methods are available for assessing quantities of these nutrients in foodstuffs, biological fluids and tissues, as well as for detecting biochemical abnormalities resulting from deficiencies of the nutrients, and for determining the rate of biological disappearance, turnover rates, etc., for vitamin B<sub>12</sub> using radioactive cobalt-labeled vitamin B<sub>12</sub>.

In view of the importance of cereals in the diets of many developing countries, and the important role of foodgrains in the Food For Peace programs, research on the folic acid and vitamin B<sub>12</sub> requirements for young children could prove to be extremely valuable to those planning the commodity mix going into Food For Peace efforts abroad. This

should be of direct value in treating the anemia diseases which are widespread throughout the world.

b. Research Completed and in Progress

Although the symptoms and effects of folic acid and vitamin B<sub>12</sub> deficiencies have been established, there is almost no evidence regarding the requirements of folic acid for growth in man, and only a few relatively indecisive papers concerning the growth-promoting effect of vitamin B<sub>12</sub> in children. For example, see (308)

c. Research Objectives

- (1) Determine the vitamin B<sub>12</sub> and folic acid requirement of infants and young children in relation to hemopoiesis, growth, and other parameters.
- (2) Study the availability of these nutrients from Food For Peace commodities and other foodstuffs.
- (3) Outline a basis for planning to meet the requirements of the infant and young child with vegetable-based formulations.

d. Suggested Research Personnel

The team conducting this research should contain a pediatrician concerned with growth and development, a pediatric hematologist, a nutritional biochemist, a dietary nutritionist, nurses and laboratory technicians. Field work, involving observations of children in a given area, should be conducted under conditions which will permit clinical metabolic examinations to be carried out in association with these observations, and where subjects may be brought to a hospital for short periods for tracer studies using radioactively labeled substances to determine their metabolism.

Priority:

Medium high

f. Cross References

This project is related to projects 34 and 35 in Chapter IV.

54. Continuing Evaluation of Malnutrition in the Pre-School Child in Relation to Ongoing Nutritional and Food For Peace Programsa. Research Rationale

Most of the research described in this map concerns a situation at a point in time, or a review of experience in the recent past. However, since there is considerable evidence that malnutrition will continue to affect large portions of the world's population for some time to come, there is a need for long-term research to establish baselines from which to measure the impact of Food For Peace and general economic development on existing nutritional problems. The key individual in most developing countries in these considerations is the nutritionally vulnerable pre-school child. There is great need to determine the current nutrient status of children in this age group in order to establish their dietary deficiencies. With this information the effects of any programs instituted for their improvement can be assessed.

The ICNND surveys in a number of countries provide an excellent baseline of information on the widespread occurrence of malnutrition in the pre-school child. It would be of value not only to repeat such surveys in selected countries, but to use such second surveys as baselines for evaluation of new approaches which have been used, under Food For Peace or through other auspices, to deal with the problem

of malnourished pre-school children and to protect others from malnutrition. This requires a present commitment to a longer range research objective, but the value would lie in supplying future information on the results of intervening efforts to improve nutrition. To isolate the impact of Food For Peace programs, it will be necessary to identify specific areas (in the countries where second surveys would be carried out) where these programs have been implemented. Comparisons could then be made against the comparable age groups in the country as a whole, and against control groups which have been receiving adequate nourishment. This could be further divided to cover different kinds of programs (e.g., pre-school children, school lunch, nutrition, education, general additions to food supply through Title I sales) to determine if there are significant differences between them.

b. Research Completed and in Progress

A longitudinal study on a limited scale has recently been carried out in Indonesia. About 40 children, diagnosed in 1958 as malnourished and having hemeralopia (defective vision in bright light), and an equal number considered normal in 1958, were re-examined in 1964 (922). The physical and mental development appeared impaired in 1964, in comparison with that of the original group of normal children. The age of the children at the first examination varied from two to six years. Other similar small studies may have been carried out elsewhere, but apparently no work of this kind has been done relating specifically to Food For Peace. See for example, (156), (164), (214), (219), (226), (242), (255), (290), (341), (379), (390), and (415).

c. Research Objectives

Areas selected for this project should be those which have had ICNND nutrition surveys, and in which there are significant Food For Peace programs. Objectives of the secondary survey would include:

- (1) Cross-sectional measurements of the nutritional status of various age groups in the population.
- (2) Systematic evaluation of the health and nutrition of children, with special attention to children from areas where Food For Peace programs have been in operation. Comparisons would be made with children of the same age groups in the population at large, and with special groups considered normal at the time of the initial survey. The second survey should follow the first by at least five years, and preferably seven to ten years.
- (3) If the initial ICNND survey did not include baseline measurements of normal children receiving adequate nourishment, these should be carried out at an early date for subsequent comparisons.
- (4) Evaluation should include tests and measurements which will permit comparative analysis of the physical and mental development of selected groups over a period of time.

d. Suggested Research Personnel

Research teams should include pediatricians, biochemists and nutritionists, together with field staff to conduct household surveys and technicians to conduct the necessary laboratory tests.

In the past these ICNND surveys have been carried out by teams

composed of personnel drawn from U. S. and host country professionals and technicians.

e. Priority

High

f. Cross References

See also project 35 in Chapter IV.

T. Programs for Achieving Improved Nutrition

Important advances in the fields of nutrition and food technology have produced a number of ways which afford opportunities to improve the quality of nutrient intake. Among these ways are possibilities for fortifying the commodities supplied under Food For Peace programs or using the commodities to produce the components for a nutritionally improved diet in recipient countries. Although Food For Peace has begun to explore some of the possibilities which are now available, additional research related to the commodities supplied by Food For Peace should greatly support and strengthen this trend toward qualitative improvement because it would provide officials with more extensive information on which to base future policy decisions.

There is also need to determine effective educational approaches which will alert parents to the dangers of malnutrition in their pre-school children, and to the ways in which Food For Peace commodities might be used to improve the nutritional status of these children. Knowledge about improved nutritional opportunities must reach those in greatest need of such knowledge if there is to be progress toward the objective of better health in the developing countries.

Finally, programs for achieving improved nutrition would benefit from more thorough study of the factors which can cause contamination of the Food For Peace commodities, and of the packaging and storage methods which can be employed to reduce or eliminate the possibilities of spoilage or contamination.

55. Technological Changes to Increase the Proportion and Improve the Quality of Protein Consumed

a. Research Rationale

The protein deficiency of the diets of a large proportion of the populations of the developing countries is well known, and the competition of men and animals for the produce of the land is so intense in many areas that it is highly probable this deficiency will continue. Various possibilities exist by means of which Food For Peace commodities might be used to increase the protein intake of recipients. This project would study and evaluate the more promising among them. There is a further advantage in that these protein-enriching methods also can be used with commodities not included in the Food For Peace program, and the benefits of the research can be extended to foodstuffs normally produced in the recipient countries. In this sense, the research initiated for Food For Peace purposes could have an effect on general nutrition far beyond those people who receive the Food For Peace commodities themselves.

In certain countries foods preserved by traditional methods of fermentation are known to supply additional protein to local diets. These include fermented soybeans, a blend of bulgar and milk (tarana), and a bread-like product (idli) made by the action of the

Leuconostoc bacteria on a dough containing a black gram (bean) and rice. Development of household and commercial techniques for fermentation of Food For Peace commodities, tested for acceptability on grounds of taste preferences, would open opportunities for additions to the dietary protein supply which may now be unknown or unused.

Another potential protein source is high quality protein supplements from oilseeds. Much is known about the processing conditions required for production of soybean protein products, and methods of producing cottonseed meal protein of reasonably good quality are also known. However, most industrial plants in the U. S., as well as in the developing countries, fail to handle the oilseed proteins with sufficient care to achieve a quality suitable for use in human diets. In most instances, minor revision of plant operations and some additional equipment would permit routine production of oilseed meals with acceptable protein quality for use in formulated foods and for pre-school children. In addition, the level of gossypol in cottonseed, and other deleterious substances, can be reduced sufficiently to be suitable for human feeding with the proper application of present technology. Finally, proper handling and storing of materials are essential in order to minimize the problem of mycotoxin contamination from molds and fungi, and the research should be directed in part toward establishing conditions which will preclude this source of contamination.

A third possibility involves the use of fish protein concentrate -- potentially of great value as an inexpensive source of high quality animal protein and a good source of lysine and the sulfur-amino



acids, and also as a source of such elements as calcium, phosphorus and iodine which are deficient in the diets of many areas of the world. The U. S. Department of the Interior, Bureau of Commercial Fisheries, has a program to develop a fish protein concentrate suitable for human consumption, but it remains to be tested whether it is nutritionally effective in protein (and other) deficient diets, and whether commercially feasible products containing fish-protein-concentrate can be made.

From the point of view of the undernourished populations the development of new plant varieties can be expected to contribute the most promising solutions to the need for inexpensive, easily produced foods of high nutritive value. Research on the development of new plant varieties would be complementary to the other possible sources of protein. Important characteristics which could be considered in a plant variety development program are total protein yield of the major crops used for energy, improved quality of protein such as increase in specific amino acids or vitamins, and total calorie yield. Research might be concentrated on one or two examples important to the area(s) selected for emphasis.

Research along all of these broad avenues of inquiry should be particularly valuable, since all build on work which indicates chance for success for both U. S. and indigenous implementation to increase protein supply in the diet.

b. Research Completed and in Progress

The fermentation process has been studied in the case of idli, and the bacteria identified. Related studies have been made on a

small-scale process for the fermentation of soybeans to produce the Indonesian tempeh. Further research is needed, however, to include other Food For Peace commodities as a base for fermented foods which meet other diet preferences (608).

Although the methods are known by which high quality protein supplements can be made from cottonseed, they have not been widely adopted. The relative effectiveness of this protein supplement, and the economics of its manufacture and use vis-a-vis other alternatives, is not known (112), (240), (345), and (347). Similarly, in the case of fish protein concentrate, many small-scale investigations have shown it has considerable potential and versatility in terms of commodities with which it can be mixed (10), and (314). However, further work is needed to determine the nutritive quality of fish protein concentrate, supplemented foods, the optimum amounts to be used as supplement, and the specific effects on the organoleptic quality of the supplemented foods which result.

c. Research Objectives

- (1) Assess different fermentation techniques as means of increasing the availability of dietary protein, and develop processes (commercial and simplified home methods) for producing more nutritious foods from Food For Peace commodities.
- (2) Assess the methods of producing oilseed meal proteins from the standpoint of economic feasibility in U. S. and recipient country locations, and relative nutritional efficiency and compatibility with local dietary preferences compared to other sources of protein which could be included in Food For Peace.

(3) Assess the nutritive value of fish protein concentrate supplementation in Food For Peace commodities, and the economic feasibility of carrying out such supplementation in either the U. S. or foreign facilities.

(4) Develop new varieties of selected plants with potential for improvement in the quality and quantity of protein and other nutrients.

(5) Results under the preceding objectives should be compared in order to determine the combination of nutritional efficiency and economic feasibility most applicable to areas where protein deficiency is a critical problem.

d. Suggested Research Personnel

A team will be needed consisting of chemists, senior nutritionists, food technologists, home economists, and an economist or technologist able to analyze economic feasibility. Because of the need to consider the compatibility of alternatives with local food preferences, there should be close cooperation with, or inclusion of, personnel from the countries where research is carried out. The analysis of economic feasibility would probably follow the research on relative nutritional efficiency and the methods or processes to be used.

e. Priority

High

f. Cross References

A related project includes a study of possibilities to produce additional animal protein (56). See also projects 11, 18, 62, and 63.

56. Assess the Possibilities of Increasing the Production, Improving the Processing, and Expanding the Use of Animal Type Proteins

a. Research Rationale

Animal products (milk, eggs, and meat) have long been recognized as important sources of high quality protein and protective vitamins and minerals. The levels of critical B-complex vitamins are provided in generous amounts by animal products, almost without exception. Most animal products are also excellent sources of the essential amino acids, lysine, methionine and cystine; milk and eggs contain high levels of all essential amino acids, including lysine, tryptophan, and the sulfur-amino acids. For these reasons, small amounts of animal proteins, including fish proteins, can be expected to improve materially the amino acid balance and adequacy of the protein mixtures generally consumed by people subsisting primarily upon cereals and limited amounts of other plant proteins.

Feeding cereal grain (and other feeds) to animals is less efficient than direct consumption of these foodstuffs by man. But there are many possibilities for use of pasturage, roughage, and by-products which do not cut into the land available for direct food production. Any effort to increase the production of animal proteins, however, must also include consideration of the animal diseases and parasites which can affect man's well-being to a significant extent. The annual losses due to zoonoses, both in terms of human suffering and decreased availability of animal products, are considerably greater in developing areas than in countries where intensive livestock production has become a tradition. More than two hundred diseases of animals are communicable. Of these, over one hundred are known

to be transmissible from animal to man. There are also more than one hundred different parasites that affect both man and animals.

Improved measures for control of such diseases are often the most critical factor for the establishment of a viable animal industry.

Since the surplus commodities available to Food For Peace include feed grains as well as foodstuffs for direct human consumption, there is the possibility that the introduction of feedgrains in some countries might contribute indirectly to the solution of human nutrition problems by assisting and stimulating expanded animal and fish production. This has further long-run implications in that economic development, with rising incomes and changing demands for food which reduce reliance on cereals, could reach levels at which the expanded animal and fish production can be sustained by increasing export earning capacity and/or a lesser emphasis on cereal production which releases some land for fodder production. The problem is to identify the areas where increased inclusion of feedgrains in the Food For Peace program has the greatest probability for incorporation in the local agriculture and eventual self-sustaining growth.

b. Research Completed and in Progress

AID missions in many countries have included animal husbandry and fisheries programs in their technical assistance efforts, generally with the objective of introducing new breeds, improving the health of existing stock, and expanding and improving the marketing and preservation of animal products (923).

This body of experience would be useful in identifying the kinds of problems which might be encountered in an attempt to use imported feedgrains, and also countries where this type of program would be most promising. There is no evidence that this possibility has been examined in any depth as it related to Food For Peace, with the exception of the Israeli experience (30).

The agencies concerned with animal disease control on an international scale, such as the Food and Agriculture Organization (FAO), World Health Organization (WHO), Pan American Health Organization (PAHO), and Office International des Epizooties (OIE) have ongoing coordinated basic research activities in many categories. In addition, competent government and privately financed research teams are active in many countries. Often, control of specific diseases has probably not been accomplished because sufficient resources, both human and financial, have not been concentrated on the problem over the necessary time span. In other cases, effective control measures are known, but have not been implemented.

c. Research Objectives

In areas where AID experience indicates that feedgrains, in combination with local forage and food by-products, might be used to increase the production of animal proteins, research would be directed toward objectives such as the following:

- (1) Assess the possibility of converting feedgrains into animal proteins within alternatives appropriate to the area (cattle, swine, ruminant animals, poultry, fish), giving consideration to such matters as conversion efficiency, effects on existing strains and breeds, additional requirements for balanced

feeding, and potential for expansion of animal protein production by reliance on imported feedgrains initially.

- (2) Determine the major sources of animal disease and parasite infestation in the areas selected for emphasis, and devise effective disease control measures to minimize losses in animal production from such causes.
- (3) Assess the economic viability of an import-based feedgrain program, considering the probable costs and returns of those who might use them, requirements for investment in milling facilities, market outlets for animal products, processing, storage, and preservation facilities, and the market prospects.
- (4) Prepare recommendations for countries or regions where Food For Peace feedgrain imports would constitute a technically and economically feasible means to increase the availability of animal protein in the diet.

d. Suggested Research Personnel

Studies of the kind outlined above would require the services of an animal husbandry man, food technologist, animal pathologist, and an agricultural economist, and preferably persons in these categories who have had experience in less developed countries. The latter could be important because the technical possibilities using local breeds and strains of animals can be quite different from those applicable in the U. S., and the marketing problems are also likely to be quite specialized in different areas.

e. Priority

Medium high

f. Cross References

A study of alternative sources of protein is proposed in project 55 in this chapter. See also projects 11, 18, 62, 63, and 66.

57. Assess the Technical Possibilities and Limitations of Fortified Foods to Supplement Diets Based on Cereal Grains

a. Research Rationale

Cereals are low in their ratio of protein to calories, and other low-protein foods such as sugar, starch, fats, roots and tubers are also included in nearly all diets in the less developed countries. The problem is most severe in countries whose populations are rice-eating or corn-eating. Young children suffer the most because their rapid growth demands more protein and they are frequently given starch gruels that are even lower in protein than the usual adult diets. It appears possible to supply adequate protein at low cost by the use of supplements to a diet based on plant products -- blending cereals with oilseeds, pulses, dry milk, or fish flour. The principal obstacles to introduction of such fortification are cost, inconvenience, and lack of appetite appeal. Problems also arise from nutritional imbalance produced by adding a protein supplement to a diet that is marginal with respect to vitamins. Depending on the circumstances, it may also be necessary to fortify protein supplements with vitamins, minerals, and perhaps amino acids.

The purpose of this research is, therefore, to explore the nutritional and economic feasibility of supplementation and fortification of



Food For Peace commodities for selected areas where malnutrition is widespread and Food For Peace commodities constitute a significant contribution to the food intake of the malnourished sectors.

b. Research Completed and in Progress

Processed edible protein concentrates are now available commercially or are in an advanced stage of development in many countries, including Brazil, Chile, Colombia, El Salvador, Guatemala, India, Indonesia, Mexico, Morocco, Nigeria, Peru, and Senegal. The composition of these products varies from country to country, depending on the availability of locally produced foods, (112), (123), (124), (125), (126), (220), (239), (240), (313), (400), and (936). Insufficient attention has been given, however, to qualities related to acceptability, flavor, texture, and the production costs. Further work is needed in developing formulations adjusted to dietary needs, and methods of incorporation into Food For Peace commodities as well as the domestically grown staple cereals.

c. Research Objectives

- (1) For given areas of research concentration, determine the nutritional requirements of pre-school children and other groups most susceptible to malnutrition, and relate these to known methods for fortifying foodgrains. This would involve, for example, findings with respect to the possible precipitation of vitamin deficiencies by simple addition of protein elements.
- (2) Examine alternative methods for fortifying foodgrains, both in the U. S. and in recipient countries, and with reference to both Food For Peace commodities and those grown in recipient

countries. This examination would be concerned with the nutritional contribution of alternatives and the cost of achieving it.

- (3) Compare nutritional requirements with the alternative means to meet them, and evaluate these by indicating the relative costs to realize different nutritional objectives. Such recommendations, and costs, might be further broken down to show what would be needed to realize different levels of nutritional requirement such as "bare minimum;" "adequate;" or "good;" since Food For Peace budgetary constraints could preclude higher levels of contribution while permitting less ideal foodgrain fortification.

d. Suggested Research Personnel

This research will require the skills of food technologists, nutritionists, biochemists, and home economists to assess the feasibility of different alternatives, the contribution to nutrition, and the acceptability of the final products in the areas where they may be introduced.

e. Priority

High. This project should precede 51, which would require the data developed here.

f. Cross References

As indicated under the priority, project 51 is closely related. See also projects 11, 18, 44, 45, and 63.

58. Assessment of Educational Approaches in Improving Nutrition of the Pre-School Child, and the Possible Role of Food For Peace

a. Research Rationale

A prior project suggests that a study be made of alternative methods which might be used to teach how to prepare or preserve the commodities being distributed under Food For Peace programs. This project is closely related in that it also is concerned with research on the best methods for teaching about food, but it is aimed at a problem which lies somewhat deeper. The former project assumes that people are getting Food For Peace commodities, but may not be getting adequate instruction on how best to use them. This project, assuming that many people may not be aware that their children need the commodities which are available through Food For Peace, seeks to find methods by which Food For Peace can reach a segment of the population where its impact can do a strategic job of forestalling the debilitating effects of malnutrition.

Parents of pre-school children in the developing countries frequently attribute the symptoms of malnutrition in their children to other kinds of disease. They also delay, for various reasons, seeking medical advice and assistance. Thus, the health and mental development of these malnourished children may be permanently damaged.

