THE RELATIONSHIP BETWEEN P. L. 480 TITLE I IMPORTS AND DOMESTIC AGRICULTURAL PRODUCTION IN SIX RECEIVING NATIONS

Thesis for the Degree of Ph. D.

MICHIGAN STATE UNIVERSITY

Wayne Alan Schutjer

1964

This is to certify that the

thesis entitled

THE RELATIONSHIP BETWEEN P. L. 480
TITLE I IMPORTS AND DOMESTIC AGRICULTURAL
PRODUCTION IN SIX RECEIVING NATIONS

presented by

Wayne Alan Schutjer

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Agricultural Economics

Lawrence W. Witt
Major professor

Date May 22, 1964

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By

Wayne Alan Schutjer

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Agricultural Economics

1964

ABSTRACT

THE RELATIONSHIP BETWEEN P. L. 480
TITLE I IMPORTS AND DOMESTIC AGRICULTURAL
PRODUCTION IN SIX RECEIVING NATIONS

by Wayne Alan Schutjer

Since 1955 the United States has exported over nine billion dollars worth of agricultural commodities under Title I of P. L. 480. It is argued by some that these sales for local currency have an adverse effect on the domestic agriculture of the receiving nation. The overall objective of this thesis was to study the relationship between the Title I program, including both the commodity and local currency aspects, and domestic agricultural production in the receiving nations.

Six nations were selected for study: Colombia, India, Israel, Japan, Pakistan and Turkey. The data used in analyzing the individual nation's experiences were obtained from secondary sources including studies conducted under both U.S.D.A. and U.N. auspices dealing with the effects of Title I imports on the economy of the receiving nations. Supplemental data were obtained from other U.N. and U.S. Government sources as well as from agencies within the receiving nations. The procedure adopted consists of a theoretical analysis, an intensive analysis of the experiences of the six receiving nations, and a comparative analysis of the individual nation experience.

The analysis of the Colombian experience suggests that Title I wheat imports have contributed to a reduced rate of growth in Colombian wheat production and that a vigorous domestic cotton expansion program

over-shadowed any effect of Title I imports of cotton and vegetable oils upon domestic production and prices. In India imports of two Title I commodities, wheat and cotton, were found to have had no discernable effect upon domestic production. The effect of Title I imports of wheat and feed grains on domestic production in Israel was greatly influenced by the government's food grain expansion program which resulted in expanded wheat acreage at the expense of feed grains. Imports of cotton and vegetable oils appear to have had no effect upon domestic production. But cotton imports did contribute to the expansion of Israel's textile industry. The analysis of Title I wheat, feed grain, and tobacco imports by Japan suggest that Title I imports were absorbed with no detrimental effects upon domestic agricultural production. The Title I program did, however, result in a decline in commercial imports of tobacco and contribute to the government's feed grain price stabilization program. Imports of wheat by Pakistan made a contribution to the government's wheat distribution program. Cotton and cottonseed oil imports were used to stimulate the textile and vanaspati industries at the expense of domestic cotton producers. The analysis of the Turkish domestic price and production record of the three Title I commodities, wheat, feed grains, and vegetable oils, leads to the conclusion that there were no adverse effects upon domestic production stemming from the Title I program in that nation.

A comparison of the experiences of the six nations with the Title I program leads to three rather general conclusions. (1) Title I imports have been absorbed by the receiving nations with very little detrimental effect upon agricultural production. (2) The most important variable in explaining differential impacts of Title I imports upon domestic agricultural prices and production is the public policy of the receiving

nation. (3) The additional resources flowing into the receiving nations under Title I have permitted additional flexibility in the public policy of the receiving nations. In Colombia the local currency derived from the Title I program made a possitive contribution to agricultural investment. This was not the case in all of the other nations, and in Turkey it appears that the Title I program has resulted in less emphasis being placed upon agricultural development.

ACKNOWLEDGEMENTS

Credit for assistance in the completion of this thesis is due many persons. It is impossible to list all the people who contributed but I would like to express my gratitude to a few.

Sincere appreciation is extended to Professor Lawrence W. Witt, major professor, for his encouragement and patience during both the writing of this thesis and the entire Ph.D. program. The comments and suggestions given by Dr. L. V. Manderscheid are also gratefully acknowledged. I am indebted to the Department of Agricultural Economics for financial and other assistance during my graduate study at Michigan State University.

A final note of gratitude is due my wife who not only typed the preliminary drafts of this thesis, but also exhibited much confidence and patience throughout all my graduate training.

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CHAPTER I

INTRODUCTION

The ability of United States agriculture to produce an over abundance of food and fiber is one of the principal problems facing the United States. Many possible explanations have been given for the over abundance; however, one simple fact emerges, United States agriculture is producing more than is demanded at prevailing prices. To help remedy this situation, the United States sells agricultural products to less developed nations on terms more favorable than those obtainable in normal commercial channels. It is argued by some that such sales benefit both the United States and the receiving nations whose agricultural sectors for various reasons are unable to fulfill local demand. However, serious questions have been raised, pointing to possible adverse effects on the domestic agriculture of the receiving nations resulting from these shipments.

The export market is an important outlet for United States agricultural products. See Table 1.0. During the period 1955-58 exports accounted for nearly 12 percent of the total utilization of farm commodities. For several crops the percentage is even higher; in 1959 more than 25 percent of the domestic production of barley, cotton, rice, rye, tobacco, wheat, tallow, hops, fats and oils, and oil seeds were exported.[1]

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[1]Menzie, Witt, Eicher, and Hillman, Policy for United States Agricultural Export Surplus Disposal, Technical Bulletin 150, The University of Arizona, College of Agriculture, Agricultural Experiment Station, Tucson, Arizona, p. 58.

Table 1.0 - Utilization* of Farm Commodities, Selected Periods, 1925-1958

	(percent of total utilization)				
Period	Domestic Food	Feed for Work Stock	Industrial & Other Non-Food Uses	Exports	Total Utilization
1925-29	68.4	9.6	10.7	11.3	100
1935-39	74.7	6.4	12.2	6.7	100
1945-49	75.3	3.0	12.8	8.9	100
1955-58	76.4	.8	10.5	11.8	100

*Utilization excludes feed for livestock production and seed.

Source: Data taken from: Witt, Lawrence, Potentials of New Markets for Agricultural Products, prepared for the Committee for Economic Development, July, 1961, Table I, p. 7.

Agricultural exports exceeded five billion dollars in 1962 or about one fourth of the total value of United States exports. See Table 1.1. This relative position of agricultural exports in total exports has been maintained since 1930 even though total exports increased more than 18 billion dollars.[2] The ability of agricultural exports to keep pace with non-agricultural exports in the last two decades is in large part due to government programs. A variety of postwar programs facilitated agricultural exports after 1945. Data for the past decade are shown in Table 1.2 which gives a breakdown of U. S. agricultural exports on the basis of the type of transaction involved. The three types of transactions include; (1) commercial exports, that is exports

[2]Agricultural exports as a percent of total exports declined during the war years, 1940-44, but increased again in the post-war period.

Table 1.1 - United States Agricultural Exports
1930-1962

Calendar Year	Agricultural Exports	Total Exports	Ag as a Percent of Total
	(million dollars)	(Million dollars)	(Percent)
Average 1930-34	822	2,296	36
Average 1935-39	747	2,828	26
Average 1940-44	1,307	8,792	15
Average 1945-59	3,280	11,744	28
Average 1950-54	3,249	14,138	23
Average 1955-59	3,937	18,020	22
1960	4,832	20,299	24
1961	5,024	20,629	24
1962	5,031	21,359	24

Source: Economic Research Service, U. S. Department of Agriculture, U. S. Foreign Agricultural Trade by Commodities Calendar Year 1962, June 1963, Table 2, p. 2.

for dollars at U. S. domestic prices, (2) commercial exports with government assistance, that is, exports for dollars at prices less than U. S. domestic prices, and (3) exports under special programs including P.L. 480 and Section 402 of the Mutual Security Act.[3]

It can be readily seen that since 1953 between one-half and two-thirds of total U. S. agricultural exports have been in some way government assisted. These figures indicate that governmental action

[3] Op. Cit., Menzie, Et. Al., pp. 35-36.

Table 1.2 - U. S. Agricultural Exports: Commercial and Special Programs, by Fiscal Years 1953-61. (in billions of dollars)

Year Ending June 30	Commercial Exports No Assistance	Commercial Exports Gov't Assisted	Special Programs	Total
1953	1.8	.6	.4	2.8
1954	1.9	.4	.6	2.9
1955	1.9	.4	.8	3.1
1956	1.6	.5	1.4	3.5
1957	1.7	1.1	1.9	4.7
1958	1.6	1.2	1.2	4.0
1959	1.6	.8	1.3	3.7
1960	1.9	1.3	1.3	4.5
1961	2.0	1.4	1.5	4.9

Source: Menzie, Witt, Eicher and Hillman, Policy for United States Agricultural Export Surplus Disposal, The University of Arizona, College of Agriculture, Agricultural Experiment Station, Tucson, Arizona, Table IV-2, p. 36.

in the export sphere has been an effective means of increasing foreign shipments of agricultural products.

P.L. 480 The major government program operating in the export market for U. S. agricultural products is authorized by the Agricultural Trade Development and Assistance Act of 1945. This law, more commonly known as P.L. 480, consists of four titles which outline the procedures to be used in meeting the objectives of the law. The stated objectives of P.L. 480 are to: (1) increase the consumption of United States

agricultural commodities in foreign nations, (2) improve the foreign relations of the United States, (3) expand international trade among the United States and friendly nations, (4) facilitate the convertability of currency, (5) promote the economic stability of American agriculture and the national welfare, (6) further the foreign policy of the United States, (7) stimulate and facilitate the expansion of foreign trade in United States agricultural commodities, and (8) use the foreign currencies which accrue under P.L. 480 to (a) encourage economic development, (b) purchase strategic materials, (c) pay U. S. obligations abroad, (d) promote the collective strength and (e) foster in other ways the foreign policy of the United States.[4]

Title I authorizes the Executive to negotiate and carry out agreements with friendly nations to provide for the sale of surplus agricultural commodities for foreign currencies. This title also outlines the uses to which the foreign currencies may be put.[5] In making such

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[4]Public Law 480 - 83d Congress, Chapter 469 - 2d Session S.2475 prepared for distribution by the Foreign Agricultural Service U.S.D.A., p. 1.

[5]Foreign currencies may be used for (a) market development, (b) the purchase of strategic materials, (c) procurement of military supplies for the common defense, (d) financing the purchase of goods or services for other friendly nations, (e) promoting balanced economic development and trade among nations (f) pay United States obligations abroad, (g) loans to promote multilateral trade and economic development, (h) financing the translation, publication, and distribution of books and periodicals, including Government publications, abroad, (j) provide assistance to activities and projects associated with the United States Information and Educational Exchange Act, (k) to collect, translate, abstract, and disseminate scientific and technological information and to conduct research and support scientific activities overseas, (l) acquisition of sites and buildings and grounds abroad, for U. S. government use, and for construction, repair, alteration, and finishing of these buildings and facilities, (m) participation in cultural exchange, trade, agricultural and horticultural fairs, (n) the evaluation, indexing, etc. and acquisition of foreign books and periodicals, (o) assisting U. S. sponsored colleges or institutions abroad, (p) supporting workships in American studies, (q) emergency assistance other than requirements for

agreements the President is required to (1) safeguard world prices and not unduly disrupt normal patterns of commercial trade with friendly nations, (2) take steps to assure that private trade channels are used as much as possible, (3) give special consideration to developing and expanding market demand abroad with emphasis on underdeveloped and new market areas, (4) prevent re-exporting of the goods by the recipient country unless otherwise specified, (5) afford any friendly nation the maximum opportunity to purchase surplus agricultural commodities from the U. S. in view of the policy of the Act, and (6) to obtain exchange rates which are not less favorable than may be obtained from the United States disbursing officers in the respective countries.[6]

Title II authorizes the use of surplus commodities for emergency situations in friendly nations, or by friendly people regardless of the attitude of their governments. As of May 1960, this title also authorizes the transfer of surplus foods on a grant basis in order to promote economic development. The programs are implemented largely through the payment of wages in kind.[7]

Title III authorizes the barter and exchange of surplus commodities for strategic materials and other goods not produced in the United States. Secondly, this title provides for grants of surplus food for use by the needy within the United States in school-lunch

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surplus food, (r) preparation, distribution and exhibition of audio-visual information and educational materials abroad, and (s) for the sale for dollars to American Tourists. Ibid., p. 4-8.

[6]Ibid., p. 2.

[7]Ibid., p. 9. The original amendment of 1960 authorized such grants only until June 1961, however, in July 1961, this limitation was repealed.

programs, public hospitals, and non-profit summer camps for children. Finally it authorizes donations to approved international agencies for use in the assistance of needy persons outside of the United States.[8]

Title IV authorizes the Executive to make agreements with friendly nations for the delivery of surplus commodities for periods up to ten years. The payment for the commodities must be in dollars and include interest but the payments can be made to come due up to twenty years after the shipments have been completed.[9]

Since the inception of P.L. 480 in 1954, nearly 14 billion dollars of U. S. farm commodities have been committed for export under its provisions.[10] A summary of the amounts committed by Title as well as the annual proportion committed under each Title are given in Table 1.3.

Title I has been the most important title in terms of value exported. Title I exports in 1955 were $354.6 million, representing 45.2 percent of the total for that year. This percentage increased to almost 74 percent in 1960 but has declined to about 68 percent during the first half of 1963. Title II, disaster and relief assistance has more than doubled since 1955 in dollar volume but has remained relatively stable in terms of percent of total P.L. 480 committments.

Title III foreign donations have increased slightly in dollar amount but decreased from about 25 percent to 10 percent in terms of the total P.L. 480 program. The same is true of the barter section of

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[8]Ibid., p. 10-14.

[9]Ibid., p. 14.

[10]United States Government, Seventeenth Semi-annual Report on Activities carried on Under Public Law 480, Appendix Table I, March 4, 1963.

Table 1.3 - The Composition of the P.L. 480 Program: 1955-1963

Fiscal Year		Title I Sales for local Currency Millions of Dollars	Title I Sales for local Currency Percent of Total	Title II Disaster & other Relief Assist. Millions of Dollars	Title II Disaster & other Relief Assist. Percent of Total	Title III Foreign Donations Millions of Dollars	Title III Foreign Donations Percent of Total	Title III Barter Millions of Dollars	Title III Barter Percent of Total	Title IV Millions of Dollars	Title IV Percent of Total	Total Millions of Dollars
	1955	354.6	45.2	107.8	13.7	197.2	25.1	124.6	15.9	0	0	784.2
	1956	671.3	48.9	101.0	7.4	302.5	22.0	298.4	21.7	0	0	1373.2
	1957	1034.4	56.6	131.2	7.2	253.7	13.9	400.5	22.0	0	0	1819.8
	1958	729.9	60.2	109.5	9.1	272.5	22.5	99.8	8.2	0	0	1209.7
	1959	834.3	66.5	77.8	6.2	209.8	16.7	132.3	10.5	0	0	1254.2
	1960	1135.9	74.7	85.7	5.6	148.9	9.8	149.7	9.8	0	0	1520.2
	1961	1767.1	73.9	274.4	11.5	208.2	8.7	143.9	6.0	0	0	2393.6
	1962	1592.0	69.1	232.6	10.1	224.5	9.7	198.3	8.6	57.0	2.5	2304.4
1st half	1963	888.8	67.6	210.2	15.9	134.9	10.3	29.6	2.3	52.0	4.0	1315.5
	Total	9006.3	64.4	1330.2	9.5	1952.2	13.9	1577.1	11.3	109.0	.8	13974.8

Millions of dollars valued at export market value for Title I, Title III Barter, and Title IV. Title II transfer authorizations and Title III Foreign Donations are in millions of dollars valued at ccc cost.

Source: United States Government, Seventeenth semiannual report on activities carried on under Public Law 480, March 4, 1963, appendix Table I.

Title III which has experienced the sharpest decline in terms of percent of total, falling from nearly 16 percent in 1955 and 22 percent in 1957 to less than three percent in the first half of 1963. It is difficult to say anything about the position of Title IV since it is a relatively new program which accounted for only 2.5 and 4.0 percent in 1962 and the first half of 1963, respectively.

The sheer magnitude of the P.L. 480 program and especially of the Title I program point up not only its importance as a source of demand for United States agricultural products, but also the potential impact of this program on the agriculture and economic development of the receiving nations. Some authors have suggested that the impact of surplus imports may be a negative effect on the agricultural production of the receiving nations, while others find no grounds for such fears.

First, to the extent that P.L. 480, by making food and fiber available on less than commercial terms reduces a nation's incentive for developing its domestic agriculture, these imports will be a detriment to the nation's long run development. Witt writes: "There is reason to think that the existence of special export programs has reduced the pressures on Planning Commissions and Ministries of Agriculture to solve their food problems. Thus, the whole range of needed agricultural development programs may receive inadequate attention..."[11]

Secondly, it is possible that P.L. 480 imports will increase supply to an extent that domestic prices for agricultural products will fall. If this occurs it may be that domestic producers will have

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[11]Witt, Lawrence, "Discussion: Impact and Implication of Foreign Surplus Disposal on Underdeveloped Economies," J.F.E., Vol. XLII, Dec. 1960, pp. 1046-1047.

less incentive to produce and to make capital improvements, etc. As Schultz writes: "Not a few countries presently receiving substantial amounts of P.L. 480 farm products are in danger of impairing their agriculture."[12] Furthermore: "...W. W. Wilcox, in reporting on discussions in Santiago, noted that 'Staff members of F.A.O. attending the Conference expressed the view that there probably was more danger of serious adverse effects on the producers in the receiving countries from continued P.L. 480 exports than on competitive producers in other exporting countries. They are apprehensive that desirable, and in the long run, necessary agriculture development in the receiving countries will not take place if P.L. 480 exports are continued and expanded.'"[13] Taking an opposing view Myers, while head of the Foreign Agriculture Service, wrote:

"It has been charged that surplus disposals have injured the farmers of the recipient countries. There seems to be little evidence of this, but it has been considered by the U. S. and recipient nations in negotiating agreements."[14]

Objectives. The overall objective of this study is to determine the effect of Title I imports on the agricultural production of the receiving nations. The specific objectives are:

1. To analyze the domestic price and production records of Title I imported and related commodities in selected receiving nations.

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[12]Schultz, T. W., "Value of U. S. Farm Surpluses to Underdeveloped Countries," J.F.E., Vol. XLII, Dec. 1960, p. 1029.

[13]Ibid., p. 1029.

[14]Myers, Max, "Impact of P.L. 480 - Discussion," Journal of Farm Economics, Vol. XLII, Dec., 1960, p. 1079.

2. To compare the domestic price and production records of Title I imported and related commodities in the selected nations and analyze any differences in their experiences.

3. To make recommendations based upon the findings of the study regarding future P.L. 480 Title I agreements.

Procedure. Given the objectives of the study the procedure adopted consists of a theoretical analysis (Chapter II), an intensive analysis of the experiences of six receiving nations (Chapter III), and a comparative analysis of the individual nation experiences (Chapter IV).

Chapter II, the theoretical analysis, outlines the theoretical effects of subsidized food imports on the agriculture of the receiving nations. The analysis considers not only the price and production record of the imported good, but also that of related goods. Some of the products which are imported under P.L. 480, Title I, are intermediate products in the sense they are used in the production of other products. For purposes of the theoretical analysis, these goods are treated as factors.

As there is much disagreement among economists as to the nature of supply response in the less developed nations. Chapter II also considers this problem. The chapter concludes with a discussion of the effect upon earlier conclusions when certain variables usually held constant in a static analysis are allowed to change. The variables considered in this section include income, tastes, institutions, populations, and technology.

Chapter III consists of an intensive analysis of the price and production records of Title I and related commodities in selected receiving nations. This chapter is concerned with (1) the Title I program

and its size, (2) the domestic price and production record of Title I commodities, (3) the domestic price and production record of related commodities, (4) changes of an institutional or economic character which may have influenced the price and production records of the receiving nation and (5) long run effects of the Title I program on domestic agricultural production.

Chapter IV is concerned first of all with a comparison of the individual nation experiences and secondly with an analysis of differences in the nations' experiences. This procedure should provide insights not only into the price and production records of the six receiving nations but also into the circumstances associated with the various outcomes. In this way the study should provide a basis for policy recommendations concerning future P.L. 480 Title I agreements.

CHAPTER II

THEORETICAL CONSIDERATIONS

This chapter presents a theoretical framework which can be used in evaluating the effects of Title I imports on domestic agricultural production in the receiving nations.

Schultz wrote in 1960 that given an increase of six percent of the supply of a commodity, for which there are no close substitutes in production or consumption, a price elasticity of no less than unity, implies a reduction of farm food prices of six percent, which will be offset somewhat by the income effects of the rise in real income associated with the receipts of P.L. 480 grants.[1]

Fisher in a later paper[2] points out that Schultz's example is "...implicitly based on the proposition that the effect of a one percent increase in food supplies on price is measured by the reciprocal of the price elasticity of demand. It is of some importance to realize; however, that...this will overstate the price effect unless the supply curve of domestic production is perfectly inelastic..."[3]

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[1]Schultz, T. W., "Value of U. S. Farm Surpluses to Underdeveloped Countries," J.F.E., Vol XLII, December, 1960, p. 1028.

[2]Fisher, F. M., Food Surplus Disposal, Price Effects, and the Costs of Agricultural Policies in Underdeveloped Countries: A Theoretical Analysis, Report 6307, Netherlands School of Economics, February, 1963.

[3]Ibid. p. 2. In Schultz's paper he specified a six percent change but assumed that a one percent change in supply would lead to a one percent decrease in price.

If the domestic supply curve is less than perfectly inelastic, the fall in price brought about by imports will decrease domestic supply, thereby reducing total availability as compared to what it would have been had domestic producers continued to produce the same amount. This can be readily seen from figure I which shows what happens to price (P) and quantity (Q) when imports (I) are added to a perfectly inelastic supply schedule (S_1) and to a supply curve with some elasticity (S_2). In figure I, Q_0 - Q_3 shows the reduction in domestic production when the domestic supply curve has some elasticity. When the domestic supply curve is perfectly inelastic, the increase in imports brings about a price decrease from P_0 to P_1 which is greater than the decrease P_0 to P_2

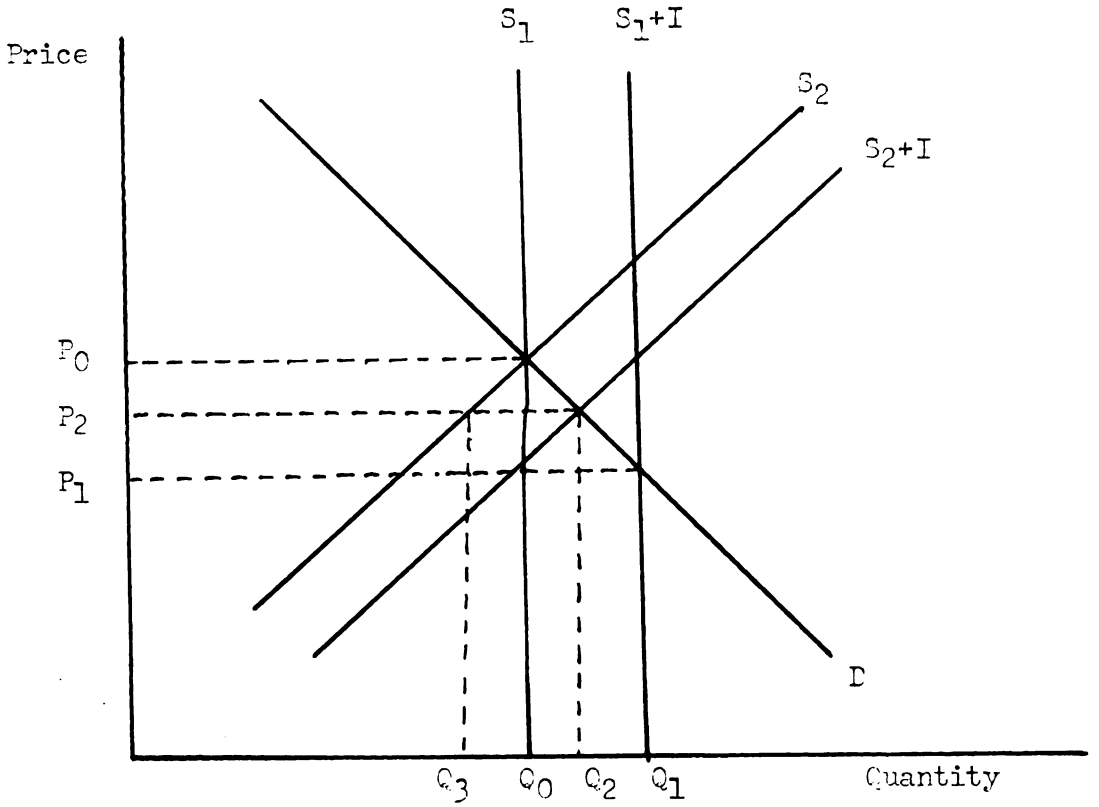

Figure I. The Effect of Title I Imports on the Domestic Price and Supply of the Imported Good.

which results under conditions of a more elastic domestic supply curve. Fisher points out that under conditions other than a perfectly inelastic domestic supply curve, the size of the price effect is one over the sum of domestic price elasticity of demand (N_D) and domestic supply price elasticity (N_s) and not merely one over demand elasticity, that is $\frac{1}{N_s + N_D}$ whereas the size of the change in domestic supply induced by imports is given by the price elasticity of domestic supply divided by the sum of domestic supply and demand price elasticities, i.e. $\frac{N_s}{N_s + N_D}$[4].