Lacking knowledge of the fundamentals of nutrition, parents will follow traditional feeding patterns for the post-weaning children which may not constitute a diet adequate for proper growth. Thus, malnutrition may result from ignorance as well as from relative poverty in a society. The purpose of this project is, therefore, to develop teaching methods which will reach parents in all strata

of the society, and alert them to prevent malnutrition by judiciously combining Food For Peace commodities and local foods during the critical post-weaning period.

b. Research Completed and in Progress

There has been considerable experience with family feeding programs of various kinds under Title III, but much of this involves reaching specially disadvantaged groups in a society. This focus has precluded attempts at broad educational efforts on the topic of nutrition, and the manpower and other resources available have not been sufficient to carry out this wider purpose. The experience in family feeding should contain much valuable information on the kinds of problems and obstacles which have been encountered, but for this project research directed more toward teaching and communication techniques will be required. See (13), (28), (62), (75), (84), (133), (142), (153), (155), (192), (206), (216), (218), (245), (247), (270), (304), (386), (387), (404), (551), (554), and (579).

c. Research Objectives

- (1) Determine the typical feeding patterns for post-weaning children in selected areas where malnutrition is a particularly serious problem. This portion of the study should attempt to identify whether feeding patterns differ significantly by economic, age, sex, or other groupings within the society, and to analyze the nutritional effects of such differences in pattern as may be discerned.
- (2) Determine effective methods of communicating information on nutrition. This would involve study of the normal channels through which people now receive new knowledge, sources which they respect, and the most effective ways in which the relevant audience (determined under the first objective) can be easily reached.

- (3) Determine the major causes of malnutrition in the areas being studied, and the kinds of Food For Peace and local foods which could be added to children's diets to offset malnutrition.
- (4) Study the available resources and personnel which could be used in a broad nutrition education program (e.g., school teachers, para-medical personnel, village officials, religious leaders), and determine the needs to equip them to carry out the educational program. This would provide Food For Peace administrators with some guide as to how the teacher training part of the eventual program must be established, and may serve to indicate how Food For Peace (through local currency or commodities) may be used in supporting the training and teaching phases.

#### Suggested Research Personnel

Teams carrying out this research in different areas should include a communications specialist (cultural anthropologist, rural sociologist) and a nutritionist or home economist who can analyze the nutritional value of the children's diet and determine how this may be improved from available sources. Recommendations on the needs to establish training facilities for those who will do the teaching of nutrition may require the services of personnel from local government agencies dealing with education, and such people should participate in the earlier stages of the research to gain some better idea of the kind of educational program which is being anticipated.

#### e. Priority

High

f. Cross References

Project 48 in this chapter concerns teaching of food preparation methods, and some coordination of these two projects should be useful. See also project 35 in Chapter IV.

Evaluation of the Packaging and Storage of Food For Peace Commodities

a. Research Rationale

The nutritional impact of Food For Peace commodities depends, in part, on the condition in which they arrive at their destinations, and the ability to keep them from spoilage and contamination until they are ready for distribution and consumption. Program administrators have a good idea of the size of losses in transit and in storage, and elaborate procedures have been set for verifying losses and insuring that spoiled and contaminated food is destroyed rather than distributed. Despite this, an evaluation of packaging and storage still seems necessary for a number of reasons.

For one thing, food stocks are generally ordered destroyed only when they have become totally unfit for human consumption and pose some danger to the health of those who might consume it. Before this point is reached, however, poor packaging or storage may make certain commodities unpalatable or difficult to use without rendering them deleterious. This could result in lower consumption due to poor preparation and/or less pleasant taste.

Packaging suitable for one area is not always suitable for others, and this distinction is most clear as between temperate countries and tropical humid regions. Large size containers which cannot be

kept sealed once opened are inappropriate for places where humidity can affect such commodities as dried milk and flour, but are economical and easy to use in cool or dry climates. Standardization of packaging, while desirable in terms of initial costs in the U. S., may actually be more costly in terms of losses in the field or in reduced receptivity by those for whom it is intended.

Packaging materials, which are not returned to the U. S., frequently have secondary uses in the recipient countries. Some are more usable in this respect than others (e.g., cloth bags rather than plastic), and acquire a value which is additional to the food this originally contained. Recognition of this factor, and deliberate planning of packaging which will make some further contribution to the well-being of recipients could further enhance the contribution of the program by generating interest in this via the secondary uses of the containers.

There are storage problems in many countries, both at central supply depots and at smaller up-country points. The size, location, and construction of the central depots is discussed elsewhere in the research map, but availability of insecticides, anti-rodent devices, and handling equipment could make a significant improvement in the storage provided under existing facilities in most areas. It also seems possible that relatively inexpensive changes could be introduced which would improve the storage facilities used at up-country points such as earthen-floor sheds and school rooms.

On grounds such as these, a thorough look at the packaging and storage results under Food For Peace should pay dividends in

recommendations for changes which will ensure that a higher proportion of the commodities supplied reaches consumers in proper condition. This project can be global in its effects, for by sampling areas distinguished by different climatic conditions it would be possible to assess the effects of different packaging and storage practices in all areas with similar conditions.

b. Research Completed and in Progress

Grain storage facilities have been built under AID and World Bank auspices in several of the developing countries, and this experience would provide information on factors affecting grain storage in comparable areas. The reports of Food For Peace officers in the field, and reports from representatives of voluntary agencies, should contain a great deal on packaging and storage because such problems are among the most difficult these personnel face. A careful survey of these reports would thus give a research team a good indication of things to watch for and suggest ways to reduce some of the problems. Also see (923)

c. Research Objectives

- (1) Determine the major sources of potential food contamination due to improper packaging and storage in selected regions. This objective may be largely achieved by research suggested in project 52 above.
- (2) Survey the suitability of present packaging of Food For Peace commodities for regions with different climatic conditions, and determine where changes in packaging are most needed. This survey would consider both the packaging materials used and



- the size of the containers in determining suitability.
- (3) Where changes are indicated, new packaging alternatives should be studied with secondary uses in mind. Since more than one possibility will probably be applicable, there should be estimates of the costs to use alternative kinds of packaging. Such estimates should include the difference in costs to provide separate packaging for different destinations, the difference in costs of shipment and handling, and the difference in costs of materials recommended for use as compared with packaging now in use. These cost differences should be shown together with the differences in expected benefits (e.g., better preservation of the commodities, increased acceptance, secondary uses of packaging materials).
- 4) Typical storage arrangements (large scale and small) should be surveyed as a basis for recommendations on easily implemented storage improvements. Such recommendations should call for locally produced materials where possible, and should provide cost estimates for improved storage which can be compared against the costs of normal losses under present conditions. As in the case of packaging, the survey would sample different climatic regions, and frame the generalized recommendations in terms of their applicability to the more commonly encountered storage facilities in the different kinds of regions.

d. suggested Research Personnel

The team making this survey and evaluation should include persons familiar with the range of packaging alternatives suitable for Food For Peace commodities, and their performance characteristics under

different kinds of climatic and handling and storage conditions. A person trained in nutritional toxicology will be required to identify the major sources of contamination. The team should also include persons who are knowledgeable about storage arrangements, and who can suggest improvisation based on locally available materials. Prior experience in overseas assignments would be valuable, and persons with such background should be included to the greatest extent possible.

e. Priority

High. This project should follow the research in project 52.

f. Cross References

In addition to project 52, see also projects 44 and 75.



## CHAPTER VI

## POPULATION AND FOOD SUPPLY

## PREAMBLE

One of the important characteristics of the world setting in which the Food For Peace program operates is the relationship, real and potential, between population and food supply. This relationship has both global and particular country attributes. Excessive supplies in some countries are potentially (and actually) transferable to countries with deficits, both by commercial trade and by concessional programs, such as Food For Peace, World Food Program, and bilateral programs. The deficit in food changes over time as rates of increase in food production and in population expand or reduce the pressures for food transfers. Efforts to improve the quality of the diet can increase the demand for some foods and reduce it for others, if individuals have and are willing to spend their income to improve the quality of their diet. And special programs to bypass the marketing system can increase the intake of food for those with little money.

The Food For Peace and similar programs require knowledge about the present and likely future relationships between population and food supplies, if adequate intermediate and long term policies and plans are to be made. Present crude projections suggest so severe a problem as to urge the expanded use of Food For Peace in recipient countries to increase food supplies and to give attention to how Food For Peace might affect the rate of population increase. Even with a high probability that developed countries other than

the United States also will have surplus food, the net shortages of food for the less developed nations are likely to grow, if current trends continue. The information required for intelligent programming includes such items as the changes in the prospective size, composition, and location (rural or urban) of population, the prospective levels of income and demand, the changes in nutrition likely to be implemented by private and public decisions, the size and trends in food production, by countries and by commodities, and the probable programs of food fortification. Some of these items will utilize nonagricultural as well as agricultural resources.

Much of this research is underway; AID itself, through research contracts, is financing an extensive agricultural research program. The USDA, in addition to participating in AID-sponsored research on agricultural development, is financing, with U. S.-owned local currency, a research program in host countries with much emphasis on food utilization. Moreover, the USDA is committing dollars and local currency to studies of market demands and supplies, present and projected, and to calculations of nutritional needs. Nevertheless, this research is not yet adequate to the task.

AID-sponsored and other research, both within and outside the government, are directed at various aspects of the population problem, increasing the analysis of recent changes, projections of current trends, and studies of the possible effects of family planning and likely potentials of expanding programs in birth control. Here, too, many unsolved, puzzling questions remain.

Thus, the writer of this section of the Research Map faces the difficult problem of defining the extent of the Food For Peace interest in this type of research. How far should Food For Peace attempt to underwrite research in this area? To what extent should Food For Peace leave to

others the initiative in this area? By now it should be evident that the research needs of the Food For Peace program are substantial and significant. Thus, it appears important to avoid additional projects wherever possible, wherever existing research interests are dealing with the significant problems. Essentially this is the approach taken here. Two kinds of projects are described. One of these comprises a few broad projects of special interest to Food For Peace (and to AID), and serves to emphasize their importance for Food For Peace to those studying agricultural or population problems. Secondly, we shall discuss and describe a number of projects in which Food For Peace has a vital interest, so that new emphases or aspects of continuing research may be given more attention.

One consequence of this approach is that the population and food supply problems are not examined in depth. The projects discussed are only a partial solution to many problems in this area. Thus, a substantial number of the projects in this section are summary projects; that is, they bring together data from many countries. Even so, the refinement of the data can be a separate project within each country. The ERS, USDA is utilizing local currency contracts to advance efforts in certain problem areas, and some AID personnel are actively engaged in developing new research ideas.

Additional research can be financed with U. S.-owned local currency to examine a wide range of farm production problems. Narrowly conceived U. S. interests have tended to restrict the scope of the projects discussed with U. S. liaison officials to research that can be justified with budgeted dollars. Insufficient attention is being given to the general U. S. interest in better understanding the problems, potentials and limitations of agriculture in specific developing nations. Some desire to broaden the present definition of U. S. interests can be observed. We suggest the need

to substantially increase the range of projects definable as within the U. S. interest, particularly in the area of agricultural development, to complement and supplement the present AID-USDA contract supporting a study of the process of agricultural development.

Finally, to repeat, it is not expected that those concerned with Food For Peace research will budget new funds for each of the projects here proposed. In some cases joint financing, or (perhaps more feasible administratively) the financing of one section of a larger package may be appropriate. For those projects of primary concern to Food For Peace, some or all of the budget may be provided as an integral part of the research on Food For Peace. But it seemed unwise to present only these projects here; for the research oriented community, at least, it is appropriate to set forth a number of important issues influencing the environment in which any research on Food For Peace in relation to food supply and population must take place. Several projects in the attached list deal with issues which exist because there is a Food For Peace program, though of course, they affect the functioning of Food For Peace and the situation has different characteristics because Food For Peace is putting foods in countries where there is a current gap between domestic supplies and consumption.

#### ISSUES AND PROPOSED PROJECTS

##### U. Projections of Food Supply and Population

The major issue in this entire section of the Research Map, and, in fact, a major element of the environment in which Food For Peace operates, is the extent to which world per capita food supplies are increasing or

decreasing. A number of observers suggest that the pressures of food supply on population and incomes will increase in the developed countries, while in the less developed nations, the pressures of population upon food supply will increase. But among these observers, some project extreme food shortages, while others are mildly optimistic. These generalizations differ in the implicit assumptions they make about the character of technological changes and their application to agriculture, about the probable extent of population control, and about the agricultural and developmental policies of governments. A number of economic parameters are incorporated in the analysis, including demand and income elasticities, slow responsiveness of supply to price, and moderately long-term production functions. Several of these variables are likely to change over time, and others are susceptible to change under the influence of appropriate programs and levels of effort. The problems Food For Peace decision makers face now and will face in the future will depend heavily upon the nature of the changing population-food supply ratio.

Since the changes in the relationships between population and food supply are consequences of the strength and interaction of a series of variables in over a hundred nations, there are several reasons for more or less regular periodic reviews of the situation. The statistical base for these estimates ranges widely in quality for most of the developing nations. More careful, complete, and up-to-date estimates of population and its rate of growth are likely to be forthcoming for many countries. Estimates of agricultural production and its rate of change are likely to improve for many countries. Moreover, present developmental efforts should increase the production of food more rapidly than those of the past, and hopefully accelerate, while the public health and improved nutrition programs of recent years which



increase the need for food should be offset, at least partially, by accelerated efforts in population control in a number of nations with large and growing populations. Adequate Food For Peace planning and programming requires the availability of periodic evaluations of whether such changes are decreasing or increasing the needs for and potentials of the Food For Peace and similar programs.

60. Alternative Projections of Population, Food Supply, and the Demand for Food, Especially for Individual Countries

a. Research Rationale

Aggregate projections of population, food supplies, income, and demand are important means in assessing the broad character of the world food situation. And a number of such projections are available. But the real contribution of these studies to Food For Peace programming will come from assessments by individual countries of the current situations, and an evaluation of the alternative approaches and necessary efforts in agricultural development and population control.

In nearly all countries, the food provided under Food For Peace is small relative to the total produced domestically, but its marginal contribution may be critical in many cases. A three, five or seven percent contribution can make the difference between inflation and stability in food prices, and a small excess, two to three percent, can press farm prices downward in the recipient countries. Shipping distances and program commitments make it difficult to adjust the flow of imports to internal price changes, though in theory import adjustments would be geared to price strengths

or weaknesses. Moreover, if the world food balance becomes tighter, there will be need for careful allocation among countries and perhaps for developing and holding reserve stocks for somewhat later use. Such decisions require increasingly accurate country level projections of the population-food supply balance, for both nutritional needs and market supplies and demand. The need for this kind of information has increased rapidly, with national and international agencies drawing heavily upon such information. Consequently, data must be as accurate as possible. In making population projections, it is now commonplace to utilize three alternative rates of increase, a high, medium, and low relationship between birth rates and death rates. Each generally has predicted a population increase, with the high projection involving a high birth rate and medium to low death rate.

But most projections of food production have not incorporated refinements, such as those used in population projections. Usually a single estimate is made, with the disclaimer that it is only an approximation. It is desirable to seek more refinement in the production estimates by providing high and low level projections that encompass the probabilities, so that some range within which man can influence his destiny can be obtained.

A number of very complex problems underlie any projection. First, there is a social necessity for better diets within the developing countries themselves. Serious efforts in many countries to improve diets are likely and the results of such programs cannot be projected. Second, per capita incomes are increasing, despite

rapid population increases, and the demand for food expands both in quantity and quality. And the rate of increase in demand due to an increase in income is larger in the developing than in the developed countries. Third, past projections of population growth have often been wrong. We cannot be sure that present projections are any better. Fourth, the projections of supply have no better basis than projections of population. Economists have not provided any real supply response analysis for the developing nations. Until they do, debates will continue about the relative importance of the level of prices, compared with more stable prices, and both compared to technical information, credit, motivations, tenure rules, and rural institutions. These are serious problems, difficult to resolve.

The single project presented here requires a large family of contributing projects, with priority given to large countries, to important Food For Peace recipients, and to countries for which present projections appear less than satisfactory. Some of these contributing projects can experiment with different techniques in making the projections. In addition to physical balances, we need comprehensive projections of the economic balance between effective demand (need plus purchasing power) and marketable supplies. Such estimates require projections of income--the rate of economic development--and an indication of the probable proportion of that income that will be spent on food and other agricultural products.

These projections of the relation between food and population will need to be repeated at frequent intervals. For individual countries

with large population and food production, the research also will need to be repeated often, while some rotation among the smaller countries may be possible. These projections should be very important in Food For Peace program planning.

b. Research Completed and in Progress

There have been a number of attempts to gauge and project the relationship between food and population. Two broad approaches have been used, with a number of modifications within each. One approach involves nutritional food needs, the other, food demand, sometimes including but often omitting consideration of foreign exchange resources.

The need approach is based upon an estimate of minimum diets. This approach emphasizes the need for nutritional quality in the available food. Such diets, multiplied by population, are compared with world food supplies. Future nutritional needs and supplies are projected on the basis of recent trends in population and food production to provide regional and world balance sheets. All such calculations indicate large and rapidly growing deficiencies in food production, with animal proteins and protective foods in particularly short supply.

The USDA report, "The World Food Budget--1962 and 1966" (790), and a later report, estimating the needs in 1970 (782), represent the first of these approaches. They have drawn on data on production (767, 768) accumulated and published in a series, "Food Balances in Foreign Countries" (793), and on nutritional knowledge to define protein, calorie, and other diet needs. The FAO also has made

calculations of world food needs defined in a similar way (621). Such studies make clear that nutritional deficiencies cannot be met easily, and are far larger than the annual potential surplus of U. S. agriculture.

All such reports imply a need for a continued non-market program to transfer food to those unable to purchase adequate amounts--the transfer in some cases being necessary because of balance of payments problems, and in others because the family purchasing power is too small. Many people at home and abroad have values that reject non-market programs as a long-term proposition. Consequently, there are powerful reasons for giving considerable attention to strengthening market forces in such a way as to provide economic opportunities to expand both the demand and the supply of foods.

This contrast between calculations of needs and of demand is discussed by Cochrane, Mackie and Chappell (146), who refer to nutritional deficits and economic deficits. The demand approach in estimating present and future demand and supply relations is more complex than the calculation of needs and supplies. One variation is implied in discussions of market development--the potential amount of future commercial purchases in the world market compared with the probable amount available for sale in these markets. Since agricultural production relative to demand is increasing more rapidly in the wealthier countries, those providing the majority of the world trade, the prospective balance is not favorable for agriculture.

Another and more usual approach is to ignore the foreign exchange problem and to calculate the increase in food demand in current prices as population increases and per capita income changes, to compare these figures with the current demand, and thereby to estimate the increase in production plus imports that will be needed to maintain current relative prices. The economic approach implies that improvements in nutrition will come mainly from individuals as they spend larger incomes, and assumes that many countries will continue to have significant numbers of people suffering from malnutrition. These estimates usually project rather significant increases in demand, though the estimated quality of food is smaller than the increase in nutritional needs. Will these estimates become real future demand because the foreign exchange needs of the developing nations are met, by hard currency loans, a growth in exports of present soft currency countries, or through "sales" programs which bypass the shortage of hard currency.

Estimates of the world demand for food have been presented in several places, including Cochrane, et al., (146). One of the most comprehensive estimates is contained in an FAO document attributed to Goreux (602) in which estimates of population and levels of income for 1970 are made and then are converted into a demand for food, using appropriate income elasticities. Production projections are made on the basis of judgments and data about the recent past. Comparisons of supply and demand by countries and by commodities give estimates of trade potential, provided foreign exchange is available to each country. The results clearly indicate that there will be ample within-country demand, but that the

earnings of foreign exchange need to increase greatly. P.L. 480, of course, can be a way to approach this problem, provided repayments on previous Title I sales do not add to the shortages of foreign exchange.

Procedures similar to those of the FAO are incorporated in a series of USDA sponsored studies financed with soft currency. Qualified research organizations abroad project, for a specific country (usually their own), the level of demand and supply for farm products and the likely volume of exports and imports of these products. Such studies have been or are being made in all parts of the world, including Japan (41), India (58, 781), the Philippines (775, 776), Austria (765, 778), Italy (770), the United Kingdom (780, 788), Nigeria (774), Ghana (785), West Indies (771), and Colombia (750). Such studies will provide an improved base for future global supply and demand projections. One of the more readable recent efforts to bring together all these studies is a USDA publication by Lester Brown (772). Limitations of the data and the difficulties in estimating future food production, population growth, the rates of economic growth, the prices of major exports, and the availability of foreign exchange make it possible to criticize any global estimate. Nonetheless, this publication is useful; the limitations are those of inadequate statistical data for the specific countries and the complete absence of knowledge on the farmers' responses to price, technical and other stimuli to production.