<u>Demand and supply elasticities</u>. The elasticity of demand is primarily influenced by the availability of substitutes for the commodity under consideration. If good substitutes are available, demand for a given

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[4]Ibid. p. 3-4. Fisher's proof of these statements is as follows: "...let the demand curve for food be: $D = f(P)$ where D is quantity demanded and P is price; let the domestic supply curve be: $S = G(P)$ where S is quantity of domestic supply. Let the amount of imported surplus be I. Then the market clearing condition is given by: $G(P) + I = f(P)$. Differentiating with respect to I and solving for $\frac{dP}{dI}$ we obtain: $\frac{dP}{dI} = \frac{1}{F'(P) - G'(P)}$. To put this all in readily interpretable terms, express I as a fraction of total existing supplies, S, and consider percentage change in price. Let E be the absolute value of the percentage change in price induced by the importation of surpluses amounting to one percent of existing supplies, than: $E = |(dP/dI)|\ (S/P) = \frac{1}{N_D + N_s}$ where N_D and N_s are the price elasticities of demand and supply, respectively (measuring the demand elasticity as positive)." ..."Similarly, we have for the effects of surpluses on domestic supply $\frac{dS}{dI} = \frac{(dS)}{(dP)}\frac{(dP)}{(dI)} = \frac{G'(P)}{F'(P) - G'(P)}$ or letting K be the absolute value of the percentage change in domestic supply induced by a surplus of one percent of existing supplies:

$$K = |(dS/dI)|\ (S/S = |(dS/dI)|\ ;\ \frac{S/P}{S/P} = \frac{N_s}{N_s + N_D}."$$

commodity will tend to be elastic.[5] The elasticity of supply on the other hand is determined by the shape of the individual firm's marginal cost curve and the ease with which new firms may enter the industry. If it is easy for the individual firm to expand its output, as reflected by the fact that this can be done without much increase in marginal cost, and if it is easy for new firms to enter the industry, then the supply will be elastic, as a given increase in price will result in a large increase in output.[6]

At the individual firm level the marginal cost curve becomes the supply curve under the assumption that the amount produced equals the amount sold. Under these circumstances, the elasticity of individual producer's supply curve depends upon the variables which influence the marginal cost curve, that is, the prices of the factors and their marginal physical products. The effect of changing output on the marginal physical product of a factor depends upon the technical relationship between the fixed and the variable factors and the resulting change in total product as more of the variable factor is combined with the fixed. The effect of changing output on the price of the variable factor depends upon the nature of its supply and demand curves. Thus, under conditions of diminishing marginal physical product and/or rising factor price the supply curve of the firm is positively sloped.

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[5]Other major factors influencing the elasticity of demand are (1) the uses to which the commodity can be put, (2) the price of the commodity relative to consumers income, and (3) whether the price established is toward the upper end or lower end of the demand curve. For a discussion of the forces influencing the elasticity of demand see: Leftwich, R., The Price System and Resource Allocation, Revised Edition, Holt, Rinehart and Winston, New York, 1960, pp. 42-46.

[6]A discussion of the factors influencing the elasticity of supply may be found in: Boulding, K., Economic Analysis, Third Edition, Harper & Brothers, New York, 1955, pp. 565-566.

In a subsistance setting characterized by a relatively low level of monetization and a relatively stable demand for money the relationship between price and quantity offered for sale may not be positive. This is demonstrated in Fig. 2 which shows the effect of a change in price on the sales and consumption of a subsistance product. O-W is the amount of wheat the producer has available, O-B is the quantity of other

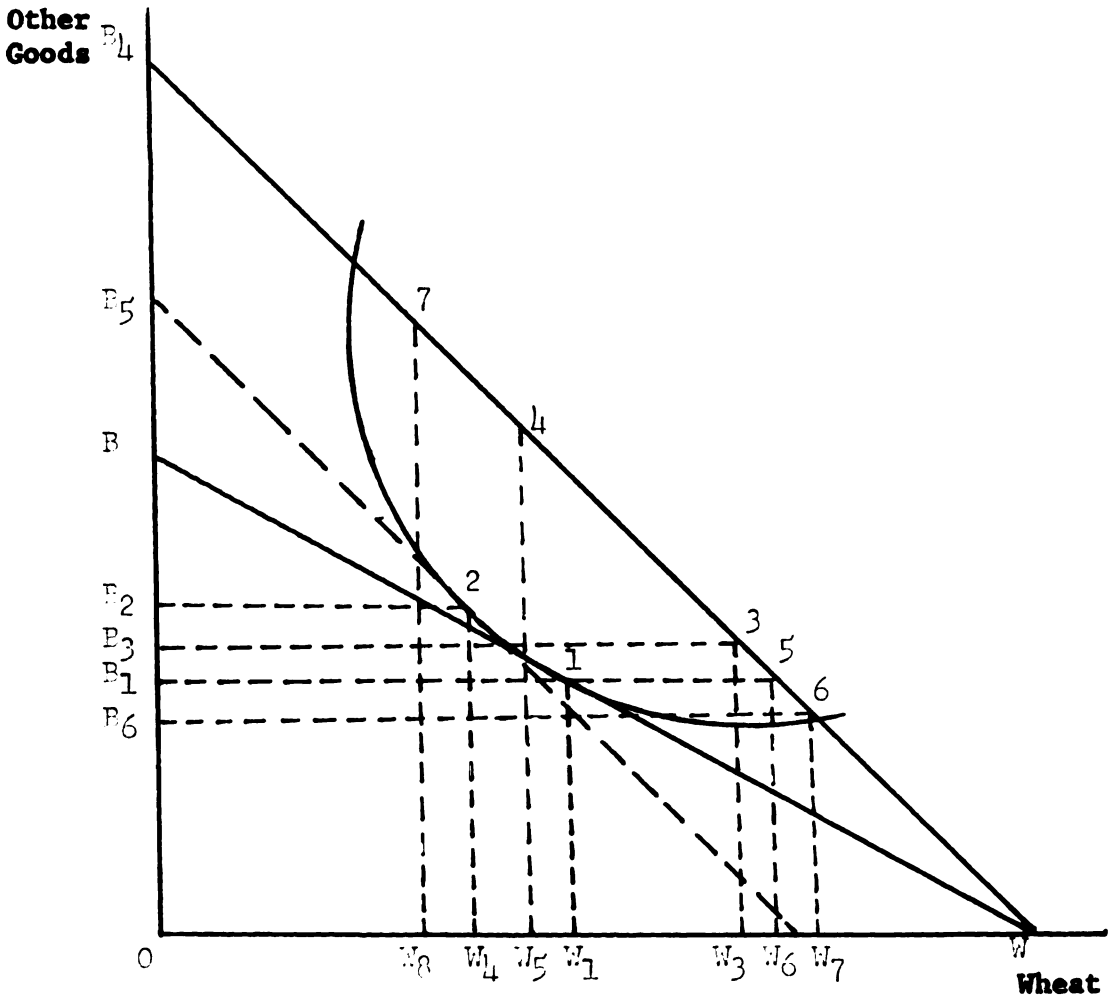

Figure 2. The Effect of a Change in Price Upon Sales and Consumption of a Subsistance Product.

goods that can be obtained for O-W wheat, thus the slope of line B-W equals the price ratio between wheat and other goods. Point 1 is the

equilibrium point where the income line B-W is tangent to the indifference curve I. In the equilibrium situation, the producer is consuming $O-W_1$ of his wheat and trading W_1-W for $O-B_1$ of other goods. When the price of wheat rises as represented by the change in the slope of the price line from W-B to $W-B_4$, the proportion of wheat sold will change. There are two influences affecting the proportion of total wheat supplies that will be sold, (1) substitution effect - the desire to buy more of what is cheaper and less of that which is more expensive and (2) the income effect which increases the consumption of all but inferior goods because of an increase in real income. The substitution effect would take the producer to point 2 where he would be decreasing his consumption of wheat to $O-W_4$ and increasing his consumption of other goods to $O-B_2$. The income effect would depend upon the nature of the income elasticity of demand for the product. The following solutions are representative of what may occur if the second indifference curve (not shown) were tangent to line $W-B_4$ at any of the points 3 through 7.

(a) Point 7 - Wheat is an inferior goods and as a result of a negative income effect coupled with a negative substitution effect the quantity of wheat consumed decreases from $O-W_1$ to $O-W_8$ while the quantity offered for sale increases from $W-W_1$ to $W-W_8$.

(b) Point 4 - Wheat is a normal good and a positive income effect W_4-W_5, cuts into but does not overcome the negative substitution effect W_1-W_4. As a net result of the two forces wheat consumption decreases from $O-W_1$ to $O-W_5$ while wheat sales increase to $W-W_5$.

(c) Point 3 - In this case wheat is a superior good. As a result, wheat consumption grows by W_1-W_3 which equals the decline in the quantity offered for sale.

(d) Point 5 - This is the case of a target demand for money income on the part of the producer, as the price of wheat rises, purchases of other goods remain constant at $O-B_1$ and increased consumption of wheat absorbs the total increase in income. As a result wheat consumption increases to $O-W_6$ and sales decline to $W-W_6$.

(e) Point 6 - In this case the other good is a Giffen Good and as a result the consumption of this good decreases to $O-B_6$ allowing wheat consumption to increase to $O-W_7$ and sales to decline to $W-W_7$.[7]

In each of the last three cases the amount of wheat offered for sale from a fixed supply would decline as the relative price of wheat increased. This does not imply, however, that in the next period less wheat will be planted; rather it is more likely that, as a result of higher prices wheat production will increase. Thus, it is possible that in the next production period the share of increased production going for sales will offset the decrease in sales resulting from the increase in income stemming from higher prices of wheat.

Surplus imports and related goods. As imports of surplus commodities induce changes in the domestic price and production of the imported good there will be shifts of factors and changes in demand which will affect not only the imported commodity but those related to it. In the case of products related in production the effect of shifting factors will be to shift the supply curves of the related commodities, to the right in the case of substitutes and to the left in the case of complements, in the face of decreased domestic price of the imported good. As may

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[7]A Giffen Good is one whose consumption changes in the same direction as the price, the reason being that the income affect more than offsets the substitution affect. Marshall, Alfred, Principles of Economics, 8th Edition, Macmillan and Co. Limited, London, 1959, pp. 109-110.

be seen from figure 3, the result will be an increase in the price of the complement (P to Pc), a decrease in the price of the substitute (P to Ps), a corresponding decrease in the quantity of the complement

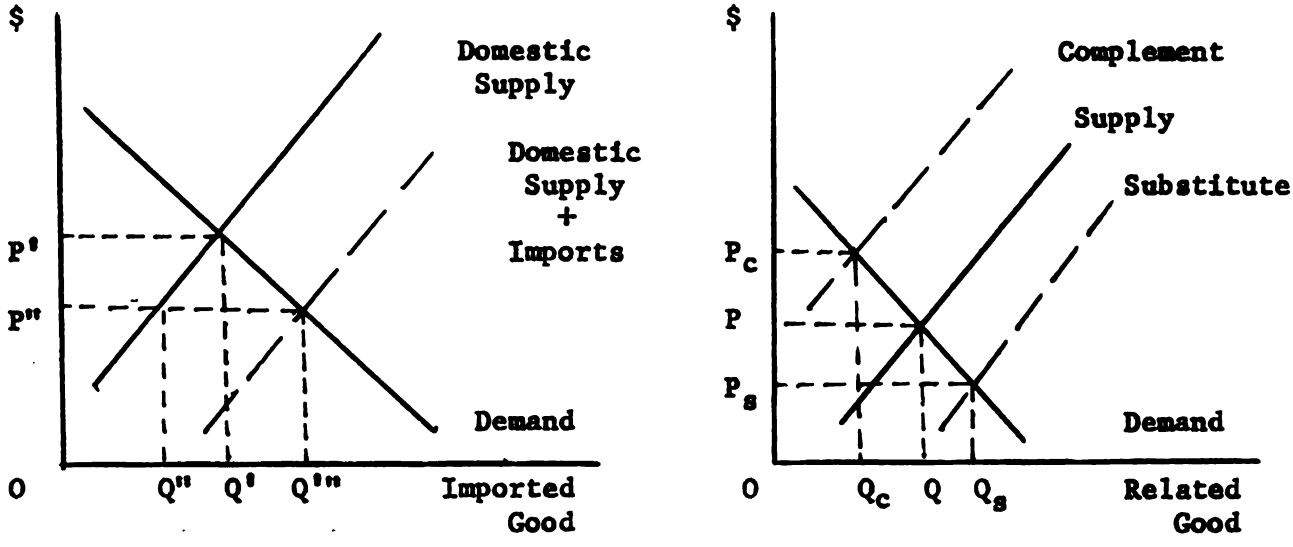

Figure 3. The Effect of Surplus Imports on the Domestic Price and Production of Production Related Commodities.

(Q to Qc) and an increase in the quantity produce of the substitute product (Q to Qs). The extent of the changes in prices and quantity will depend upon the shape of the supply and demand curves of the related goods and the ease of shifting factors between them and the imported product.

In the case of products which are related in consumption, the increase in supply of one product by affecting its price will shift the demand curves of the related product; this is shown in figure 4. If the relationship is complementary, the demand curve of the related product will be shifted to the right thereby raising price (P to Pc) and increasing supply (Q to Qc) providing the supply curve is positively sloped. A substitute relationship under the same conditions will result in a shift of the related good's demand curve to the left with a consequent price decrease (P to Ps) and decrease in supply (Q to Qs). The

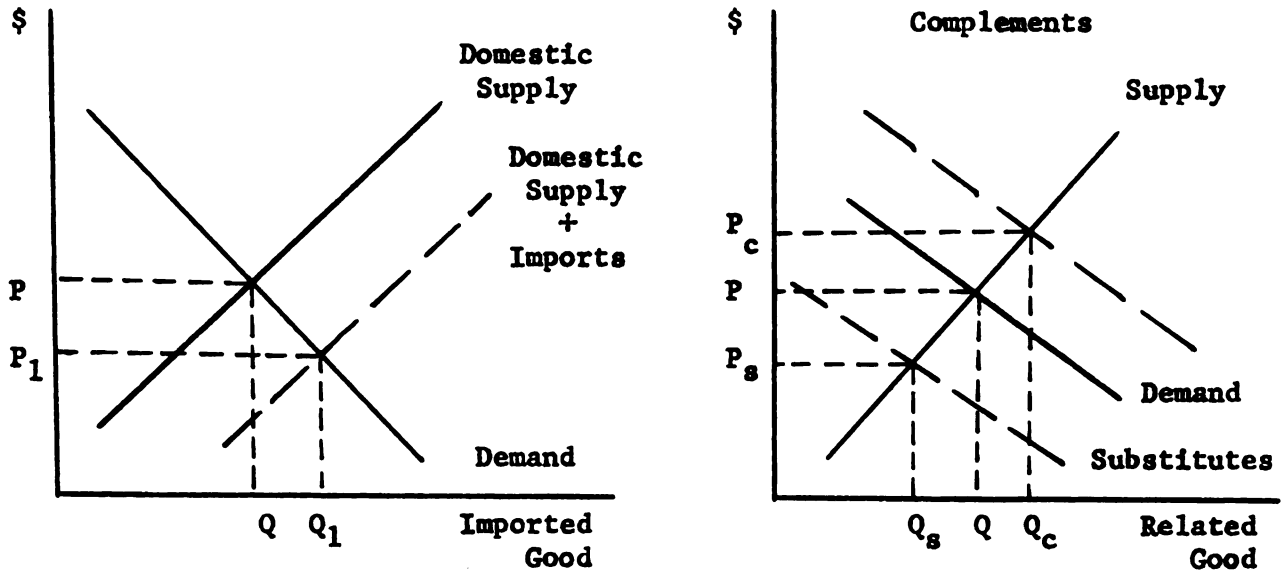

Figure 4. The Effect of Surplus Imports on the Domestic Price and Demand of Consumption Related Commodities.

precise magnitude of such changes depends not only on the supply and demand curves of the first product and of the related good but also on the cross elasticity of demand.

Many products are intermediate in the sense that they are used as raw materials in the production of other products. The demand for these factors is a derived demand and as such will depend upon the marginal physical product of the good in the production of a final product and the price received for the final product. As the supply of the factor is increased by imports the prices of the factor will fall resulting in a greater utilization of the factor. On the other hand, the demand for substitute factors will decrease resulting in a decrease in their price and the increased demand for complementary factors will result in an increase in their price. Thus, one might expect that the importation of corn would lead to a decrease in the demand for other feed grains and consequently decreases in their price and production.

Non-price variables. In the preceeding discussion, the system has been static in the sense that production functions, consumption functions and institutions have all been assumed constant. In reality many of these non-price variables are changing in such a way as to shift both supply and demand curves as well as to change the institutional setting.

Income and population growth increase demand although the impact of income changes will vary from commodity to commodity because different products have different income elasticities of demand. The imports of food and fiber under P.L. 480 may result in changes in tastes and hence changes in demand patterns. Over time technology changes but has a differential impact shifting some supply curves more than others and some not at all.

Government policy also changes both over time and perhaps as a direct result of food imports. Depending on the degree of price responsiveness and the scope of any particular program it may be that government policy is a more important variable in determining production than is price. The government of a receiving nation may also choose to offset the effects of surplus imports on agricultural prices, either partially or wholly, through a system of price supports. This type of policy will result in a shift in the income distribution within the receiving nation. If the government passes the subsidy on to the consumer through increased food prices, the shift will be more in favor of the agricultural sector than if food prices are also controlled and the general fund makes up the difference between retail and farm prices. But in either case, the effect of such a program will be to contribute to continued domestic production, at pre-Title I levels, and redistribute income from the consumer to the producer.

Changes in government policy may influence the production of agricultural commodities not only through its influence upon price but also through changes in the institutional setting and other non-price variables. Government sponsored research may lead to significant changes in technology and, hence, in the production function and supply curves of agricultural products. A government may choose to alter the availability of factors to agriculture in this way changing factor proportions and output. Good examples of this type of action are the establishment of new credit facilities and the importation of agricultural imputs such as fertilizers and feed grains. Many government policies not only influence production patterns but also the distribution of income which leads to changes in demand and investment patterns. For this reason in the country analysis sections which follow it will be necessary to examine not only how changes in non-price variables have offset or overshadowed the affect of Title I imports; but also, to what extent changes in the non-price variables have been enduced or enhanced by surplus food imports.

Long run effects of Title I imports on domestic agricultural production. Some long run effects upon domestic production may occur through Title I induced changes in tastes or population but major changes are more likely to occur due to changes in investment. Title I imports may contribute to changes in investment at either the producer or governmental level.

Investment is usually considered to take place whenever the marginal efficiency of capital is greater than the interest rate. However, in a subsistance setting where the only effective organized capital market may consist of a money lender as a source of capital and the hoarding of gold as a saving bank, the interest rate as such may have

little meaning. In such circumstances the ability and desire to invest depend primarily upon internal capital, that is, upon an individual producer's income.

Raup has suggested that the type of investment made over long periods of time in the form of small imporvements in the quality of the farm be called "accretionary."[8] This is the type of investment represented by small improvements in herd quality, fences, water supplies, etc. which a producer makes as his income and desire permit.

The effect of Title I imports upon the income of the individual producers will depend upon the size of the imports and the shape of the supply and demand curves for the imported product. The total effect is a function of both the price and output effects shown in Figure I of this chapter. In many of the less developed nations, excess demand for food is a major contribution to inflation. To the extent that food imports are able to fill the gap between domestic supply and demand these inflationary pressures are reduced. Any shifts in income distribution resulting from changes in relative price increases will also result in changes in investment patterns at the producer level and, hence, upon the long-run development of the agricultural sector and of the nation as a whole.

When Title I commodities are received by a nation local currency balances are generated, the use of these funds determine the impact of the Title I program on investment at the governmental level. These local currency balances represent a claim on resources as contrasted to

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[8]Raup, P. M., "The Contribution of Land Reforms to Agricultural Development: An Analytical Framework," Economic Development and Cultural Change, Vol. XII, No. I, Oct. 1963, p. 7.

a resource itself.[9] Thus when the United States makes these funds available to the recipient nation either through loans or grants it influences the development and investment pattern of the nation.

The contribution which local currency loans can make to increased investment within a nation depends upon the particular economic environment that exists within the receiving nation. If resources are available but unemployed because of monetary and fiscal rigidities, inflation is no problem, and loan expenditures are moderate as compared to total investment, a contribution to capital formation can result.[10] But to attribute the resulting investment to the Title I program also assumes that these fiscal and monetary rigidities would have existed in the absence of the Title I program.[11]

If loans of Title I funds are made available for projects outside the nation's development plan the nation must either cut back its expenditures on a higher priority project or suffer inflation. Thus, it is quite possible for the Title I program to be responsible for changes in the direction of investment but less likely that it will result in additional net investment.

Imports of food and fiber outside normal commercial channels will lead to changes in the receiving nations foreign exchange position.

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[9]Mason, E. D. et. al. The problem of excess accumulation of U. S. owned local currencies; findings and recommendations submitted to the undersecretary of State by the consultants on international finance and economic problems, Washington: U. S. Government Printing Office, 1960, p. 6.

[10]Goering, T. J. and Witt, L., United States Agricultural Surpluses in Colombia: A Review of Public Law 480, Michigan State University Agricultural Experiment Station, Department of Agricultural Economics, East Lansing, Michigan, Tech. Bul. 289, 1963, p. 22.

[11]Ibid., p. 22.

Changes in the amount of exchange available for imports can greatly influence the investment pattern of a nation because different investments require different quantities of resources from abroad, i.e., they have different foreign exchange components.

The positive effects of surplus food imports on the exchange position of a nation result when these imports displace normal commercial imports or prevent increases as demand increases. In addition investments made with Title I currency, or on the basis of the commodities imported under the program, may lead to import substitution and/or expanded exports, both of which will enhance a nations exchange position. On the negative side, it is quite possible that increased commodity aid will lead to a reduction in other forms of aid and in this way contribute to the loss in exchange brought about by U. S. uses of local currency for expenditures normally made with dollars.

It appears that in the long-run Title I imports may enhance the nations exchange position, depending upon the relative strength of the various forces, and thus allow a wider range of investments to be made. This should lead to a better balance between investments, as the size of the exchange component is not the only, or at least not the most important criteria that should be used in placing priorities upon investments.

CHAPTER III

COUNTRY ANALYSIS

This chapter will analyze the relationship of Title I imports to the domestic agricultural production in six receiving nations. The six nations selected for study are; Colombia, India, Israel, Japan, Pakistan, and Turkey. As may be seen from Table 3.0, since the inception of the P.L. 480 Title I program, these nations have participated in Title I agreements totaling about 3.8 billion dollars. During the same period, total P.L. 480 Title I agreements amounted to about 8 billion dollars; thus, together the six selected nations received over 47 percent of the total.

The six nations were selected because of the availability of specific studies dealing with the effect of surplus food imports on the nation's economy. The studies dealing with the effects of the Title I program in Colombia, Israel, and Turkey are the result of research conducted under contract from the U.S.D.A. The Japan, Pakistan, and India studies are United Nations F.A.O. reports. The earliest F.A.O. study in India was a pilot study, and is essentially a theoretical discussion, based upon Indian circumstances, of how and to what extent, surplus foods might be used for development. The studies concerned with the effects of the Title I program in Colombia and Israel are considerably more comprehensive than the others, and as such much more useful. However, the Turkey report is only preliminary and will no doubt be greatly improved before final submission. Because of the variation in the studies in regard to both quality and the degree of emphasis placed upon the

Table 3.0 - The Commodity Composition of the Title I Program in Five Receiving Nations
(in millions of dollars*)

Nation	Commodity								
	Wheat	Feed Grain	Rice	Cotton	Tobacco	Dairy Prod.	Fats & Oils	Others	Total
Colombia	35.0	4.1		11.9	1.6	.4	9.4		62.4
India	1,630.7	35.1	165.3	228.8	11.3	7.9	1.0	.1	2,080.2
Israel	104.1	83.3	2.9	5.6	1.6	18.7	34.9	11.5	262.6
Japan	47.9	13.3	13.7	52.5	7.6				135.0
Pakistan	557.3	23.6	78.4	50.9	17.8	24.8	175.9	.4	929.1
Turkey	215.8	20.4	3.5			2.2	98.2	6.6	346.7
Subtotal	2,590.8	179.8	263.8	350.0	39.9	64.0	319.4	18.6	3,816.0
Total P.L. 480 Title I exports	4,576.7	496.1	475.8	1,127.2	268.4	94.3	906.8	69.0	8,014.2
Subtotal as a Percent of Total	56.6	36.2	55.4	31.1	14.9	67.9	35.2	26.9	47.6

*Market value which reflects the price at which the commodities are sold by U. S. exporters under the program.

Source: United States Government, Seventeenth Semi-annual Report on Activities carried on under P.L. 480, March 4, 1963, Appendix, Table 4.

agricultural sector, it is necessary to supplement them with data from other sources. These sources include F.A.O. and other United Nations agencies, as well as government agencies in the receiving nations themselves. The fact does remain, however, that the availability of these studies permits insights into the effects of Title I imports which could otherwise only be gained through study within the receiving nations themselves.

Colombia

The Title I program in Colombia. Between 1955 and 1960 over 300 thousand metric tons of United States surplus commodities valued at more than 48 million dollars were imported under Title I by Colombia. Data concerning the commodities imported and their relative importance in terms of the total Title I program in Colombia are presented in Table 3.1.

Title I imports of wheat and flour were the largest in terms of both quantity and value, accounting for 85 percent of total quantity and 41.2 percent of total value. Vegetable oil imports included 8.98 thousand metric tons of cottonseed oil and 22.18 thousand metric tons of soybean oil. Together these imports of vegetable oils represented 9.4 percent of the total quantity and 31.7 percent of the total value imported under the Title I program. Cotton imports of 16.89 thousand metric tons valued at 11.9 million dollars represented 5.1 percent and 24.5 percent of total quantity and value, respectively. Imports of tobacco, non-fat dry milk and anhydrous milk fat were relatively unimportant in terms of the total Title I program.

Two groups of related products, wheat and flour and vegetable oils, were received by Colombia in each of the years included in the period

Table 3.1 - Total Shipments of Title I Commodities to Colombia: 1955-60.

Commodity	Quantity 1000's Metric Tons	Percent of Total	Value 1000's U.S. dollars	Percent of Total
Wheat	233.08	70.9	15,947	32.7
Flour	46.50	14.1	4,150	8.5
Cotton	16.89	5.1	11,930	24.5
Tobacco	.50	.2	938	1.9
Anhydrous Milk Fat	.09	--*	116	.2
Nonfat Dry Milk	.65	.2	163	.3
Cotton Seed Oil	8.98	2.7	9,460	19.4
Soybean Oil	22.18	6.7	6,005	12.3
Total	328.87	100.0	48.709	100.0

*Less than .1 percent

Source: Derived from Appendix Tables 1 and 2.