The FAO annual "State of Food and Agriculture" (618) presents data on current trends in population and food production. Since 1959

these summaries show a generally worsening relationship in all regions except for North America and Western Europe, but increases in North America were sufficient to offset decreases elsewhere. However, in the last two years, due to a larger increase in population, due to the effect of production controls in North America and other factors, the aggregate world food situation has deteriorated. The changes have not been dramatic, 3-5 percent in a region from one year to another, and 1-2 percent on a world basis. The USDA's 1965 "World Agricultural Situation" (789) estimates a decrease for 1964/65 from 105 to 104 from the previous year, (with 1952/53-1954/55 per capita production as 100, p. 4).

Data on grain production, area, and yield of developed and developing countries indicate that the increase in production is not too different (131). However, the developed countries expanded production by increasing yields, while the developing countries did so mainly by increasing the area planted to grains. The per capita supply increased significantly in the developed countries, but it declined slightly in the developing countries. So long as these trends continue, the Food For Peace program is likely to face increasing needs for its principal commodity--wheat.

All these projections clearly imply that local agriculture in the developing nations needs to expand far more rapidly than it has in the recent past. They also clearly support the arguments of those who propose a vast increase in efforts to control population growth.

#### Research Objectives

As indicated, there is substantial research completed and in progress in this area. The general objectives of such studies



are appropriate to the questions raised here, namely to assess for specific countries the present and future balance between demand marketable supply, between food production and food availability, and between potential supplies and nutritional needs. A number of additions or modifications suggested here are directed at making the information more useful for planning.

(1) Projections of supply should be elaborated to include more consideration of realizable near-term agricultural potentials. A "high rate of projection" might be based on a 30 to 50 percent increase in the agricultural development effort, with favorable prices, and utilizing technology known within the country. Similarly, a "low rate of projection" might be based upon no further expansion in agricultural services, prices which are not particularly attractive, or some similar but not too unrealistic continuance of the current agricultural situation in the specific countries. Much more needs to be known about supply responses to various incentives.

(2) The agricultural production projections prepared in various countries by the ERS are becoming basic documents on world agriculture. Moreover, through local currency contracts, the ERS is having a substantial effect upon the research orientations and methodology of significant research institutions abroad. There needs to be more relationship between these series of projects and that part of the U. S. research community capable of providing ideas on improved research techniques and likely to use the resulting data. It is suggested that there be established a small and highly competent research

advisory committee of people outside the government who would assist in developing procedures to improve the estimates.

- (3) More personnel are needed to compile, compare, and utilize the existing information available for supply projections. This need is largely a consequence of the completion of a substantial number of country studies. The comparison of macro estimates of food production and distribution needs to be carefully compared with information from consumer surveys, as one basis for judging the reliability of Food Balance Sheets issued periodically for countries and regions. Also, for large countries (e.g., Brazil) with substantial regional differences, it is appropriate, as ERS is doing, to suggest regional surveys to have a better understanding of the actual food deficits.
- (4) Along these same lines, these same consumer surveys can be examined to determine whether such statistics support either the nutritional conclusions drawn from food balance sheet analyses or the information provided by ICNND nutritional surveys. Where discrepancies occur, the reasons for their existence need to be carefully reviewed, and techniques should be developed which are likely to improve the validity of the information. Moreover, the changing age distribution of the population will affect both the food needs and the demand for food.
- (5) There is a need to put more economic content into many of these studies than presently exist, especially the Food Balance Sheets. The commercial export potentials do not become well

identified when nutritional needs multiplied by population are compared with physical production. Even the internal purchasing power available to buy Title I and Title IV shipments are not identified by such projections. The expansion and development of current analyses and projections of the marketable supply and effective demand in internal markets (briefly supply-demand projections) can improve the information available for Title I and IV programming. If projections of foreign exchange earnings and expenditures can be added, then it would be possible to be more sanguine about commercial export prospects.

Some of the suggestions made above may be planned. In any case it should be clear that present research efforts in projecting population, demand, and food supply need to be continued and expanded.

d. Suggested Research Personnel

This research is largely in operation, mainly in FAO, ERS, USDA, or through USDA sponsorship of local currency contracts with groups of economists and statisticians abroad. It is suggested that an organized research advisory group would be of mutual benefit, by bringing the research information more fully to the attention of the U. S. research community, and by assisting the ERS as it strives to improve the level of research competency among its overseas contractors. The latter is a continuing concern to Food For Peace.

The size of this research effort and its importance raises a question of whether it is appropriate that nearly all this work be sponsored or carried out by national and international governments.

Much of the data necessary are assembled by government units, but the analysis and interpretation can be done outside the government. Biased results are always possible (whoever the research workers may be) and are best avoided when there is competition among research workers and several sponsors for possible projects. Thus, while we anticipate that most of this work will and should be done by government, sponsorship of university and non-government research in this area by foundations is needed, particularly for basic work. It probably should be related to one of the family of projects described next.

#### Priority

Not relevant, since the work is underway.

#### Cross References

7, 16, 27, 61, 62, 68, and 80.

### 61. Means by Which the Statistical and Bases for Projections and Projection Techniques can be Improved

#### a. Research Rationale

The discussion of population and food supply projections indicates that planning of technical assistance and other efforts in agriculture, the facilitation of commercial trade and the programming of non-commercial exports are a vital function for national and international governments. All involved recognize that the data base often is weak and sometimes inadequate for the complex projections derived therefrom. The great variation among countries in the data reporting procedures and what they represent adds to the difficulties in building comprehensive summaries.

The ERS, the FAO, and the developing countries themselves are engaged in programs to improve the completeness of their data and the quality of the information. These efforts should be accelerated. Present efforts seem, though this judgment is tentative, too much concerned with extending methods presently being used in developed countries with too little emphasis on developing new procedures that are appropriate to the characteristics of the agriculture of developing nations. The FAO, however, has been giving attention to procedures that have more promise for developing nations, including a "sample census" of the world agriculture.

Little attention has been given to studies of supply responses, especially as a consequence of new information, or, more broadly, to the economic analysis of the forces which affect the production of agricultural commodities. To a major degree, present supply projections depend upon an extrapolation from recent trends. This procedure does not provide a basis for estimating the consequences of an accelerated technical assistance effort, of increased capital investment, of an improved price level and price stability situation, or of any of a variety of improvements in the rural institutions. Economists and statisticians should consider new projecting techniques through which prospective changes in production can be evaluated. What might be done by budgeting realistic expectations of new practice adoption on individual farms?

Work such as this can be regarded as basic rather than operational, partly because it is useful only in the long-run, and partly because it is several steps removed from the short-run program operations

of P.L. 480. Nonetheless, without significant improvements in the basic data, without a comprehensive analysis of the reasons for the changes in the volume of agricultural production, only modest improvements in the projections can be made five or ten years from now.

b. Research Completed or in Progress

The food supply and population projections discussed in the previous project (Project 60) is relevant to this proposal also.

Another extensive body of literature dealing with agricultural estimating and reporting procedures has been compiled by the U. S. Department of Agriculture. The United Nations agencies, and especially the FAO, are sponsoring and supporting efforts to improve the statistical and sampling procedures used to estimate current food production. The U. S. Bureau of the Census is involved in similar technical assistance activities, some through AID arrangements and some directly with developing countries.

Studies of sampling by statisticians in academic and governmental positions may provide possibilities for increasing the accuracy of existing data. Much of the statistical work in India has relevance to this problem of data collection.

Another new approach attempts to estimate production on the basis of aerial photography. The amount of land in a particular crop can be estimated quite accurately; techniques to associate acreage with yield are more difficult.

But these studies concentrate on ways to obtain accurate estimates of current production; they do not consider ways to perfect the

projection of production five or ten years into the future. More relevant to this problem are studies of supply response, the elasticity of supply, or the nature of the production function in agriculture.

There also are limitations in present studies of supply response. One group of studies, for the United States, attempts mainly to identify the nature of the agricultural production response to price changes. The fixed asset theory, as developed by Glenn Johnson (251) and applied by Dale Hathaway (37), has implications for commercial agriculture, both in the developed countries and the developing countries. The controversy, mainly in India, about the existence or non-existence of a backward sloping market supply curve for agriculture, is a problem peculiar to developing countries. Both approaches to agricultural supply analysis are attempts to improve the projections of supply.

Budgeting procedures for a developing country which involve some prediction of improved practices is demonstrated in Adams, et al. (1).

Reference should also be made to the present AID agricultural research program (804), in which much emphasis is given to the sources and nature of the stimuli to agricultural production in a number of countries. The project proposed here will contribute to such studies over a period of time, by establishing better data and improving understanding.

c. Research Objectives

- (1) To develop agricultural reporting and data analysis procedures which facilitate a more rapid improvement in the data on food production and consumption in the developing countries.
- (2) To provide economic analysis procedures which permit a more accurate projection of the food production likely from several alternative patterns of agricultural development policies.
- (3) To use these procedures to provide in a specific country a more reliable basis for estimating the commercial and Food For Peace import requirements.
- (4) To use these procedures to provide more accurate multi-year development plans in the developing nations.

d. Suggested Research Personnel

This project requires men with both statistical and agricultural economic talents. Experience in developing countries will be helpful, but the primary requirement is imagination and a willingness to explore new procedures which avoid the sources of errors and variabilities of present data collection methods, and which can highlight the important variables affecting farmers' decisions to increase production.

e. Priority

Low in respect to short term Food For Peace operations, but high in terms of the total AID and USDA interests.

f. Cross References

12, 13, 16, 26, 60, and 79.



V. Possible Accelerations of Agricultural Advance in Relation to Food For Peace

A narrow view of Food For Peace interests and responsibilities would concentrate on the outflow of U. S. commodities and ways in which a certain complex of objectives would be most effectively attained. A broad view of Food For Peace would equate it with the Food and Agriculture Organization's Freedom From Hunger campaign. An expansion of production in the host countries is a contribution to the objectives of the program in the same way as an increase in U. S. exports leads to extra consumption in the host country. Most of the projects listed under this issue depend on a broad interpretation of the purpose of Food For Peace. This issue is in some ways the foreign counterpart of Issue E, particularly Project 11.

The general methods for expanding agricultural production are a concern of AID and the USDA in the U. S. government, as well as of the planning authorities, several ministries and people generally in the developing countries. Food For Peace can contribute to or subtract from the total effort, depending upon a number of policies and procedures. It is possible to examine the importance of Food For Peace only in the context of the total program, and though Food For Peace responsibilities may be applicable to only one part of that total, this part may be very important in potential impact.

62. Comprehensive Analysis of Agricultural Potentials

a. Research Rationale

Present estimates for the future population-food supply balance indicate that the fulfillment of food needs, nutritionally defined, will require substantial expansion and shifts in the agriculture of developing countries, regardless of the quantity of food available by purchase or on a concessional basis from other countries. These

estimates also indicate that, in economic terms, the demand for food (increased population times increased per capita income) is increasing more rapidly than the growth in foreign exchange earnings; hence, market supplies from domestic sources must increase more rapidly if shortages are to be filled without increasing reliance on concessional imports such as Food For Peace. Thus, broad social and nutritional Food For Peace objectives require that agricultural potentials of recipient countries be more fully realized. And most important, for Food For Peace planning, it is essential that this information be made available for each country with an indication of the major bottlenecks which need to be overcome.

The production of crops and animals for food and commercial purposes can be increased markedly in most of the developing countries of the world. Exploiting the potential of lands already in cultivation or those which could be opened to man's use requires that farmers utilize knowledge and technical inputs, and receive benefits for their efforts. In some instances the knowledge of the profitable use of capital inputs is not known and must be gained over time by agricultural scientists and farmers alike.

The analysis of agricultural potentials in a specific country requires knowledge about the sources of the present food supply, particularly that part which comes to market. It requires knowledge of the resources, including additional land area that is available to produce additional food, but mainly, the opportunities for intensification of existing farm land, which in turn requires information on possible nonfarm inputs. Implementation of such

changes involves a sort of social and economic inventory of change agents, customs that promote or inhibit the change, price and other policies that affect motivations, and so on.

Thus, a careful inventory and analysis of the potentials for expanding agricultural production, and the costs of programs to attain part or all of these potentials is needed. This analysis needs to consider comparative advantage, to include the possible exports of some commodities and imports of others, along with estimates of the time required to bring about desired changes. A few studies in depth are a prime necessity. Comprehensive and realistic appraisals of such potentials are basic data for estimating the possible future gap between population growth, as translated into a demand for food, and the supply of food.

Acceptance of change and innovation is at best a slow and sometimes difficult adjustment. Changes in farmers' attitudes and philosophy as well as revisions of governmental policies are often required. Package programs (such as the Ford Foundation is using in India), if properly supported and administered, will usually bring about more lasting and profound changes in acceptance and adoption of innovations by rural people than will a concentration on a single approach. Virtually all developing countries have a need to strengthen those agricultural institutions which relate to training, extension and research in agriculture.

b. Research Completed and in Progress

No attempt will be made here to summarize the large amount of research on agriculture in other countries. Recent AID activities

provide two sources for a review and appraisal of current knowledge about agricultural development. One of these is the MIT-AID sponsored seminar in the summer of 1964, "Policies for Promoting Agricultural Development." The second is "Aid Research Program in Agriculture and Rural Development," FY 1962-1967, published by AID, Department of State in January, 1965 (804). This report summarizes present AID-sponsored research, research proposed for early implementation, and titles of other possible projects. Thus, this publication represents a program of research on agricultural development. The UN Food and Agriculture Organization is giving much attention to this problem also (615, 616). While these studies may provide useful background information, it is not at all clear that any of the individual country studies will provide the needed understanding in depth. A comprehensive compilation, "The Diffusion of Innovations," has been prepared by Everett Rogers (66).

Under an AID contract Dr. Rogers is currently conducting studies of diffusion in Brazil, Nigeria, and India.

c. Research Objectives

From the standpoint of Food For Peace, there are three principal objectives to be attained through a variety of research projects. While both general and specific information can be useful, the emphasis is on the assessment of the situation in individual countries.

The major purpose of this project is to provide a competent, systematic assessment of the agricultural production potentials of major food aid recipient nations.

The second objective is an economic assessment to determine the degree to which these potentials are economic at several alternative levels of prices of inputs and outputs. In other words, what is the potential level of production of commodities at specified prices. The analysis should take account of comparative advantage.

The third objective is to define the feasible procedures for attaining these potentials and perhaps to further delimit the potentials on the basis of social, political and administrative costs and limitations. A span of time, which should be estimated, would be necessary to implement and carry through an active program.

d. Suggested Research Personnel

The kinds of professional resources required vary with the specific projects. Technical agricultural specialists would be used in assessing physical potentials, agricultural economists for economic potentials, and several kinds of social scientists in evaluating and developing procedures to realize the potentials.

e. Priority

Much work already is underway with an established budget using AID and USDA dollar and local currency resources. The Food For Peace short-run interests probably can be accommodated within this budget.

For the future a few fundamental projects which carefully and thoroughly analyze the accomplishments in five or ten selected countries are needed. This work requires the kind of financial support and freedom provided by a foundation grant.

f. Cross References

11, 12, 15, 16, 17, 18, 25, 26, 55, 56, 60, 63, 64, 65, 70,  
71, and 80.

63. Pricing, Production, and Marketing Policies by which Food For Peace Programs Can Enhance Agricultural AdvanceResearch Rationale

The central concern of this project is to develop ideas which will make Food For Peace an instrument for the positive improvement of the host country's agriculture. The project which follows is designed to reduce the possible adverse effects of massive imports of farm products; this project is dedicated to making Food For Peace a positive stimulus.

Food For Peace may already be contributing to this project in several ways. Title I local currency may be used to finance agricultural development efforts. These may be simply replacement of other resources or they may be net additions. The true marginal increments are not easily identified. Title I commodities may support an expansion of livestock production, and may improve the agricultural processing industry either in total capacity or in the quality of its operations. Title II economic development programs have been used to support and improve livestock production, and are being used to facilitate land settlement. They may be used to assist in changing and strengthening rural institutional structures.

Reviews and evaluations need to be made from time to time to determine whether such programs are accomplishing desired objectives.

The desirable long-range pattern of local agriculture, in terms of comparative advantage, will differ among countries. In addition, the development needs of agriculture in a particular country as it moves towards this pattern, need to be determined. Imaginative programming of Food For Peace can provide support for the development of local agriculture. The rate and nature of the general development program also will affect the alternative levels of Food For Peace programs that can be supported, presumably, ceteris paribus, the higher the rate of general economic development, the larger the possible volume of Food For Peace that is consistent with an active expansion of domestic agriculture (although a large general development program often will also involve a higher rate of agricultural development).

The challenge is to develop and expand imaginative Food For Peace programs to strengthen local agricultural policy. On the one hand, it is necessary to guard against possible complacency in the recipient country. On the other, there are a host of possibilities for positive action to stimulate agricultural production. A guaranteed level of domestic prices, supported with local currency, may be an important technique. A larger and more effective research and extension program may be supported through local currency or given emphasis by codicils in the agreement. Nonagricultural inputs, such as fertilizer, chemical sprays, or weed controls, can be supported by local currency loans to appropriate enterprises. Agricultural credit programs can be expanded in a similar way. In short, how can P.L. 480 agreements to supply commodities be used to stimulate agricultural production?

In light of information available on the process by which to expand agriculture in developing countries generally, and in the host country specifically, research would focus on (1) how Food For Peace supplies can be used as a stimulant to agriculture, and (2) the essential elements of positive agricultural policy which likely should be assured in advance of or at the time of an agreement to provide Food For Peace supplies.

b. Research Completed or in Progress

Relevant research has been referred to under Projects 60 and 62.

c. Research Objectives

Research on agricultural development, separately provided through non-Food For Peace research, would identify the principal elements of policies and programs to stimulate agriculture. At present, these elements are under discussion and subject to change; still, in specific countries there often is consensus on some of the essentials. For such items,

- (1) Ascertain how Food For Peace can stimulate and support agricultural development.
- (2) Determine how Food For Peace may be used as an implement of bargaining to insure that the host country does give proper and serious effort to agricultural advancement.
- (3) Evaluate past and current efforts to use Food For Peace to expand agricultural production, whether in crop or livestock production, whether in expanding or intensifying land use, or in improving rural institutions.



d. Suggested Research Personnel

The project needs agricultural economists interested in policy, production, and price response, and in agricultural development. A combination of U. S. and host country personnel is desirable.

e. Priority

A small project might be developed to evaluate current efforts in a few countries, and to recommend new approaches. If and as new programs are implemented, a follow-up project should be initiated to evaluate such programs. Priority is high when the timing is right.

f. Cross References

12, 16, 17, 18, 25, 26, 28, 46, 55, 56, 57, 62, 64, 65, 69, 70, 71, 79, and 80.

64. Development of Programs Whereby Possible Adverse Effects of Large Title I Imports Can be Mitigated

a. Research Rationale

The introduction of large volumes of P.L. 480 commodities into a country, principally through Title I and Title IV programs, almost certainly has effects upon the food prices. The nature of these effects will vary with the characteristics of food marketing institutions and of the markets themselves in the recipient countries, the pattern of agricultural policies, the rate of and change in economic development, and other factors. The nature of these effects is the subject of earlier research proposals, Projects 16, 17, and 18 in particular. The effects in some countries likely will be considered adverse to the interests of either the United

States or the host country, or both, at least by some people. In such instances, the question is: "What can be done about it?" As such questions arise or seem likely, this project should be implemented.

The exact specifications of the research problem cannot be stated until some of the possible adverse effects are identified. A number of possibilities come to mind. First, prices of locally produced commodities similar to P.L. 480 commodities may be reduced relative to all food prices, and even actually reduced, as a consequence of imports. If so, there are a number of ways in which such effects can be mitigated or countered. One such program would be to schedule imports more closely to the times of annual shortages. A second would involve price guarantees at appropriate levels to local producers. A lower average price may be better than a higher, but fluctuating price. Another possibility would be an accelerated rate of economic growth. In other instances, a shortage of milling equipment and a preference of millers for imported wheat may require additional milling capacity or mixing regulations that assure that local wheat will be more fully utilized.

Sometimes the problem may be identified, let us say, as a downgrading of the priorities to agricultural development, and a consequent more limited financial and other development efforts in the agricultural sector. This may be seen in lower priorities for fertilizer plants and the production of other modern inputs to agriculture, or in fewer efforts on the agricultural infra-structure, such as research and education. The possible remedies might include provisos in future agreements to accelerate such effort.

Other possible adverse effects will require programs to mitigate their effects.

This project is likely to require implementation and correlation with other efforts in agricultural development, and thus needs to be related on the one hand, to Project 62 on agricultural potentials, and, on the other, to evaluations of the accomplishments of straight-forward agricultural development programs.

b. Research Completed or in Progress

Relevant research has been discussed under Projects 16 and Project 60. The comprehensive reviews of P.L. 480 in Israel (30) and in Colombia (1) also suggest the importance of host country policies in determining the residual impacts of Food For Peace imports. A theoretical discussion (negative) is found in T. W. Schultz (337), and a more positive one in Fisher (191).

c. Research Objectives

- (1) When and where adverse effects of P.L. 480 are identified, to develop alternative host country programs which will counteract these effects.
- (2) To relate these suggested programs to the overall food, agricultural and developmental programs, and to select modified programs that are most consistent and feasible in stimulating agriculture in the specific situation.

d. Suggested Research Personnel

The personnel needed may vary with the problem identified. Thus, if the problem is the timing of the receipts, a transportation specialist and perhaps someone familiar with storage would be most appropriate. It is more likely, however, that a policy oriented agricultural

economist will be needed. Local personnel can be used, but the solutions will require consideration of official U. S. policies and procedures, thus underscoring the need for someone from the U. S.

e. Priority

Very high, when adverse effects have been identified. Until then this project should not be implemented.

f. Cross References

15, 16, 17, 18, 23, 25, 26, 28, 62, 63, 65, 70, 71, and 79.

65. Evaluation of the Significance of U. S. Nonparticipation in Agricultural Development Programs which Feature Crops Competitive with Those Exported by the United States

a. Research Rationale

The United States produces and exports a wide range of agricultural products. The range of products in surplus or near surplus also is fairly wide. Consequently, nearly every developing nation produces one or more products in which there is actual or potential competition with the United States, either in world markets, or more often, within the domestic markets of the developing nation itself. At the same time the recipient countries seek assistance from the United States because of our demonstrated ability to increase the volume and reduce the production costs of a wide range of farm products. Thus, the agricultural officials of AID field missions are faced with questions, requests, and proposals which deal with many kinds of functions and many commodities.

At first, it appears self-evident that it is unwise to expend effort to expand in developing countries the production of

commodities that are in surplus. Commodity pressure groups and Congressional committees often have been critical of any efforts that appear to have this effect. However, the shortages of foreign exchange whereby developing countries can purchase such commodities, the possible changing structure of comparative advantage, and the clear evidence that the pressure of population on food supply is increasing combine to support the view that the answer is not clear-cut. There may well be instances in which a developing country's best economic advantage does lie in expanding production of products already in ample supply in the world market. This is the issue proposed for study.

This concern with surplus crops has been extended to "similar" commodities, and even sometimes to countries and areas where either exports competitive to, or commercial imports of, U. S. surplus products are very unlikely. AID (and its predecessor) has hesitated to participate in projects with a significant potential effect upon production of crops which the U. S. produces in large quantities. For projects designed to produce surplus commodities, and where the output clearly would enter into competition in world markets, AID generally has refused to participate.

Sometimes, therefore, little effort is given to the expansion of such crops, even though the cooperating country has considerable potential comparative advantage in such production, and could, by expanding production, earn foreign exchange with which to import other farm products from the United States. Lack of cooperation may also curtail the potential increase in certain grain supplies

which would improve the overall domestic food supply situation, and provide a somewhat better level of nutrition. The developing country may use its own resources, partially freed by U. S. support of other programs, to carry on internal agricultural development programs to expand the production of these competitive crops. The policy of nonsupport leads to friction between the U. S. and the country receiving aid. Consequently, U. S. agricultural technicians are not able to participate in the full range of agricultural activities, and may even need to discourage certain activities.

The resolution of this issue is likely to become more important if and as the pressures of increased population and desires for improved nutrition place greater demands upon a nation's food production. The quantitative significance of support or nonsupport of wheat, rice, feed grain, and cotton production needs evaluation to determine the extent, if any, to which the recipient country is barred from being better able to meet its food needs through commercial channels. Similarly, the political costs of present U. S. policies need to be compared with the possible economic gains to U. S. commercial exports to determine whether the results are worth the cost.

From a political standpoint, any project which encourages production of a U. S. produced commodity is subject to question by U. S. interests, including Congressmen from producing states, while any refusal to cooperate with a developing country can be attacked as a form of economic colonialism. The consequences of either action may be insignificant in economic competition, but they are not

always so. The agricultural sections of AID are in a difficult situation, in some countries, by controversy over the definition of "similar" commodities, (See Project 8 under Economic and Financial), and Title I arrangements designed to prevent diversions which might affect "normal" commercial sales of the U. S. and "friendly countries." Both the overall development program and the specific agricultural development package in a particular country are likely to give considerable attention to means of increasing foreign exchange earnings, which often includes agricultural exports. Thus, the long-range plan is subject to warping as a consequence of these problems.

Judgment and compromise are needed between creating significant increased competition in world trade and a stance which permits AID technicians to deal fully with the important agricultural issues in the countries receiving aid. It is possible to exaggerate the problem on either side, but in some countries the problem may be significant. It seems probable, however, that the agricultural aid section, the USDA Title I arrangements, and the use of local currency are subjected to an undue amount of harassment by interested commodity groups and Congressmen. Yet, at the same time, there is little objective information available which can be marshalled by those criticized to support their position, in part or in total, or even to make reasonable readjustments in their approach.

Also, there have been changes in policies actually followed. The identification of actual policies for commodities and countries, and changes over time should be helpful in discussions of the importance of the problem.

Thus, there are reasons to inquire into the importance and consequences of this issue. Such an analysis can identify circumstances in which U. S. agricultural economic interests are likely to be seriously affected, the circumstances under which the consequence can be ignored, and means by which to focus on the situations in which care must be taken in comparing the costs and benefits of policy combinations. Hopefully, such a study would lead to legislative history, and perhaps legislation, which provided more satisfactory guidelines to field personnel. (Parenthetically, Congress might acknowledge that the United States does not follow internal consistency on virtually the same issue, subsidizing irrigation in the West and fertilization in the Midwest for crops which are in chronic surplus.)

b. Research Completed and in Progress

Written information on this issue of U. S. policy is found mainly in Congressional materials, including testimony of USDA and AID administrators and in statements prepared by people with commodity interests. These materials tend to accuse or defend a Title I agreement or AID agricultural project of producing, in a particular country, results contrary to the U. S. commercial trade interest. Occasionally, a brief reference is made in a professional paper (on policy) to the negative aspects, for economic development, of non-support of certain agricultural programs. In addition the files of AID and the USDA contain many references and some systematic reports on this issue.



AID and its predecessor agency have issued periodic circulars to the field, for the guidance of its personnel. These circulars should be one source of information in determining actual policy.

However, no country has any known systematic research dealing directly with this issue; nor is any research in progress. Some insight may be gained by an examination of country reports on the impact of agricultural production of Title I P.L. 480. Unfortunately, most of these studies have been unable to obtain sufficiently precise data to establish the competitive relationships among crops, and to estimate the probable effects of greater or lesser technical assistance efforts. Inflation, shifts in the terms of trade, natural disaster, and general development impacts tend to overshadow the possible growth of competition or the loss of involvement in programs of agricultural improvement.

c. Research Objectives

The first step would be to identify AID and Food For Peace recipient countries (Group A) in which there is a U. S. concern that Food For Peace imports or AID agricultural assistance activities have led to an expansion of exports of Food For Peace commodities in competition with the United States. A closely related step would be the identification of AID and Food For Peace recipient countries (Group B) in which a reported unwillingness of AID to assist in particular agricultural development activities has led to slow growth in exportable production of agricultural commodities in which the recipient country appears to have a comparative advantage.

The central research objective would be to determine whether the reported or presumed effects have actually occurred. A sampling of these cases would be designed to elicit answers to questions such as the following:

- (1) Did production and exports of surplus commodities in Group A countries increase more rapidly than the production and exports of other agricultural products? How does this compare with Group B.
- (2) Has there been a detectable difference in the trends in production and exports that can be associated with agricultural assistance in the two Groups?
- (3) Can these changes be attributed to any special circumstances, such as a new productive variety, an accelerated extension program, or a new irrigation project?
- (4) What is the character and extent of the AID-sponsored assistance in Group A countries that might have affected the production and export of that commodity? Can a causal relationship be established?
- (5) In Group B countries what has been the nature of the projects in which the U. S. has explicitly or implicitly refused to cooperate? Did the reported refusals actually occur.
- (6) Has the U. S. position in Group B countries injured or hampered the ability of the U. S. mission to deal with the important agricultural issues, and to work with major agricultural institutions?
- (7) Have the conclusions drawn under questions (4) and (6) been in line with, or in contradiction to, the probable changes in

comparative advantage between the U. S. and the country examined? And have such actions slowed the progress of the country in becoming economically more self reliant.

If, as seems likely, there have been changes in policy, the research procedure should be designed to take account of this fact. A summary evaluation would attempt to compare the benefits to the United States with the costs of this policy to the developing country, if, in fact, there is evidence which indicates that such benefits and costs have occurred.

d. Suggested Research Personnel

This work should be done at a university having significant international experience and with strong interests in agricultural policy. It is primarily an agricultural economics (or economics) project.

e. Priority

High. This project should be financed by non-governmental funds.

f. Cross References

2, 7, 8, 16, 23, 25, 26, 29, 62, 63, 64, 70, 71, and 80.

W. Population Movements and Changes that Affect Food For Peace Programming

A nearly universal social phenomenon in developed and underdeveloped countries alike is the substantial movement of people from the rural to the urban areas, becoming virtually a flight in some cases. In many of the less developed countries the attractions of the city contrast with the drabness of rural life, away from movies, electricity, radios, and other modern amenities. Public policies in such countries often depress or fail to encourage substantial economic opportunities in agriculture. Urban job opportunities, real

or fancied, are sought as natural disasters or the pressures of population increase upon rural resources further depress the opportunities in the countryside. This migration is significantly expanding the numbers of people living in an urban environment, and results in a demand for larger quantities of marketed food and significant changes in the national patterns of diet.

The growth of the urban demands for food often has not been matched by a growth in the food marketed by farmers, thus the pressures on the food supply in urban areas increases. Part of the urban food supply in a number of less developed nations has been provided through Food For Peace, particularly under Titles I and IV of P.L. 480. At the same time, the migration to urban areas has greatly increased the need for housing, for employment opportunities in the cities, and for the many other services needed in a rapidly growing city.

Another aspect of Food For Peace programs is the interaction between the programs and the population. In the short run, does Food For Peace influence the growth of total population, does it provide a healthier and more vigorous population, may it affect the economic productivity of that population, and, according to some concepts of population growth, may it result in a lower crude birth rate? In the longer run, does the change in population call for either an increase or a decrease in Food For Peace? Difficult though it may be to provide answers to such questions, they are valid questions, and some effort should be made to provide some information.

66. Changes in the Food Preferences Held by Migrants

a. Research Rationale

In many of the developing countries the urban population consumes a combination of food different from that of people living on farms and in villages. There may be several reasons for these changes. The availability of a greater variety of food can induce some change in the consumption pattern. Price relationships often are different. The availability coupled with the price advantage on the farm usually leads to a greater consumption of farm-produced food as compared with consumption in the town where commodities from areas are available, albeit at higher prices. But in the city most foods available embody transportation and marketing-processing services, partly to offset the greater problem of perishability existing in city food supplies. The city bakery makes bread available more easily to the city dweller than to the farmer. Social pressures from existing city dwellers may encourage shifts in consumption patterns. Then, too, the city may lie at a different elevation or draw food supplies from different climates. For these and other reasons, there are likely to be changes in the consumption patterns.

To the extent that a Food For Peace program is designed to provide food assistance to the villagers or to ex-villagers, it is necessary to know how the patterns of village (and farm) consumption differ from those in the city. This question applies mainly to Titles II and III. If a program is being designed for recent migrants (for example, to help them build improved housing), it is essential to

understand the extent to which they retain rural patterns of consumption, and the extent to which they have shifted towards the common urban patterns for their level of income. Greater success is likely if the kinds of food provided agree with the current consumption patterns. In addition, such people may be more receptive to carefully considered food modifications which improve the nutritional quality of the diet.

Also, the rate of migration and the areas from which migration occurs may be useful in estimating future program needs.

b. Research Completed and in Progress

Reference to rural-urban differences in patterns of consumption can be found in a great many studies. Few of these studies probe very far in spelling out these differences, or in examining the changes in the diet patterns of new migrants. Probably the greatest volume of information and references can be found in a series of studies contracted by ERS (started by FAS), USDA, under the general title of supply and demand projections (750). Many of these reports, in the sections on demand, have reported the food purchases of both rural and urban inhabitants and weighted them to obtain a national average. Regional differences are sometimes reported as well.

As suggested above, there also is a substantial number of studies done by other institutions in the host country which provide information on family food expenditures. Some of the ICNND studies may also contribute information (707). There may be some studies of the changing consumption pattern of rural to urban migrants, but no examples are known to the writer.

The statistics on the rate of migration are fragmentary and difficult to interpret, partly because of errors in estimating and partly because of changes in definitions. Brazil, among the developing nations, has some migration data, and a large number of recent farm-to-city migrants. Thus, a study in Brazil should be fruitful.

c. Research Objectives

The first step would be a thorough review of the work that has been done in the principal Food For Peace countries, to see how much data can be collected and interpreted from the scattered sources of information. The ERS-USDA studies should be examined and interpreted to provide to Food For Peace a relatively simple, fairly complete statement of what is known about the rural diets, the urban diets, and the diets of those in transition, citing regional differences where appropriate. To such information might be added estimates of elasticities, such as might come out of Project 12, and perhaps original data obtained from new local currency projects.

Another objective, more comparable in procedure to the first one above, would be to gauge the extent of the urbanward migration, and to gain some insight into the changes in migration patterns over time. Here again it is suggested that most of the work be done using secondary materials.

The objective most likely to require reliance on primary data gathering is the speed, degree, and extent of changes in food consumption as people change their location, occupation, and pattern of living. This research is likely to require very careful

sampling of migrants with short and long status in the urban areas, and a carefully designed questionnaire which will identify the change patterns. A single project, with considerable attention to research procedures, probably should be completed before a second one is begun in another country or region.

d. Suggested Research Personnel

Consumption economists, including general economists interested in demand analysis, would be the basic personnel resource. A home economist or nutritionist might be included, if it were decided to incorporate an analysis of the food value of the diets. Sociologists or social psychologists might be called upon, if it seemed appropriate to consider programs to change the diet patterns.

e. Priority

Low

f. Cross References

21, 42, 44, 45, 51, and 56.

67. Exploration of the Relation Between Food For Peace and Population Growth

Research Rationale

The provision of food under Title I (and IV) has increased the aggregate supply available in the recipient country. In many, but not all cases, food prices to the consumer are less than they would have been in the absence of the program. Thus, some low-income people have obtained more food than otherwise would have been possible. Also Title II and III programs have given food to people with very limited purchasing power. How crucial have these



supplies been in preventing starvation, or in increasing the degree of productive activity in which recipients are able to participate? If the food has both maintained life and increased productive activity, then the second influence may have offset the first. In many underdeveloped countries the age distribution is such that the majority of the population is below the working age; hence, the preservation of a productive adult's life or his ability to work more effectively may be an important contribution to development. Other means of offsetting increasing population should be examined. There are many difficulties and uncertainties in this area. This question needs to be studied to forestall possible later criticism, as people become more aware of the pressures of world population upon world food supplies.

The environment within which Food For Peace must operate in the future will be the result of the interaction between the dynamics of food production and the dynamics of population. Just as an increase in food production in recipient countries makes it easier to reach for nutritional goals and to assist in economic development, so a decrease in population growth leads to more food per capita, a larger proportion of the population in the working ages and a higher per capita income. The rising rate of growth of population in most countries of the world is increasingly a matter for serious concern. There is no need to elaborate the reasons for the almost universal increase in population growth in the developing nations and the consequent need for food. As one index of the possible future needs for a Food For Peace program and the pressures upon it, a careful and periodic evaluation

of the prospects that the growth rate will decline or stabilize rather than increase is needed. A considerable number of countries are engaged in small pilot projects or experiments in population control. The results of these experiments need evaluation, and the prospects for their expansion and widespread adoption need realistic appraisal. The possible cultural resistances and adjustments need evaluating. The total effects of the probable amount of family planning then need to be translated into figures on the size and composition of the population for a decade or more, with the consequent demand (and need) for food. Thus, these results will become incorporated into the previous project on Population and Food Supply Projections.

It also may be appropriate, as and if feeding programs for the pre-school child become widespread, to evaluate whether such programs have important effects upon child mortality.

A more subtle question, the impact upon the attitudes towards population control, needs to be examined for similar reasons. The resources of any country are limited, and those of the less developed countries are even more restricted. The allocation of resources and the time and energy of the principal administrators responds to pressures of problems and attitudes. There is now an increasing concern for family planning and the exploration of various birth control procedures. Is it logical to argue that economic pressures (in the absence of Food For Peace) would have brought attention to this issue earlier? Or, is the current concern the result of slowly developing attitudes, in part derived from

activities in developed countries? Within the family, would greater problems in obtaining food have aroused an interest in birth control, or is the family not likely to react in this way? Is it possible to adopt programs which distribute food so as to contribute to an acceleration of family planning?

b. Research Completed and in Progress

Allegations on either side of the argument above may be found in the literature, but without dependable evidence. There are some studies of the motivations for participating or not participating in personal or organized programs of birth control. But there are no studies on the relationship between Food For Peace and population growth or birth control.

There also is extensive literature on world populations and projections. There is general agreement that the data on numbers, mortality rates, composition, occupational classes, etc., are subject to many weaknesses. But the improvement of these data is outside the province of Food For Peace, and is the concern of competent social scientists.

Of more immediate interest is the appraisal of the possible spread in the use of contraceptive devices, and their probable effect upon the rate of population increase. Even so, such knowledge will become meaningful only as it affects the population/food supply equation of 1970 and 1975.

c. Research Objectives

The major research objective of concern to Food For Peace is the refinement of the population projections which project world and

individual country gaps between food supply and demand, and between food production and nutritional needs. Projects 60 and 62 and other agencies of government deal with these topics. Some effort might be given to determine whether Food For Peace has any influence in increasing population, and also to ways in which the program might be adapted to stimulate family planning.

The objective of this project is to explore the relation between the presence of Food For Peace programs and population. This may involve a decrease in child mortality and a consequent higher growth rate in population. It may involve changes in the population pyramid, and hence proportions of the population of working age. It may offset productivity, and hence the availability of large food supplies. And it may, because of these influences, offset the attitudes of public officials about family planning.

This is necessarily a long-term project, and requires great care in the selection of two or three areas to be studied, plus controls and continuity in the research program. It may require repeated interviews to gauge changing attitudes in a time perspective.

d. Suggested Research Personnel

This would be a project for social psychologists, population specialists, and nutritionists, as they attempt to analyze possible changing attitudes, changing mortality, and the physical level of well-being.

e. Priority

Medium

f. Cross References

In an exploratory project, references are difficult to specify. This project, however, stems primarily from the discussion in the early parts of this chapter. The questions raised in Issue M of the Social and Humanitarian chapter also are relevant.

## CHAPTER VII

## PROGRAM OPERATIONS

## PREAMBLE

The completion of research in various sections of this research map and the need to adjust to new national and international situations, Congressional revisions of the law, and operating experience may require the adoption of new procedures. The determination of what procedures to adopt and how to implement them involves a number of applied research problems. The majority of these problems will be resolved informally as administrative information flows to the decision-makers. A few are of sufficient stature to warrant a complex research design and a formal project. Some projects may be allocated to an internal operations research unit, to an AID or USDA employee as a special duty, or to a consultant who may develop workable procedures or information on which to base an early decision.

The research information provided by the implementation of the research projects described in earlier chapters will not always be directly translatable into action. The results need to be evaluated; new alternatives based on this information need to be explored. Other results will involve problems of how, where, and to what degree present practices need to be changed. Within Food For Peace someone should be given the responsibility of keeping the administrators informed about relevant research, with suggestions for translating ideas directly into action, where feasible.

Among the possible new procedures which probably will require attention is the expediting of the decision-making and procurement processes, so that the delays between field program development and the arrival of commodities are reduced. Delays in developing and approving programs, especially the delays between program approval and receipt of commodities for program implementation, are vexing and frustrating problems. What can be done to reduce these time lags at all levels of operation?