1955 to 1960. Cotton imports under Title I were received by Colombia in each year of the period 1955-1958. Imports of other commodities under Title I were received sporadically; tobacco and non-fat dry milk in 1958 and 1960 and anhydrous milk fat in 1958.

Title I imports of wheat and flour represented 31.7 percent of domestic wheat production in Colombia during the years 1955 to 1960. See Table 3.2. During the same period, Title I vegetable oil imports were equal to 31.1 percent of domestic production, and imports of cotton and tobacco represented 6.4 and 0.2 percent of domestic production, respectively. A clearer indication of importance of Title I imports to Colombia

Table 3.2 - Title I Imports in Relation to Domestic Production and Total Supply in Colombia*
1955-1960

Commodity	Title I Imports	Domestic Production	Title I as a Percent of Domestic Production	Domestic Production & Imports**	Title I as a percent of Domestic Production & Imports
	(1000's metric tons)		(percent)	(1000's Metric tons)	(percent)
Wheat	397.7***	940.0	31.7	1,618.6	18.4
Cotton	16.9	265.3	6.4	305.7	5.5
Tobacco	.5	266.9	.2	266.9****	.2
Vegetable Oils	31.2	100.2*****	31.1	162.7*****	19.2

*Production and data is for years corresponding to Title I import years.

**Commercial imports.

***Flour imported under Title I was converted to wheat using 72 percent factor.

****Imports not under P.L. 480 negligible.

*****Domestic production includes cotton seed, soybean and sesame oils.

Source: Appendix Table 1

Witt, L. W., and Wheeler, R. G., Effects of Public Law 480 Programs in Colombia; 1955-62, Medillin-Colombia, October, 1962, pp. 52, 104-106.

and the effect they can be expected to have upon domestic prices and production is provided by the comparison of Title I imports and domestic production plus commercial imports. When imports under Title I are compared to this figure, the proportion supplied by these imports falls to 18.4 percent in the case of wheat, 19.2 percent for vegetable oils and 5.5 percent for cotton. The percentage in the case of tobacco remains essentially the same, as imports other than those under Title I were negligible.

On the basis of the data presented with regard to the continuousness of imports and the proportion of domestic production and domestic production plus imports, the surplus imports of wheat, cotton, and vegetable oils can be expected to have the more significant impact on domestic production and prices. Imports of tobacco and milk products were relatively small and occurred in only two years. Therefore, the emphasis is placed on the price and production records of wheat, cotton, vegetable oils and their closely related products in the analysis sections which follows.

The economic environment in Colombia. Basic data regarding population and income in Colombia are presented in Table 3.3. Colombia's population grew from 11.3 million in 1950 to 13.8 million in 1959, an average annual increase of over 2.3 percent. National income at constant prices increased from 15.1 billion pesos in 1950 to 21.3 billion pesos in 1959.[1] Per capita real income grew from 1,356 pesos in 1950 to 1,555 pesos in

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[1]The Colombian Peso was valued at about 3.50 to the dollar until 1954, in 1955 the value fell to 4.16 pesos per dollar. Between 1956 and 1960 the value fluctuated between 6.22 and 8.36 pesos per dollar.

Table 3.3 - Colombia's Population, National Income and Per Capita Real Income: 1950-59.

Year	Population (1000's)	National* Income (Millions of Pesos)	Per-Capita Real Income (Pesos)	Percent Change
1950	11,334	15,110	1,356	---
1951	11,589	15,113	1,319	-2.7
1952	11,847	16,090	1,365	3.5
1953	12,111	17,515	1,444	5.8
1954	12,381	19,407	1,555	7.7
1955	12,657	19,511	1,520	-2.3
1956	12,939	20,062	1,519	0
1957	13,227	20,479	1,508	-0.8
1958	13,522	20,477	1,466	-2.9
1959	13,824	21,251	1,479	0.9

*In constant 1958 prices.

Source: Goering, T. J., United States Agricultural Surplus Disposal in Colombia, Ph.D. thesis, Michigan State University, 1961, p. 35.

1954, but decreased to 1,479 pesos in 1959 as population growth exceeded the increase in national income after 1954.

During the period 1950 to 1960 Colombia experienced substantial increases in its general price level. An estimate of the general wholesale price index reported by the Banco de la Republica shows a 119 percent increase between 1950 and 1960.[2] This increase was led by raw

[2]Witt, L. W., and Wheeler, R. G., Effects of Public Law 480 programs in Colombia: 1955-62, Medellin, Colombia, October 1962, p. 34. Two other estimates of the wholesale price index are available one higher and one slightly lower.

material prices which increased faster than finished goods prices.[3]

Another important aspect of the economic environment of a nation is the public policy towards agriculture. In Colombia, the agricultural policies of the past 30 years have been directed toward two particular objectives: (1) increased production of basic foodstuffs and agricultural materials in an attempt to attain self-sufficiency; and (2) the production of agricultural commodities in addition to bananas and coffee in quantities large enough to permit exports.[4] In seeking to attain these objectives the Colombian Government has adopted a series of domestic production stimulants and stringent import restrictions. Among the production stimulants adopted are government supported prices, research and extension activities, special facilities for agricultural credit and attempted reforms of the land ownership pattern.[5]

Various institutions have been established to carry out the general aims of Colombia's agricultural policy. These institutions include the various organizations responsible for establishing price supports and the dissemination of technical information to producers. An important aspect of these agencies is that they are in most cases commodity orientated, for example, under this system cotton and other oil seed prices are supported by the Instituto de Fomento Alogodonero, Tobacco prices by the Instituto de Fomento Tabacalero and barley prices by Procebada.[6]

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[3]United Nations, Statistical Yearbook: 1962, p. 474.

[4]Goering, T. J., Colombian Agricultural Price and Trade Policies, Universidad Nacional de Colombia, Palmira, Colombia, 1961, p. 7.

[5]Ibid., P. 8.

[6]Goering, T. J., Colombian Agricultural Price and Trade Policies, Universidad Nacional de Colombia, Palmica, Colombia, 1961, p. 10.

A major departure from the commodity agency price support system is found with respect to the basic foodstuffs; corn, beans, potatoes, rice, and wheat. Minimum producer prices for these commodities are established by the Instituto Nacional de Abastecimientos (INA). The INA though a surplus purchase and storage program attempts to maintain prices at a previously determined level. However, a basic weakness of INA is a serious shortage of storage facilities which means that prices fall sharply when existing storage is filled to capacity.[7]

A major fault of the overall price support system in Colombia is the frequent distortion of price relationships among commodities. Price levels tend to be established on the basis of generally unreliable cost of production data and on the basis of the relative political strength of the supporting agencies.[8] An indication of the importance of political strength in setting of price supports is provided by the fact that the support prices of commodities supported by INA have not increased as fast as the general price level while those supported by commodity agencies backed by processor groups have done so.[9]

Agricultural Production and Prices in Colombia. Data regarding changes in the average price and production of the major agricultural commodities in Colombia between the five years preceeding Title I imports and the first five years of the program are presented below. The changes in production given in Table 3.4 show that cotton and its joint product cotton seed

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[7]Op. Cit., Goering, Colombian Agricultural Price and Trade Policies, pp. 10-11.

[8]Op. Cit., Goering, Colombian Agricultural Price and Trade Policies, p. 9.

[9]A possible exception is barley after 1960.

Table 3.4 - Changes in Domestic Production of Selected Agricultural Commodities in Colombia 1950/54-1955/59.

Commodity	Average Production 1950-54	Average Production 1955-59	Percent Change in Average Production
Barley	62.3	74.8	20.1
Corn	826.8	761.6	-7.9
Paddy Rice	290.0	392.2	35.2
Potatoes	554.0	627.0	13.2
Cotton Seed	29.0	36.0	124.1
Sesame Seed	7.4	14.1	90.5
Copra	4.2	2.0	-52.4
Beans	46.6	62.2	33.5
Sugar Cane	1927.4	2424.1	25.8
Yuca	849.6	698.8	-17.7
Wheat	132.2	137.2	3.8
Cotton	40.6	84.5	108.1
Tobacco	22.4	35.9	60.3
Coffee	462.6	516.3	11.6
Coco Beans	10.1	11.6	14.8
Brown Sugar	359.3	533.3	48.4

Source: Appendix Table 3

experienced the greatest increases in production, 108 and 124 percent respectively. Average increases of 20 percent or more were also experienced by barley, rice, sesame, beans, sugarcane, tobacco, and crude brown sugar. The production of three crops decreased between the two periods, copra - 52.4 percent, yuca - 17.7 percent, and corn - 7.9 percent.

Price changes between the period 1950-54 and 1955-59 are presented in Table 3.5. The largest price increases were for sugar cane, 100 percent,

Table 3.5 - Changes in the Farm Price of Selected Agricultural Commodities in Colombia 1950/54-1955/59. (Pesos per Metric Ton)

Commodity	Average Price 1950-54	Average Price 1950-59	Percent Change in Average Price
Barley	369	503	36.3
Corn	249	383	53.0
Paddy Rice	406	551	35.7
Potatoes	286	309	8.1
Sesame Seed	588	1098	86.7
Copra	713	1216	70.1
Beans	1052	1342	27.6
Sugar Cane	10	20	100.0
Yuca	124	211	68.5
Cotton	895	1247	38.2
Tobacco	1281	1674	30.7
Wheat	640	680	21.9
Coffee	2067	3159	53.2
Coco Beans	2400	3780	57.5
Brown Sugar	224	367	63.8

Source: Appendix Table 4

sesame 86.7 percent, copra 70.1 percent, yuca 68.5 percent, and crude brown sugar 63.8 percent. There were no price declines as could be expected in view of the inflation experienced by Colombia between 1950 and 1960.

Wheat and related products. Domestic production of wheat in Colombia increased 3.8 percent between the periods 1950-54 and 1955-59. During this same period, the price of wheat at the farm level increased 21.9 percent. The demand for wheat increased between 1950 and 1960 as a result of increasing population and per capita income. Per capita consumption of wheat increased from 16.7 kilograms in 1951-54 to 18.9 kilograms in 1955-60; Title I wheat played an important role in the increase as domestic wheat provided for consumption of 16.7 kilograms in 1951-54 but only for 15.1 kilograms in 1955-60.[10]

On the production side wheat must compete for land with barley, potatoes, dairy enterprises, and some varieties of corn. Domestic production of barley increased 20.1 percent between the periods 1950-54 and 1955-59 while domestic production of potatoes increased 13.2 percent and corn production decreased 7.9 percent. The price increases at the farm level were 36.3 percent for barley, 53.0 percent for corn and 8.1 percent for potatoes.

The Sabana of Bogota, a rich agricultural area in the Department of Cundinamarca, is an important wheat growing area of Colombia. In this area, potatoes, barley, corn, wheat and dairy enterprises compete for land, even though potatoes and wheat are frequently grown in rotation. A recent study of the Sabana[11] indicated that areas planted to barley were expanding and that some of this was at the expense of the dairy

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[10]Witt, L. W., and Wheeler, R. G., Effects of Public Law 480 Programs in Colombia: 1955-62, Medellin-Colombia, October, 1962 p. 90.

[11]Departamento de Investigaciones, Caja Agraria, as reported in El Tiempo, March 16, 1961. Cited by Goering, T. J., Wheat Production in Colombia, Universidad Nacional de Colombia, Palmira, Colombia, 1962, pp. 12-13.

industry. The study concluded that the number of dairy herds had decreased about 30 percent since 1955. The expansion of barley acreage in Cundinamarca is also evidenced by INA data which suggest that hectares planted to wheat declined from 67,600 in 1955 to 23,300 in 1959.[12] The increase in barley acreage is partly the result of higher prices and the introduction of new varieties. But in addition, the competitive position of barley, as opposed to wheat, has been improved with the adoption of a double cropping system for barley by mechanized cereal producers in the Sabana.[13]

Although, the evidence does indicate that barley production has expanded at the expense of wheat and dairy in the Department of Cundinamarca, the national acreage statistics indicate that this is not a nation wide phenomena. Total wheat acreage declined somewhat, about 6 percent between 1950-54 and 1955-59; however, barley acreage for the nation as a whole remained relatively stable or declined slightly.[14]

The INA and Procebada, in addition to announcing support prices, have disseminated new varieties of wheat and barley which explain the increases in the production of these crops in spite of acreage declines. Wheat yields have increased at least 75 percent in areas where the new rust resistant "Menkenan 50" wheat has been introduced and as much as 526 percent under conditions of severe rust.[15] However, by 1961 only about

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[12]Op. Cit., Goering, Wheat Production in Colombia, p. 13.

[13]This practice is not suitable for wheat which requires a longer growing season. Adams, D. W., Adjustment Possibilities on Colombian Farms Under Alternative Levels of Public Law 480 Imports, Unpublished Ph.D. Dissertation, Michigan State University, 1964, p. 62.

[14]Op. Cit., Witt and Wheeler, pp. 57 and 62.

[15]Op. Cit., Witt-Wheeler, p. 59.

one-fourth of wheat lands were planted to the new variety. Barley yields have shown considerable increases in response to the new "Funza" variety. Yields per hectare almost doubled between 1955 when less than .02 percent of the barley area was planted with improved seeds and 1961 when 95 percent of barley lands utilized the new seed.[16] There is some evidence to support the hypothesis that although barley has been competing successfully with wheat in some areas, in others, corn has been substituted for wheat on lands suitable for the production of both crops. The acreage devoted to corn production in Colombia has declined from 831 thousand hectares in 1955 to 726 thousand hectares in 1959. However, the decrease was slight in the department of Cundinamarca and increased in Boyaca, another department where major competition between wheat and corn for land occurs.[17] The reason for the decline in total acreage of corn is probably competition between corn and cotton in other areas.[18]

Corn utilization in Colombia is divided approximately as follows; 50 percent direct human consumption, 25-30 percent processed foods, and 20-25 percent animal consumption either directly or as part of mixed feed concentrates.[19] The share of total corn production being utilized for direct human consumption has been declining at the expense of the other uses.[20] The demand for animal products in Colombia has been increasing,

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[16]Op. Cit., Witt-Wheeler, p. 62.

[17]Guillermo, G. E., La Produccion de Maiz En Colombia, Universidad Nacional de Colombia, Medellin, 1961, p. 16.

[18]This is discussed fully in a latter section dealing with cotton.

[19]Adams, D. W., Et. Al., Public Law 480 in Colombia: Impacts of Title I Programs at Alternative Levels, Medellin, Colombia, November, 1963, pp. 129-132.

[20]Ibid., pp. 129-132.

and as a result milk and beef prices at retail increased 63 percent and 65 percent respectively between 1954 and 1960.[21] Thus increases in the derived demand for corn as a feed grain probably accounts for some shift in wheat lands to corn.

Both barley and corn have enjoyed greater increases in their support prices in recent years than has wheat. Between 1955 and 1959 the increases in their respective support prices were; wheat 50 percent, barley 78 percent and corn 57 percent.[22] However, the support price of barley is more meaningful than that of wheat and corn because INA, which supports the price of wheat and corn, has been unable to maintain announced prices while Procebada, which supports barley prices, has.

It appears that Title I imports of wheat by Colombia have affected adversely the domestic production of wheat. The demand for wheat increased considerably between 1950 and 1961 as a result of rising population, income and per capita consumption.[23] Title I imports were made available to help meet the increased demand, with the result that retail prices of wheat did not increase as much as the general price level.[24] In addition, the availability of Title I wheat imports probably helped to hold down the farm price of wheat by reducing the pressure for increasing support prices.[25]

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[21]Op. Cit., Witt - Wheeler, p. 81. During the same period the retail price of all food increased 60 percent.

[22]Op. Cit., Witt-Wheeler, p. 46.

[23]Per Capita consumption increased more than 15 percent between 1951 and 1960. Op. Cit., Witt-Wheeler, p. 90.

[24]Op. Cit., Witt-Wheeler, p. 81.

[25]Ibid., Witt-Wheeler, p. 81.

Wheat production has maintained itself or increased slightly as higher yielding varieties helped to offset a decline in planted area. However, the evidence indicates that in various departments land formerly devoted to wheat production shifted into the production of barley and corn. In addition, a recent study by Adams reports that data from preliminary surveys indicates that the utilization of fertilizer and sprays for potatoes, and the availability of better quality dairy cattle and concentrates have improved the competitive position of these enterprises vis-a-vis wheat.[26]

Cotton and related commodities. Domestic production of cotton in Colombia increased 108 percent between the periods 1950-54 and 1955-59 while its price increased 38.2 percent. The substantial increase in cotton production is in large part due to expanded acreages and increased yields resulting from favorable government policies and the efforts of the Instituto de Fomento Algodonero. The principal government programs dealing with cotton include import protection, minimum producer prices, and obligatory absorption of domestic fiber by the Colombian textile industry.[27]

Although the government agricultural policy in Colombia has traditionally supported the idea of self-sufficiency in agricultural production, a change in the exchange rate in 1957 provided an additional stimulus to government and industry interest in promoting domestic cotton production.[28] Until 1957 the exchange rate for cotton maintained by the

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[26]Op. Cit., Adams, D. W., Ph.D. Thesis, pp. 62-64.

[27]Goering, T. J., Cotton Production in Colombia, Universidad Nacional de Colombia, Palmira, 1962, p. 4.

[28]Porter, H. G., The Cotton Industry in Colombia, Cotton Division, Foreign Agricultural Service, U.S.D.A., April, 1961, p. 6.

Colombian government somewhat over-valued the peso, making the peso cost of imported cotton substantially cheaper than the domestic cotton price. With the establishment of a free exchange market in mid-1957, the value of the peso in terms of dollars decreased to about one-half its former value. The effect was to raise the price of imported cotton substantially in terms of pesos, which developed a strong interest on the part of the cotton mill industry in expanding domestic cotton production.[29] Changes in cotton support prices reflect the new government interest in expanding domestic production. In the latter part of 1956, the support price for cotton was raised 23 percent and between 1956 and 1960, it was increased another 56 percent.[30]

This increased support price for cotton in conjunction with increased credit availability and ginning facilities as well as an effective research and extension program brought about the rapid increase in Colombian cotton production.[31] An indication of the success of the cotton expansion program is provided by the fact that up until 1959 Colombia was a net importer of cotton while in both 1960 and 1961, Colombia exported over 20 thousand metric tons of cotton.[32]

A major effect of the cotton expansion program was a shift in land use in the major cotton producing areas. The total acreage devoted to cotton production increased from 38.8 thousand hectares in 1950 to 151.2 thousand hectares in 1960, an increase of more than 380 percent.[33] The

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[29]Op. Cit., Goering, Cotton Production in Colombia, pp. 4-5.

[30]Op. Cit., Witt-Wheeler, p. 46.

[31]Op. Cit., Goering, Colombian Agricultural Price and Trade Policies p. 14.

[32]Op. Cit., Goering, Cotton Production in Colombia, p. 8.

[33]Op. Cit., Goering, Cotton Production in Colombia, p. 12.

most rapid increases in cotton acreage occurred in the Interior Zone where cotton competes for land with beans, corn and rice. Less rapid increases occurred in the Atlantic Zone where cotton must compete with corn, rice, and extensive livestock enterprises.

Table 3.6 provides data regarding the hectares devoted to rice, beans and corn in four important cotton producing Departments of Colombia. The Departments of Magdalena and Cordoba are in the Atlantic Zone while Valle and Tolima lie in the Interior Zone.

The figures suggest that in the Departments of Cordoba and Magdalena the areas planted to corn have diminished slightly, if any. Hectares devoted to rice production in Magdalena have increased from 6,250 in 1955 to 30,000 in 1960 and then decreased to 13,000 in 1961. These data suggest that cotton expansion in the Atlantic Zone has been at the expense of livestock operations. To the extent that land formerly devoted to grass has been shifted to cotton, it could explain some of the increase in rice and corn acreage in this area. Two crops of cotton annually are prohibited by the government as part of their disease and insect control program. When new lands are brought into cotton production they do not remain idle following cotton harvest, rather they are utilized in other crop production, frequently rice, corn or beans.[34]

In the Interior Zone, the acreage devoted to the production of beans and corn decreased substantially during the period 1955 to 1959. The bean acreage in Valle fell from 27.4 thousand hectares in 1955 to 4.6 thousand in 1959. Corn area in Valle fell from 48.0 thousand hectares to 36.0 thousand hectares in 1959 while during the same period it fell

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[34]Op. Cit., Goering, Cotton Production in Colombia, p. 13.

Table 3.6 - Hectares of Rice, Beans, and Corn In Important Colombian Cotton Producing Departments (in 1000's Hectares)

	Rice			Beans		Corn			
Year	Valle	Tolima	Magdalena	Valle	Tolima	Valle	Tolima	Magdalena	Cordoba
1955	12.0	28.0	6.2	27.4	8.0	48.0	61.8	65.0	59.0
1956	11.0	29.0	7.0	20.6	6.1	38.6	29.2	56.7	61.5
1957	16.0	29.0	6.2	26.0	8.6	31.3	26.6	41.9	60.0
1958	9.5	26.2	7.1	8.6	5.0	41.0	28.6	52.7	60.0
1959	8.6	28.0	8.1	4.6	3.0	36.0	24.0	59.1	69.6
1960	10.1	35.2	30.0	...*	...*	...*	...*	...*	...*
1961	12.6	41.4	13.0	...*	...*	...*	...*	...*	...*

*Not available.

Source: Goering, T. J., Cotton Production in Colombia, Universidad Nacional De Colombia, Palmira, 1962, p. 13.

from 61.8 thousand hectares to 24.0 thousand in Tolima. On the other hand, rice areas in Tolima increased. Some of the decrease in corn and beans is undoubtedly due to vigorous cotton competition while other reductions may be attributable to increased sugar cane plantings in the Department of Valle.[35] "There is also general agreement that the shift from corn and beans is partially the result of uncertain market prices, a factor which does not affect cotton."[36]

The rapid increase in Colombia's cotton production results from a combination of programs that included not only high prices, but also secure prices, market facilities, and the distribution of technical information and good seeds. In view of this vigorous cotton expansion program, it would be difficult to say that Title I imports had any direct impact upon domestic production of cotton. There is no doubt, however, that in the early years of free exchange, 1957-1958, the ability of Colombia to obtain cotton for local currency resulted in savings of foreign exchange which could then be made available for other imports.[37]

Vegetable oils and Related Commodities. During the period 1955-1960, Colombia imported cotton seed and soybean oils under Title I of P.L. 480. Data regarding domestic production of these vegetable oils from domestic products along with similar data for other vegetable oils and lard are given in Table 3.7. The figures presented suggest that domestic produc-

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[35]Ibid., p. 13.

[36]Ibid., pp. 13-14.

[37]It is possible, but unlikely, that without Title I imports, and with an earlier effort to expand domestic cotton production, local production would have met domestic demand earlier, resulting in exchange savings from decreased imports greater than the savings which resulted from the Title I program. Op. Cit., Witt, Wheeler, p. 127.

Table 3.7 - Colombian Production of Fats and Edible Oils From Domestic Products*
(1951-1960)

Year	Cottonseed	Sesame	Soybean	Copra	African Palm	Peanuts	Lard	Total
					Metric Tons			
1951	1,417	3,107	___**	2,520	___**	___**	11,025	18,069
1952	2,295	2,185	___**	2,352	___**	___**	11,250	18,082
1953	3,759	2,388	___**	2,240	___**	___**	10,875	19,262
1954	6,092	3,135	440	1,792	182	___**	11,856	23,497
1955	5,335	4,695	594	1,568	280	___**	12,120	24,589
1956	4,632	4,985	1,040	1,232	364	___**	11,805	24,068
1957	4,150	6,014	2,244	1,008	378	___**	13,250	27,044
1958	5,265	8,822	898	840	385	___**	11,960	27,970
1959	12,852	10,149	1,974	800	410	___**	13,034	39,219
1960	15,577	8,910	2,700	785	400	240	13,290	41,902

*Expressed in oil equivalent.

**Negligible

Source: American Embassy, Colombia: Fats and Oils, 6A(CERP-Section D, IV, A,6) Bogota, April 16, 1962, p. 13.

tion of oil from cottonseed, sesame and African Palm have increased substantially. Production of soybean oil and lard have increased slightly while production of oil from copra has decreased.

Oil seed production with the exception of soybeans is the responsibility of the Instituto de Fomento Algodonero (IFA) the same agency responsible for cotton production. Soybean production is the responsibility of the Instituto Nacional de Abastecimientos (INA).

Cottonseed is Colombia's most important domestic oil crop, accounting for more than 37 percent of all the fats and edible oils produced with domestic raw materials in 1960. The increase in importance of cottonseed as one of the nation's principal sources of both vegetable oil and all fats and oils reflects the rapid expansion of Colombia's cotton industry under the stimulus of favorable price supports and technical and marketing assistance.

While cottonseed provides Colombia with the majority of its edible oil produced from domestic crops, imports of copra are the main source of vegetable oil. Imports of copra were more than 30 thousand metric tons in 1960. It is expected that imports of copra will decrease in coming years as a result of increasing domestic supplies of oil seeds and a government decree, that requires successive reductions in copra imports of 10 percent per year, initiated to stimulate self-sufficiency programs.[38]

The San Andres Islands are an important copra producing area in Colombia. However, due to the increase in construction as a result of the expanding tourist business in this area, copra production has been decreasing and it is expected that by 1965 copra production in these Islands

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[38]Op. Cit., Embassy Report, p. 3.

will be negligible.[39] In an attempt to stem the decrease in total copra production, more than 52 percent between 1950-54 and 1955-59, the IFA is attempting to encourage plantings in other areas, particularly on Colombia's Pacific Coast.[40]

Domestic production of sesame has increased rapidly, more than 86 percent between 1950-54 and 1955-59. The greatest increase in production took place after 1956 probably due to the 62 percent increase in its price between 1956 and 1957. In the Interior Zone, sesame is grown as a rotation crop with cotton and the increase in cotton acreage in this area may also explain some of the increase in Colombia's production of sesame.

Soybean production in Colombia is limited to a small area in the Valle del Cauca where all the production is sold to one shortening factory.[41] Soybean production has increased slightly but not regularly nor significantly in terms of the total oil seed production of Colombia. This lagging production record is probably a function of a lack of technical advancement as well as the monopsonistic nature of its market.[42]

The effects of P.L. 480 Title I imports on the domestic production of oil seed crops in Colombia was probably negligible. The system of price supports and other production inducing programs adopted by the IFA and the Colombian Government offset any possible effects on producer prices and, hence, any production affects. It should be noted, however, that as a result of rising demand the retail price of vegetable oils increased sharply, over +16 percent, between 1954 and 1960; an increase which may

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[39]Ibid., p. 3.

[40]Ibid., p. 3.

[41]Ibid., p. 3.

[42]Ibid., p. 3-4.

even have been greater in the absence of Title I imports.[43]

The long-run effects of Title I imports on domestic agricultural production in Colombia. The Title I program does not appear to have brought about any decreases in income at the producer level. This is especially true in the case of cotton and vegetable oil imports whose effects were offset by policies adopted by the Colombian Government. Some wheat lands were shifted into the production of other agricultural products including barley, corn, potatoes, and dairy. In each case, the loss of its competitive position by wheat is only partially a function of lagging wheat prices and in each case a ready substitute was available.[44] However, wheat prices would have risen faster in the absence of the Title I program so there is reason to believe that producer incomes also would have increased more rapidly had Title I imports not been made available; to this extent the program had a negative effect on producers income.[45]

There is also the possibility that lower wheat prices had a negative effect upon the income of producers who were not able to transfer their resources into the production of one of wheat's substitutes. This is especially true in the case of barley where a large part of the gain in its competitive position, vis-a-vis wheat, came about as a result of the introduction of double cropping made possible by mechanization. Thus,

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[43]Op. Cit., Goering, Ph.D. Thesis, p. 115-117.

[44]In the case of barley and wheat Goering and Witt have shown that gross receipts from the two crops have increased steadily and faster than the general price level; however, the proportion derived from barley has increased. Op. Cit., Goering-Witt, p. 21.

[45]It should be noted that the Colombia Government might have adopted other procedures to procure wheat supplies externally had Title I wheat not been made available. In that event the price of wheat would not have increased any more rapidly than it did.

those farmers whose operations were not sufficiently mechanized to take advantage of this procedure no doubt lost income as the price of wheat lagged behind that of barley.

The effects of Title I imports on investment were probably more significant at the governmental level where over 230 million pesos have been made available from Title I stimulated local currency balances. Title I imports have made local currency available for investment in Colombian agriculture from three sources: (1) import taxes levied on P.L. 480 products; (2) revenues realized by INA in its purchase and resale operations for imported products; and (3) local currency loans made available by the United States under section 104 (g) of P.L. 480.

It would be a mistake to assign all investment which occurred with local currency from the above sources to the P.L. 480 program. However, there is reason to believe that the situation in Colombia during the period 1955-1960 warrants assigning at least part of the increased investment in agriculture to P.L. 480: (1) it is doubtful that imports of agricultural products would have been as large in the absence of the Title I program; (2) there is an abundance of labor in Colombia; and (3) the Colombian Government has generally exercised a moderately conservative fiscal policy.[46]

Tax revenues on P.L. 480 imports totaled an estimated 36 million pesos between 1955 and 1960 while during the same period a tax levied on flour milled domestically from P.L. 480 wheat yielded an additional 20 million pesos.[47] During the six-year period the import taxes on P.L. 480

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[46]Op. Cit., Goering, Witt, p. 23.

[47]Goering, T. J., United States Agricultural Surplus Disposal In Colombia, Ph.D. Thesis, Michigan State University, 1961, pp. 90-91.

products provided almost 75 percent of the central governments agricultural budget.[48] These revenues are transferred to a special fund in the Ministry of Agriculture and then allocated to the various commodity agencies responsible for the development of domestic production of various agricultural commodities.[49]

The second major source of local currency funds arising from Title I imports were those which accrued to INA as a result of the spread between its import and selling price. INA which is responsible for Title I imports of wheat, oils and flour realized a profit of over 78 million pesos from Title I imports during the period 1955-1960.[50] Although some of the funds received by INA were transferred to Caja Agraria (Colombia's largest development bank) those that were retained by INA represented about 50 percent of total INA expenditures in the period 1957-1960.[51] The funds retained by INA have been utilized to offset losses in its domestic price support operations and in building additional storage facilities to enhance its ability to maintain announced prices. The funds transferred from INA to the Caja Agraria were for use in three programs carried on by the bank: (1) colonization and land parcellization, (2) drainage and water control, and (3) general agricultural improvement.[52]

The third source of local currency for investment arising out of

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[48]Ibid., pp. 90-91.

[49]Ibid., pp. 90-91.

[50]Ibid., p. 93.

[51]Ibid., p. 93. Total INA expenditure figures are not available for 1955 and 1956.

[52]Ibid., p. 93.

the P.L. 480 program in Colombia are loans made under Section 104 (g) of Title I. This section of Public Law 480 provides for local currency loans to promote multilateral trade and economic development. This is the largest use of Title I pesos in Colombia as the equivalent of 70.89 million dollars, about 58 percent of total pesos involved, have been designated for this category.[53]

In Table 3.8 data regarding the allocations and loans of Section 104 (g) pesos as of March 31, 1961, are presented. It can be seen that about 50 percent of the total pesos allocated or 107.5 million pesos have actually been loaned. The table also shows that the overwhelming majority of the loans and pesos have gone to agricultural projects.

The fact that these loans have emphasized agricultural development has no doubt offset any adverse effects on agricultural investment which may have resulted from depressed farm prices. The emphasis on agricultural development is also encouraging in view of the rapidly growing population in Colombia and the fact that there is already considerable pressure on the exchange earnings of Colombia. If agricultural output can be expanded, it can forestall additional food imports and may also increase the nation's exchange earnings by permitting larger exports of agricultural products.[54]

The effect of industrial loans made with Title I local currency on the exchange position of Colombia was probably neutral at first but favorable in the long-run.[55] This is because the short-run savings in

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[53]Op. Cit., Goering-Witt, p. 23.

[54]Over 75 percent of the nations exports are composed of agricultural products with coffee accounting for 70 percent alone.

[55]Op. Cit., Adams, et. al., p. 359-360.

Table 3.8 - Allocations and Loans of Section 104(g) Pesos as of March 31, 1961: Colombia (thousands of Pesos)

	Pesos allocated	Pesos Loaned by Caja
Project Agreement I		
Cacao production	292	196
Access roads to agricultural areas	4,900	4,900
Livestock imporvement	1,700	1,700
Water well drilling	224	224
Agricultural lime pits and kilns	430	430
Fertilizer production	12,000	12,000
Irrigation	850	850
Small industry	2,154	1,967
Total: Agreement I	22,549	22,266
Project Agreement II		
Cauca Valley Corporation	33,590	32,700
Coal production	6,000	3,560
Fertilizer production	24,000	24,000
Lumber production	1,000	1,000
African palm production	4,075	2,289
Fondo STACA	4,335	0
Total: Agreement II	73,000	63,549
Project Agreement III		
Irrigation and drainage (Atlantico)	5,652	3,500
Chemical fertilizer	10,000	7,551
Cement production	2,348	2,348
Reforestation	2,000	1,200
Total: Agreement III	20,000	14,599
Project Agreement IV		
Fertilizer production	20,000	0
Reforestation	6,000	0
Irrigation and drainage	6,000	0
Irrigation and drainage (Atlantico)	14,348	0
Storage facilities (INA)	28,000	0
Livestock production (STACA)	12,000	0
Cement production	9,652	7,152
Access roads to agricultural area	5,000	0
Total: Agreement IV	101,000	7,152
Grand total: Agreements I, II, III, and IV	216,549	107,566

Source: Goering, T. J. and Witt, L., United States Agricultural Surpluses in Colombia: A Review of Public Law 480, Tech. Bul. 289, Agricultural Experiment Station, Michigan State University, East Lansing, Michigan, 1963, p. 25.

foreign exchange which is made possible by imports for pesos is likely to be offset to a large extent by an outflow of foreign exchange for investment items, as well as by the substitution by the U.S. Government of the available pesos for dollars in its local expenditures. After some lag, substantial savings of foreign exchange will result from import substitution stemming from the peso development loans. Thus the impact of both the industrial loans and those channelled into Colombian agriculture will be the enhancement of the nations exchange position and economic development in the long-run.

INDIA

The Title I Program in India. Between 1956 and 1960 India received more than 13 million metric tons of United States agricultural products valued at nearly one billion dollars under Title I. See Table 3.9. Wheat was by far the most important commodity received, accounting for over 90 percent of total volume and 78 percent of total value. Cotton was the second most important commodity representing 12.1 percent of the total value and 1.4 percent of total volume. Corn, grain sorghums, rice, tobacco and non-fat dry milk were also imported under the Title I program.

Wheat and cotton were received under Title I in each year of the period 1956-1960. Feed grain imports were concentrated in the latter years, and tobacco was received between 1957 and 1960. See Table 3.10.

In addition to the continuousness of importation another indication of the importance of a particular surplus product on the economy of the receiving nation is provided by a comparison of the magnitude of the imports and that of domestic production. This comparison has been made in Table 3.11. Title I imports of wheat represent over 26 percent of

Table 3.9 - Total Shipments of Title I Commodities to India 1956-1960

Commodity	1000's U.S. Dollars*	Percent of Total	1000's Metric tons	Percent of Total
Wheat	741101	78.1	12220	91.2
Corn	14070	1.5	276	2.1
Grain Sorghum	5801	.6	140	1.0
Rice	63819	6.7	537	4.0
Cotton	114793	12.1	197	1.4
Tobacco	6388	.7	3	.0**
Non-fat dry milk	3409	.4	21	.2
Total	949381	100.0	13394	100.0

*Market Value.
**Less than .1 percent.

Source: Appendix Table 5 and Text Table 3.10.

domestic production during the period 1956-60. But cotton imports under Title I were equal to 4.8 percent of domestic production for the same period. The other Title I imports, with the exception of corn, represented less than .5 percent of the domestic production of their respective crops.

The importance of Title I imports of wheat and cotton does not diminish significantly when these imports are compared with domestic production plus non-Title I imports. In the case of wheat, the proportion diminishes to 24.8 percent while imports of cotton represent 4.3 percent of the total supply of cotton in India during the period 1956-60. Total wheat imports supply about 25 percent of the total supply of wheat in India but more than 80 percent of these imports are made up of Title I wheat. On the other hand, Title I imports of cotton represent

Table 3.10 - Title I Shipments to India in Volume: 1955-1960
(1000's Metric Tons)

	1956	1957	1958	1959	1960	Total
Wheat	345.5	2522.6	2206.4	2797.4	4348.0	12,219.9
Corn	0	0	58.5	116.8	100.4	275.7
Grain Sorghums	0	0	86.6	10.8	42.3	139.7
Rice	40.7	156.2	0	0	339.9	536.8
Cotton	8.4	27.1	5.4	18.4	137.4	196.7
Tobacco	0	.5	1.4	.9	.3	3.1
Non-fat dry milk	0	4.9	6.8	8.9	0	20.6

Source: F.A.S., U.S.D.A., Title I, Public Law 480: Total Shipments by 6-Month Periods, January 1955 through June 1959, by County and Commodity, S.D.S.-7-61, May 24, 1961.

F.A.S., U.S.D.A., Title I, Public Law 480: Total Amounts programmed and Shipped through December 31, 1962, and Shipments by 6-month Periods, from July 1, 1959, through December 31, 1962, by Country and Commodity, S.D.S.-6-63, March 15, 1963.

only about one third of total cotton imports but total imports of cotton by India are small.[56]

In the analysis sections which follow, the effects of Title I imports of wheat and cotton are given the major emphasis. In view of the evidence presented with regard to continuousness of importation and relative size, it is highly unlikely that imports of other commodities under Title I resulted in any discernable effects upon domestic production in India.

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[56]The data on cotton and wheat imports used to make these calculations are from: Richards, S. I., Trends in Indias Agricultural Trade, Foreign Agricultural Economic Report No. 15, E.R.S., U.S. Department of Agriculture, February 1964, pp. 25 and 29.

Table 3.11 - Title I Imports in Relation to Domestic Production in India 1956-60 (in 1000's Metric ton)

	Title I Imports	Domestic Production	Percentage of Total
Wheat	12,220	46,400	26.3
Corn	276	17,653	1.6
Grain Sorghums	140	41,767	.3
Rice	537	225,746	.2
Cotton	197	4,133	4.8
Tobacco	3	1,392	.2
Non-fat Dry Milk	21	___*	___*

*Not Available

Source: Text Table 3.10 and Appendix Table 6

The economic environment in India. During the period 1950-1960 the population of India increased from 358.3 million to 431.7 million, an increase of about 2 percent a year. See Table 3.12. Over the same period national income increased from 102.4 billion rupees to 145.0 billion rupees an increase of about 41 percent. The percentage increase in per capita income over the period was 16 percent.[57]

The price level in India increased during the period 1950-1960. The largest increase in the general price level occurred after 1955 and appears to have been pushed upward primarily by increases in prices of agricultural products. See Table 3.13.

The national agricultural policy of India is an important aspect of the economic environment facing agricultural producers. However, since

[57]One U.S. dollar equals about 4.80 Indian Rupees.

Table 3.12 - Population, National Income and Per Capita Income in India: 1950-1960 (Constant 1960-61 Prices)

	Population 1000's	National Income (Billion Rupees)	Per Capita Income (Rupees)
1950	358293	102.4	286.4
1951	362488	105.2	289.2
1952	368639	109.3	295.4
1953	375131	115.9	307.6
1954	381973	118.8	309.4
1955	389198	121.3	309.9
1956	396815	127.1	318.5
1957	404858	125.9	309.1
1958	41334	135.1	324.9
1959	422278	136.8	322.1
1960	431690	145.0	331.1

Source: N.C.A.E.R., Long Term Projections of Demand and Supply of Selected Agricultural Commodities 1960-61 to 1975-76. Commercial Printing Press, Bombay, April 1962, p. 33.
United Nations, Demographic Yearbook 1962, Rome 1963, pp. 136-137.

1951, India's agricultural policy has been geared to national plans for economic development. The basic goals of India's third Five Year Plan are to increase national income over 5 percent a year, to expand basic industries, to use as fully as possible all manpower resources, to establish greater equality of opportunity for all people, and to expand agricultural output 30 percent.[58]

[58] Government of India, Third Five Year Plan, pp. 48, 55.

Table 3.13 - Wholesale Price Indexes in India: 1950-1960
(1952-1953 = base)

Index	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
1. Food Article	108.3	122.4	93.7	102.2	98.6	82.9	92.8	102.3	102.3	113.8	117.0
Cereals	92.0	100.0	95.0	100.0	88.0	70.0	86.0	99.0	95.0	102.0	103.0
2. Industrial Raw Materials	119.1	153.7	103.2	101.5	106.2	97.2	109.4	117.3	111.3	116.2	131.9
Raw Cotton	93.0	144.0	109.0	96.0	108.0	92.0	107.0	113.0	103.0	102.0	113.0
3. Manufactures	98.9	118.7	107.6	98.9	100.6	101.1	102.9	106.2	107.6	108.2	116.9
4. All Commodities	106.4	125.2	99.9	100.8	100.3	90.8	98.1	105.6	105.4	112.3	118.9

Source: Government of India, Third Five Year Plan, pp. 119-120.

The proposed expansion of agricultural production is in response to a desire on the part of India's planners to achieve self-sufficiency in food grains and increase agricultural production to meet the requirements of industry and exports.[59] The Government of India has attempted to promote higher agricultural output through land reform, the application of technological improvements, improved credit and marketing facilities, and by expanding agricultural research, education, and extension systems. The Government also operates a limited price-support program for selected crops; however, direct production controls are confined to tea, coffee, and rubber.[60]

The agricultural price and production record in India. Data concerning the average production of selected agricultural commodities in India for the two periods, 1950-56 and 1956-60, are presented in Table 3.14, as is the percentage increase between the two periods. The greatest increases were in the production of dry beans, chick peas, and sugar cane. Domestic production of barley remained virtually stable between the two periods while the production of sesame seed decreased. A comparison of these changes with the changes in the average prices between the same two periods suggests that little if any relationship exists between the changes in production and prices. See Table 3.15. For example, the prices of both sugar cane and dry beans increased as little as any, while the price of barley increased over 40 percent between the two periods.

Wheat and related products. Wheat is a major food grain in India, second

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[59]Ibid., p. 48.

[60]E.R.S., U.S.D.A., Agricultural Policies of Foreign Government Agriculture Handbook No. 132, Washington, March, 1964, p. 248.

Table 3.14 - Domestic Production of Selected Agricultural Commodities, India, 1950-56 and 1956-60
(1000's metric tons)

	Average 1950-1956	Average 1956-1960	Percent Change
Wheat	7269	9280	27.6
Barley	2658	2682	.9
Corn	2531	3531	39.5
Sorghum	7040	8353	14.4
Rice	36153	45149	24.9
Sugar Cane	55693	73492	31.9
Potatoes	1809	2309	27.6
Dry Beans	973	1384	42.2
Chick Peas	4444	5851	31.7
Peanuts	3566	4385	22.9
Cotton Seed	1293	1654	27.9
Linseed	370	395	6.8
Sesame Seed	497	399	-19.7
Tobacco	244	279	14.3
Cotton	666	827	24.2

Source: Derived from data presented in Appendix Table 6.

only to rice in the proportion of total quantity of food grains consumed.[61] Recognizing this importance, the Government of India has used a variety of price and non-price measures to expand wheat production. These include

[61] National Council of Applied Economic Research, Long Term Projections of Demand for and Supply of Selected Agricultural Commodities 1960-61 to 1975-76, N.C.A.E.R., New Delhi, April 1962, pp. 217-218.

Table 3.15 - Prices of Selected Agricultural Commodities, India, 1950-56 and 1956-60*

	Average 1950-1956	Average 1956-1960	Percent Change
Wheat	13.2	16.2	22.7
Barley	8.2	11.5	40.2
Corn	10.6	12.9	21.7
Sorghum	10.4	11.8	13.5
Rice	16.5	22.6	36.9
Sugar Cane	1.5	1.5	0
Dry Beans	23.4**	24.6**	5.1
Chick Peas	11.3	13.4	18.6
Peanuts	26.0	27.8	6.9
Cotton Seed	11.3	13.2	16.8
Linseed	23.1	23.7	2.6
Cotton	71.1	76.3	7.3

*All prices expressed as Rupees per 82.28 lb. except cotton which is expressed as Rupees per 784 lbs.

**Price data not available for 1950 and 1960.

Source: Derived from data presented in Appendix Table 7.

consolidation of holdings, rent control, tenancy reform and co-operative farming schemes. In addition considerable effort is made to encourage farmers to adopt better farm practices including increased use of fertilizer, irrigation and higher quality seeds.[62]

A price support policy for wheat and other grains was adopted by

[62] F.A.O., National Grain Policies, United Nations, Rome, 1959, p. 79.

the government of India in December 1954.[63] The decline of wheat prices beginning in June 1954 resulted in government purchases of wheat at fixed prices in three Districts of India. This limited price support scheme was extended to all India in March 1955, when the government announced that it would purchase wheat at all rail heads at fixed prices. As a result, the Government of India purchased 76,400 metric tons of wheat in 1955.

The quantity of wheat purchased by the government was relatively small, but the price support program contributed to a recovery of wheat and other food grain prices. In May of 1956, support prices were again announced for wheat but they were ineffective because of the substantially higher level of market prices.

In view of the tendency for food grains prices to rise, the government felt no need to fix support prices after 1956. Instead, the Indian Government gave assurance to producers that prices would not be allowed to fall below "economic levels." The rise in food grain prices continued and in 1957 the government adopted several measures to bring prices down. These measures included increased imports of food grains and their distribution at government-set prices through fair price shops, tightening credit to check hoarding by traders, the establishment of zonal restrictions on the internal movement of food grains, and banning their export. As a result of these efforts, the index of food prices was held in line with the all commodities price index and increases in the cereals price index were less than in either of the other two.

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[63]The following discussion of India's wheat price policy is based primarily upon information supplied in: F.A.O., National Grain Policies, United Nations, Rome, 1959, and the annual suppliments through 1962.

Basic data regarding the production, prices, and area devoted to wheat and its principal competitors are given in Table 3.16. The increase

Table 3.16 - The Production, Price, and Area Planted to Wheat And Its Principal Competitors in India. 1950-55 and 1955-60

	Wheat	Barley	Potatoes	Cotton	Corn
Production (1000 tons)					
Average 1950-55	7269	2558	1809	666	2531
Average 1956-60	9280	2682	2309	827	3531
Percent Change	27.6	.9	27.6	24.2	39.5
Price (Rupees per 82.28 lb.)*					
Average 1950-55	13.2	8.2	N.A.	71.1	10.6
Average 1956-60	16.2	11.5	N.A.	76.3	12.9
Percent Change	22.7	40.2	N.A.	7.3	21.7
Area (1000 Hectares)					
Average 1950-55	10124	3274	250	6376	3492
Average 1956-59	12570	3324	305	8055	3900
Percent Change	24.2	1.5	22.0	26.3	11.7

*Except for cotton whose price is expressed in Rupees per 784 lbs.

Source: Text Tables 3.14 and 3.15. Government of India, Statistical Abstract of the Indian Union, New Series No. 9, New Delhi, 1960, pp. 435-439.

in wheat production is comparable with that of potatoes, cotton and corn and significantly greater than the increase in barley production. And the increase in the price of wheat and in the area devoted to its production

are in line with those of the other products.[64]

In general there is no indication of injury to the producers of wheat which can be attributed to Title I imports if the standard utilized is the performance records of other field crops grown in India. It should be pointed out; however, that the prices of wheat would have increased more rapidly in the absence of Title I imports or commercial imports of a similar magnitude. This is especially evident since Title I wheat imports were used to control retail wheat prices. The effect of higher prices would have been to enhance the increase in total wheat production in India. But two factors suggest that any large increase in production would require a great increase in price; (1) the proportion of the total wheat crop which is marketed in India is about one third, and (2) the price response coefficient for wheat in India is low.[65] For example, a recent study calculated the price response coefficient for wheat in India and found that only in highly urban state of Bombay does the acreage under wheat appear to be very price elastic, a coefficient of .64 as compared to, for example, only .06 in Uttar Pradesh a more rural state.[66] For the nation as a whole the price response coefficient is probably on the order of .16.[67] Thus the effect of Title I imports probably fell more heavily upon the incomes of wheat producers than they

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[64]The cropped area in India is increasing as new areas are brought into production and more and more land is sown more than once a year.

[65]Data on marketable surplus from: F.A.O., National Grain Policies, 1962, Supplement 4, United Nations, Rome, p. 73.

[66]Op. Cit., N.C.A.E.R., p. 167.

[67]Ibid., Table 37. "Price Elasticities of Acreage Under Selected Crops in Selected States," p. 168. There is a substantial disagreement among Indian economists as to the acreage response to prices, some arguing that higher prices reduce marketings and possibly even production.

did upon domestic wheat production.

Cotton and related products. Domestic cotton production receives considerable attention in India since it is the raw material for one of the nation's important industries. In addition to price controls, measures such as the provision of hybrid seed, loans to cultivators and extension work among producers, have all been adopted to stimulate cotton production.[68]

Domestic cotton production in India increased more than 24 percent between the periods 1950-55 and 1956-60, but the domestic price of cotton increased only 7.3 percent between the same two periods. See Table 3.16. Thus, the fact that cotton prices have not increased substantially since the Korean Boom of the early 1950's does not appear to have injured domestic production. This conclusion suggests a lack of price responsiveness on the part of cotton producers, or that other measures to stimulate cotton production were more important than, and overshadowed the price response. The findings of the N.C.A.E.R. study support the lack of price responsiveness hypothesis.[69] The study reports that no significant relationship between the price and the acreage sown to cotton could be established at either the State or District level.

Cotton cloth production increased about 18 percent between 1950 and 1960, but the increase was probably not stimulated by lagging raw materials prices, as the price of manufactured cotton products followed a pattern similar to that of raw cotton.[70] On the other hand, the world price

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[68]Government of India, Second Five Year Plan, Bombay, 1956, p. 263.

[69]Op. Cit., N.C.A.E.R., p. 169.

[70]For example the price of grey standard shirting increased about 10 percent between the periods 1950-55 and 1956-59. Op. Cit., Statistical Abstract, p. 348.

of cotton fell following the Korean Boom of the early 1950's, hence, India's exports of raw cotton and cotton manufactures have not increased. See Table 3.17. Thus, it appears as if the expanded production of cotton and textiles has been entirely consumed in India.

Table 3.17 - Exports of Cotton and Cotton Cloth by India. 1951-52 and 1959-60

Year	Raw Cotton (metric tons)	Mill Made Cotton Cloth (million yds)	Hand Loam Cotton Cloth (million yds)
1951-52	52,782	736	87
1952-53	45,690	548	54
1953-54	27,058	652	64
1954-55	94,416	898	58
1955-56	71,358	815	58
1956-57	40,301	744	60
1957-58	72,843	844	38
1958-59	58,627	581	35
1959-60	33,805	816	35

Source: For raw cotton: Richards, S. I., Trends in India's Agricultural Trade, Foreign Agricultural Economic Report No. 15, E.R.S., U.S. Department of Agriculture, Washington, February, 1964, p. 12.

For Cotton Cloth: National Council of Applied Economic Research, Long Term Projections of Demand for and Supply of Selected Agricultural Commodities 1960-61 to 1975-76, N.C.A.E.R., New Delhi, April 1962, p. 201.

The extent to which the availability of cotton under Title I contributed to lagging cotton prices is difficult to discern. But in view of the evidence on the lack of price responsiveness of India's cotton producers and the data regarding increases in cotton production it is doubtful that these imports injured domestic production significantly.

The long-run effects of Title I imports. The importation of wheat and cotton under Title I contributed to lagging income for the farmers producing these products, as incomes failed to increase as rapidly as they may have in the absence of the program. The extent of the injury was probably not substantial as the government followed a policy of price control during this period and most likely would have adopted other procedures to control any substantial increase in prices had Title I products not been available. But, to the extent that farmer's incomes were negatively effected investment at the individual producer level was reduced.

At the national level, the picture is more complex. The Title I program in India had a local currency component of 2,337.2 million dollars as of June 30, 1961. Table 3.18 gives a breakdown of the allocation of

Table 3.18 - Allocation of Local Currency Arising Out of the Title I Program in India as of June 30, 1961.