A number of applied research projects are described below. They anticipate problems which may need to be examined more formally and carefully. This list is suggestive; it cannot be exclusive, because it is not possible to project fully the problems that Food For Peace will face in the 1970s. Nevertheless most of the problems described exist, and are likely to persist.

Most of these projects are closely related to daily operations. A few deal with problems that are more or less always present, such as the several projects in public administration--Projects 81 to 84. Project 70 should be singled out also, since it deals with a very difficult problem, characteristic of the U. S. government: the tendency to develop policies and programs specific to one department and agency, which may not be well integrated with programs of other units of government, thus requiring a superstructure of committees to coordinate such programs. The emphasis here is on the coordination of inter-agency decision making in a specific country. The pressures in decision making tend to emphasize the agency view, despite various efforts to coordinate programs with committees, inter-agency coordination, and changes in the patterns of organization of responsibility. Reconciliation of views by compromise does not always provide the best solution, particularly when applied to an overseas problem. Thus,

the emphasis in this project is to provide help from outside the government by someone less committed to an agency view, and to see whether the existing resolution of different views is the most appropriate alternative, or whether an alternative formulation (or compromise) may provide a more acceptable general welfare position.

Any operating program results in certain frictions between the central and field staff, among countries involved, among various government agencies, and among government and nongovernment agencies. Requests for clarification often carry implications of lack of confidence or of excessive bureaucracy. Much time and energy can be expended because communications are not clear. Are there available means by which these frictions can be reduced? What are the areas of most concern? How may such areas be clarified? Thus, the overall emphasis in this last group of projects is on operations and implementation.

#### ISSUES AND PROPOSED PROJECTS

##### X. Consistency and Relationships Among Multiple Foreign Policy Objectives

Food For Peace is characterized by multiple objectives and dispersed responsibility for program operation. The program objectives tend to be fragmented as administrative responsibility is delegated to one or another major agency, and sometimes to different units within that agency. Objectives attached to Food For Peace and its legislative predecessor include surplus disposal, market development (for U. S. exports), economic development (of the recipient country), improved foreign policy (support of U. S. positions by recipient countries), better nutrition, and improved social and humanitarian relations in the recipient country. The objectives associated with various local currency uses range from military support to cultural exchange.



It is almost inconceivable that any program can efficiently attain all such varied objectives, although it might accomplish each to some degree. Hence, for effective overall functioning, it is essential to establish the extent to which two or more objectives are mutually consistent, competitive, or partially complementary. Further, priorities need to be established among objectives and groups of objectives, to program commodities effectively among complementary and competitive objectives. Overall evaluation by Congress and especially by the public often fails to differentiate among Titles and Sub-Titles, so that the entire program may be damned by an aberration in one area.

Several questions can be raised. Now, after more than a decade of operation, can these objectives be clarified and integrated? Are the costs of clarification of objectives too high to be acceptable? If not, towards what purposes should the program be integrated? Or, what priorities are attached to each of the objectives? Important questions about the future of Food For Peace cannot be answered unless there is at least a preliminary answer to such questions.

The Food For Peace program can relate to several areas and levels of operation in a host country. Titles I and IV are a type of balance of payments support, while Titles II and III influence local institutions and individual welfare. Any of these can operate as a distinct program with self-contained objectives, or it can function as an integral and integrated part of the U. S. objectives in that country. Most likely, Food For Peace presently functions in an intermediate position between these two extremes.

In another sense the United States has a range of objectives in any country, some of whose objectives are derived from the interactions of the host

country's policies with U. S. foreign policy, while others stem mainly from the position (supported by legislation) of a major unit of the U. S. government.

The variations among countries, as well as from time to time among agencies in Washington, make planning and programming decisions difficult for the members of U. S. missions abroad. Is it possible to develop strategies and objectives for Food For Peace in individual countries and groups of countries that can clarify the validity of particular alternatives? Would this clarification provide a better medium-term basis for programming? These questions may be approached at two levels: first, Food For Peace in relation to policies of foreign assistance, and second, the operating strategy of Food For Peace itself.

68. Integration, Consistency, and Overall Evaluation of Food For Peace Objectives and Accomplishments

a. Research Rationale

The major purpose of this project is to draw on present and future research related to Food For Peace to evaluate the consistency and emphasis to be given to the several objectives. Information on the accomplishments of the several programs will be provided by research projects described earlier. Some evaluations are at present available. Such information may suggest that some highly desired programs are not as effective as was hoped, while others are doing better than expected. To what extent does this information suggest a shift in the emphasis given to particular objectives, and to what extent does it urge increased emphasis in making a particular approach work better?

The resolution of such problems are, in the final analysis, a responsibility of the executive branch. There are procedures, however, whereby such decision-making can be expedited. One such procedure is a periodic summary of relevant research knowledge. Such a summary might emphasize a number of specified alternatives, with statements on the strengths and limitations of each alternative, as revealed by recent research. In a less formal way a "task force" composed of research workers and program administrators might work together for a period of time to evolve appropriate lines of action, which then can be proposed to senior executives. But before such executive decisions can be made, some analysis of the interrelations among objectives is needed.

First, a wide range of objectives is involved in Food For Peace. The nature of the relationships in typical situations requires a substantial examination of many programs both in concept and in empirical reality. A number of projects which would provide a partial comprehensive evaluation have been proposed, e.g., Projects 3, 33, and 62. Such research and the people who completed them can be called upon to assist in a further, more comprehensive evaluation.

The second reason for an analysis of objectives is the dispersed nature of the program administration and program development processes. Personnel within each agency can give attention to periodic reviews of their programs and can suggest improvements, but each group is to some degree limited in its perspectives and responsibilities. An overall view can be developed and implemented

by an occasional combined approach utilizing governmental and nongovernmental specialists working together.

For these two reasons it appears desirable to provide for a systematic evaluation of Food For Peace objectives and accomplishments. This overall evaluation includes a focus on the extent to which one Food For Peace program reinforces or conflicts with a second and an identification of procedures which may increase the general effectiveness of the program. This evaluation contrasts with other projects which attempt to evaluate and improve particular programs.

This project, which might be repeated, is contemplated as a short-term project which would be initiated by the executive branch in anticipation of a comprehensive program review. It would draw on leading research workers actually or recently engaged in a variety of Food For Peace - related research. This project might be implemented by the appointment of several individuals as consultants, who would serve in a task force. This project is proposed as a short-term research contract because it may have some administrative advantages. The preparatory work can be done in the home offices of the members of the research team; the contract with one university or research institute could finance several people working in different places. Also, this research project emphasizes the intellectual effort that is essential to the integration of the program.

Finally, it should be emphasized that government employees cooperating in the project also require preparation time to enable them to study research reports and to become better acquainted with less familiar parts of the Food For Peace program.

b. Research Completed or in Progress

A substantial number of people have published papers in which judgments of the merits and limitations of the program are expressed. Joseph Davis (160), Schultz (337), and Mikesell (558) provide the more critical views. John Davis (158) and Paarlberg (60) give more favorable views. Benedict and Bauer (7), Crawford (19), and Allen (101) provide both positive and negative comments. There are a number of papers which are empirically oriented, including Dandekar (517), Witt and Eicher (578), Adams, et al. (I), Kahn (253), and Ginor (30), and which are based upon personal experience in one or more countries.

However, all these reports are focused on Title I programs; they do not assist in relating Title I to other Titles. The completion of projects, described earlier in the research map, will provide a number of studies on recent Title I experience, and will evaluate Title II, III, and IV programs. Presumably, some of the authors of these studies would be involved in implementing the project presented here.

c. Research Objectives

- (1) To draw on current research for information about how to better integrate objectives of the Food For Peace program and to increase the overall level of program effectiveness.
- (2) To suggest to executive agency decision makers practical procedures to increase the level of accomplishment of Food For Peace objectives.

(3) To relate Food For Peace objectives to other aspects of foreign relations, including competitive exporters as well as recipient countries, and to suggest modifications which will coordinate Food For Peace more fully than at present with U. S. foreign relations.

d. Suggested Research Personnel

This project would draw on people in several disciplines who have developed competence and knowledge of Food For Peace through directing specific projects.

Priority

This project probably should not be implemented until other research is well underway. The need for an executive decision on renewing or revising P.L. 480 should be anticipated by some six to nine months. When such a decision is pending, the project has high priority.

f. Cross References

1, 3, 8, 11, 19, 28, 33, 60, and 69.

69. Toward Fuller Integration of Food Aid with Other Foreign Aid Objectives

a. Research Rationale

In this project and the next, the central focus is on ways in which to improve the interaction among units of government at home and abroad. Project 70 is concerned with this problem in individual countries; this project is concerned with what can be done towards greater coordination among agencies and programs, mainly at home.

This project is an attempt to examine the problems which overlap among established agencies, and to see whether some criteria, programs, and strategies can be established which facilitate coordination. If so, latent rivalries and differences in view can be permanently interred, and program planning can be made more effective.

The transfer of P.L. 480 commodities was delegated by the President to the USDA for Title I, and to AID for Titles II and III. When Title IV was added, primary responsibility was delegated to the USDA. The USDA also is responsible for defining what commodities are available for all Titles. Responsibility for the use of local currency is allocated to a wide list of agencies, though AID carries responsibility for a large fraction of the currency. Proposed programs for specific countries are reviewed by an inter-agency committee, chaired by the USDA, and including people from the Departments of Commerce, Labor, Treasury, and State from AID and sometimes from other agencies. A policy committee (at about the under-secretary level) meets regularly to review and establish policy. The Food For Peace Director is represented directly in this activity. And the Bureau of the Budget, Council of Economic Advisors, and other offices present views from time to time. Functions and responsibilities are usually fairly well understood, although new programs and new approaches sometimes require additional time. The reason for listing these various responsibilities and divisions of authority is to point out the complexity of the decision making process. In such a situation it sometimes is difficult to establish guidelines which fully implement and integrate programs with a

strong domestic interest into foreign assistance and foreign policy objectives, particularly when the international aspects of the program are themselves complex. This is made even more difficult when the data base for analyzing the potential impact is weak, as was discussed in Project 61.

The research proposed here would begin with the assumption that a high priority is attached to using food aid as developmental assistance (although another foreign aid objective could be substituted). The decisions and decision process in Washington would be examined in an attempt to determine what criteria could be used to maximize the impact of development assistance (or alternatively, the effects in improving nutrition), and to determine what issues and interests would be pushed aside. The implications of such an approach for one or several countries upon the division of responsibility, the volume of Food For Peace shipments, the combination of commodities and similar items would be explored. Essentially this research should provide suggestions on how to proceed, if it were determined that, for a particular country, food aid should be allocated solely or primarily on the basis of its contribution to a single objective.

This work would need to explore the separatist tendencies of the organization of the U. S. government to review the extent to which the Food For Peace coordination efforts have overcome these tendencies, and to suggest ways in which even greater coordination and unification of programming could be obtained.



In the final analysis, however, Food For Peace has objectives that contribute to a mixture of objectives in foreign relations. Therefore, suggestions are desired by which a more integrated series of programs become feasible.

b. Research Completed or in Progress

A number of authors have touched on problems related to the questions discussed above. John Davis in several reports (158, 159, 160), discusses several cases where coordination was inadequate. Fitzgerald (523) points to a number of situations in which the time between the beginning and the completion of a project seems long. Witt and Eicher (578) discuss the multiple objectives and unanticipated results which occurred in several countries. But relatively little attention has been given to an examination of the internal operations of Food For Peace.

c. Research Objectives

- (1) To examine the various interests which affect the overall programming of Food For Peace.
- (2) To develop procedures and criteria whereby a single objective (developmental assistance) is given priority.
- (3) To suggest ways in which the Food For Peace program can be more closely integrated into the complex objectives of U. S. foreign relations.
- (4) To examine the practical consequences of providing such a priority.
- (5) To suggest alternative criteria for action.

d. Suggested Research Personnel

This is a project for an institution skilled in studying the processes of government. The Brookings Institution is an obvious example. The major work would be undertaken by a mature individual with a knowledge of governmental operations.

e. Priority

High

f. Cross References

1, 16, 20, 26, 28, 63, and 68.

70. Integrating Food For Peace Policies and Strategies in Individual Countries with U. S. Assistance Policy Objectives

a. Research Rationale

In Chapter III, Projects 23 and 24 deal with the general relation of the Food For Peace program to foreign relations. The family of projects suggested here is directed at developing strategies for individual countries. The majority of this work would best be done as a subproject or section of an overall evaluation of the aid program in a specific country. It is assumed that such an evaluation would draw on general foreign policy objectives, and on Food For Peace relations to foreign policy, and would be primarily concerned with defining the role, relationships and size of the U. S. assistance effort for a future period of time.

This proposal to study the integration of Food For Peace with U. S. foreign aid stems from two historical facts: (1) The Food for Peace program has shifted in objectives and emphasis over time from surplus disposal to economic development and improvement of

nutritional welfare; the consequent shifting of goals have created uncertainties in the field. (2) The specific negotiating arrangements have varied among countries, partly because of personalities, partly because of differences in the size and nature of the assistance effort, and partly because the USDA has special interests in food aid, in contrast with other forms of assistance.

Of course, the U. S. Ambassador has responsibility for coordinating all U. S. government operating programs in the country where he is stationed, and eliminating at least the more flagrant cases of conflict. But in most cases the burdens of the office make it impossible for him to do much more than accept the suggestions of his staff. Moreover, directions from Washington, based on legislative history and agency preferences, usually limit the range of policies available to the Ambassador. Food For Peace, in its several Titles and the administrative specifications for their application, contains provisions whose full implementation may require deviation from principles and policies followed in other foreign operations in that country. The application of different criteria in different programs, the necessity at times to reallocate dollar aid or foreign exchange from one set of uses to Food For Peace (to pay for ocean freight, for example), market development, construction of storage facilities, allocation of exchange for normal commercial purchases, the differences in the degree to which the flow of commodities is controlled within the recipient economy, all pose questions about whether there are ways to develop more integrated programs for the country under review. This long time problem of internal inter-agency relations and international relations is not

limited to Food For Peace. In fact, the organization of AID in 1961 was one attempt to bring together various foreign aid programs in one agency; within the agency, the greater role attached to regional bureaus is also a move towards better coordination of country programs, though with possible losses in other levels of coordination.

It is suggested that further progress in integrating the programs for a specific country may be possible without necessarily revising the present legislative and presidential directives on substantive programming. Is it possible to integrate Food For Peace more fully into foreign aid programs? An examination of means by which this can be done, and the areas in which coordination is most needed, can help develop more integrated programs, and can provide a basis for directives from Washington on acceptable modifications of present specifications.

This research also may better identify areas in which separate, yet responsible decisions can be made on Food For Peace programs, with assurance that such decisions will be in step with other programs.

The research emphasis, broadly speaking, is an analysis of how Food For Peace can best contribute to U. S. policy vis-a-vis a particular country. One level of analysis involves its contribution to economic development, to health and nutrition, to political stability, and to improved social institutions and relationships.

Another level of analysis would involve bringing all these analyses together with some sort of weighting or systematic interrelationship.

But the emphasis suggested is primarily upon the relationship of Food For Peace to development.

This emphasis is suggested for several reasons.

First, the long run pressures of population on food supply are increasing. By the 1970s, most countries will require both Food For Peace imports and more rapid advances in their own agricultural development if they are to adequately meet the rising internal demand for food. Second, in volume of resources, Food For Peace matches, and sometimes more than matches, the volume of dollar aid available to a considerable number of countries. The rate of economic development can be increased if food aid is properly coordinated with the policies, plans, and programs for development. Third, there is increasing evidence that food aid, properly provided, can make a contribution to economic development. Yet many analyses of aid operations give only incidental attention to food aid, considering it primarily as assistance to internal food consumption.

Selection of the countries in which to undertake this research will depend heavily upon overall AID priorities; when a general evaluation is being planned, the Food For Peace interests need to be specifically incorporated in the plan of work or directives to those undertaking the evaluation.

b. Research Completed or in Progress

A number of country evaluations have been made of assistance programs, usually involving a group of external advisors. Among the recent evaluation teams sponsored by AID are those in Thailand,

Turkey, and Tunisia. A regional study on Latin America was supported by the Ford Foundation and administered through the National Planning Association. In most such studies little consideration has been given as to how Food For Peace might best be integrated with assistance objectives. Even in the recent study in Tunisia, the Food For Peace program was brought in fairly late in the process, despite the size and scope of the food shipments to that country.

To a degree these evaluation teams have tended to accept the views made in some of the early analyses of P.L. 480. It was argued that the program was depressing to internal farm prices, and this in turn, reduced incomes and incentives to farmers. Project 16 (Economic and Financial) provides references and suggests that contrary views have been put forward, and that more recent P.L. 480 operations, at least in some countries, avoid these negative impacts and can make positive contributions to the developmental process. Results from Project 16 and from Project 62 can be drawn upon in the specific country evaluations suggested here.

No specific country studies are known which estimate the desirable alternative levels of Food For Peace and of commercial imports consistent with one or another level of other foreign aid and rate of internal economic development. If such country-based studies were available, they would provide estimates to program officers and AID administrators of the level of farm product imports appropriate to the current accomplishments and near future plans in economic development. Such studies would indicate whether Food For Peace shipments over the estimated amount would hinder or make little contribution to development, and permit officials to

move toward an integration of Food For Peace with the overall U. S. foreign policy objectives for that country.

c. Research Objectives

This project would be a part of a general foreign assistance evaluation for a specific country--its research objectives are not further defined at this point.

Specifically the "sub-project" on Food For Peace would require economic analysis and information to project the probable pattern of demand with several possible rates of economic development. Also it will be necessary to assess how the several economic sectors will respond to price and other incentives, and to estimate the levels of production at these rates of development.

Some of the basic information will be available from research done under Projects 12, 60, and 62, although not necessarily for the same countries; hence, some judgments in transferring parameters will be needed. However, programming projections must be made for the specific country. These projections require large amounts of information, more than is available, so that gaps need to be filled by reasonable estimates or assumptions. The policy questions for various levels of food aid can be ascertained, a more comprehensive review of policy positions and interrelationships can be made, and better knowledge of the advantages and limitations of various levels of food aid can lead to more effective programs.

The emphasis would be on improving the total U. S. government stance in deciding on the most appropriate package of foreign assistance

to a specific country, and how to attain improved integration of programs.

d. Suggested Research Personnel

In some instances, reassignments within the evaluation team will enable adequate consideration for Food For Peace. More commonly, however, those concerned with agricultural and food problems (including irrigation, community development, agricultural exports, agricultural teaching, and research) have had heavy work loads; consequently the evaluation team's personnel resources in this area need strengthening. One possibility is to add a development economist (agricultural) able to deal with aspects of the demand for food and the development impacts of food aid. Another possibility is to restructure the team, without adding staff, to include two agricultural and food economists rather than one.

A more fundamental approach - almost a separate project - would bring together economists and public administration specialists to develop general approaches whereby the separatist tendencies of the U. S. government in formulating policies can be counteracted more fully.

e. Priority

High, at the time that an evaluation team is organized for an important Food For Peace recipient.

f. Cross References

1, 23, 24, 62, 63, 64, 65, and 71.



71. Alternative Strategies in Formulating Food For Peace Programs in Specific Countries

a. Research Rationale

This project would draw on research results from projects described elsewhere in this map, using assessments on the basis of the actual situation in a specific country.

As responsible U. S. officials develop specific Food For Peace programs, what are the possible and probable leverages that they are able to apply? They may have more influence on commodity policy than they have through local currency on monetary policy or development policy. Such officials will be assisted in carrying out their responsibilities if the past negotiating experiences, and realistic appraisals of strategic policy making forces, were reviewed. The U. S. leverage in influencing decisions change over time. Knowledge of the probable timing and limits of influence can help avoid postponing a difficult point when the U. S. leverage on that issue is likely to decline. On other issues, if the U. S. leverage may increase, precedents should not be established formally or de facto.

Pragmatically, the questions are of this order: Is it better to begin a particular school lunch program or voluntary agency program on a small and not very adequate basis, expecting that there will be a strong probability that it can be improved in a year or two; or is it better to bargain for a better beginning, since five to ten years may elapse before a reasonably useful program is forthcoming? Is it appropriate to let programs lapse, or become

smaller in the hope of gaining greater leverage in the future? The emphasis is on policy strategy, although in actual program management there also are planning and programming problems.