Category	Million Dollars	Percent of Total
Grants for Economic Development	788.2	33.7
Cooley Loans	162.3	6.9
Loans for Economic Development	1,085.9	46.5
United States Uses	300.8	12.9
Total	2,337.2	100.0

Source: United States Government, Sixteenth Semiannual Report of Activities Carried on Under Public Law 480. Washington, 1962, pp. 72 and 74.

these funds according to uses, as well as the proportion of this total allocated for each use. The two categories, grants for economic development and loans for economic development, account for over 80 percent of

total allocations. Out of the total of 1874.1 million dollars allocated for these two categories only 258.6 million dollars had actually been disbursed by December of 1961. Thus less than 14 percent of these moneys had actually been disbursed. See Table 3.19.

Table 3.19 - Disbursements of Local Currency by Use in India as of December 1961.

Category	Millions of Dollars
Grants	
Food and Agriculture	2.3
Labor	.1
Health & Sanitation	15.3
Education	.3
Other	.2
Loans	
Industry and mining	199.2
Transportation	1.8
Other	39.4
Total Loans & Grants Disbursed	258.6

Source: United States Government, Sixteenth Semiannual Report of Activities carried on Under Public Law 480. Washington 1962, pp. 20 and 26.

The long-run effects of these funds upon the agricultural production of the nation depends to a large extent upon the nature of the investments undertaken. As may be seen in Table 3.19 only 2.3 million dollars was allocated for direct investment in agriculture. But some of the funds invested in the other categories will have some effect upon agricultural output especially those which improve the human factor.

In viewing investment patterns in India, it is necessary to consider their overall public investment programs as expressed in the Five Year Plans. Data regarding the size and make-up of the First and Second plans are presented in Table 3.20. As may be seen the Second Plan was over

Table 3.20 - The Distribution of Public Investment Under India's First and Second Five Year Plan's.

Area of Investment	First Plan Crores* of Rupees	First Plan Percent of Total	Second Plan Crores* of Rupees	Second Plan Percent of Total	Percentage Increase
Agriculture & Community Dev.**	540	22.9	1,054	22.0	95.2
Power Projects	493	20.9	427	8.9	-13.2
Transport & Communication	556	23.6	1,385	28.9	149.1
Industries & Minerals	179	7.6	890	18.5	397.2
Social Service & Rehabilitation	547	23.2	945	19.7	72.8
Miscellaneous	41	1.7	99	2.1	141.5
Total	2,356	100.0	4,800	100.0	103.7

*A crore equals 10 million.

**Includes irrigation.

Source: Choudhury, R., The Plans for Economic Development In India, Bookland Private Ltd., Calcutta, 1959, pp. 105, 106, 134.

twice as large as the First Plan. The fact that the Second Plan was so much greater than the first and that 25 percent of the Second Plan was financed through deficit financing while only 18 percent of the First was financed in this way points to the inflationary nature of the Second Plan.[71]

[71]Choudhury, R., The Plans for Economic Development in India, Bookland Private Ltd., Calcutta, 1959, pp. 114, 938.

The Title I program made at least two important contributions to the Second Five Year Plan. In the first place, it helped to offset the inflationary pressures created by the plan and secondly, it compensated for the Plan's industrial emphasis. As of fiscal 1960 over 2337.2 million dollars worth of agricultural commodities were received by India under Title I. And by the end of 1961 only 13.7 percent of the local currency component of these sales had been disbursed. Thus the Title I commodities were able to absorb much of the excess money created by the deficit spending of the Second Plan.

In May of 1960 the United States and India signed a four year agreement in which the U.S. was committed to provide 1.3 billion dollars worth of Title I commodities beginning in 1960. Sen points out that the timing and the duration of the agreement permitted the Planning Commission to integrate these expected receipts into India's Third Five Year Plan.[72] Thus, the Title I program should be of significant help in the fulfillment of the objectives of India's Third Plan for economic development.

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[72]Sen, S.R., "Impact and implication of foreign surplus disposal on underdeveloped economies - The Indian Perspective," J.F.E., Vol. XLII, Dec., 1960, pp. 1033-1034.

ISRAEL

The Title I program in Israel. Israel received more than two million tons of Title I agricultural commodities valued at over 150 million dollars through 1960. The principal commodities received were feed grains, dairy products, edible oils, and wheat. In volume, these four groups of commodities accounted for over 90 percent of the total received. Feed grain imports were 56.5 percent, wheat 38.2 percent, edible oils 1.8 percent and dairy products 1.7 percent of the total.

These same commodities were also the largest in total value, accounting for over 87 percent of a total value of $150,205,000. Of this total feed grains accounted for 35.7 percent, wheat 33.6 percent, dairy products 10.8 percent, and edible fats and oils 7.5 percent. See Table 3.21.

Wheat, feed grains, tobacco and cotton were imported under Title I in each year of the period 1955-1960. Dairy products were received in each year with the exception of 1960 and edible oils in each year except 1957. Imports of other commodities under Title I were sporadic.

The relationship between the size of Title I imports and domestic production and total supplies of similar commodities is presented in Table 3.22. Imports of wheat and feed grains under Title I were about twice as great as domestic production while imports of rice were more than four times as great as domestic rice production. Dairy products imports under Title I were also relatively large as imports of butter and hard cheese were 115 and 60 percent, respectively, of domestic production. Edible oil imports were 15 percent, cotton imports 24 percent, and tobacco imports 6 percent of domestic production respectively.

Table 3.21 - Total Title I Shipments to Israel 1955-1960

Commodity	Shipments			
	Metric Tons	Percent	1000's Dollars	Percent
Feed grains	1,204,690	56.5	53,566	35.7
(a) barley	146,330		7,043	
(b) corn	326,920		16,577	
(c) grain sorghums	731,440		29,946	
Dairy products	36,550	1.7	16,160	10.8
(a) butter	11,190		9,646	
(b) cheese	4,730		2,400	
(c) dried whole milk	210		200	
(d) non-fat dried milk	20,420		3,914	
Edible fats and oils	37,980	1.8	11,211	7.5
(a) cotton seed oil	21,820		7,152	
(b) soybean oil	16,160		4,059	
Tallow	2,350	.1	500	.3
Wheat	814,490	38.2	50,483	33.6
Cotton	7,720	.4	5,347	3.6
Tobacco	640	*	935	.6
Rice	11,490	.5	1,298	.9
Beef	11,230	.5	9,999	6.7
Prunes	320	*	100	*
Dry edible beans	3,810	.2	606	.4
Total	2,131,270	100.0	150,205	100.0

*Less than 1 percent

Source: Computed from data presented in: Appendix Tables 8 and 9

When Title I imports are expressed as a percent of total supply, which include other imports, their relative importance declines. For example, Title I imports of rice were 438 percent of domestic production but only 17 percent of total supplies of rice, while Title I imports of wheat and feed grains which were about twice as large as domestic production represent 34 percent and 53 percent of total supplies respectively. Even with these adjustments for commercial imports, Title I imports of the principal commodities are significant; however, the comparison does

Table 3.22 - Title I Imports in Relation to Domestic Production and Total Supply in Israel: 1955-1960.

Commodity*	Title I Imports Annual Ave. 1955-1960 (tons)	Domestic Production Annual Ave. 1955-1960 (tons)	Title I as a Percent of Domestic Production (percent)	Total Supply** Annual Average 1955-1960 (tons)	Title I as a Percent of Total Supply (percent)
Wheat	127,139	61,750	217	372,444	34.2
Rice	1,660	438	438	10,018	16.6
Butter	1,865	1,615	115	4,559	40.9
Hard Cheese	788	1,313	60	3,025	26.0
Beef	1,872	6,485	29	13,580	13.8
Edible oil***	5,635		15	34,977	16.1
Feed grains	187,130	106,600	188	355,000	52.7
Cotton	1,287	5,349	24	10,425	12.3
Tobacco	107	1,861	6	2,706	3.9

*Tallow, dried whole milk, prunes, and dried beans not included: dried whole milk imported only in 1959; prunes were imported only in 1958; and dried beans were not domestically produced.
**Total supply = total imports plus domestic production with no change in stocks.
***Domestic production figures include oil refined from Title I imports the percentage was calculated on the basis of fat content.

Source: Ginor, F., Analysis and Assessment of the Economic Effect of the U.S. Public Law 480 Title I Program in Israel, Bank of Israel, Tel-Aviv, Oct., 1961, pp. 173, 185, 194, 206, 220, 228, and 231. Appendix table 8.

point out the importance of imports in the total supply of food and fiber in Israel.

In the analysis section which follows major attention is given to the domestic production and price records of wheat, feed grains, cotton, and vegetable oils along with closely related products. Imports of dairy products under Title I were also important in terms of domestic production, total supplies, and continuousness of importation. However, the price and production record of dairy products is influenced by the availability of feed grains, thus dairy products are considered in conjunction with Title I imports of feed grains.

The economic environment in Israel. During the period 1950 to 1960 the economy of Israel grew rapidly. The value of gross national product in constant prices increased 174 percent at an annual growth rate of 10.6 percent a year. During the same period population increased 67 percent with an annual growth rate of 5.2 percent, much of it from migration.[73]

Under the stimulus of rising population and incomes the demand for food increased rapidly between 1950 and 1960. As may be seen from Table 3.23 between 1952 and 1960 per capita consumption of food and beverage increased by almost 38 percent, primarily as a result of rising income. The most rapid increases in consumption were of livestock products, as per capita consumption of meat and meat products increased almost 300 percent while per capita consumption of milk and eggs increased almost 55 percent. Per capita consumption of fresh fruit increased 120 percent while per capita consumption of tea, coffee and cocoa increased

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[73]Ginor, F., Analysis and Assessment of the Economic Effect of the U.S. Public Law 480 Title I Program in Israel, Bank of Israel, Tel-Aviv, Oct., 1961, p. 10.

Table 3.23 - Per Capita Food Consumption in Israel
at Constant Prices: 1952, 1955, 1960
(Indexes: 1952 = 100)

Commodity	1952	1955	1960
A. Consumption of Food & Beverages	100.0	109.4	137.8
Food Consumption	100.0	109.1	138.1
Cereals & Cereal products	100.0	100.2	94.0
Meat & Meat products	100.0	191.9	398.7
Fish	100.0	91.3	96.4
Milk & Milk products	100.0	134.5	154.9
Eggs	100.0	116.7	154.7
Edible oils	100.0	102.7	112.4
Fresh fruit	100.0	115.7	220.5
Fresh vegetables	100.0	101.3	89.0
Processed fruits & vegetables	100.0	85.2	103.3
Sugar & Sugar products	100.0	124.9	134.3
Tea, Coffee, Cocoa	100.0	178.3	195.7
Beverage Consumption	100.0	113.7	133.0
Soft drinks	100.0	145.3	148.4
Alcoholic drinks	100.0	98.5	124.8
B. Tobacco Consumption	100.0	92.2	89.8

Source: Ginor F., Analysis and Assessment of the Economic Effect of the U.S. Title I Program in Israel, Bank of Isreal, Tel-Aviv, October 1961, p. 423.

96 percent. On the other hand, per capita consumption of cereal products, fish and fresh vegetables declined.

A second important aspect of the economic environment of Israel which influences agricultural output and prices significantly is the agricultural policy of the nation. The goal of Israel's agricultural policy as expressed in the Seven Year Plan in 1953 was a level of output by 1960 that would make Israel self-sufficient in all foodstuff production and allow a surplus for export.[74] However, by 1956 this plan was dropped.[75] In recent years other goals or objectives of Israel's agricultural policy have been declared at various times by responsible leaders, to include:

A. Maximum income of farmers.

B. Maximum production of calories.

C. Maximum earnings of foreign currency.

D. Maximum value-output per acre.

E. Maximum value-output per input of water.

F. Maximum number of persons employed on a given unit of land.[76]

The above goals or objectives are not only inconsistent but do not provide economically solid guide lines for policy. A review of the various policies adopted by the government seems to indicate that the working objectives of Israel's agricultural policy are to increase production of of commodities for export and at the same time reduce the need for certain agricultural import items.[77]

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[74]Rubner, A., The Economy of Israel, Frederick, A. Praeger, New York, 1960, p. 110.

[75]Ibid., p. 110.

[76]Ibid., p. 111

[77]This interpretation is supported by: Op. Cit., Agricultural Handbook 132, p. 213.

In attempting to meet the objectives of its agricultural policy the Israel government has adopted a system of price supports, subsidies, and strong trade barriers. Table 3.24 presents data regarding direct agricultural subsidies to agricultural producers. It should be noted, however,

Table 3.24 - Agricultural Subsidy Payments to Israel Producers: Fiscal years 1958-1961 (IL millions)

	1958-59	1959-60	1960-61	1961-62
Eggs	11.9	19.4	15.2	17.9
Cows & ewes milk	16.2	12.5	10.5	20.1
Beef & Poultry meat	0.8	3.3	1.1	6.2
Vegetables	7.7	5.1	3.2	4.8
Cotton	4.8	6.8	8.7	10.0
Other Products	0.2	1.1	1.7	2.1
Subsidies to new settlement	2.6	2.9	2.8	2.6
Total output subsidies	44.2	51.1	47.2	63.7
Drought Compensation	6.2	23.2	4.5	8.0
Fertilizers & water	3.7	3.4	5.4	6.8
Total imput subsidies	9.9	26.6	9.9	14.8
Grand total	54.1	77.7	57.1	78.5

Source: Bank of Israel, Annual Report 1962, Jerusalem, May, 1963, p. 204.

that these direct payments do not fully reflect the extent of Government subsidies to agriculture. For example, the Bank of Israel estimates that 14 million IL should be added to the 14.8 million IL of imput subsidies in 1961-62 to take account of the amount by which production costs were prevented from rising as a result of the postponement of price increases

in imported imputs.[78]

In addition to direct Government supports the Israel farmer has the support of various government sanctioned farm organizations. It is not essential that these be enumerated; however, it should be noted that various farm organizations have marketing, research and credit functions.[79]

The marketing functions of the various farm organizations are performed in various ways to influence the returns to producers of agricultural commodities. This may be through cooperative marketing or through fixing of a minimum price and buying all surpluses which result at the fixed price. For example, the Vegetable Production and Marketing Board fixes a minimum price for vegetables and buys quantities left on the market at stated minimum prices and disposes of them partly for canning, partly for distribution among the needy, and partly by destruction.[80] This price support operation is financed by a levy which is paid by the producers on every ton of vegetables marketed and by an annual Government contribution which amounts to about one third of the cost.[81]

In addition to the various price support activities of the farm organizations, guaranteed prices to producers also result from the activities of an Export Company established to encourage agricultural exports. The company contracts with farmers producing products expecially

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[78]Bank of Israel, Annual Report 1962, Jerusalem, May 1963, p. 204.

[79]Holm, H. M., The Agricultural Economy of Israel, FAS, U.S.D.A., June, 1960, pp. 17-18.

[80]Government of Israel, Ministry of Agriculture, Bank of Israel, The Economy and Agriculture of Israel, A report prepared for the Mediterranean Development Project of the U.N., F.A.O., Jerusalem, June, 1959, p. 35.

[81]Ibid., p. 35.

for export, specifying either a fixed price or a minimum price plus the difference between it and the selling price.[82]

As is the case with most nations, the national policies of Israel's Government influencing agricultural prices and production are extremely complex. In later sections, policies that influence important Title I commodities and related goods will be considered in more detail.

The agricultural price and production record of Israel. The value of Israel's agricultural output grew rapidly between 1950 and 1960. In 1950 the value of total agricultural output in current prices was I.L. 45.8 million, and in 1954 the comparable figure was I.L. 258.0 million and in 1960 I.L. 673.8 million.[83]

Table 3.25 gives the average production of most agricultural commodities produced in Israel for two periods, 1950-54 and 1955-60, as well as the percentage change between the two periods. The greatest increases in production were experienced in sugar beets, peanuts, cotton, and livestock products. On the other hand, the average domestic production of barley and tobacco declined between the two periods.

Indexes of producer prices as well as the general wholesale price index are presented in Table 3.26. It should be noted when viewing these price indexes that they may not reflect the actual price received because of the system of subsidy payments used by the government of Israel to encourage production and maintain farm incomes. The greatest price increases were in cattle and sheep prices; however, most of the prices increased as much or more than the general wholesale price index.

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[82] Ibid., p. 39.

[83] Op. Cit., Ginor, p. 238. The general wholesale price index increased from 100 in 1951 to 295 in 1954 and to 378 in 1960.

Table 3.25 - Changes in the Domestic Production of Agricultural Commodities in Israel: 1950/54-1955/60.

Commodity	Average Production 1950-54	Average Production 1955-60	Percent Change
	1000 metric tons	1000 metric tons	
Barley	62.5	57.6	-8
Corn	11.6	23	99
Grain Sorghum	20.5*	26	27
Feed Grains	82.2	106.6	30
Wheat	27.2	61.6	126
Milk**	138	261.8	90
Tobacco	2.3***	1.9	-17
Rice	0	.7****	
Beef	1.4	6.5	364
Cotton	.12***	5.4	4400
Butter	.6	1.6	166
Hard Cheese	.5	1.3	160
Sugar beets	21	114	443
Potatoes	51	89	75
Onions	17*****	23	35
Tomatoes	70******	110	57
Grapes	20	44	120
Lemons	11	17	55
Olives	11	12	9
Groundnuts	6	16	167
Dry Peas	0	1.6*******	
Chick Peas	13	1.3	30

*Includes only 1951-54
**Milk in metric tons.
***Average of 1953 and 1954.
****Includes only 1957-60.
*****Average 1952-53-54.
******1954 only.
*******1960 not included.

Source: Computed from data presented in Appendix Tables 10 and 11.

Feed grains and related commodities. The most important Title I imports in terms of value, quantity, and percent of total supplies were feed grains. Between 1951 and 1960 the producer price index of feed grains increased from 100 to 412 while the wholesale price index increased to 378. However, following the initiation of the Title I program, in 1955,

Table 3.26 - Indexes of Producer Prices of Agricultural Commodities and the General Wholesale Price, Israel: 1951-60*
(1951 = 100)**

Commodity	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Eggs	100	151	229	270	300	325	389	398	347	351
Cattle	100	186	265	276	698	815	885	1068	892	838
Sheep	100	179	346	632	530	573	660	679	610	648
Poultry	100	158	236	309	293	273	328	294	258	248
Milk	100	165	240	263	269	301	316	324	292	292
Edible oils	___***	100	194	227	331	352	442	400	382	371
Rice	100	172	233	233	233	233	233	233	___***	___***
Wheat****	100	162	278	347	413	413	438	438	438	447
Dry beans q	100	143	160	327	359	360	360	___***	___***	___***
Feed Grains	100	198	214	291	419	350	419	419	419	412
General Wholesale	100	170	250	295	310	328	375	383	383	378

*Prices of rice, wheat, and dry beans are at the retail level.
**For edible oils 1952 = 100
***Not available
****Standard bread price

Source: Calculated from data presented in: Ginor, F., Analysis and Assessment of the Economic Effect of the U.S. Public Law 480 Title I Program in Israel, Bank of Israel, Tel-Aviv, Oct. 1961, pp. 414, 447, 449, 456, 458, and 459.
The General Wholesale Price Index from: United Nations, Statistical Year book 1961, Rome, p. 476.

feed grain prices remained virtually stable. Domestic feed grain production increased 30 percent from an annual average of 82.2 thousand metric tons in the period 1950-54 to an annual average of 106.6 thousand metric tons in the period 1955-60.

The principal feed grains produced by Israel are barley, corn, and grain sorghum. Domestic production of corn increased 99 percent between 1950-54 and 1955-60 while domestic production of grain sorghum increased 27 percent and barley production decreased 8 percent.

In Israel barley and sorghum are produced on non-irrigated land and thus do not compete with corn which is produced primarily on irrigated land. The area devoted to corn production has declined slightly but the expanded use of fertilizers and new seed account for most of the rapid increase in production.[84] The area devoted to grain sorghum production has remained relatively stable while the area devoted to barley production has declined rapidly from 227 thousand acres in 1953 to 142 thousand acres in 1959.[85]

The reason for the decline in barley acreage has been a substitution of wheat for barley on lands suited for the production of both crops. The shift of dry lands from barley to wheat is no doubt partly due to the government policy initiated in 1955 to expand both bread grain production and marketing. This policy includes a provision which allows farmers to trade one ton of wheat for about 1 - 1/3 ton of barley or corn.[86] The availability of feed grains to the government after 1955

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[84]Op. Cit., Holm, p. 30.

[85]Ibid., p. 30.

[86]Ibid., p. 28.

under Title I of P.L. 480 contributed to the feasability of this policy and thus indirectly to the decline in barley acreage.

During the period 1950 to 1960 livestock production in Israel expanded greatly as the value of domestic production of animal products, including milk, eggs, meat, and pond fish, increased from 116.8 million I.L. in 1950 to 344.8 million I.L. in 1960 or nearly 200 percent.[87] Livestock production has also increased relative to other agricultural output. In 1954, livestock production was 38.5 percent of total agricultural output and in 1960 it was 50 percent.

The rapid increase in livestock production was stimulated by Title I imports of feed grains in two ways. First the availability of Title I feed grains held feed grain prices in check after 1954 (see Table 3.25). This stability of feed grain prices in the face of rising producer prices of animal products made livestock production more profitable. Secondly, the importation of feed grains created optimistic expectations as to the continuity of feed grains supplies and the stability of feed grain prices. This created expectations of continued profitability of the new enterprises.[88]

The increase in feed grain supplies and the resulting expansion of the livestock industry offset any adverse effects on domestic production that Title I imports of meat and dairy products might have had. Title I imports represented 40 percent of total supplies of butter, 36 percent of non-fat dry milk supplies, and 14 percent of beef supplies. See Table 3.22. However, average production of these products increased

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[87] Op. Cit., Ginor, p. 241 - In terms of 1958-59 prices.

[88] Ibid., p. 40.

fron the period 1950-54 to the period 1955-60. The increase was over 350 percent for beef, 166 percent for butter, 160 percent for hard cheese, and 90 percent for milk.

Wheat and related products. Wheat production in Israel increased from an annual average of 27 thousand metric tons in the period 1950-54 to an annual average of 62 thousand metric tons in the period 1955-60 an increase of 126 percent. Most of the increase was due to increases in acreage sown to wheat at the expense of lands formerly devoted to the production of barley. After the initiation of the government policy to expand wheat production in 1955 the area devoted to wheat production increased from 77 thousand acres in 1954 to 117 thousand in 1955 and to 154 thousand in 1959.[89] Barley acreage decreased from 227 thousand acres in 1953 to 171 thousand acres in 1959.[90]

The effects of the government policy to expand wheat production no doubt prevented Title I imports of wheat from having any adverse effects upon domestic wheat production. However, it appears that Title I imports and increasing domestic production have to some extent displaced other imports. The average annual imports of wheat in the period 1950-54 were 233 thousand metric tons while imports excluding Title I shipments were on the average only 184 thousand metric tons for the period 1955-60.[91]

Cotton and related products. Domestic cotton production showed the greatest increase of any Title I commodity. Cotton production on a commercial basis in Israel began in 1953. For the period 1953-54 average production was

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[89]Op. Cit., Holm, p. 28.

[90]Ibid., p. 28.

[91]Op. Cit., Ginor, p. 180.

only 120 metric tons while during the period 1955-60 average annual production was more than 5,000 metric tons.

Cotton is grown on irrigated land suitable for the production of sugar beets, vegetables, and corn. Domestic production of sugar beets has expanded rapidly, increasing from an average annual production of 21 thousand metric tons in the period 1950-54 to 114 thousand metric tons in the period 1955-60, an increase of more than 400 percent. Domestic production of corn also increased. The acreage devoted to the production of the three crops is presented in Table 3.27. The area devoted to the

Table 3.27 - Area Devoted to Sugar Beets, Cotton, and Corn in Israel: 1956-1959. (1000 Acres)

Crop	1956	1957	1958	1959
Sugar Beets	2	3	6	7
Cotton	14	12	14	17
Corn	23*	24	15	9

*1955

Source: Holm, H. M., The Agricultural Economy of Israel, U.S.D.A. F.A.S. M-81, Washington, June, 1960, pp. 30 and 32.

production of corn has decreased since 1956, while that of both sugar beets and cotton has increased.

Cotton production and processing are under the supervision of the Cotton Production and Marketing Board, which coordinates cotton growing and marketing in Israel. The Board represents both growers and buyers; fixes the prices of cotton and cottonseed; maintains grading and storage facilities; provides crop insurance; and cooperates with the Ministry of

Agriculture in cotton pest control.[92] In addition to the activities of the Cotton Production and Marketing Board, cotton producers have received the benefits of direct government subsidies which reached 10 million I.L. in 1961-62. See Table 3.24.

The effect of Title I imports of cotton on domestic production was no doubt offset by the vigorous cotton expansion program and the government subsidy system. However, Ginor reports that the availability of Title I cotton enabled Israel to expand its cotton spinning industry earlier than would have been the case in the absence of the program.[93]

A joint product of cotton, cottonseed oil, was also imported under Title I. The source of raw material for refined vegetable oils in Israel is both domestic oil and oils imported under Title I. For this reason, in order to assess the effects of Title I on domestic oil production, it is necessary to consider production of the oil seeds themselves.

Domestic production of principal oilseeds in Israel has increased rapidly from less than a thousand metric tons in 1951 to more than 23 thousand metric tons in 1960. See Table 3.28. The greatest increase has been in cottonseed production, since it grew from virtually no production in 1951 into by far the most important source of vegetable oil in Israel. This great increase in cottonseed production is of course correlated with the expansion in cotton production.

Although Title I imports of vegetable oils have been relatively large, there appear to have been no adverse effects on domestic production of oilseeds. But greatly increased demand stemming from rising

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[92]Op. Cit., Holm, p. 31.

[93]Op. Cit., Ginor, p. 231.

Table 3.28 - Domestic Production of Principal Oil Seeds in Israel: 1951-60

(Metric Tons)

Year	Cotton Seed	Sun-flower Seed	Saf-flower Seed	Sesame Seed	Total
1951	0	468	150	108	726
1952	0	870	1,000	150	2,020
1953	30	870	500	380	1,780
1954	500	1,620	500	700	3,320
1955	4,000	500	1,100	420	7,020
1956	5,250	950	1,450	1,450	9,100
1957	6,700	2,750	1,050	1,520	12,020
1958	8,100	1,500	700	950	11,250
1959	12,250	2,400	555	970	16,120
1960	19,000	2,650	450	1,130	23,230

Source: Ginor, F., Analysis and Assessment of the Economic Effect of the U.S. Public Law 480 Title I Program in Israel, Bank of Israel, Tel-Aviv, Oct., 1961, p. 222.

incomes and population in conjunction with the government's cotton subsidies have done much to prevent any such adverse effects.[94]

Long run effects of Title I imports on agricultural production in Israel. The effects of Title I imports on income and, hence on investment at the individual producer level in Israel were mixed. The producers of feed grains probably lost income due to the stabilizing influence of feed grain imports on domestic feed grain prices. This loss was not as great as it would have been in the absence of the government's policy of food

[94]The daily consumption of fats per capita rose from 68.2 grams in 1952 to 85.7 grams in 1959.

grain expansion and the ease of shifting barley lands into wheat production. The loss in income was also less for those individual producers who made the transition to wheat production more rapidly than others.

Title I imports probably had their greatest impact on incomes of livestock producers. As a result of the relatively stable feed grain prices after 1955, and rising livestock product prices livestock production became more profitable, thereby stimulating production and increasing producer incomes. Ginor estimates that additional income accruing from the share of the increase in livestock production which can be attributed to Title I amounted to I.L. 85-95 million during 1955-60 or I.L. 14-16 million annually.[95] She also estimates that investment in the livestock industry during the same period would have been about I.L. 71 million less in the absence of the Title I program.[96]

It should also be noted that this additional investment in the livestock industry was not government sponsored and that loan funds from the Development Budget were not made available for this use. Hence, funds for the additional investment in livestock enterprises were raised by farmers themselves either from savings or other non-government sources.

The importation of other commodities under Title I probably had negligible effects on domestic production. This was due in part to their small size and in part to governmental policies adopted by Israel to prevent any adverse effects. As a result it would be difficult to say that incomes of producers were either enhanced or injured and thus that

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[95]Op. Cit., Ginor, p. 274, In constant 1958-59 prices. The Israel pound had a value of .357 I.L. to the dollar in 1952, by 1954 the value had fallen to 1.80 I.L. per dollar and has remained at this level.

[96]Ibid., p. 275.

there were any indirect effects on private investment from these imports.

The Title I program in Israel had a local currency value of 303.8 million I.L. Of this total I.L. 48.5 million were designated for U.S. uses, I.L. 199.4 million for loans under Section 104(g), I.L. 46.5 for loans under the Cooley amendment and I.L. 7.6 million for grants under Section 104(e). See Table 3.29.

Table 3.29 - Sales Agreements Under Title I with Israel and I.L. Funds Generated for Various Uses: 1955-1960.

Source and Uses	U.S. Dollars (1000's)	I.L. Funds (1000's)
Sales Agreements	168,549	303,388
U.S. uses*	26,966	48,538
Loans to Israel**	110,783	199,410
Grants to Israel***	4,200	7,560
Cooley loans	25,827	46,489
Total****	167,776	301,997

*After the transfer of $11.11 million or I.L. 20 million to Sec. 104(g).
**For use under subsection 104(g).
***For use under subsection 104(e).
****Difference between total and sales agreements is a freight differential.

Source: Ginor, F., Analysis and Assessment of the Economic Effect of the U.S. Public Law 480 Title I Program in Israel, Bank of Israel, Tel-Aviv, Oct. 1961, p. 7.

Of the I.L. 245.8 million made available for use under subsection 104(g) and the Cooley Amendment, I.L. 180.2 million were released for approved projects. The funds for approved projects were channelled to the economy through the State Development Budget.[97] During the six

[97]Loans under the Cooley Amendment were originally extended by the Export Import Bank of Washington through their Israel agent, the Industrial Development Bank of Israel. These projects were later incorporated into the Development Budget.

year period 1955-60, Title I funds constituted about 9 percent of the investment expenditure of the State Development Budget. See Table 3.30.

Table 3.30 - Investments of Title I Funds and Expenditure of the State Development Budget: Israel 1955-1960.

Branch	Investments of the state Development Budget (I.L. Millions)*	Title I Investments (I.L.Millions)*	Share of Title I Investments (percent)
Agriculture & Irrigation	687.0	54.3	7.9
Electric Power	140.2	22.5	16.0
Industry & Mining	405.0	76.9	19.0
Transport	265.5	14.6	5.5
Oil	46.1	0	0
Housing	360.3	5.6	1.5
Municipalities	46.7	4.7	10.1
Miscellaneous	105.0	1.6	1.5
Total	2,055.8	180.2	8.8

*Current prices

Source: Ginor, F., Analysis and Assessment of the Economic Effect of the U.S. Public Law 480 Title I Program in Israel, Bank of Israel, Tel-Aviv, Oct., 1961, p. 16.

Over 50 percent of these funds were channelled into investment in industry and electric power generation. About 30 percent were utilized for investments in agriculture and irrigation; however these constituted a relatively small share (7-9 percent) of the government's total loan program in the agricultural sector.

The actual loans made with Title I funds do not represent additional investment as much as investment for which United States approval was

easily elicited. On the other hand, the importation of commodities did allow investment to be made which resulted in the creation of over 5,000 new jobs a year on the average between 1955 and 1960 and at the same time hold the price level relatively stable.[98] The index of wholesales prices increased only 22 percent during the period 1955-1960 while between 1951 and 1955 it increased over 200 percent.

Another factor which must be considered in crediting investment from Title I local currency balances to the Title I program is the fact that less than 16 percent of the local currency was designated for U.S. uses.[99] If the United States had elected to claim more resources the Government of Israel would either have had to decrease its investment program or subject the nation to greater inflationary pressures.

Another aspect of the affect of the Title I program on investment patterns in Israel is that loans which can be identified as being made with Title I funds had a small import component.[100] However, Ginor, states that in the absence of the Title I program, the total development budget would have had a smaller import component, since the Title I program made more foreign exchange available for non-food imports. Thus, the investment patterns of Israel was influenced in the direction of investments with higher foreign exchange requirements.

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[98]Op. Cit., Ginor, p. 67.

[99]Following the initiation of the Title I program an extensive translation program was initiated in Israel utilizing local currency, suggesting that even 16 percent of the Title I local currency provided larger than normal U.S. needs for Israel's currency.

[100]Op. Cit., Ginor, p. 49.

The Title I program has made a contribution to the achievement of Israel's basic agricultural policy. This policy of concentrating productive efforts in high value products such as fruits, vegetables, milk, eggs, and poultry is designed to enhance the nations exchange position by producing products expensive to import, which are at the same time, good exchange earners. For example only 15 to 20 percent of the wheat required and 30 percent of other grains are grown in Israel, but nearly all dairy products and about 80 percent of the fats and oils, and red meat needed are produced domestically.[101]

The variation in the foreign exchange components of various types of investments suggests that the success of this policy line could have a significant impact upon the direction of future investment both agricultural and non-agricultural. In addition, if Israel's agricultural trade accounts could be balanced, it would provide a less vulnerable position to a nation whose Balance of Payments, in 1962, included 85.3 million dollars of net foreign investment.[102]

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[101]Op. Cit., Agricultural Handbook No. 132, p. 212.

[102]Op. Cit., Bank of Israel, p. 49.

JAPAN

The Title I program in Japan. Between 1955 and 1957 Japan received more than 1.25 million metric tons of U.S. agricultural products valued at more than 135 million dollars under Title I of P.L. 480. In effect these were the "tapering off" programs following G.A.R.O.I.A. (army civilian supply) and E.C.A. which had supplied food during most of the years following the occupation of Japan. However, the post 1957 growth in Japanese exports was not fully anticipated at the time, so that the end of the program was not then recognized. As may be seen from Table 3.31, wheat

Table 3.31 - Total Shipments of Title I Commodities to Japan 1955-1957

Commodity	1000's Metric tons	Percent of Total	1000's Dollars	Percent of Total
Wheat	843.08	66.1	47,826	35.4
Barley	156.42	12.3	7,967	5.9
Corn	99.30	7.8	5,411	4.0
Rice	97.16	7.6	13,750	10.2
Cotton	75.49	5.9	52,471	38.9
Tobacco	4.44	.4	7,639	5.7
Total	1,275.89	100.0	135,044	100.0

Source: United States Dept. of Agriculture, F.A.S., Title I, Public Law 480; Total Shipments by 6-month Periods, January 1955 through June 1959, by Country and Commodity, Washington, SDS-7-61, May 1961.

represented 66.1 percent of the volume and 35.4 percent of the total value imported. Barley was the second most important import representing 12.3 percent of the total volume and 5.9 percent of total value. Corn, rice, cotton and tobacco were also imported under the Title I program.

Wheat, barley and cotton were imported under Title I for three consecutive years beginning in 1955 while corn and tobacco were imported in 1956 and 1957. Rice was imported under the Title I program only in 1955. See Table 3.32.

Table 3.32 - Shipments of Title I Commodities to Japan by Year: 1955-1957 (in 1000's metric tons)

	1955	1956	1957	Total
Wheat	372.48	348.88	121.72	843.08
Barley	56.84	80.86	18.72	156.42
Corn	.00	50.89	48.41	99.30
Rice	97.16	.00	.00	97.16
Cotton	44.63	28.82	2.04	75.49
Tobacco	3.01	1.43	.00	4.44

Source: United States Dept. of Agriculture, F.A.S., Title I, Public Law 480: Total Shipments by 6-month Periods, January 1955 through June 1959 by Country and Commodity, Washington, SDS-7-61, May 1961.

In addition to the continuousness of importation another indication of the importance of a particular surplus product on the economy of the receiving nation is provided by comparing the magnitude of the imports with domestic production and total supply. These comparisons have been made in Table 3.33.

Title I wheat imports were 20.2 percent of domestic production while imports of barley, rice and tobacco were only 2.3 percent, .7 percent, and 1.5 percent of domestic production respectively. When viewed as a proportion of domestic production, corn imports, representing 55.2 percent of domestic production, were the most important. But because of

Table 3.33 - Title I Imports in Relation to Domestic Production and Total Supply in Japan*

(in 1000's metric tons)

Commodity	Title I Imports	Domestic Production	Title I Imports as a percent of Domestic Production	Production and Imports	Title I Imports as a percent of Production & Imports
Wheat	843.08	4173	20.2	10970.0	7.7
Barley	156.42	6908	2.3	9259.4	1.7
Corn	99.30	180	55.2	1040.7	9.5
Rice	97.16	14818	.7	16064.4	.6
Tobacco	4.44	303	1.5	319.2	1.4
Cotton**	75.49			1707.5	4.4

*Production and imports for the same years of Title I imports.
**Domestic production of cotton negligible.

Source: Text Table 3.31, Appendix Tables 13 and 16.

large commercial imports of corn by Japan, Title I imports represented less than 10 percent of total annual supply, which includes imports and domestic production. Title I imports represented only 7.7 percent and 4.4 percent of Japan's total annual supply of wheat and cotton respectively.

In the analysis sections which follow major attention is given to the domestic price and production records of wheat, barley, corn, tobacco and their closely related products. Rice was imported under Title I in only one year, 1955, and represented less than 1 percent of total supplies in that year. Cotton is not produced domestically and, therefore, is not considered.

The economic environment in Japan. During the period 1950-1957 the population in Japan increased from 82.9 million to 90.7 million, an increase of 9.4 percent or about 1.3 percent a year. See Table 3.34. Over the same period national income increased from 3,381.5 billion yen to 8,153.1 billion yen, an average annual increase of 13.6 percent. Per capita national income grew from 40.7 thousand yen to 89.8 thousand yen, an increase of 120.3 percent or about 12.1 percent a year.[103]

The price level in Japan has been relatively stable. For example, the general wholesale price index increased only eight percent between 1951 and 1957 which represents only slightly more than a one percent increase per year.[104] During the same period the wholesale price index of farm products increased 33 percent; however, it remained virtually constant after 1954.[105]

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[103]The exchange rate for yen is 360.8 yen per dollar.

[104]United Nations, Statistical Yearbook: 1959, p. 449.

[105]Ibid., p. 449.

Table 3.34 - Population and National Income in Japan: 1950-1957

Year	Population 1000's	Population Percent Change	National Income (in billion yen)	National Income Percent Change	Per Capita Nat'l Income (in thousand yen)	Per Capita Nat'l Income Percent Change
1950	82,900		3,381.5		40.7	
1951	84,200	1.6	4,347.5	28.6	51.6	26.8
1952	85,500	1.5	4,959.0	14.1	58.0	12.4
1953	86,700	1.4	5,647.0	13.9	65.1	12.2
1954	88,000	1.5	5,984.4	6.0	68.0	4.5
1955	89,000	1.1	6,551.1	9.5	78.6	8.2
1956	89,950	1.1	7,310.6	11.6	81.2	10.3
1957	90,730	.9	8,153.1	11.5	89.8	10.6

Source: Population data from: United Nations, Demographic Yearbook: 1962, pp. 136-137.

National income data from: United Nations, Statistical Yearbook: 1959, p. 447.

The national agricultural policy of Japan is an important part of the economic environment facing agricultural producers. The broad objective of Japan's economic policy is the achievement of a continued increase in the total and per capita production and consumption of goods and services, with maximum opportunity for full employment.[106] Agricultural policies emphasize the government's desire to make the economic condition of Japanese farmers closer to that of industrial workers.[107]

In order to increase farm incomes, the government supports the prices of many agricultural commodities including those food grains and

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[106]Op. Cit., Agriculture Handbook No. 132, p. 225.

[107]Ibid., p. 225.

oil bearing crops.[108] In addition to its price support activities, the Japanese Government has adopted other policies to encourage greater production. For example, land improvement projects receive financial assistance from the government and subsidies are granted to assist farmers in the procurement of production supplies.[109]

The agricultural price and production record in Japan. The changes in the average annual production and prices of commodities imported under the Title I program between the period 1950-54 and the average of the years the commodity was imported are presented in Table 3.35. The same information for selected non-Title I commodities is presented in Table 3.36.

There appears to be little relationship between the changes in prices and the changes in production for either Title I or non-Title I commodities. Wheat experienced the only decrease in domestic production of all the Title I commodities yet its price increased more than that of the other Title I commodities with the exception of rice. On the other hand, tobacco production increased almost twice as fast as did that of any other commodity imported under Title I, while its price increased less than that of wheat.

Wheat, barley and related products. The domestic price and production record of wheat and barley are considered together as they are substitutes in production. Wheat and barley are grown in southern Japan as a winter crop on paddy land and in the north as an upland crop. In both these areas, in addition to each other, they must compete for land with rapeseed. In its competition with barley for growing area, wheat is somewhat at a

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[108]Brown, L.R., The Japanese Agricultural Economy, Economic Research Service, U.S.D.A., June, 1961, p. 26.

[109]F.A.O., United Nations, National Grain Policies, Rome, 1959, p. 85.

Table 3.35 - Changes in the Domestic Price and Production of Selected Title I Commodities in Japan*

Commodity	Average Production 1950-54	Average Production of Import Years	Percent Change	Average Price 1950-54	Average Price** of Import Years	Percent Change
	(1000 metric tons)		(Percent)	(1000 metric tons)		(Percent)
Wheat***	1451	1391	-4.1	3.23	3.57	10.5
Barley***	2192	2303	5.1	3.41	3.73	9.4
Corn****	77	90	16.9	33.08******	26.33	-20.4
Rice***	11492	14818	28.9	5.75	6.84	15.8
Tobacco*****	100	152	52.0	3.82	4.15	8.6

*Prices are all the support price with the exception of corn.
**Average price and production for the years the commodity was imported under Title I.
***1000 yen per Kg.
****Yen per Kg. of 2nd and 3rd grade.
*****Yen per 10 grams.
******1954 only.

Source: Appendix Tables 12 and 14.

Table 3.36 - Changes in the Domestic Price and Production of Selected Non-Title I Agricultural Commodities in Japan: 1950-54 - 1955-57.

Commodity	Average Production 1950-54	Average Production 1955-57	Percent Change	Average Price 1950-54	Average Price 1955-57	Percent Change
	(1000 metric tons)			(Yen per 10 Kg.)		
Soybeans	449	474	5.6	692	620	-10.4
Broad beans	29	24	-17.2	474	458	-3.4
Sweet Potatoes	5729	6827	19.2	121	128	5.8
Milk	620	1169	88.5	319	284	-10.9
Poultry**	29464	44548	51.2	1274	1363	6.9
Meat***	148	238	60.8	1456	1393	-4.3
Eggs	287****	371	29.3	1865	1949	4.5
Tea	54	72	33.3	226	215	4.9
Rapeseed	218	292	33.9	520*****	598	15.0
Millets & Sorghum	131	104	-20.6			
Oats	144	172	19.4			
Dry beans	158	242	53.2			
Dry Peas	14	19	35.7			
Flaxseed	4	3.7	-7.5			
Beet sugar	239	504	110.9			

*All prices are yen per 10 Kg. except tea whose price is given in yen per Kg.
**In thousands.
***Includes domestic production of beef, veal, pork, mutton, and lamb.
****1952-54 only.
*****Average 1953-54.

Source: Appendix Tables 13 and 15.

disadvantage as barley ripens faster and thus fits rotational systems better.[110] In addition while the relationship between barley and wheat prices has remained about the same barley yields have increased considerably more than wheat yields.[111] The rising barley yields in conjunction with a rapidly rising rapeseed price have resulted in a shift of lands formerly devoted to the production of wheat into the production of barley and rapeseed. See Table 3.37.

There is a good chance that the shift will continue as a result of changing consumption pattern. As a food grain, rice is preferred by Japanese consumers to either wheat or barley. The postwar rice shortage, which was partially offset by heavy wheat imports, did create a permanent place for wheat and wheat products in the Japanese diet. However, the preference of many consumers for rice is still strong and with rising incomes and lower consumer prices for rice no doubt much of the demand lost to wheat will be recovered by rice.[112]

It would be difficult to say that Title I imports of either wheat or barley have had any influence on domestic production or prices. Some economists may care to argue that the availability of Title I wheat imports influenced the government's policy makers' price level decisions. However, the Japanese Report states explicitly:

> Official prices to producers are set without regard to import prices or the local currency values equivalent to import prices. ....These price policy measures, coupled with the fact that surplus commodities have been purchased in the framework of planned

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[110]Op. Cit., Brown, p. 8.

[111]Wheat yields increased 2 percent between the period 1951-54 and 1955-59 while barley yields increased over 12 percent. Op. Cit., Statistical Abstracts of Agriculture and Forestry: 1960, p. 15.

[112]Op. Cit., Brown, pp. 25-26.

imports necessary to meet domestic consumption needs, protect local producers.[113]

Table 3.37 - Hectares Sown to Wheat, Barley, Naked Barley, and Rapeseed in Japan: 1950-1957.

(1000 hectares)

Year	Wheat	Barley	Naked Barley	Rapeseed
1950	763.5	429.3	591.2	118.4
1951	735.1	420.2	558.8	145.9
1952	720.8	407.4	522.4	221.7
1953	686.2	404.7	516.3	244.8
1954	671.9	446.5	567.6	174.5
1955	663.3	433.5	562.1	207.7
1956	657.6	425.1	556.4	252.0
1957	617.6	416.0	517.8	258.7

Source: Ministry of Agriculture and Forestry, Japan, Abstract of Statistics on Agriculture, Forestry, and Fisheries Japan 1960, March 1961, pp. 15, 26.

Tobacco. Tobacco imports by Japan under Title I in 1955 and 1956 represented about 1.5 percent of domestic production. Tobacco production increased between the two periods 1950-54 and 1955-57 as did its price. Tobacco production in Japan is under the supervision of the Japanese Monopoly Corporation which sets its price and controls production through annual acreage allotments which are established after a review of the supply situation.[114]

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[113] F.A.O. United Nations, A Note on the Utilization of Agricultural Surpluses for Economic Development in Japan, Bangkok, 1958, p. 28.

[114] Op. Cit., Brown, p. 13.

The area devoted to tobacco production in Japan increased from an average of 59 thousand hectares in 1950-54 to about 75 thousand hectares in the period 1955-56.[115] However in view of the procedure used by the Japanese Monopoly Corporation in establishing acreage allotments, acreages would probably not have been greater in the absence of the Title I programs. Instead of decreasing domestic production the Monopoly Corporation choose to decrease imports. As is noted in the F.A.O. report, after surplus imports had increased the Monopoly Corporation's stocks of tobacco to a level equivalent to two years consumption at the end of 1956, the Corporation decreased its imports in 1957 and 1958.[116]

Corn and related products. Corn production in Japan is concentrated in the northernmost island of Hokkaido where its principal substitute in production is sugar beets.

In 1955 the Japanese Government in order to stabilize corn prices and indirectly subsidize livestock producers initiated a policy of selling imported corn at prices substantially below the wholesale price of domestically produced corn.[117] The program was continued throughout 1956 and 1957 and as a result the price received by domestic corn producers fell by more than 20 percent for the average of 1955-57 as compared to 1954. It may be that the availability of Title I imports of corn in 1956 and 1957 influenced the decision to adopt this program. In any case the availability of corn under Title I in quantities equalling between 10 and 15 percent of commercial imports contributed to the feasibility

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[115] Op. Cit., Abstract of Statistics on Agriculture, Forestry, and Fisheries in Japan: 1960, p. 28.

[116] Op. Cit., Japanese F.A.O. Report p. 45.

[117] Op. Cit., National Grain Policies, p. 86.

of such a program by reducing the foreign exchange costs.

There is no indication that the fall in the price of corn influenced domestic corn production adversely. Domestic production was about 17 percent greater in 1956 and 1957, than it was during the period 1950-1954. The fact that corn production increased is even more surprising in view of the fact that Japan has a vigorous expansion program for sugar beets--the principal production competitor of corn. The program, which includes a favorable price support program,[118] contributed to an increase in the domestic production of sugar beets of 110 percent between 1950-54 and 1955-57 and to an increase in the acreage devoted to sugar beet production from 14.1 thousand hectares in 1950 to 28.7 thousand in 1957.[119] There is no indication that this was at the expense of corn as the area devoted to corn production increased from 67.9 thousand hectares in 1950 to 74.8 thousand hectares in 1957.[120]

Long run effects of Title I imports on agricultural production in Japan. The effect of Title I shipments on domestic production and income and hence on the investment of individual producers in Japan was probably negligible. The degree of control exerted by the Japanese Government over agriculture coupled with a national agricultural policy objective of increasing agricultural incomes, no doubt was responsible for the manner in which Title I imports were absorbed without detrimental effects on producer incomes.

At the national level, the effect of the local currency balances which were made available to the Japanese Government for investments or

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[118] Op. Cit., Brown, p. 9.

[119] Op. Cit., Abstract of Statistics on Agriculture, Forestry, and Fisheries, Japan, 1960, p. 29.

[120] Ibid., p. 17.

loans is potentially large. Between 70 and 75 percent of the yen proceeds were made available to the Japanese Government for the following purposes:

(1) Development of electric power resources;

(2) Irrigation, drainage, reclamation and incidental works;

(3) Promotion of productivity of the Japanese economy;

(4) Development of forests, livestock and livestock products, port and warehouse facilities, domestic production of fertilizers and the beet sugar industry;

(5) Other economic development projects for mutually agreed purposes.[121]

In a nation such as Japan whose agriculture is relatively land poor and labor rich the alternatives available for increasing agricultural incomes must center on expanding the cultivatable land area, making more intensive use of the land which is available and ultimately to have industry and commerce absorb labor from the agricultural sector. The nature of the projects supported by the Title I funds appear to be consistent with these alternatives. Table 3.38 below shows the uses to which the funds have been put as well as the percentage each is of the total. The largest share has been allocated for electric power development, about two-thirds of the total, however, projects with a more direct effect on agriculture have also received substantial support. The largest of these is the Aicki Irrigation Project which received almost 6 billion yen or 15 percent of the total. This project is designed to bring an additional 7,800 acres under cultivation and to irrigate a total of area of about 78,000 acres.[122] It is estimated by the Japanese Government that this additional area under

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[121]Op. Cit., Japanese F.A.O. Report, pp. 13 and 26.

[122]Op. Cit., Japanese F.A.O. Report, p. 14.

Table 3.38 - Uses of Local Currency Made Available to Japan as of 1957.

Project	Investment (million of yen)	Percent of Total
Electric Power Development	26,133	66.7
Aicki Irrigation Corporation	5,898	15.1
Agricultural Land Machinery Corp.	1,666	4.3
Settlers Fund	174	.4
Reclamation of Factory Sites	500	1.3
Forest Development Corporation	1,000	2.6
Beet Sugar Factory	600	1.5
Fishing Ports	700	1.8
Central wholesale Markets	419	1.0
Calcium Cyanamide Factory	116	.3
Meat Packing Houses	204	.5
Meat Markets	272	.7
Silk Center	150	.4
Japan Productivity Center	1,150	2.9
Unallocated and reserves	204	.5
Total	39,186	100.0

Source: United Nations, F.A.O. A Note on the Utilization of Agricultural Surpluses for Economic Development in Japan, Bangkok, 1958, p. 33.

cultivation and irrigation will increase the annual value of production of cereals, vegetables and fruits by approximately 5,000 million yen.[123]

[123] Op. Cit., Japanese F.A.O. Report, p. 14.

During the Title I period Japan had virtually no inflation while at the same time the availability of labor made the nation ripe for additional investment. The yen proceeds derived from surplus transactions and earmarked for economic development accounted for 7.7 percent and 6.8 percent of the total financial resources available for government investments and loans in 1955-56 and 1956-57.[124] It can not be said that Title I funds represented a net increase equal to their yen value to investment in Japan. However, the fact that the United States, choosing not to compete for resources, made 75 percent of the total yen proceeds available, contributed to the investment program of the nation.