Similarly, practical questions have arisen on aspects of Title I programs. To what extent should the U. S. approve substantial parts of a "shopping list" of commodities to begin a program, even though some commodities are not, or are only marginally, in surplus supply? Or a more recent question would involve the possible combination of commodities and the relevant emphases upon Title I and Title IV arrangements. More broadly speaking, what policy strategies have been pursued in the past and how successful have they been? Why have some worked while others have not? What leverage does the United States have?

The major task in this proposal is to identify the policy strategy to be pursued. In many cases, past policy will be implicit rather than explicit, and can be identified only after careful interviews with responsible officials. Moreover, it is likely that, over time, there have been subtle policy changes not always recognized by the program administrators themselves.

A number of areas in which strategy is particularly relevant emerges as a consequence of the issues identified in this research map.

Without losing the sense of overall strategy, it would be desirable to give attention to the following: (1) consideration of improving agriculture in the host country, (2) changing normal market requirements, (3) concern with changes in the agricultural exports of the host country to commodities similar to those supplied, (4) changes

in the size of the program, (5) foreign exchange and economic development needs, and (6) the possible changes in foreign policy relations between the U. S. and the recipient country. With respect to Titles II and III more attention could be given to the effectiveness of the food distribution program and the trends in local governmental contributions of food, money, and personnel.

b. Research Completed or in Progress

There is much general material to serve as a source of information on this project proposal; the semi-annual reports (808), testimony presented to Congress in various Hearings and in the Congressional Record (719-740, 742-747), policy speeches of the Secretary of Agriculture, the Secretary's annual report, and various news releases of Food For Peace, AID, and the USDA (714).

However, analytical studies or reviews which examine policy strategy are much less frequent. Broad objectives are stated and repeated in many speeches and some reports, one of the better early statements is in Baughman (800), and in a more critical vein by Mikesell (558). A comprehensive review to 1962 is provided by Menzie, et al. (557), and by Witt and Eicher (578). More specific analysis is found in several papers by John Davis (157, 158, 159) and more critically by Joseph Davis (160). Even so, none of these specifically deals with the appropriate U. S. strategy to use in negotiating a series of P.L. 480 agreements with a particular country, to build bit by bit the internal programs and institutions by which the country can better meet its own problems, and to move toward a policy more acceptable to the United States.

Although specific country evaluations are not included in any of the references above, a number of country studies on the impact of Title I programs have now been completed for Israel (24), Colombia (1, 921), Pakistan (113, 508, 630), India (14, 777, 623, 624, 796), and Turkey (903); evaluations are in progress for Greece and Spain. Evaluations of Title II and Title III programs are suggested elsewhere in this map and can be drawn upon as completed. Certain administrative memoranda, dispatches, and work papers which represent views of responsible civil servants may be made available; although many of these are likely to be in a short-term framework, they will be valuable in clarifying actual decisions on policy.

For the countries and programs selected for study, it will be necessary to draw on a variety of sources, including: research studies on the Food For Peace program, when available, the formal and informal agreements and understandings reached when program commitments were made (including both governmental and the operating agencies), less formal surveys of program accomplishments, the views and experiences of the agricultural attache, Food For Peace officer, and other U. S. officials, the views and attitudes of host country officials, and the approaches of the program officers and members of the Inter-Agency Committee in Washington.

From this information the nature of, and changes in, strategy can be determined. In turn, actual changes in the host country can be examined in relation to this strategy, and this can lead to new strategies for use in the next round of discussions.

c. Research Objectives

The research problem

- (1) To identify the strategy used in Food For Peace negotiations with a number of significant countries.
- (2) To indicate the success of the strategy used to influence policy and programs in the host country.
- (3) To propose possible strategies that have been or may be more effective in accomplishing U. S. foreign policy and Food For Peace objectives, and to establish priorities among them.

d. Suggested Research Personnel

Personnel in the USDA or in AID would be most appropriate. The nature of the problem and the data needed seem to make this a within-government project. An experienced individual could be assigned to this task from time to time as appropriate countries were identified. A number of consultants would be required.

e. Priority

Since this would be done for individual countries over a period of time, it has high priority for one or two countries (to be selected by AID and USDA) and ranges to low priority for others.

f. Cross References

62, 63, 64, 65, and 70.

Y. Statutory and Other Changes that Would Expedite Administrative Processes

The operation and management of Food For Peace is subject to complex legislative and administrative rules and procedures, which often were originally developed for operations far removed from the problems of Food For Peace.

Many of these rules were designed to protect the public interest; some developed as a consequence of critical reactions to foreign programs--any foreign programs--and the agencies that run them. Within these rules, there has been much effort to develop procedures which are responsive and appropriate to the early objectives of P.L. 480; modifications have evolved as the program became less temporary and as Food For Peace objectives were given greater emphasis. For whatever reason, there are many complaints from field personnel about the time required to inaugurate new programs, to increase significantly the level of operations, to meet emergency needs, and to support similar innovations.

To a substantial degree, the procedures have evolved by accretion and adjustment rather than by systematic evaluation and testing of alternative patterns of operation. It appears that there are certain, usually not large, categories of programs where, for political, economic, or humanitarian reasons, it is desirable to implement a program rather quickly once the host country's concurrence and the Embassy's approval are given. These procedures, too, should be expedited for certain program categories. There are other situations in which long-term commitments rather than quick action are desired (and such commitments have been made under Title I for a number of countries, e.g., India and Pakistan). The maintenance of reserve supplies in other countries is an alternative procedure.

In short, there are a number of types of situations in which the field program objectives have been partially frustrated, personnel have been overworked, and the program accomplishments have been limited by time-consuming and cumbersome procedures including the bid-procurement procedures. A review of these situations, some imagination in developing alternative

procedures which still safeguard the public interest, and some proposals for changes in the legal requirements under specific situations could lead to improvement.

72. Developing Improved Procedures for Program Approval and Implementation

a. Research Rationale

The research proposed here would identify the steps in the program development, review, and implementation process that require substantial amounts of time. The reasons for each step and the time lapse should be identified in relation to: (a) legislative requirements, (b) orderly program development, (c) protection of the public interest (in the sense of fair prices, market access, etc.), and (d) adequate communication. The research would explore alternative procedures, including those which might require legislative approval whereby adequate program decisions might be made in substantially shorter periods of time. Such alternatives might include a greater shift of responsibility to the field, more explicit requirements in the manual, an interagency-developed check list under which one office in one agency has authority for program approval if the check list is complete, a revolving inventory of commodities from which shipments can be made to the recipient country, and a reserve stockpile in major recipient areas out of which shipments to a specific country might be made. Some of these alternatives are likely to require modifications in legislation; the possible gains need to be carefully assessed before such a request is made.

b. Research Completed or in Progress

In 1960 the General Accounting Office drew together a substantial amount of material on the organization and procedures under P.L. 480 as they existed at that time (807). Since then a number of other IAO reports have been prepared, several for individual countries. The McGee report (710) provides a more recent overall appraisal of operational strengths and weaknesses. Neither of these, however, probes specifically into actual administrative procedures in an effort to reduce or eliminate time-consuming operations. Fitzgerald (523) draws on AID information on the time lags between program formulation and the arrival of food.

c. Research Objectives

The research would analyze information on the usual amount of time required from program formulation to implementation. The processes involved in each step and the reasons for each would need to be identified. Communications with field personnel for clarification, and the sources of requests for further information would be examined in an attempt to review the decision-making process and determine reasons for delays. Relevant statutes and general governmental procedures would need to be studied, and alternative procedures would need to be analyzed for legality or illegality. In general, the research would attempt to develop innovations which would accomplish the present program objectives with less time and manpower.

In carrying out the research, a number of programs under each Title for a variety of countries would be selected for review.



Randomized selection of specific programs, within certain constraints, appears appropriate. These constraints might include Title, year of implementation, size of country, and geographical region. For each of these programs at least the following items would be obtained from government records or examined, where available.

- (1) Date at which the first proposal from a country was prepared for dispatch to Washington
- (2) Date sent to Washington
- (3) Date program sent to Inter-Agency Committee
- (4) Date approved by Inter-Agency Committee
- (5) Date of formal notice to recipient country or agency
- (6) Date procurement process began
- (7) Date first procurement contract or arrangement confirmed
- (8) Date of first shipment
- (9) Date shipment arrived
- (10) Date program began
- (11) Extent to which this program differed from previously approved programs
- (12) Were there special circumstances, such as the depletion of the P.L. 480 budget, a shortage of commodities, or overriding political circumstances?

This procedure may be complemented by a flow chart showing steps and agency units involved, together with the time requirements.

The major research problems would be:

To identify the typical or average time sequence for each step in the process of approving the program.

To suggest alternative procedures which would reduce time and personnel costs, and would increase the probable impact of the program in the host country.

To provide a basis for judging whether new procedures can significantly improve Food For Peace operations and reduce the quantity of manpower required.

To supply information whereby a decision can be made as to whether new authorizing legislation is necessary; and to justify this request if one is made.

d. Suggested Research Personnel

This work probably can be done most effectively by a research unit within the government, which is familiar with Food For Peace or AID overseas operations, or by a nongovernment research unit which includes individuals with experience in governmental operations.

e. Priority

The sequence within this research project already has been indicated. There appears to be no particular reason for scheduling this research ahead of or after other research in this map, with the exception of work (Project 17) which relates to possible strategic reserves held in anticipation of future program needs. There are good reasons for relating these two projects to each other within approximately the same time period.

f. Cross References

17, 30, 33, 74, and 83.

73. Comparison of Methods of Different Voluntary Agencies

a. Research Rationale

The different United States voluntary agencies, such as CARE (Cooperation and American Relief Everywhere), Catholic Relief Service, Lutheran World Relief, and American Jewish Joint Distribution Committee have very different modes of operation. Some simply operate food programs; others distribute food as one small part of more comprehensive programs. Moreover, certain agencies seem to have effective training and consultation programs which others seem to lack. It is almost certain then that some agencies operate more effective programs than others. We need to know which are the most effective in using their food resources, why these differences exist, and how the more ineffective organizations can be improved. The goals by which to measure the program may not be identical among the voluntary agencies.

b. Research Completed and in Progress

There is no research on this topic. Certain administrators will have views which can furnish research hypotheses, but these hypotheses need to be tested and documented to establish their validity.

c. Research Objectives

- (1) To assess, by means of sample surveys, the comparative effectiveness of several of the agencies in reaching their target populations. Small samples could be used in each of several countries. Data on the usual measures of health and caloric intake should be taken on intended recipients and their families. It would be well to have an accounting of the expenses borne by the agency, the United States government, and the recipient country in administering each such program. (But it should be emphasized that this is not a detailed audit; rather it is one measure of the scope of the overall program, and an indication of effectiveness. Moreover, cost per unit of food distributed is not likely to be very meaningful since a large budget may be associated with a comprehensive and effective program).
- (2) To identify, by means of intensive interviewing with officials and technicians working with or for each agency, the techniques used to distribute Food For Peace supplies. This should be done country by country and agency by agency to determine the extent to which the agencies have uniform practices in various countries.
- (3) The two preceding sets of information should be brought together to show the extent to which and reasons why different voluntary agencies differ in their effectiveness. Recommendations for improving the food distribution practices of those agencies which are relatively less effective should also be made.

d. Suggested Research Personnel

The first objective could be conducted by research units within countries under the supervision of a sociologist or anthropologist who plans and oversees the overall project. Nutritional questions will require the consultation of a nutritional expert, and may require comprehensive nutritional evaluation of the accomplishments of a particular agency program. The project supervisor could conduct the interviews under the second objective, and could write up the results under the third.

Priority

Medium

Cross References

30, 33, 34, 74, 75, and 81.

74. The Feasibility of Combining Shipment and Handling of Commodities Originating Under Separate Titles or Programs

a. Research Rationale

Is it true that shipments, unloading, storing, internal transportation, and similar items are handled at less cost in dollars and personnel under Title I than under Titles II and III, and that there is little difference between Titles I and IV? If so, the research emphasis is whether there are important and feasible financial savings if Title II and III shipments, if they are present, are added to Title I up to the point of distribution to consumers in the host country. If there are possible savings in money and personnel, then other questions need to be resolved. There may be several Title II and Title III programs in a single

country, and important savings may be possible by combining the shipping and handling of these programs.

Among these questions are the following: Can all Title II and III commodities be added to Title I, or can only a few bulk commodities such as wheat, feed grains, and vegetable oils be included? Are the savings of little significance when only part of the Title II or III shipments are handled jointly? Is it possible to conform to the legislative requirements on marking and milling, or can other satisfactory procedures be developed or proposed to Congress? Is it likely that stability of supplies for country Title II and III programs will be increased or decreased? Can packaging be tailored to the climatic and other special problems of areas where supplies are to be consigned?

Other questions would need to be answered if combined shipments appeared to be promising, at least in some countries. What actual operational procedures should be adopted whereby local currency, reflecting the value of Title II and III commodities, would be returned to the host country. Audit procedures, consistent with existing legislation, or more probably with new legislation specifically requested to authorize these new procedures, would need to be specified.

b. Research Completed and in Progress

No research which bears on this topic is known, although there are some reports on the subject in AID files. Some significance, however, might be attached to the results of studies on the change in attitudes of those receiving food packages marked as a donation

of the people of the United States. One consequence of combining programs would be the reliance on posters rather than packages as an information device.

c. Research Objectives

Cost analysis is needed in the handling of Food For Peace shipments under Title I, Title II and Title III for two or three countries.

These costs should be separated into the following categories:

(a) dollar costs to the United States, (b) personnel costs to the United States, (c) foreign exchange costs to the recipient country, (d) foreign exchange costs to voluntary agency, if appropriate, (e) local currency cost to the recipient country and voluntary agency, (f) personnel cost to the voluntary agency, (g) personnel cost to the recipient country. Some of the personnel costs will be difficult to identify in that they require part of the time of high level administrators whose principal duties are in other areas, but some estimate of the possible costs and frustrations should be suggested.

In the case of some Title I and IV projects, it may be necessary, though difficult, to obtain costs from private trade channels.

The possibility of obtaining such information will determine whether some parts of this project are feasible.

The analysis of the above costs could indicate that there is no significant advantage in combining programs. If so, the research would be complete. If, as anticipated, there are possible cost savings, then additional information is needed to determine whether some or all commodities could be included, and whether program

stability would be increased or decreased. Also information on the impact of food package marking would be required.

The remainder of the research would involve thoughtful and imaginative approaches to the legislative and operational aspects of the possible combination of shipments, in consultation with Congress, voluntary agencies, the General Accounting Office, and appropriate units of AID and the USDA.

The research problem would be:

- (1) To identify and analyze potential savings in cost and personnel through combining shipments, unloading, storing and internal transportation under the several titles.
- (2) To determine the situations and commodities under which such savings can be obtained.
- (3) To project the implications for program operations of the combined handling of the several titles, especially in respect to program stability and politico-social effects of package identification.
- (4) To develop legislative and administrative procedures, if appropriate, which would realize the cost savings indicated.

d. Suggested Research Personnel

This would be either a fairly complex or a fairly simple and straight-forward study, depending upon the country selected. An engineer or specialist in transportation and storage might examine a single small country with several programs, and estimate the possible cost saving opportunities, and their consequences, while a specialist in public administration would analyze the possible



changes in administrative procedures. A more complex study would involve more countries, more programs and greater volume. An independent consulting firm, experienced in making studies in other countries, would be a likely source of the specialized competencies required.

e. Priority

Medium in relation to the total Food For Peace program, but higher in relation to Titles II and III.

f. Cross References

3, 5, 15, 30, 72, 73, and 75.

75. The Effect of Markings and Posters Upon the Perception of Food For Peace Held by Food Recipients

a. Research Rationale

Congressional reviews of the Food For Peace programs, particularly Title III, have emphasized a concern that the recipients become aware of the source of the food donations. One procedure has become a major technique to implement this desire, namely that the package be marked as a donation of the people of the United States. How effective has it been? What kind of image does it create? Do posters at the point of distribution serve the same purposes? Are other alternatives more effective and less costly?

In the actual field operations under Title II and Title III, a substantial number of the food packages are opened and the food distributed so that the packages are not received by the ultimate recipient. Posters are used in cafeteria lines, or at school milk distribution points. Many of the packages that go to the

ultimate recipients intact cannot be read because the recipients are illiterate. Early protests that the markings were printed in English or that Spanish wording went to French or Portuguese speaking groups, etc., have led to a multiple language package. Are these concerns with communication appropriate? How effective are they? What image do the recipients receive about the food and the country that sent it.

There have been suggestions that the packages might be used to carry information on nutrition, on how to use the food, or on combinations of food that would provide a good diet for a child or all members of the family. One phase of this study could ascertain whether this idea has much potential.

There are several levels of analysis possible in this area. The simplest is to ascertain whether the recipients realize that the food comes from the United States, or whether they attribute it to the organization which does the actual distribution--the school, CARE, or a religious organization. A second level would inquire how the message that "the food comes from the U. S." can best be communicated. A third level would be concerned with the meaning of the message when it is communicated, and the possibility of adding a different message.

The amount of discussion that has occurred in regard to marking suggests that a specific project should be undertaken to ascertain the extent to which the desired message is transmitted, and possible ways to increase the extent to which it is transmitted.

b. Research Completed or in Progress

No specific research in this area is known. The general problem is noted in Congressional hearings on the extension of P.L. 480, and in a number of reviews of procedures.

c. Research Objectives

- (1) To ascertain whether recipients had accurate beliefs about the source of food donations, and the way in which they obtained this information.
- (2) To evaluate the importance of specific commodity packages, posters, and word of mouth in communicating the source of the food, especially whether a multiple approach was necessary or whether coverage could be obtained as readily with bulk packages plus posters, etc.

The research on the meaning of whatever image was created would need to be done both in countries where the attitude toward the U. S. was positive and where the attitude tended to be negative.

d. Suggested Research Personnel

Communication specialists should be called upon, and there would be merit in having this work done through one of the U. S. government agencies, so that those doing the research are available readily as consultants.

e. Priority

Medium

f. Cross References

2, 4, 59, and 74.

## Z. Problems Resulting from Substantial Program Expansion or Reduction

The size of the present Food For Peace program is influenced on the one hand by the surplus producing potential of U. S. agriculture and the acceptable techniques for controlling production, and on the other hand by the need of developing countries to accept such commodities and the ability to load, transport, unload, and distribute these commodities. In addition, political considerations may prohibit shipments, or influence the level of programming. Substantial changes in program levels are possible (e.g., the exclusion of Title I programs in Poland and Yugoslavia), and may occur elsewhere. Legislation, of course, does not change a country's need for commodities, but it may force them to accept alternative procedures by which to obtain or distribute commodities, and they may decide that rationing is necessary.

Specific commodities have been available in very small amounts or not at all, while others are in ample supply. Other commodities have had significant variations in availability from year to year. Is it feasible to increase the range of commodities? Can the program be changed so that variations in the supply do not disrupt the distribution programs?

More drastic variations in the supply of Food For Peace inputs are possible. A serious drought in the Upper Mississippi Valley, or a virulent disease or insect affecting large areas could temporarily or permanently reduce or eliminate the excess production of American agriculture. Existing supplies might be inadequate because of new demands overseas, as a consequence of population growth, internal disaster, or new political arrangements (such as a doubling of shipments to India, or USSR dollar purchase on a large scale).

The inverse of this issue, of course, is the possibility of program expansion as a consequence of a larger world supply of surplus commodities.

In what directions should plans be expanded? In which countries? How rapidly?

The food production problems of the developing countries, the inadequate levels of nutrition, and the rapidly expanding population would seem to provide very large potentials for program expansion. Thus, many people see no limit or end to the Food For Peace program.

Increasingly, however, very real short-term and long-term limits to the amount of food that can be allocated to a particular country are being recognized. Some of these are physical, some cultural, while others involve more subtle problems of adverse effects on other parts of the economy and society.

#### 76. Planning Procedures in Case of Program Expansion or Reduction

##### a. Research Rationale

For reasons discussed above, there is no assurance that the Food For Peace program can continue at the present level of operation. Domestic or foreign developments can impose pressures which can affect the aggregate size of the program. Even wider ranges in volume are possible for specific countries: from complete elimination to a doubling of the program. The priorities now imposed for the distribution of commodities make this problem important now for Titles II and III, but a drought, disease, or effective production controls make it potentially applicable to Titles I and IV.