In Japan one-third of the population lives on farms, while the agricultural sector accounts for less than 10 percent of the nation's G.N.P. Thus it is not surprising that the agricultural policy of the nation is aimed at reducing the gap between farm and non-farm incomes. However, in view of the resource endowment of the agriculture sector, it is evident that a major source of increased per capita farm income will have to be a decrease in the agricultural population. Therefore, the fact that the primary use to which Title I local currency balances were put were investments of an industrial nature, either to provide jobs for farm people or to add new inputs for agriculture, represents a decision in line with both the stated agricultural policy of the nation and its overall economic objective. And in view of the fact that most of Japan's domestic agriculture prices are above world prices a decision to invest in industry is a move toward more efficient allocation of resources on a world basis.

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[124]Op. Cit., Japanese F.A.O. Report, p. 16.

Pakistan

The Title I program in Pakistan. With Pakistan and Turkey, attention is again given to nations where the Title I program provided mainly food for direct consumption in an agricultural economy that is in some respects less complex. In the period 1955-1960 Pakistan received over 4,338 thousand metric tons of United States agricultural commodities, valued at over 364 million dollars, under Title I of P.L. 480. More than 80 percent of the total quantity and about 60 percent of the total value was composed of wheat and wheat products. These included wheat, wheat flour, and bulgur. See Table 3.39. Rice was the second largest import as it accounted for 14 percent of total volume and 22 percent of total value. Imports of cotton

Table 3.39 The Composition of the Title I Program in Pakistan 1955-1960

Commodity	1000's metric tons	Percent of total	100's dollars	Percent of total
Wheat	3554.77	81.95	212595	58.38
Wheat Flour	26.69	.62	1826	.50
Tobacco	4.96	.11	8784	2.41
Ghee	3.83	.09	4580	1.25
Non-fat dry milk	2.79	.06	637	.17
Cottonseed oil	47.64	1.10	14291	3.92
Soybean oil	39.91	.92	10316	2.83
Linseed oil	1.42	.03	438	.12
Tallow	1.14	.03	239	.07
Rice	609.25	14.04	78371	21.52
Cotton	43.66	1.01	31954	8.78
Bulgur	1.00	.02	83	.02
Total	4338.06	100.00	364114	100.00

Source: Calculated from data presented in Appendix Tables 17 and 18.

under Title I were only 1 percent of the total volume but almost 9 percent of the total value. Imports of vegetable oils represented about 7 percent of total value with the remainder made up of tobacco and dairy products.

Rice and cotton were imported under Title I in each year of the program through 1960. Wheat and wheat products were imported each year after 1955 while the principal vegetable oil imports were concentrated in the period 1957-1960. Tobacco was imported under Title I in 1955, 1956, 1959 and 1960 while some dairy products were received in each year of the period 1956-1960.

Title I imports of wheat during the period 1955-1960 were equivalent to 9.1 percent of domestic production and 8.3 percent of total supply. Cotton imports under Title I were 1.35 percent of both domestic production and total supply as commercial imports of cotton are small. See Table 3.39. As may also be seen from Table 3.40, Title I imports of tobacco and rice were less than one tenth of one percent of domestic production in the period 1955-1960. Vegetable oils imports averaged about 15 thousand metric tons in the period 1955-60. If this figure is compared to domestic production of edible oils in 1960 of 129 thousand metric tons the percentage vegetable oil imports were of domestic production is about 12 percent.[125] The total supply of edible oils in Pakistan during 1960 was 162 thousand metric tons; thus, Title I imports of 15 thousand metric tons represent about 9 percent of total supply as compared to 12 percent of domestic production.[126]

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[125] Wanamaker, G.E., and MacDonald, D.L., The Market for Fats, Oils and Oil Meal in Pakistan, F.A.S. M-122, August 1961, U.S. Dept. of Agriculture, p. 6.

[126] Ibid., p. 6.

Table 3.40. Title I Imports in Relation to Domestic Production and Total Supply of Title I Commodities in Pakistan 1955-1960[1]

Commodity	Title I Imports	Domestic Production	Title I Imports as a percent of Domestic Production	Total Supply[2]	Title I Imports as a percent of total supply
	(1000 metric tons)	(1000 metric tons)	(Percent)	(1000 metric tons)	(percent)
Wheat[3]	3,554.80	39,062	9.10	42,849	8.30
Tobacco	4.96	955	.01	959	less than .01
Rice	609.25	143,565	less than .01	145,382	less than .01
Cotton	43.66	3,203	1.36	3,220	1.35

1. Milk products were also imported but were only about 6000 tons and they were in a form not comparable with the domestic production data.

2. Total supply included both domestic production and commercial imports.

3. The percentage Title I imports were of domestic production of wheat is understated due to the exclusion of wheat flour and bulgur imports.

Source: Appendix Tables 17, 20 and 23.

In the analysis sections which follow, primary emphasis is given to the effects of wheat, cotton and vegetable oil imports. Imports of rice and tobacco were so small in comparison to domestic production and total supply that no discernable effects upon domestic price and production can be expected.

The economic environment in Pakistan. Between 1950 and 1960 the national income of Pakistan in constant prices increased about 23 percent, from 18,324 million rupees to 22,606 million rupees.[127] During the same period the population of Pakistan increased from 75 million to over 92 million or about 23 percent. As a result of similar growth patterns of both population and national income per-capita national income remained virtually constant. See Table 3.41.

Estimates of the wholesale price index are not available for Pakistan but estimates of the consumer price index are. The consumer price index of all commodities increased from 100 in 1953 to 113 in 1960 while the consumer food price index increased from 100 in 1953 to 123 in 1960, as may be seen from Table 3.42. The general consumer price index has actually been relatively stable whereas the consumer price index of food increased 13 percent in 1957 and 8 percent in 1960.

The agricultural policy of Pakistan, another important aspect of the economic environment, is aimed primarily at self sufficiency in food grain production and maintenance of the present export level of the nation's chief foreign exchange earners.[128] The details of the specific policies in-

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[127] The exchange rate for the Pakistan Rupee was about 3.33 per dollar until 1955, since then the rate has been about 4.00 rupees per dollar.

[128] Lerner, S., Agricultural Policy in Pakistan, E.R.S.-Foreign-16, U.S. Department of Agriculture, October 1961, p. 1

Table 3.41. Population and National Income in Constant Prices, Pakistan 1950-1960[1]

Year	National income (million Rupee)	Population (1000's)	Per-capita Nat'l Income (Rupees)
1950	18324	75040	244
1951	...[2]	76602	...[2]
1952	...[2]	78232	...[2]
1953	19450	79896	243
1954	19850	81595	243
1955	19556	83331	235
1956	20854	85103	245
1957	21087	86913	243
1958	21040	88762	237
1959	21693	90650	239
1960	22606	92578	244

1. Constant 1949-52 prices.

2. Not Available

Source: United Nations, Statistical Yearbook: 1961, Rome, p. 486

United Nations, Demographic Yearbook: 1963, Rome, pp. 136-137.

Table 3.42. The Consumer Price Index in Pakistan 1952-1960

(1953= 100)

Index	1952	1953	1954	1955	1956	1957	1958	1959	1960
General	90	100	98	94	97	106	110	106	113
Food	93	100	98	95	100	113	117	113	123

Source: United Nations, Statistical Yearbook, 1961, Rome, p. 484.

fluencing domestic production of commodities which are imported under Title I are presented in the analysis sections that follow.

The agricultural price and production record in Pakistan.

A comparison of the average production between the two periods 1950-54 and 1955-60 for the principal agricultural commodities produced in Pakistan are presentd in Table 3.43. Changes in domestic prices for several of the same commodities are presented in Table 3.44. Most commodities experienced increases in both domestic production and prices. The greatest increases in domestic production occurred in sugar cane, meat, and tobacco production. The price of sugar cane increased considerably less than that of most other agricultural commodities while the largest average price increases were experienced by chickpeas and jute. In general their appears to be little relationship between the changes in price and the changes in production.

Table 3.43. Changes in Domestic Production of Selected Agricultural Commodities in Pakistan: 1950/54 - 1955/60.

(in 1000's of Metric Tons)

Commodity	Average Production 1950-54	Average Production 1955-60	Percent Change
Barley	146	144	-1.4
Corn	401	456	13.7
Wheat	3472	3616	4.2
Millet & Sorghum	576	566	-2.3
Chick peas	601	679	13.0
Rice	12693	13349	5.2
Sugar cane	10496	14284	36.1

Table 3.43 (continued)

Commodity	Average Production 1950-54	Average Production 1955-60	Percent Change
Jute	899	1037	15.4
Cotton	281	300	6.8
Tobacco	77	95	23.4
Milk[1]	5295	6296	18.9
Meat[2]	238	314	31.9

1. Includes whole cow, goat and buffalo milk.

2. Beef, veal, mutton and lamb.

Source: Appendix Tables 19 and 20.

Table 3.44. ChangesIn the Price of Selected Agricultural Commodities in Pakistan: 1950/54 - 1955/60

(Rupees per 82.28 lb.)

Commodity	Average Price 1950-54	Average Price 1955-60	Percent Change
Wheat	11.0	13.1	19.1
Chickpeas	....[3]	13.8	43.8[1]
Rice	21.0	24.9	18.6
Cotton	94.1	92.6	-1.6
Sugar cane	18.4	20.2	9.8
Jute	154.4[2]	226.0[2]	46.4
Sorghum	....[3]	12.6	21.2[1]

1. Percent change is the average of 1955-60 compared to 1955.
2. Rupees per 400 lb.
3. Not available

Source: Appendix Tables 21 and 22.

Wheat and related products. Wheat is the basic food grain in West Pakistan, and in addition to home consumption, wheat is used in the payment of wages ana for barter in the villages. As a result of the special place of wheat in the economy of Pakistan most farmers are compelled to raise wheat.

Direct price supports for cereal products do not exist in Pakistan. However, indirect supports are available for wheat in West Pakistan and rice in East Pakistan in the form of fixed procurement prices that the government will pay for these grains.[129] These procurement prices include both floor and ceiling prices that are fixed after the main grain crops have been gathered with little or no weight given to either the cost of production or to a concept of parity.[130] The government is also responsible for supplying wheat to deficit areas including East Pakistan and urban centers in both East and West Pakistan.[131] To assure an equitable distribution of wheat the government restricts the supply of wheat in possession of private parties and prohibits the movement of wheat from or into surplus areas except by official permit.[132]

In order to implement their policy of distributing wheat the government of Pakistan has adopted a wheat procurement system. Three main methods of procurement are used; (1) compulsary levy, (2) selective procurement, and (3) voluntary procurement.[133] Under the compulsary levy, producers in

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[129] F.A.O., United Nations, National Grain Policies, Rome, 1959, p. 89.

[130] Ibid., p. 89. The ceiling price is the important one due to the shortage of cereals in Pakistan.

[131] Ibid., p. 90

[132] Ibid., pp. 90-91.

[133] F.A.O., United Nations, National Grain Policies 1960 Supplement, Rome, 1960, p. 93.

surplus areas are required to sell to the government at the announced procurement price any production that the government determines to be above their own requirements. Under the system of selective procurement cultivators are required to declare their surplus stocks which, if needed, are then purchased by the government at the procurement price. Under the voluntary procurement system a farmer sells his crop voluntarily to the government at the procurement price.

Nearly all the wheat produced in Pakistan is produced in West Pakistan where it competes principally with cotton, chickpeas, sugar cane, rice, and other grains. The price of wheat increased about 19 percent on the average between 1950-54 and 1955-60. See Table 3.45. This increase was about the same as the increase in the price of rice, the other principal food grain and considerably less than the 40 percent increase in the price of chickpeas. On the other hand, the prices of two other competitors, cotton and sugar cane, increased less than the price of wheat.

Table 3.45. Domestic Price and Production Changes for Wheat and Its Principal Production Substitutes: Pakistan

	Wheat	Cotton	Chickpeas	Sugarcane	Rice
Production[1]					
1950-54	3472	281	601	10496	12693
1955-60	3616	300	679	14284	13349
Change (Percent)	4.2	6.8	13.0	36.1	5.2
Price[2]					
1950-54	11.0	94.1	...[3]	18.4	21.0
1955-60	13.1	92.6	13.8	20.2	24.9
Change (Percent)	19.1	-1.6	43.8	9.8	18.6

1. 1000's metric tons.
2. Rupees per 82.28 lb except cotton, per 728 lb.
3. Not available
Source: Appendix Tables 19, 20, 21, and 22.

The average wheat production of Pakistan was 4.2 percent greater in the period 1955-60 than in 1950-54. See Table 3.45. This increase was less than that of any of the other major crops produced in West Pakistan including cotton whose price decreased 1.6 percent between the two periods. In view of the rapid growth in Pakistan's population, 23 percent between 1950 and 1960, and the relatively small increase in wheat production, wheat prices no doubt would have increased more in the absence of the government's wheat policy. This conclusion is supported by the fact that in 1960 when the government dropped all controls on wheat shipments and procurement, the price of wheat jumped about 25 percent.[134]

There appears to have been no shifting of land either into or out of wheat production. See Table 3.46. Wheat was grown on 43 percent of the West Pakistan area devoted to principal crop production in the period 1950-54 and on about 44 percent in the period 1955-59. Cotton acreage increased slightly in spite of the fall in the price of cotton while sugar cane, whose price increased only about 10 percent, had the greatest increase in acreage.

P.L. 480, Title I imports have made a significant contribution to the government's wheat distribution program in urban areas. During the first 3 years of the program, P.L. 480 Agreements accounted for about 50 percent of the total percapita supplies available for distribution. However, perhaps more important is that Title I imports have enabled the government to distribute increased amounts of wheat without increasing procurements. Wheat

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[134] Within one month of the new policy, short supplies and speculation forced the government to again adopt controls over wheat. Op. Cit., Lerner, p. 2.

Table 3.46. Acreage Devoted to Six Principal Commodities in West Pakistan

Commodity	Average 1950-54 (Millions of Acres)	(Percent)	Average 1955-59 (Million of Acres)	Percent of Total[1] (Percent)	Percent Change 1950/54-1955/59 (Percent)
Wheat	10.27	43.0	11.63	43.9	13.3
Cotton	3.15	13.2	3.44	13.0	9.2
Chickpeas	2.50	10.5	3.05	11.5	22.0
Sugarcane	.61	2.6	.90	3.4	47.5
Rice	2.34	9.8	2.65	10.0	13.1
Other grains	5.01	21.0	4.83	18.2	-3.6
Total	23.88	100.0	26.50	100.0	

1. Total is the total acreage devoted to these six crops in West Pakistan and does not include about 3 million acres of fruits, vegetables, spices, legumes, rapeseed and other minor crops.

Source: Calculated from data presented in: Minyard, J.D., Cotton In Pakistan, F.A.S., M-151, U.S. Department of Agriculture, September, 1963, p. 4.

procurements have remained virtually constant when the average of the pre-P.L. 480 period is compared with average procurement of wheat since the inception of the Title I program.[135] Since the free market price is above the government procurement price this has probably been a plus to wheat farmers incomes especially if, as the Pakistan Report suggests, the government would have controlled any rise in food prices in the face of a shortage.[136]

Cotton and related products. As may be seen from Table 3.44 the domestic production of cotton increased by about 6 percent between the period 1950-54 and 1955-60, in spite of the fact that its average price was less in the second period than in the earlier period. The acreage devoted to cotton production increased by about 290 thousand acres in West Pakistan between the periods 1950-54 and 1955-59. See Table 3.46. In general there appear to have been no shifts in production from cotton to either commodities also imported under Title I or to those not imported under Title I.

The fall in the price of cotton is due to a variety of reasons including a strong desire on the part of the government to develop a domestic textile industry. Much of the legislation dealing with cotton over the past decade has provided for favorable treatment of the textile industry by maintaining low cotton prices to allow a wider profit margin for the mills.[137] In addition the internal price of cotton was probably depressed somewhat by a

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[135] ECAFE/FAO Agriculture Division, A Note on the Utilization of Agricultural Surpluses for Economic Development in Pakistan, United Nations, Bangkok, 1961, p. 23.

[136] Ibid., p. 47. However, it is possible that the government would have raised farm prices in an attempt to stimulate production and subsidized the consumer price. Under such a program farm incomes may have been greater depending upon the extent of the price increase.

[137] Minyard, J.O., Cotton in Pakistan, F.A.S. M-151, U.S. Department of Agriculture, September 1963, p. 18.

decline in the export price of Pakistan cotton.[138] The fall in the export price of Pakistan cotton was in response to a shift in the world demand for cotton. This shift came about partially as a result of the termination of the Korean War which had greatly stimulated demand in the early 50's, and partly in response to the United States subsidized exports and surplus disposal transactions in cotton.

Not only has the price of Pakistan's cotton in foreign markets declined but so have total exports of cotton. As may be seen from Table 3.47, total exports of cotton have declined from an average of 830 thousand bales

Table 3.47. Exports of Cotton by Pakistan 1954-1961

(1000 bales)

Year	Desi	Upland[1]	Total
Average:			
1950-54	82	748	830
Annual:			
1954	96	589	685
1955	173	518	691
1956	117	395	512
1957	129	304	433
1958	153	242	375
1959	137	249	386
1960	83	113	206
1961	125	218	343

1. Total - Desi exports.

Source: Computed from data presented in: Minyard, J., Cotton in Pakistan, F.A.S. M-151, U.S. Department of Agriculture, September, 1963, p. 21.

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138 ECAFE/FAO Agriculture Division, A Note on theUtilization of Agricultural Surpluses for Economic Development in Pakistan, United Nations, Bangkok, 1961, p. 50.

in the period 1950-54 to less than 350 thousand bales in 1961. Exports of Desi (shortstaple cotton) have declined somewhat but the major decline has occurred in the exports of upland (longstaple cotton) which competes directly with much cotton shipped from the U.S.[139] The ECAFE/FAO Report states, "...United States subsidized exports, as well as surplus disposal transactions on a world-wide scale relating to cotton, have apparently affected the foreign demand for and the prices of cotton produced in other exporting countries including Pakistan."[140]

Although exports of cotton did decline almost 60 percent between the periods 1950-54 and 1955-60 this was offset to a large extent by two factors. See Table 3.48. First, exports of cotton textiles increased considerably between the two periods, from less than 1 million rupees to more than 70 million rupees. Secondly, imports of cotton textiles by Pakistan decreased from an average value of 264 million rupees in the period 1950-54 to an average

Table 3.48. Exports and Imports of Cotton and Cotton Textiles: Pakistan 1950-54 and 1955-60

(Million Rupees)

Year	Exports Cotton	Exports Textiles	Exports Total	Imports Cotton	Imports Textiles	Imports Total	Net Cotton Exchange Balance
Ave. 1950-54	664	-1.	665	3	264	267	398
Ave. 1955-60	278	74	352	12	25	37	315

1. Less than 1 million Rupees.

Source: Appendix Table 13.

[139] The United States cotton exports are made up primarily of Upland cotton with a staple length of between 1 and 1-1/8 inches.

[140] Ibid., p. 50

of 25 million rupees in the period 1955-60. As a result, although earning from cotton exports fell about 60 percent, the net exchange balance of Pakistan for cotton fell only 20 percent.[141]

Vegetable oils. Between 1957 and 1960 about 2 thousand tons of edible vegetable oils were received by Pakistan under the Title I program. The shipments were composed of about one half cottonseed oil, which is the principal vegetable oil produced in Pakistan, and one half soybean oil, of which there is virtually no domestic production in Pakistan.

As could be anticipated in view of the production record of cotton in Pakistan, domestic production of cotton seed was virtually stable between 1952 and 1960.[142] However, the price of cottonseed and that of cottonseed oil has fallen steadily since 1958, following Title I imports in 1957.[143] The decrease in the prices of both cottonseed and cottonseed oil were the result of a government program to stabilize domestic prices of vegetable oils by importing cottonseed and soybean oils under Title I. No doubt in the absence of the Title I program, the domestic price of cottonseed oil would have been higher, especially in view of the stable production and rising demand.

Falling cottonseed oil prices did have a favorable influence upon the vanaspati industry in Pakistan which consumes almost the entire quantity of domestically produced and imported cottonseed oil. Vanaspati or vegetable

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[141] It should be noted that the per capita consumption of cotton has also grown from 3 lbs. per capita in 1950 to 5 lbs. per capita in 1960. Ibid., pp. 30-31.

[142] See Appendix Table 14.

[143] Wanamaker, G.E., and MacDonald, D.L., The Market for Fats, Oils, and Oilmeal in Pakistan, FAS M-122, U.S. Department of Agriculture, August 1961, p. 21.

ghee is a hydrogenated cottonseed oil product which is the principal source of fat in the diet of the people of West Pakistan. The price of vanaspati is controlled by the government at the factory, wholesale, and retail levels. In addition the government maintains a 12 percent sales tax and 1.5 cent a pound excise tax.[144] In addition to creating favorable raw materials prices Title I imports have stimulated the vegetable ghee industry by creating favorable expectations as to the continued supply of the raw material.[145] As evidence of this expansion, the vegetable ghee industry was expected to double between 1961 and 1962 and again between 1962 and 1963.[146]

Long run effects of Title I imports on domestic agricultural production in Pakistan. The effect of Title I imports on the income and hence on the investment patterns of domestic producers in Pakistan was probably mixed. Imports of vegetable oils under Title I contributed to a decline in the price of both cottonseed and cottonseed oil which had a negative effect on the income of cotton producers. Cotton lint prices fell between the periods 1950-54 and 1955-60 but primarily due to high prices in the early fifties and a conscious effort on the part of the government to develop a textile industry.

The effect of wheat imports under Title I on the income of domestic wheat producers depends upon what one is willing to assume would have been the government's wheat policy in the absence of the program. If the government would have been successful in maintaining its wheat control price without

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[144] Ibid., p. 22.

[145] Ibid., pp. 21-22.

[146] Ibid., p. 19.

Title I imports then the fact that producers were able to sell more wheat on the open market probably increased incomes. On the other hand, if wheat prices would have risen faster in the absence of the program, the effect of Title I imports on the income of wheat producers was probably downward.

At the governmental level the U.S. Title I program has resulted in some loss of foreign exchange earnings by Pakistan through cotton exports. This loss was probably not as great as had been feared as it was offset to a large extent by increases in cotton textile exports and decreases in textile imports.

Investment of local currency balances in agriculture which may be considered additional were probably small. As of 1961, the Title I program in Pakistan had a total Rupee value of 5.1 billion. The uses to which these funds have been designated are shown in Table 3.49.

Table 3.49. Allocation of P.L. 480 Title I Funds Accruing from Seven Agreements with Pakistan Between 1955-1961.

	Crores of Rupees [1]	Percent
Total Rupee Value	506.9	100.0
Common Defense	37.8	7.5
Economic Grants	202.2	39.9
Cooley Loans	24.6	4.9
Development Loans	131.4	25.9
Indus Basin	62.7	12.4
U.S. Uses	48.3	9.5

1. A crore equals 10 million

Source: Beringer, C., P.L. 480 and Economic Development (A Case Study of West Pakistan), The Institute of Development Economics, Karachi, February 1963, p. 14.

Over 60 percent of the local currency has been allocated to the categories of economic grants, economic development loans, and the Indus Basin project. U. S. uses including Cooley Loans account for about 15 percent and 7.5 percent has been allocated for common defense.

The fact that rupee counterpart funds are committed to various uses in the agreements does not mean that they have been actually utilized. As a matter of fact less than 60 percent of P.L. 480 generated funds have actually been withdrawn from the accounts.[147] As a result there was a substantial lag in the use of local currency in Pakistan. When the actual deposits are compared with withdrawals of local currency through 1960 it can be seen that the sale of P.L. 480 commodities in Pakistan resulted in a net contraction of the money supply.[148]

Not only were less than 60 percent of the funds withdrawn but those designated for development purposes have been utilized within the framework of the over-all development plan of Pakistan. This stems from the procedure adopted by the United States and Pakistan for selecting uses of funds. This procedure involves the preparing of an annual development program by the Government of Pakistan within the framework of its long term program. The government then submits to A.I.D.[149] certain projects whose local currency component it proposes be financed either partly or wholly out of counterpart funds.[150] A breakdown of the purposes for which grants and loans of local

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[147] Beringer, C., P.L. 480 and Economic Development (A Case Study of West Pakistan), The Institute of Development Economics, Karachi, February, 1963, p. 15.

[148] Ibid., p. 16. Since 1960 withdrawals have equalled deposits.

[149] United States Agency for International Development.

[150] This discussion of the procedure of selecting uses is from the Beringer Report, pp. 15-16.

currency have been made is presented in Table 3.50.

A brief review of the nature of the projects which have been supported suggests that projects that will contribute to the development of infrastructure have been emphasized. These types of investments usually have a

Table 3.50. Breakdown of Loans and Grants of Title I Generated Rupees, By Purpose 1955-1960.

Loans	Crores of Rupees[1]
Small Industries Corporation	1.00
Karachi Water Supply	4.00
Provincial Econ. Development	8.70
Rehabilitation of Pak Railways	7.96
Pak. Industrial Finance Corp.	3.00
Karachi Resettlement Program	0.75
Sub Total Loans	25.41
Grants	
University of Dacca	0.02
University of Panjab	0.36
General Public Health Service	0.37
Karachi Water Supply	4.34
Karnafuli Multi-purpose Project	3.67
Aviation Facilities	0.11
W. Pak, Power Development	3.01
Basic Medical Scientific Institute	0.01
Sub Total Grants	11.89
Total Grants and Loans	37.30

1. Crore equals 10 million.

Source: Beringer, C. P.L. 480 and Economic Development (A Case Study of West Pakistan), The Institute of Development Economics, Karachi, February 1963, p. 74.

long gestation period and often the benefits stemming from them cannot be measured in dollar terms. However, they are the type of investment which may prove to contribute significantly to the economic growth of the nation.

The shifting of investment patterns toward infrastructure is an important aspect of the effect of the Title I program on the development of Pakistan. However, the fact that as of June 30, 1962 less than 50 percent of the value of the agreements had been collected by the U.S., and of this only 75 percent had been distributed, points up another important aspect of the effect of Title I imports upon the economy of Pakistan.[151] This aspect of the Title I program is that the disbursement of counterpart funds would have offset the counter inflationary impact of the commodity inflow and have forced the government to curtail its operating or development expenditures.

The agricultural sector of Pakistan accounts for one-half of the nation's national income and two-thirds of its exports. However, the agricultural sector has been unable to meet the rising demand for food stemming from Pakistan's rapidly growing population. Not only has food production failed to expand sufficiently to meet the additional demand from domestic sources but neither have exports of agricultural products expanded enough to permit the purchase of the needed food supply abroad. As a result, the availability of food grains under Title I has contributed greatly to forestalling internal consumer pressures for a reappraisal of national food policies.