Alternate plans to phase out or phase down programs need to be developed, so that there is minimum negative impact and maximum permanent institutionalization of past accomplishments. Such planning involves estimation of the most and least dispensable programs, the time required for reasonable phasing out, and the kind of interim policies which might help maintain achievements gained through current efforts to improve the level of nutrition. Such procedures, inevitably, would include a consideration of country, program, and commodity priorities. No blueprint can be drawn, but a checklist of important considerations and possible time patterns would be a useful reference when and if the necessity occurred. The possibility of deliberate expansion in U. S. production, temporarily or permanently, needs to be included, together with the criteria under which such action would be appropriate. (see Project 11).

Similarly, standby plans for new programs or an expansion of present programs are needed, so that logical and valuable expansions can take place as and if such action becomes feasible. The two approaches undoubtedly will complement and stimulate each other. The pattern of possible contraction should be consistent with the pattern of possible expansion.

This problem area includes many items where the questions to be clarified are more a matter of values than of information. Which parts of the program should be maintained, if at all possible? And which ones have reached the point where they should be terminated, either because the host government is able to take over, or because the project is not accomplishing its planned objectives.

Some information, however, can contribute to decisions either to expand or to contract. The history of specific projects can be studied to identify a probable or typical sequence to maturity (maturity here meaning either that the local government takes over complete responsibility for procurement and operation, or that the project, while still depending on outside supplies, functions effectively with a minimum of U. S. supervision). Similarly, the identification of critical areas of health and nutrition, and of projects which have effectively dealt with such problems in particular countries, would be prime candidates for possible inauguration in other countries if additional supplies became available. Projects which have been effective in stimulating the food production and food industries in the host countries are likely to be prime candidates either for maintenance in a reduced program or for expansion in a larger program, in view of the views expressed under Population and Food Supply.

The direction and emphasis of the research cannot easily be separated from the planning itself; in fact, the questions that are relevant are to a large extent the questions that are asked as alternative plans are proposed, their possibilities and implications explored, and then compared one with another.

b. Research Completed or in Progress

This project can draw on research results from projects described elsewhere in this map. It also can draw on the specific country appraisals of Title I projects, referred to in Project 70.

There are many sources of information which bear on the issues here. Projections of population, of food supply, of trade patterns, and of foreign exchange earnings and expenditures all have relevance. The views and experience of Food For Peace personnel can be drawn on for administrative resolution of problems. But the specific analysis and appraisal of Food For Peace projects in various countries proposed in this research map should have greater relevance. The research and planning proposed here can be repeated periodically as more information and current situations pose new relevant alternatives. This research can be done best when the research in this entire map is completed, but interim integrations, and in fact a more or less continuous review appears appropriate.

c. Research Objectives

The central objective is to project, periodically, the most appropriate alternatives for program expansion and contraction.

Present programming will benefit by comparing the present programs with the proposed alternatives so as to gain insights into worthwhile shifts in the present program.

d. Suggested Research Personnel

People who are presently involved in the Food For Peace program should be assigned to this task. It is an appropriate recurrent assignment for an operations research unit. A number of consultants from outside the government should be utilized.



e. Priority

High. Some attention should be given soon to this problem. Once some of the results of program evaluation are available, a major review would be appropriate.

f. Cross References

3, 8, 14, 32, 41, 77, 78, and 79.

77 Physical Limitations to Food For Peace Imports, by Titlesa. Research Rationale

This project and the next one are written in the framework of an expanding program for some period of time. This can be applied to a particular country in which the program is expanding, even though the overall program is contracting. It may or may not be desirable to expand and to make semi-permanent commitments of food in large amounts. One element of the decision on the level of concessional imports is the physical ability to handle the food effectively, and the costs to other sectors and industries of large food shipments. These limitations are not well understood.

A number of bottlenecks limit the amount of commodities that can be sent, unloaded, stored, processed, and distributed in a particular country. These include both food and the whole array of import and export products, and even a substantial part of the domestically produced commodities. What are these bottlenecks, where are they, and what can be done to reduce their importance? The latter question becomes quite complicated. Can programming of Food For Peace and other commodities in a different time sequence improve the situation? Can internal reorganization, such as

double shifts of labor, reduce the problem? What can be done that does not require foreign exchange? Can priorities be established so that exchange requirements are kept small?

Certain countries can be identified, in studies referred to in the Food Supply chapter, where there is clear evidence of an increasingly larger gap between the probable domestic production and demand for farm products. Some countries also are affected by variability in production, as are a number in which the average relation between production and demand is not growing worse. For a number of these countries, it is clearly in the United States' interest to prevent serious internal food deficits. A selection of the larger countries can be studied to determine ways in which adequate amounts of Food For Peace commodities can be provided over that provided by domestic production and normal imports.

The physical bottlenecks in port, transportation, processing, and marketing facilities will provide one set of possible limits in the amount of food that can be received. Evaluations will be required on the amount of additional shipments that can be handled if priority is given to food over other imports and exports. Such judgments on conversion in the use of facilities are difficult, but essential during crises.

Another set of limits would involve the concept of establishing reserve supplies stored in the country in anticipation of needs. In this instance especially, but also in considering processing and distribution facilities, it will be necessary to take account of the requirements for handling the domestic crop, and the

alternatives that may be feasible for storage closer to the farm at various interior market towns. A comprehensive review of appropriate reserve stocks and storage policies is suggested in Project 17.

These estimates would provide a basis for tentative allocations of additional shipments and specification of the particular additional facilities that would be needed, their location, and the approximate foreign exchange and local currency costs. A time sequence indicating when such facilities are needed can be estimated, and such investments can be made a part of the planning and programming of the host country. If necessary, such investments might constitute a codicil in future agreements.

b. Research Completed and in Process

Information is available on current experience, delays in unloading, and processing previous Food For Peace shipments in several Embassy offices. A number of countries, including Colombia, Brazil, and Egypt have contracted with private consulting firms to analyze some of these problems and to recommend ways to overcome them. Few, if any, have been published, although several typed copies of the reports usually are available within the country. As countries likely to face future problems are identified, it will be necessary to determine whether such studies have been made and are being implemented. A published report on India's port facilities is available (786), though somewhat general.

c. Research Objectives

The principal objective is to identify the possible amounts of food shipments that the port, transportation, storage, and distributional

facilities can absorb in addition to normal production and commercial imports. These figures should be provided at several levels, as follows: (1) with the usual volume of imports of nonagricultural commodities and volume of various exports; (2) with some priority given to food imports, but no other changes; and (3) with substantial adjustments in other imports and exports, to substantially facilitate the handling of Food For Peace shipments (during a crisis situation). Such an approach will provide possible levels of imports, the cost to the economy of larger program volumes, and will identify the nature of the bottlenecks.

d. Suggested Research Personnel

The personnel would be engineers and production management people who have experience in evaluating the physical facilities. An economist or marketing specialist will be needed, in some countries at least, in order to explore possible market and distributional problems.

e. Priority

Medium

f. Cross References

11, 14, 76, and 78.

78. Cultural and Economic Limitations to Food For Peace Imports

a. Research Rationale

Other bottlenecks are cultural or man made. They involve such items as food habits, mixing requirements for domestic and imported grains, rigid food production patterns when shifts are indicated,

ineffective local administration, and similar items. What can be done to shift these patterns, to modify policies, and to improve local operations? Which alternatives are most likely to be successful? In view of such circumstances, how should resources be allocated?

More specifically, the foods available for a particular country often are not congruent with the existing pattern of consumption. What can be done to change the kinds of food available is an aspect of Project 11. What can be done to change consumption patterns is part of Project 42. A comparison of these two alternatives, and the extent of change deemed possible, provides an estimate of possible program levels.

In addition to drawing on these complex issues, there are specific operational problems in local administration, the process of changing laws to facilitate imports, and the handling, processing, and distribution of certain commodities, all of which may limit the absorptive capacity of the host nation. For example, vegetable oil requires a number of facilities before it can be moved readily into consumption channels as a competitor either to olive oil or to butter. Other problems relate to the port, storage, transportation, and processing facilities. To what extent do limitations in such facilities provide bottlenecks that limit the possible receipt of Food For Peace commodities?

Finally, there is a need to consider the economic implications of various levels of imports upon the internal economy. The possible disincentives to agriculture and benefits to the processing

industries need to be evaluated and related to the other factors indicated above.

b. Research Completed or in Progress

The research information listed under Projects 16 and 42 is somewhat relevant, and the completed projects more relevant. A number of market development surveys can provide useful information, hypotheses that warrant testing, and some sense of the trends in resource use and consumption patterns. Three market development studies have been completed for Germany (547), Japan (539), and for Italy (770), and provide some cross-commodity analysis. But these are for commercial markets in developed countries, and are not for typical Food For Peace recipients.

Research dealing with incentives or disincentives to local agriculture, to the attitudes of people, and to their ability to work harder (more effectively) would need to be drawn upon also, in the specific country and cultural context.

c. Research Objectives

The principal objective is to define social, economic, and institutional factors which limit the possible use of Food For Peace imports. In some cases (and perhaps in many) it will be desirable to assess the costs and possibilities of actions to increase the possible imports by eliminating or reducing the importance of certain bottlenecks.

d. Suggested Research Personnel

A broad social science background is desirable, along with substantial understanding of the culture of the specific areas being

considered. If this project were to incorporate original research of the kind suggested in Projects 16 and 42, a team, including sociologists and economists, would be required, and the project would be more costly in money and time.

The first one or two such studies might be done by outside groups to develop research methods and to give emphasis to the problems; later analysis can be done within the U. S. government.

e. Priority

Medium

f. Cross References

5, 11, 14, 22, 23, 41, 42, 47, 48, 76, and 77.

79. Providing Guidelines on Priorities to Program Developers

a. Research Rationale

The field programming of Food For Peace may be directed towards one or more of a multiplicity of objectives. Some of these objectives are complementary; in other cases they are competing in the sense that food directed towards one objective does not contribute to, and is not available for, another objective. So long as there are no limits on the amount of farm products that may be programmed (from the U. S. point of view), the conflict among objectives is less obvious, but they do exist in relation to other objectives in foreign relations. Moreover, some commodities are already in short supply, while others may be in the future.

To the degree that limits exist on the quantity of certain commodities available, it is appropriate to provide field personnel

with criteria or priorities for the development of various types of programs and food uses. A time sequence of availabilities, to the extent that definition is possible, also will indicate whether short-term or long-term programs can be developed, as for example in feed grain usages. In addition, the possible conflicts between concessional food imports and other objectives need to be indicated, so that field personnel can have some sense of the priorities for food programs compared with other types of programs.

The issue then is what information can be provided to the field staff to indicate suitable priorities on types of programs and availability of commodities. Such priorities will be influenced by overall aid priorities, by projected food supply-population relationships, and by projected availability of commodities. Under some conditions, of course, it may be appropriate to consider attempts to change the amount of food available for allocation (see Projects 11 and 17). Instructions and suggestions on priorities will be helpful in providing an overall balance between field requests, AID and USDA objectives, and the realities of commodity resources.

More broadly, there also is a question of the extent to which previous programs have been developed on an "ideal" basis or on the basis of the commodities the U. S. has available for programming. To what extent have programs to countries been restricted? If it is concluded that programs have been restricted, should they be, and to what extent?



The Food For Peace program can function in such a way that either small or large amounts of additional dollar or foreign exchange resources can be required. It can function so as to bring small or moderate dollar returns or dollar savings to the United States for the farm commodities sent overseas. A larger volume tends to be associated with larger supplementary dollar or foreign exchange costs and lower returns to the United States. On the other hand, the domestic costs of the Commodity Credit Corporation inventory are likely to be smaller if the volume is large. (An exception occurs if large shipments lead to less rigid production controls, higher prices, and a larger gross volume of Commodity Credit Corporation purchases.) For the recipient country, a larger program probably reduces the dollar or foreign exchange costs, but depends on the provisions of the specific agreement.

A careful analysis of the net effects upon the federal budget of various levels of programming is suggested in other sections of this research map (Projects 1, 3, and 14). This information can be organized to provide guidelines to economic officers and program offices so that they can make realistic decisions as to whether it is or is not in the U. S. interests to embark on certain Food For Peace programs which may otherwise be only marginally valuable. It also will be helpful in deciding among alternative provisions within Food For Peace programs which clearly are desirable by other criteria.

b. Research Completed or in Progress

No research is known which deals specifically with this issue, but see the research referred to in the projects cited.

c. Research Objectives

The emphasis in this proposal is on developing guidelines that can be helpful to field personnel in developing and extending Food For Peace projects. It would draw on existing knowledge and stated program objectives. It should be repeated every few years.

A separate question which does require new information is the determination of the ways and extent to which field programs have been modified to take account of commodities available, and whether such modifications are simply inconveniences and frictions, or whether they reduce the effectiveness of the program's basic objectives. Conceivably, such problems could even enhance the effectiveness of the overall program by forcing greater local contribution and participation.

Guidelines, which include realistic costs, will be difficult to prepare. This is true in part because marginal cost concepts need to be given attention for both domestic and international programs, and in part because of the interactions between the foreign and the domestic programs. The latter includes the interrelations between Food For Peace programs overseas and domestic agricultural programs, including such items as storage cost savings, volume of exports and extent of controls over production, and additional costs to the U. S. of shipping food overseas. Also needed is an appreciation of the analysis and decision-making process on Food For Peace programming within the receiving country. Only with this information can relevant instructions or guidelines be prepared which bridge the gap between general program content

and specific country situations, with guidelines that are practical and useful to those working within the host countries.

The research would include the adaptation of general information on the interrelations of programs for application in developing country programs. It would incorporate special information on the marginal costs and returns of specific additions to the Food For Peace program to assist U. S. officials in host countries in making financial guidelines. The research would need to take account of guidelines for use within the framework of commodities available for programming, the volume of other development aid available, and the opportunities for various program combinations.

d. Suggested Research Personnel

Under some circumstances, the purposes of this proposal might be accomplished by a task force composed of USDA, AID, and several research workers charged with the responsibility for developing instructions for the field staff. Under other circumstances, a single research team may be able to carry the implications of their research through to a statement of appropriate instructions.

It is suggested, however, that the first endeavor should be done by providing a highly competent social scientist with an interagency advisory committee, and the capability of drawing about a man year of service from each of several agencies. This person would develop the program guidelines in a way that would be both realistic and meaningful to field personnel, not specific administrative procedures, but in the broadly economic and other interests of the United States.

If this is well done once, it should be relatively easy to update the material as conditions change and as new research results become available.

e. Priority

High for the first time, at convenient intervals for the follow-up projects.

f. Cross References

61, 63, 64, 76, and 84.

AA. The Issue of Market Development Effects

One of the objectives of Public Law 480 as judged by its title, by the testimony presented regularly by the USDA, and by the use to which some of the derived local currency is put is to expand commercial markets for U. S. farm products. In the long-run, substantial complementarity exists between economic development and market development, yet it is probable that these two objectives are substantially competitive in the short-run.

The programs sponsored in the general framework of market development cover a wide range of activities. There are trade fairs, new product demonstrations, advertising programs, and public relations activities, many of which may be described as market promotion. Some of these activities are directed at changing laws, regulations or usual business practices so that U. S. agricultural commodities can more easily move into the market, or be made more appealing to the consumer.

But of more interest because of their relationship with projects in this research map are the research and evaluation projects supported by market development funds. These include the statistical analysis of demand, market research, economic effects of Title I programs, and the evaluation of

market development activities. Reference is made elsewhere to a number of these projects completed or being carried on by agencies of the USDA. Those who will use this map need to have a brief description of these evaluations of market development activities, in order to be aware of them, and to avoid duplication of effort.

## 80. Evaluation of Market Development Programs

### a. Research Rationale

A substantial amount of local currency has been transferred under the market development requirements from developing to developed countries to support various kinds of advertising, demonstration, and market information programs. Commodity interest groups in the United States have made contracts to carry out a substantial part of these programs, much through advertising and other techniques developed in the United States.

It is generally argued that these activities bring greater knowledge of American farm products to the attention of consumers in other lands. They establish commercial contacts. They strive to reduce the barriers to trade. They assist private American exporters in identifying the reasons for adverse reaction, and to adjust the product better to the preferences of the importer and consumer. The purpose, of course, is to increase the commercial exports of U. S. farm products.

One aspect of this expanding demand is the reallocation of countries from P.L. 480 recipients to commercial purchasers, or at least from Title I to Title IV programs. Japan, Greece, Spain,

and Taiwan are examples of shifts to commercial purchasers. This change in status has been attributed to a number of factors, one of which might be market development, particularly if economic development and market development are closely associated. Most economists, however, would argue that the ability of a country to pay its own way is a consequence of economic growth, with consequent increases in the ability to purchase with hard currency, and only then is there a market development effect.

The major share of P.L. 480 commodities is being sent to developing countries; about a third goes to India and Pakistan with similar developing countries also high on the list of recipients. Even if P.L. 480 in general, and market development in particular, share in the contribution to strengthening some economies, still this does not mean that India, Pakistan, Egypt, Indonesia, and Turkey are soon to be major commercial purchasers of U. S. farm products. Thus, there are broad questions to be raised on the relationship between market development and the growth of commercial trade with developing countries.

But this is only one aspect of market development. Much, perhaps the majority, of these activities are centered in countries now engaged in commercial trade. Much of the market development work is financed with a percentage of local currency payments by the Title I recipients (which are required to be convertible). In this way, Indian rupees or Colombian pesos may finance an advertising activity in West Germany, or a food market demonstration in Italy. Some of these rupees, pesos, and other currency will remain in the

developing countries to support such market development activities as technical advice on food processing, experiments in blending local and imported products, product improvement and standardization, and assistance in solving technical problems, often by a simple transfer of information already known in developed countries. These may be more important in these countries than "point-of-sales" campaigns, and so on. A local representative sometimes is employed to try to persuade the host government to remove or reduce certain onerous restrictions which make sales of imported products difficult. In a number of countries there is some evidence that food aid programs have contributed to market development. Although Japan cannot be considered as an underdeveloped country, Japan's school lunch program is credited with increasing the commercial market demand for nonfat dry milk. And the school lunch program was stimulated by the P.L. 480 program. In India, which is a developing country, the sale of P.L. 480 wheat to Indian flour mills at prices below those of indigenous wheat did encourage the consumption of flour. A number of other cases may be used to illustrate how U. S. products may be introduced in a manner to develop commercial markets as a recipient country develops economically and is able to allocate foreign exchange for commercial food imports.

These specific programs represent a substantial volume of activity. The FAS-USDA does support periodic evaluations of these activities. They believe that these evaluations are useful, and they draw on talented and experienced people. However, these reports tend to be more surveys than research. Although surveys can be extremely

valuable pieces of work, there is a need for an occasional long-term study which collects hard data and critically attempts to discriminate between temporary trends and structural changes in demand, giving the reasons for such trends and changes. Such research is very difficult, requires careful planning, and requires considerable time.

Research on advertising, domestic or foreign, does not have well developed procedures; the conclusions of work that has been done are not well received. Despite the prevalence of negative conclusions, farmers, food distributors and thousands of industrial firms continue to support extensive advertising programs. The evaluation of market development falls into this same category. Nevertheless, and because of the substantial volume of funds expended on this program, it is recommended that an attempt be made (or in effect an invitation issued) to develop a basic research project on the economics of market development activities.

b. Research Completed or in Progress

Two kinds of market development evaluations have been made. One group is an overall country evaluation of market development activities; the second is a commodity oriented study, usually for a region.

Three country evaluation studies have been, for Germany (547), Japan (539), and Italy. Each of these has been conducted by agricultural economists at a land grant university. These studies are based upon relatively short visits by competent research workers, hence do not indicate what might be accomplished by a



full-scale research project. Another earlier university contract in Spain (509) deals with market potentials for tobacco, and probably should be classified as a market research project.

More recently, the USDA has sponsored a number of market evaluation studies, each for a single commodity, mainly in Western Europe. A team of people with talents in advertising, product improvement, and other areas of market promotion have made these reports. Their reports are restricted documents.

There is nothing comparable to these studies which appraises market development activities on a relatively objective basis for the higher-income developing countries, such as Turkey, Colombia, Mexico, Taiwan, or Greece, although the studies of Title I programs in several of these countries provide some information.

c. Research Objectives

Present surveys to provide evaluations of market development activities are not affected by this project proposal. They deal with specific types of activities. The objectives of the project suggested here would be:

- (1) To examine the factors, such as increased income, changing tastes, increased communication, trends in agriculture, and changes in population size and structure, which have led to changes in the demand for imports in specific countries.
- (2) To identify the policies of governments and of private firms, and their possible importance in influencing the source of such imported products.

- (3) To attempt to ascertain the importance or the role of market development activities in this complex economic environment, and to discuss the alternative implications for market development programs.
- (4) Or, to develop an alternative, possibly experimental, procedure by which to identify specifically the accomplishments of a well-rounded market development program.

d. Recommended Research Personnel

This project has not been sufficiently developed to permit identification of the particular talents required. Clearly, several people will be required, including a statistician, advertising specialist, and economist.

This should be a USDA-sponsored rather than an AID-sponsored area of research, in order to draw easily on the studies already completed or in progress. Most of the present research is conducted by a unit of the USDA, often by employing temporary consultants. For this project, however, it is suggested that an outside contractor can provide stimulation and critical self-analysis, which will have longer term usefulness to the USDA.

e. Priority

High

f. Cross References

60, 62, 63, and 65.

BB. The Administration of Food For Peace Programs.

There are many administrative problems connected with the implementation of Food For Peace programs in recipient countries. Some of these fall within the purview of the United States, others are the responsibility of the host governments, and still others devolve on the voluntary agencies who, in effect, are responsible to both governments.

One specific problem identified here is the comparative cost, accomplishment, and influence of the Food For Peace program under several titles.

Many of the Food For Peace programs, particularly under Title II, require a substantial amount of time of AID personnel. This has led to criticisms within the country mission, and can raise overall AID personnel requirements if Title II programs continue to grow. However, it is argued that the program impact, in political, cultural and economic terms, is such as to warrant the cost. The program and personnel officers will be able to function more effectively and with fewer internal frictions if there is basic information on the costs and effects of the different AID programs. Thus, if it is determined that the Title II Food-For-Wages impact is desirable in a particular country, then personnel requirements will have a particular character, and the requisite assistance will be sought. Marginal decisions on Title I versus Title II or on Title II versus dollar aid will be made with full knowledge of the kinds of efforts each will require.

Most of the administration of programs abroad under Title I and Title IV is provided by the host country. The same is true for some of the Title II programs. This may affect the competence and availability of skilled public administrators, and it may affect the size and structure of the agency administering the program. The program may impose rules of procedure which

are unknown in the host country, or which require a double set of administrative checks on performance.

Also in a changing and developing program the United States is faced with the need to keep its staff informed. Ways by which to do so can be tested and evaluated.

81. Comparative Personnel Costs and Effectiveness Among Titles of P.L. 480

a. Research Rationale

The development of significant and complex Title II and III programs, such as in Tunisia, Brazil, and Korea, makes it possible to examine the strengths and weaknesses, the accomplishments and costs of several types of AID programming. These include:

- (1) Technical assistance
- (2) Dollar support for balance of payments
- (3) Dollar loans for specific projects
- (4) Title I commodity assistance and the associated local currency loans and grants
- (5) Title II and Title III commodity donations

There are several possible means of comparison: e.g., (2) and (4) might be compared, (4) and (5) could be compared, or (1), (2), and (3) might be compared with (4) and with (5). This last comparison is most relevant to the Food For Peace program. One of the countries in which this three-fold comparison is possible is Brazil.

These several assistance activities have different effects upon the economy. They lead to different levels of awareness and reactions

by the people at federal and state governmental levels, and among the general populace. The social and humanitarian effects differ, as does the political impact. The personnel-public administration requirements of each program vary significantly, with important communication and programming problems in the relationship between Washington and field personnel.

It would be useful for future aid programming to have a comprehensive view of the accomplishments of each of these approaches, the problems implicit in each program, and to know in advance which program is most likely to provide a particular desired social, political or economic impact. Brazil and Korea are among the very few nations with a Title II and III program large enough to permit this comparison with other types of AID programming. It must be emphasized that an adequate analysis requires consideration of the social and humanitarian aspects as well as the economic and administrative effects.

The personnel requirements appear to be substantially greater for Title II and III programs than other programs, at least in the initial period. Some officials question whether the more personal and humanitarian impact warrants the added personnel requirement. Some also ask whether the procedures established for traditional foreign aid programs can be appropriately applied to Food For Peace. Nevertheless, all officials are seeking answers to the questions of how large the program should be. What criteria are appropriate to govern the volume and complexity of the Title II operations?

b. Research Completed and in Progress

No such comparisons have been made; however, there have been a number of country evaluation studies of AID programs, as in Turkey and Tunisia, in which some attention has been given to Food For Peace as aid. These can be drawn on to some extent for both substance and methodology.

c. Research Objectives

Each of the programs could be the focus for a more detailed study. The purpose of this research proposal is to point out the broad differences in the impact on people, in economic development, and the public administration implications of each type of aid to guide mission directors and program officers as they consider changes in foreign aid operations in a particular country.

The Title II and Title III Food For Peace programs should be compared with Title I Commodity and Local Currency Assistance, and with other foreign assistance to ascertain personnel requirements. The effects of these programs upon the economy of Brazil or a similar nation would be compared. Attention can also be given to an analysis of the short-run and long-run social and political impacts of each of these programs upon individuals and groups.

The final product would indicate the personnel and public administration needs of each program during its development and would project the probable needs as the programs become routinized.

d. Suggested Research Personnel

The research team needs to have skills in social psychology, public administration, and economics to insure the necessary breadth to

adequately compare these programs. One of the university contract groups would be appropriate.

e. Priority

Medium to high

f. Cross References

3, 4, 5, 20, 30, 33, 73, 82, 83, and 84.

82. Changes in the Sophistication and Competencies of Public and Private Administration in the Recipient Country in Food For Peace Activities

a. Research Rationale

The principle function of this project is to examine the effectiveness of the administration of Food For Peace programs in the host country, and changes in the program over time. The previous project (81) examined the comparative personnel costs of different programs. The present project is concerned with comparative costs of a particular program in different countries or within a single country as experience is gained. Do personnel and other needs per ton of food distributed decrease or increase as program size changes? Are there differences in the administration of personnel costs and procedures between a Title I wheat program and a Title I feed grain program, or between programs involving grains and those involving vegetable oils?

If there are substantial differences in the apparent output per Food For Peace worker in a host country, can the reasons be identified? Perhaps money costs are kept low by using voluntary workers, which may lead to changes in their attitudes towards welfare and social and human development. There may be important differences in the

delegation of authority, or in associated programs which Food For Peace makes possible.

Another series of questions relates to the career patterns of Food For Peace administrators. They may be drawn from other administrative positions with the result that Food For Peace helps make more acute the shortage of competent administrators. It may be that many of the administrative personnel are drawn from within the program and move out to other positions, so that Food For Peace distribution programs become a fruitful source and training program for much needed talents.

How do former host country administrators now view their experience in programs of food distribution? It may be that the program provided many personal contacts and developed satisfactions which were not possible in other roles. And it may be that specific requirements--accountability--led to frustrations and negative reactions.

A comparison of programs most probably will identify differences in specific programs in administrative costs and procedures. The reasons for and consequences of such differences need to be examined. From such information it should be possible to determine more accurately both the appropriate local institutions to handle particular programs, and changes in the administrative policies of food distribution agencies which will lead to more effective programs.

b. Research Completed or in Progress

There have been a number of governmental reviews of particular programs, primarily as a check on legal and fiscal requirements. Such



audit procedures, as by the General Accounting Office, do not provide the analysis envisaged here.

Specific reference to public administration of Food For Peace is made in the McGee report (710), which suggests that more personnel are required to have a more effective program. But there is no indication of which phases of the program should be strengthened.

More general references to the administration of Food For Peace are provided by McGovern (52) and by Paddock and Paddock (61). A general concern with administration in relation to the political system is found in such works as Braibante (11), Holt (40), Pye (63), Millikan (53), Brecker (12), Ward (80), and many others.

Although the central focus is on the substantive impacts of the program, several country-level case studies of P.L. 480 may be useful in identifying possible administrative problems. These include Ginor (30) for Israel, two FAO-ECAFE studies for Japan and Pakistan (629, 630), Adams, et al., for Colombia (1), and Aktan (903) for Turkey.

c. Research Objectives

- (1) To identify the various interests in program-planning, management-planning, and administrative actions of the Food For Peace administration by host administrative agencies.
- (2) To identify the recipient's capabilities for providing administrative efficiency for in-country implementation of Food For Peace programs.
- (3) To relate Food For Peace to the development of administrative talent and capabilities.

- (4) To formulate criteria for administrative action by host administrative agencies which will provide Food For Peace decision makers with an understanding of the consequences of alternative administrative procedures.

d. Suggested Research Personnel

This study should be conducted by indigenous universities specializing in public administration. Assistance from U. S. public administration specialists should be provided.

e. Priority

Medium

f. Cross References

24, 26, 46, 81, 83, and 84.

83. Effects of Food For Peace Upon the Structure and Operations of U. S. Administrative Agencies

a. Research Rationale

Whereas Title I and Title IV in-country implementation is administered by the host country, Title II involves both U. S. and host country cooperation; Title III requires the use of U. S.-related voluntary agencies. In relation to the amount of commodities, it is likely that Title II will increase the number of personnel required in the U. S. mission, while Title III is likely to increase the size of the voluntary agencies operating in the host country. To what extent does this occur, and what differences exist among countries? Such variations may exist because of the differences in the effectiveness of the host government, because specific

objectives are different, or because the means of implementation and channels of administration vary significantly.

For Title I, the U. S. mission is receiving and administering local currency. It also has administrative problems from Title IV.

Have such activities modified the structure and operation of the U. S. mission? And in what ways? It may be that records for such funds have been easily absorbed into the accounting process, but not so easily handled in loans to host country agencies. These effects may also differ among countries.

Title III principally involves the voluntary agencies. A separate project (73) is designed to examine and compare the methods used by the several voluntary agencies. This project can be drawn on heavily for information which compares the effects of Title III upon the voluntary agencies with the effects of Titles I, IV, and especially II upon the structure of the U. S. mission.

Finally, there is now a significant effort to consider the host country's agricultural and food policy as part of the framework within which to negotiate further agreements, including Titles I and IV. Through what administrative procedures are such recommendations implemented? The need to make such recommendations will increase the work load significantly, and may change the structure of interrelationships within the mission. It may be that a comparison among U. S. missions can provide suggestions for more effectively and efficiently organizing the total activities that take place.

b. Research Completed and in Progress

There exists very little literature dealing directly with in-country implementation of Titles II, III, and IV by U. S. governmental and non-governmental agencies. A number of works have some relevance for general orientation in that they touch on in-country implementation of U. S. foreign assistance programs, hence provide information about administrative procedures and coordination of assistance programs. However, specific discussion of P. L. 480 is found in several Congressional Hearings (734, 738), and special reports by the Brookings Institutions (504, 741). Two other works touch more directly upon aspects of in-country Food For Peace implementation by U. S. agencies; John Davis (160) and Senator McGee (710). A report by the voluntary agencies themselves (906) includes a response to some questions on the structure and operation of the food distribution program. It provides ideas, but does not provide details on administrative costs and problems.

c. Research Objectives

- (1) To identify various administrative procedures used by U. S. in-country administrative agencies (voluntary and nonvoluntary) for the implementation of Food For Peace.
- (2) To evaluate administrative changes required for the coordination of Food For Peace programs, and the compatibility with U. S. national interests of U. S.-administered Food For Peace programs by voluntary and nonvoluntary agencies.
- (3) To re-examine U. S. administrative actions in Food For Peace recipient countries and to take better account of new requests to the U. S. missions from Washington and the procedures for responding to these requests.

d. Suggested Research Personnel

This study should be done by an American research organization. Some of the questions discussed here can be examined through an internal operations research unit, but others will be more adequately handled by a research organization concerned with public administration. Familiarity with the operations of the Food For Peace program is necessary for at least one of the people involved in the research.

e. Priority

Low, partly because other projects need to be completed first. These other projects will provide criteria, i.e., specific objectives, which can be used in this project.

f. Cross References

28, 30, 72, 81, 82, and 84.

84. Improving the Knowledge and Effectiveness of Personnel

a. Research Rationale

An evaluation of the administrative problems of Food For Peace has been suggested in the projects just presented. The results from this work need to be made available. In addition, the frequent rotation of personnel among countries, and the shifting of assignments to and from Food For Peace responsibilities are a part of the overall personnel policy of AID and other agencies operating overseas. The benefits of such reassignments are not being questioned. But this policy does have costs in noncontinuity of personnel and a consequent reduction of opportunities to build

on experience, even though the Food For Peace personnel rotated to new countries do bring this experience with them. What can be done to utilize these experiences more fully? Regional conferences are one possibility and they have been used to some extent. Can periodic and systematic reviews of operating experiences be brought together for the guidance and stimulation of those on new assignments? Or can certain end-of-tour reports be revised somewhat and distributed as means of training and stimulating personnel?

The McGee Committee report in 1963 concluded that the quantity (and quality) of personnel assigned to Food For Peace was inadequate. Since that time there have been changes and increases in the personnel assigned to Food For Peace programs. In addition, it is not clear whether the McGee Committee was referring to personnel concerned with both commodity and local currency or with only one. A review and appraisal of the administrative loads and quality of personnel are appropriate. Such an appraisal will be more useful if done with some care and deliberation, with realistic appraisals of what can and cannot be done in the use of local currency in contrast to the greater leverage available as agreements are made to provide commodities.

Questions also arise with respect to communications between the field staff and Washington, and among the agencies in Washington. Further, to what extent do the views of AID personnel within a country become knowledge for other agencies in Washington, or the views of the agricultural attache in the country part of the considerations of AID in Washington. To what extent does faulty

communication lead to an inadequate total program, or to the elimination of elements considered basic essentials by one or another of the participants?

b. Research Completed or in Progress

No research directly bearing on these problems is available.

Research Objectives

This research can be, and at some stage should be, incorporated into a comparative study of personnel problems and efficiency in other units of AID, the USDA, and the Department of State. But, because of the special character of P.L. 480 in its interagency relations, and the special interest of certain Congressional committees, there is a need for added information on Food For Peace personnel.

The specific objectives would be:

- (1) To identify the kinds of information typically required by Food For Peace personnel to do an effective job. This may include information which is neither sought nor requested.
- (2) To determine the kinds of information that may be exchanged among personnel by conferences and by the rotation of personnel, and those that can best be developed and communicated in other ways.
- (3) To recommend appropriate procedures for improved communication.

d. Suggested Research Personnel

Appropriate individuals within the government would be assigned this task.

e. Priority

High

f. Cross References

79, 81, 82, and 83.





INDEX OF SUBJECTS

The Index below indicates the major subjects covered in the proposed research projects (Chapter II through VII). The number reference is to the project number. Other cross-references are given at the end of each project proposal.

## A

- Acceptance of new foods (See Cultural factors; Food habits)
- Adaptation to low nutrient intake, 49
- Administration of programs, 5, 6, 19, 26, 33, 68, 69, 70, 71  
72, 74, 76, 82, 83, 84
- Agricultural production, United States, 1, 11, 14, 22, 27, 64,  
68, 69, 76, 80
- Agricultural production, recipient countries, 12, 15, 16, 17,  
22, 25, 26, 55, 60, 61, 62, 63, 64, 65, 68
- Animal diseases, 56

## B

- Balance of payments problems, 1, 2, 3, 6, 7, 8, 11, 27, 60, 62,  
65, 69, 70, 71, 79
- Banking systems, recipient countries, 4
- Benefit-cost ratios, 1, 5, 19, 20, 79
- Budget Procedures, 4, 16

## C

- Child feeding programs, 31, 34, 35, 36, 49, 54, 51
- Civil disturbance relief, 40
- Community development 32, 37, 50, 63
- Comparative advantage, Recipient countries, 8, 11, 62, 65
- Comparative advantage, United States, 8, 11, 65

## C

Contamination of food, 43, 52, 59, 77

Cooley Loans, 9, 10, (see also loans)

Costs of production: (see Agricultural production, U. S.;  
Agricultural production, recipient countries)

Cropping patterns, 8, 16, 62, 63, 65

Cultural factors, 32, 42, 43, 44, 45, 46, 47, 48, 49, 78

Currency, (see Local currency)

## D

Data improvements, 61

Demand, food

Income elasticity of, 6, 12, 13, 60, 66, 67, 70

Price elasticity of, 12, 13

Demonstration effects, 32

Diet, (see Nutritional requirements; Food habits)

Diffusion, 42, 43, 45, 46, 48, 58 (see also Demonstration effects)

Disaster relief, 39, 40

Disincentives, (see Incentives)

Diversion, United States commodities, 21

## E

Economic development, United States participation in, 4, 9,  
16, 19, 26, 28, 63, 64, 65, 69, 71, 80, 82

Educational development, 34, 48, 58

Exports, United States commercial, 7, 8

## F

- Family feeding programs, 33, 36, 38
- Folic acid requirements, 53
- Food aid, substitutability for financial aid, 1, 14
- Food habits, 43, 44, 45, 46, 58, 66, 78, (see also Cultural factors)
- Food packaging, 59, 74, 75
- Food preparation 44, 45, 47, 48
- Food preservation, 48
- Food requirements, (see Demand, food; Import requirements; Nutritional requirements; Food habits)
- Fortification, nutritional, 11, 55, 56, 57

## G

- Grants, 3, 6, 16

## I

- Import requirements, food, 1, 2, 6, 11, 12, 15, 51, 55, 56, 57, 60, 65, 77, 78, 80
- Import requirements, non-food, 1
- Incentives, 16, 18, 62, 64
- Infant feeding, (see Child feeding programs)
- Inflation, 9
- Intergovernment relations, 23, 28, 71, 82

## L

- Learning, 31, 34, 35, 49
- Linear programming applications, 13, 15, 22, 51
- Livestock, (see Animal diseases; Protein enrichment)

## L

Loans, 3, 6, 9, 16, (see also Cooley loans)

Local currency,

    "Excess" currencies, 4, 9

    Sales, Title I, 3, 4

    Timing of sales, 4

    United States uses, 9, 10

Marketing institutions, 18, 80

Migrants, (see Population)

## N

"Normal marketings", 7, 8, 16, 64, 65, 80

Nutritional requirements, 11, 22, 34, 45, 36, 37, 38, 45, 49,  
50, 51, 53, 54, 55, 56, 57, 58, 60, 66, 67

## P

Packaging, (see Food packaging)

Perception of Food For Peace

    Abroad, 24, 30, 42, 43, 44, 45, 46, 69, 75, 78

    In the United States, 29, 69, 84

Personnel requirements, 72, 73, 82, 83, 84

Planning,

    Programs, 6, 8, 69, 70, 72, 76, 79, 81, 82

    Projects, 19, 20, 26, 73, 79

Population,

    Estimates, 6, 60, 61, 67, 80

    Migrant, 66

Pre-school child, (see Child feeding programs)

Processing facilities, 18, 55, 56, 57

Protein Enrichment, 55, 56

## P

Publicity, 74, 75, (See also Perception of Food For Peace)

P.L. 480

Amendments, 2

Interpretations, 7, 8, 65, 80

## R

Reserve stocks, 17

Role conflicts, 30

## S

School feeding programs, 31, 33, 34

Shipping costs, 2, 77, 79

Shipping, programming of, 17, 74, 77, 79

"Similar" commodities, 7, 8, 64, 65, 80

Storage facilities, 17, 18, 59, 77

Supply instability, 42, 77

Surpluses, United States agricultural  
changes in, 11, 14, 15, 27, 60, 76

## T

Title I, 3, 4, 10, 16, 25, 26, 31, 74, 81, (See also Local currency sales)

Title II, 5, 19, 20, 21, 31, 32, 33, 36, 39, 40, 74, 81 (See also Works projects)

Title III, 21, 30, 33, 34, 35, 36, 37, 38, 74, 81

Title IV, 6, 26, (See also Loans)

T

Toxicology, 52, 59

Trade patterns, 6, 7, 9, 64

Transfer mechanisms, commodities, 3, 4, 5, 6, 69, 70, 71, 80

Transportation, 17, 18, 74, 77, 80

V

Vitamin deficiencies, 53, 55

Voluntary agencies, 30, 34, 35, 36, 37, 38, 39, 40, 73, 82

W

Wages-in-kind, 19, 50, (See also Works projects; Title II; Title III;  
Voluntary agencies)

Withdrawal effects, 41

Women's feeding programs, 36, 38

Work attitudes, 32, 50

Works projects, 3, 5, 19, 20, 21, 32, 37, 50