It is difficult to judge what policies the government of Pakistan would have invoked in the absence of the Title I program. However, some

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[151] Op. Cit., 17th Semi Annual Report, p. 73.

combination of increased resources devoted to food production or special provision by the United States to permit the procurement of foods externally on a commercial or non-commercial basis seems most likely.[152]

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[152] Witt, L.W., and Eicher, C., The Effects of United States Agricultural Surplus Disposal Programs on Recipient Countries, Research Bulletin 2, Agricultural Experiment Station, Department of Agricultural Economics, Michigan State University, 1964, p. 36.

Turkey

The Title I program in Turkey. During the period 1955-1960 Turkey received over 2.5 million metric tons of U.S. Title I agricultural products valued at more than $230 million. Table 3.51 gives the commodity composition of the program in Turkey through 1960 in terms of quantity and value.

Wheat was the most important Title I import in terms of both quantity and value, accounting for more than 75 percent of the total quantity and over 52 percent of the total value. Feed grain imports, consisting of barley, corn, and oats, represented 352 thousand metric tons or 13.7 percent of total quantity. Feed grain imports under Title I were valued at over $19 million or 8.3 percent of the total value.

Fats and oils imports including cottonseed oil, soybean oil, and tallow represented 8.9 percent of the total quantity and 34.2 percent of the total value imported under the program. Dairy products, rice, beef and poultry were also imported under Title I but were relatively unimportant in terms of both total quantity and value.

Wheat was imported under Title I in each year of the period 1955-1960. Feed grain imports occurred in each year of the period 1955-1960 except in 1958 and 1960, while edible oils came in each year except 1955 and 1960. Rice imports were limited to 1956, 1958 and 1960 while dairy products were imported under Title I only in 1957, beef in 1956 and 1957, and poultry in 1958.

The relationship between Title I imports, domestic supply and total supply is shown in Table 3.52. Vegetable oils were the most important in terms of domestic production as they were on the average about 25 percent of domestic production. Rice imports under Title I were 4.2 percent

Table 3.51 Total Shipments of Title I Commodities to Turkey 1955-1960.

Commodity	1000's metric tons	Percent of Total	1000's dollars	Percent of total
Wheat	1939.64	75.8	120235	52.2
Barley	183.81	7.2	9683	4.2
Corn	118.56	4.6	6396	2.8
Oats	49.92	1.9	3034	1.3
Rice	25.49	1.0	3453	1.5
Butter	.41	[1]	399	.2
Cheese	2.26	.1	1300	.6
Anhydrous milk fat	.15	[1]	200	.1
Non-fat dry milk	1.09	[1]	300	.1
Cottonseed oil	117.00	4.6	45459	19.8
Soybean oil	89.96	3.5	28667	12.5
Tallow	20.43	.8	4397	1.9
Beef	6.62	.3	4397	1.9
Poultry	3.10	.1	2247	1.0
Total	2558.44	100.0	230167	100.0

[1]Less than .1 percent

Source: Appendix Tables 25 and 26.

Table 3.52. Title I Imports in Relation to Domestic Production and Total Supply: Turkey 1955-1960

Commodity	Title I Imports	Domestic Production	Title I Imports as a percent of Domestic Production	Total[1] Supply	Title I Imports as a percent of Total Supply
	(1000's metric tons)		(percent)	(1000 metric tons)	(Percent)
Wheat	1940	47193	4.1	48204	4.0
Barley	184	20135	.9	20255	.9
Oats	50	2702	1.9	2744	1.8
Corn	199	5453	2.2	5467	2.2
Feed Grains	353	28290	1.2	28466	1.2
Rice	25	589	4.2	604	4.1
Vegetable oils[2]	209	839	24.9	1015	20.6

1. Domestic supply plus commercial imports.

2. Imports include cotton and soybean oil while domestic production includes cottonseed, sunflower, sesame, poppyseed and olive oils.

Source: Data for vegetable oils from: Aktan, R., Analysis and Assessment of the Economic Effects Public Law 480 Title I Program Turkey, Ankara, Turkey, June 1963, Table XXIV. The other data from Appendix Tables 25, 27 and 31.

of domestic production during the period 1955-60 while wheat and feed grains represented 4.1 and 1.2 percent of domestic production respectively. The percentages Title I imports were of domestic production plus commercial imports for the period 1950-1960 do not differ significantly from those obtained by comparing Title I imports with domestic production. The reason for the similarity of the percentages is that commercial imports of Title I type products were relatively small, even for vegetable oils.

In the analysis sections which follow major attention is given to the affect of Title I Imports of wheat, feed grains, and vegetable oils on domestic production in Turkey.

The economic environment in Turkey. Basic Data regarding changes in population and national income in Turkey for the period 1950-1960 are presented in Table 3.53. Population increased by about 33 percent between

Table 3.53 Population, National Income, and Per-Capita National Income in Turkey: 1950-1960[1]

Year	Population (in 1000s)	National Income (Million lira)	Per Capital Nat'l Income Lira	Percent Change
1950	20947	24744	1181	
1951	21634	28469	1316	11
1952	22219	30898	1391	6
1953	22818	34383	1507	8
1954	23433	31212	1332	-12
1955	24065	33516	1393	5
1956	24771	35789	1445	4
1957	25498	38045	1492	3
1958	26247	39661	1511	2
1959	27017	41343	1530	1
1960	27829	42835	1539	1

[1]Constant 1961 prices.

Source: Population data from: United Nations, Demographic Yearbook, 1961, The Data on National Income from: Prime Ministry of the Republic of Turkey, State Planning Organization, Tables of Five-Year Development Plan of Turkey, (Deaft Outline), Ankara, Sept. 1962, p. 3

1950 and 1960 while national income increased from 24.7 billion Turkish Lira in 1950 to 42.8 billion Lira in 1960, an increase of 73 percent.[152] During the same period per-capita national income increased from 1,181 lira to 1,539 lira, an increase of about 30 percent at an annual growth rate of less than 3 percent.

The agricultural policy of Turkey is also an important aspect of the economic environment affecting agricultural production and prices. The principal objective of Turkey's agricultural policy is to expand the national income and raise the standard of living by increasing agricultural production.[153] The government has striven toward increased production and productivity by adopting a system of price supports and by improving production methods. Included in improved production techniques are more advanced cropping techniques, increased mechanization, more extensive irrigation and the wide use of fertilizers, insecticides, high-quality seeds and breeding stock.[154]

In Turkey the ministry of agriculture is responsible for crop and animal production. However, in reality a series of semi-official agencies and unions of farmers cooperatives administered price supports for their members. In addition, the Agricultural Bank administers farm credit and the National Office for Agricultural Equipment handles much of the dis-

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[152]The Turkish Lira exchanged for dollars at the rate of 2.80 lira per dollar before 1957. In 1958 the rate was 4.90 lira per dollar and since 1959 the principle export rate of exchange is 9.00 lira per dollar.

[153]United Nations, F.A.O. National Grain Policies, Rome, 1959, p. 93.

[154]Ibid., p. 93.

tribution of machinery and other farm supplies.[155]

Toprak Makrulleri Ofisi (TMO) administers the support price on cereals, does almost all buying of grain for distribution to urban centers, does all grain exporting and importing (including P.L. 480 imports of cereals), controls grain storage, and also purchases all opium produced.[156] Et ve Balik Kurumu (EBK) has responsibility for meat and fish production and has handled almost all tallow, oilseed, beef, poultry and dairy product imports under Title I.

The Ministry of Monopoly administers the support price for tobacco and handles the marketing of tea and coffee. Sugar beet production is under the sponsorship of the State Sugar Beet Company which supports sugar beet prices. There are four semiofficial unions of farmers cooperatives which administer support prices and handle the marketing for their members. The commodities they deal with include cotton, figs, raisins, and olives.

In the analysis sections which follow greater attention will be given to the specific agencies responsible for domestic production of the principle Title I commodities.

The agricultural price and production record in Turkey. Data regarding changes in the average production of selected agricultural products in Turkey between the periods 1950-54 and 1955-60 are presented in Table 3.54.

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[155] West, Q.M., Agricultural Development in Turkey, Foreign Agriculture Report No. 106, F.A.S., U.S.D.A., January 1958, p. 25.

[156] This discussion and that which follows concerning the administration of Agricultural policy in Turkey is taken primarily from, Op. Cit., West pp. 24-28 and Op. Cit., Aktan, pp. 4-6, Part II.

Table 3.54. Changes in the Average Domestic Production of Selected Agricultural Commodities in Turkey 1950/54-1955/60 (in thousands of metric tons)

	Average Production 1950-1954	Average Production 1955-1960	Percent Change
Wheat	5838	7866	34.7
Barley	2767	3356	21.3
Oats	362	450	24.3
Corn	797	909	14.1
Rice	143	164	14.7
Soybeans	3	5.3	76.6
Milk	3188	3874	21.5
Beef	46	75	63.0
Rye	583	677	16.1
Millet	86	69	-19.8
Sugar beets	1124	2653	136.0
Potatoes	831	1298	56.2
Onions	235	392	66.8
Dry beans	102	141	38.2
Dry peas	1	1.5	50.0
Dry broad beans	38	45	18.4
Chick peas	83	89	7.2
Lentils	62	74	19.4
Groundnuts	10	19	90.0
Cotton	145	168	15.9
Vegetable oils	119	142	18.9

Source: Appendix Tables 27 and 28.

The greatest increases in production were experienced by sugar beets, vegetables, peanuts, and soybeans. Domestic production of millet recorded the only decrease between the periods.

The price data presented in Table 3.55 is not as complete as the production data; however, it does indicate that the rapid increase in sugar beet and potato production was primarily in response to rapid price increases. Another factor influencing the domestic production of sugar beets

Table 3.55 Percentage Price Changes for Selected Field Crops in Turkey: 1950/54-1955/60[1]

Commodity	Percent Change
Wheat	51.9
Rice	91.8
Barley	81.1
Oats	76.3
Corn	85.2
Sugar beets	187.8
Potatoes	217.4

[1]Prices to farmers.

Source: Calculated from data presented in: Aktan Resat, Analysis and Assessment of the Economic Effects Public Law 480 Title I Program, Turkey, Ankara, Turkey, June, 1963, Tables XXXIV and XXXV.

and potatoes is irrigation. In 1955 these two crops had the highest percentage of total crop irrigated of any crops in Turkey and with the rapid rise in their prices, the percentage has no doubt increased.[157]

Wheat, feed grains and related products. The principal cereals produced in Turkey, wheat, barley, oats, and corn, were all imported under Title I. The importance of cereal production in Turkey is shown by the fact that about 90 percent of the cultivated land is devoted to grain production, either current crop or fallow. Of this area, 59 percent is in wheat and 21 percent in barley with the remainder devoted to oats, corn, rye, and millet.[158]

To support cereal prices, the Turkish Government each June fixes support prices for wheat, rye, barley, oats, corn, and rice. T.M.O. stands ready to buy at the established prices, all quantities offered by farmers. Deliveries are optional, as a private cereals market functions in Turkey, and there is no obligation for the growers to supply any part of their crop to T.M.O.

In addition to stablizing the cereals market by buying cereals offered to it and releasing stocks whenever prices rise above a certain level, T.M.O. also performs market organization functions. T.M.O. will deliver wheat to a flour mill in one population center or flour to a hospital or army unit in another, in this way playing a major role in the distribution of wheat and flour from surplus to deficit areas.

Support prices of five cereals for the period 1952-1960 are presented in Table 3.56. It can be seen that the ratio of announced wheat

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[157] Op. Cit., West, p. 12. The data presented will not allow a comparison over time as it is limited to the year 1955.

[158] Op. Cit., West, p. 28.

Table 3.56. Support Prices of Cereals in Turkey: 1952-1962[1]

(Kurush per Kg)[2]

	Wheat	Rye	Barley	Oats	Corn
1952	30	21	19	19	20
1953	30	21	19	19	20
1954	30	25	22	22	22
1955	30	25	22	22	24
1956	35	25	26	25	24
1957	45	32	32	31	30
1958	45	32	31	31	30
1959	45	32	31	31	38
1960	55	42	39	39	38
1961	63	3	3	3	47
1962	73	3	3	3	56

1. Top prices for best quality cereals including premiums.

2. One Kurush equals about .1 cent.

Source: United Nations, F.A.O. National Grain Policies, Rome, 1959, p. 93.

United Nations, F.A.O. National Grain Policies Supplement 2, Rome, 1960, p. 95.

Aktan Resat, Analysis and Assessment of the Economic Effects Public Law 480 Title I Program Turkey, Ankara Turkey, June, 1963, Table 26.

prices to feed grain prices has been declining. In 1952 the announced price of feed grains was about two-thirds of the announced price of wheat while in 1960 announced prices of feed grains were about four-fifths of the announced wheat price. As could be expected, the same trend has occurred in the ratio of farm prices of wheat to farm prices of feed grains. See Table 3.57.

Table 3.57. Selected Price Indexes in Turkey: 1950-1962
(Average 1950-54 = 100)

Year	Wheat[1]	Barley[1]	Corn[1]	Oats[1]	All[2] Cereals	Vegetable[2] raw Materials	General[2] Index
1950	96.3	88.2	93.1	87.3	97.3	87.2	88.9
1951	94.9	86.8	91.2	91.5	95.2	110.3	99.8
1952	98.0	93.6	94.9	96.8	93.3	100.1	99.2
1953	101.7	105.9	103.7	103.7	99.1	94.0	100.1
1954	108.8	125.0	117.8	120.6	115.1	108.3	112.0
1955	112.5	129.4	123.5	126.5	123.0	128.9	127.6
1956	119.7	146.6	140.1	143.9	160.0	143.2	148.2
1957	151.2	183.3	193.5	174.1	185.6	200.3	174.4
1958	152.2	177.5	193.1	175.7	172.5	217.7	208.3
1959	175.3	211.8	217.9	205.8	206.1	268.8	256.4
1960	200.3	237.7	242.9	231.7	222.6	308.0	260.0
1961	246.1	263.3	278.3	238.1	263.9	273.4	261.3
1962	279.3	289.2	313.4	277.2	276.5	277.6	268.6

1. prices received by farmers
2. wholesale price indexes

Source: Aktan, Resat, Analysis and Assessment of the Economic Effects Public Law 480 Title I Program Turkey, Ankara, Turkey, June 1963, Table XXXIV and XXXVI.

The increases in the indexes of feed grain and wheat prices did not keep pace with either the general wholesale price index or the index of wholesale price index or the index of wholesale vegetable raw materials prices until 1962. The reversal of the trend in 1960 is the result of large increases in the support prices of cereals in 1960. For example, the support price of wheat increased from 45 kurush per kilogram in 1959 to 73 kurush per kilogram in 1962 in three annual jumps.

To the extent that the availability of cereals on less than commercial terms contributed to price policy decisions, the lagging cereal prices of the period 1955-1960 can be attributed to Title I imports. In view of the fact that these imports were the equivalent of 12 to 15 percent of marketed domestic production, this conclusion seems warrented.[159]

The domestic production of all cereals imported under Title I increased between the periods 1950-54 and 1955-60. See Table 3.56. The greatest increase was in wheat production, 34.7 percent, while barley production increased 21.3 percent, and domestic production of oats and corn increased 24.3 percent and 14.1 percent, respectively. Domestic production of rye, which is not imported under Title I, increased 16.1 percent while that of another non-Title I cereal, millet, decreased 19.8 percent.

The principal non-cereal substitutes in production for wheat and feed grains in Turkey are pulses. The domestic production increases for the

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[159] A highly tentative statistical analysis reported in the Turkey report suggests that the annual increase in nominal wheat prices would have been twice as great in the absence of P.L. 480 or other wheat imports of a similar magnitude, other things remaining the same. Op. Cit., Aktan, p. 18-19, Part II.

principal pulses between the periods 1950-54 and 1955-60 were; dry beans 38.2 percent, dry peas 50.0 percent, broad beans 18.4 percent, chick peas 7.2 percent, and lentils 19.4 percent. There appear to have been no shifts in production from feed grains or wheat to pulses.

The fact that wheat prices lagged behind feed grain prices while there appears to have been no shift from the production of wheat to either feed grains or pulses is probably due to the role of wheat in the Turkish economy. Wheat is the traditional food crop of the turkish farmer and only a small percentage has in the past moved in commercial channels. The authors of the Turkey Report estimate that in 1950 about 20 percent of the wheat crop was sold and by 1960 this had only increased to 40 percent.[160] Thus the increase in production of wheat in spite of the declining food-feed grain price ratio, is probably due to a lack of price responsiveness on the part of wheat producers.

It could be expected that lagging feed grain prices would stimulate livestock production provided that lovestock prices kept pace with or exceeded the general price rise of the nation. The wholesale or producer price index was not available for livestock products, which prevents a direct comparison; however, the retail price index is available for both meats and other products.[161] See Table 3.58.

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[160] Op. Cit., Aktan, Tables 37 and 38, The authors did not estimate the marketed share for other crops, and even the estimate for wheat must be considered quite tentative.

[161] The authors of the Turkey Report feel that consumer prices generally show the same trends as farm prices and that changes in marketing margins, processing, and wages in transportation and distribution have not induced modifications in the patterns. Op. Cit., Resat Aktan, Part II, p. 16.

Table 3.58. Retail Price Index, Ankara, 1950-1962

(1950-54 = 100)

	General Index	All Food	Cereals	Meats	Dairy Products
1950	94.4	95.4	103.0	84.4	95.3
1951	93.4	92.3	99.0	86.6	83.5
1952	97.5	99.6	99.0	101.1	101.7
1953	102.6	103.7	99.0	111.1	107.1
1954	11.9	108.9	100.0	118.9	112.4
1955	125.2	118.3	101.9	127.7	127.4
1956	139.6	131.7	114.9	142.2	126.3
1957	157.1	153.5	147.5	133.3	132.8
1958	181.7	175.3	157.4	204.4	146.7
1959	222.8	227.8	185.1	245.6	223.8
1960	239.2	244.8	214.9	258.9	248.4
1961	242.3	248.9	222.8	261.1	245.2
1962	251.3	267.2	281.8	289.2	246.3

Source: Aktan, R., Analysis and Assessment of the Economic Effects Public Law 480 Title I Program Turkey, Ankara, Turkey, June 1963, Table XLV.

The price patterns of livestock products and feed grains indicate that the profitability of livestock enterprise increased rapidly until 1960. After 1960 rising feed grain prices stemming from increased support prices reversed this trend. The production of meat in Turkey increased from an annual average of 103 thousand tons in 1950-54 to an annual average

of 150 thousand tone in the period 1955-60, a 45 percent increase. Domestic production of beef and veal increased from an annual average of 46 thousand tons to 75 thousand tons during the same two periods, an increase of over 60 percent.

The extent to which the increase in livestock production can be attributed to lower feed grain prices stemming from Title I imports is difficult to discern. However, no doubt feed grain imports under Title I were partially responsible for the increase in livestock production. In addition, imports of products other than cereals under the Title I Program have also contributed to the growth in Turkey's livestock industry. E.B.K. (Meat and Fish Corporation) is responsible for Title I imports of non-cereals. As a result of a difference in buying and selling prices of these imports E.B.K. has realized a substantial profit, which has enhanced its ability to invest in the construction of modern meat slaughter and distribution facilities.[162]

Vegetable oils and related products. The other significant group of Title I imports, in addition to food and feed grains, were fats and oils. As was noted earlier the average domestic production of vegetable oils increased about 19 percent between the periods 1950-1954 and 1955-60. However, the data on domestic production includes cottonseed, sunflower, sesame, poppy seed and olive oils while Title I imports were limited to cottonseed and soybean oils. Under these circumstances the comparisons are not very meaningful because some of the oils are substitutes in production, others substitutes in comsumption, and others not related.

Another method of getting an indication of the effects of Title I imports on the domestic production of fats and oils in Turkey is to look

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[162] Op. Cit., Aktan, Part II, pp. 4-5.

at the data on the sources of vegetable oils, and oil seeds.[163]

Table 3.59 gives the average domestic production and farm prices of three principal oil seed crops for the periods 1950-54 and 1955-60 as well as the percentage change between the two periods. Cottonseed is the source of cotton seed oil which is the only vegetable oil both domestically produced and imported under Title I. the other two oil seeds, sesame and sunflower seed, are both field crops and edible and thus are related to cottonseed oil on both the production and consumption side.

Table 3.59. Average Production and Farm Prices of Selected Oil Seeds, in Turkey 1950/54-1955/60

	Average 1950-54	Average 1955-60	Percent Change
Production[1]			
Cottonseed	270.4	298.1	10.2
Sesame seed	34.9	46.6	33.5
Sunflower seed	101.3	116.4	14.9
Farm Prices[2]			
Cottonseed	27.9	55.2	97.8
Sesame seed	84.7	169.2	99.8
Sunflower seed	36.0	82.1	128.1

1 in 1000's metric tons.

2 in Kurush per kilogram.

Source: Appendix tables 29 and 30.

[163] Domestic production of fats is not discussed primarily because of a lack of data but also because the production of fats is highly related to meat production which is considered under the feed grain section.

Domestic production of all three oil seed increased between the two periods. Cottonseed production increased by 10.2 percent, sesame seed production 33.5 percent, while sunflower seed production increased 14.9 percent. The increases in prices of the three oil seed crops were 97.8 percent for cottonseed, 99.8 percent for sesame seed and 128.1 percent for sunflower seed.

The price increases for cottonseed and sesame seed were about the same as the percentage increase in the wholesale price index between the two periods. The price increase for sunflower seed surpassed the increase in the wholesale price index and also the increase in the wholesale price index of vegetable raw materials.

It is difficult to assess the effect of Title I imports of cottonseed oil, the only vegetable oil both imported under Title I and domestically produced, on domestic production of cottonseed. The reason being that cottonseed, a jointly produced product of cotton lint, is greatly influenced by the price and production of cotton. For example, in 1957-58 the price of cotton, which is supported by two unions of cotton cooperatives, was increased 25 percent.[164] As a result of the price increase, domestic production of cotton increased greatly as did domestic cottonseed production. With the increased supply of cottonseed the price of cottonseed increased only 1 Kurush per kilogram as compared to increases of over 10 Kurush the proceeding year and at least 5 Kurush in the three years preceeding that. However, in 1959 when cotton production and hence cottonseed production fell off somewhat the price of cottonseed increased over 10 Kurush per kilogram.

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[164] Op. Cit., West, p. 26.

No doubt one reason for relatively small increase in cottonseed production was the relative stability of its price as compared to that of other oilseeds and the wholesale price index. However, some weight must be given to the fact that cotton production was greatly stimulated in the early 1950's by the demand created by the Korean War. In addition, the cotton unions that support the price of cotton in Turkey are hesitant to increase its price. The reason is that the price of cotton in Turkey is above the world price, and although price increases may be passed on in the case of domestically utilized cotton, the cotton unions must absorb any loss incurred on exported cotton.[165]

Long run effects of Title I imports on domestic agricultural production in Turkey. The effect of Title I imports on agricultural producers incomes in Turkey was mixed. The price and production record of oil seeds suggests that the effect of Title I imports of vegetable oils on the income and thus on the investment patterns of oil seed producers was negligible. On the other hand, during the early years of the Title I program cereal prices failed to keep pace with those of other agricultural products and with the general level of inflation. It is difficult to pin point exactly the effect of lagging prices on the income of cereal producers. However, if real prices of wheat had increased as much in the period 1955-61 as the Turkey Report suggest they did in the period 1948-54, the income received by wheat producers would have been at least 9 or 10 percent greater.[166]

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[165] Op. Cit., West, p. 27.

[166] This assumes that total production and production costs were the same in both periods.

Feed grain prices did not lag behind non-agricultural and other agricultural prices as much as did those of wheat, but no doubt the income of feed grain producers would likewise have been greater in the absence of the program. Lagging feed grain prices did, however, contribute to an increase in the profitability and size of the livestock industry, and in this way to increased income in this section of the Turkish agricultural economy.

At the national level there are two ways in which Title I imports have affected agricultural production in Turkey. The first of these is through investments made with local currency arising out of the Title I program which the United States either granted or loaned to Turkey for investment in agriculture. The second is the utilization of profits accruing to the importing agencies as a result of a difference between the import and domestic prices of Title I commodities.

The effect of loans and grants of Turkish currency made by the United States for direct investment in agriculture has been relatively minor. Out of a total 2,292 million lira arising out of the Title I program less than 4 percent has been allocated either directly or indirectly for investment in agriculture.

Two semi-official Turkish agencies are responsible for handling all P.L. 480 imports, the Toprak Maksulleri Ofisi and Et Ve Balik Kurumco. The TMO has responsibility for the importation of cereal products while E.B.K. handled almost all of the tallow and oilseed imports as well as the small quantities of beef, poultry, and dairy products imported.[167] As a a result of a spread between buying and selling prices or Title I imports

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[167] Op. Cit., Aktan, Part II, p. 4.

E.B.K. and T.M.O. realized a combined income of 461,511 thousand lira during the period 1955-1962. See Table 3.60. Of this total, 268,285 thousand lira accrued to T.M.O. while E.B.K. realized 196,225 thousand lira.

Table 3.60. Income Accruing to the Importing Agencies of Title I Products: 1955-1962

(in 1000's of Lira)

Year	Costs	Returns	Difference
1955	85,448	116,233	30,785
1956	32,354	50,651	18,298
1957	295,415	388,654	93,238
1958	267,228	361,935	94,707
1959	328,585	446,151	117,566
1960	275,309	259,099	-16,210
1961	604,475	623,304	18,829
1962	805,872	913,170	107,298
Total	2,694,685	3,159,196	464,511

Source: Aktan, R., Analysis and Assessment of the Economic Effects Public Law 480 Title I Program Turkey, Ankara, Turkey, June, 1963, Table XVII

A lack of data prevents an analysis of the use of this income accruing from the Title I program to E.B.K. and T.M.O. In general T.M.O. is a price support and marketing agency while E.B.K. tends to work more in the areas of cold storage, processing and marketing.[168] The efforts of E.B.K. have provided

[168] Op. Cit., Aktan, Part II, p. 5.

Turkey with modern meat slaughter and distribution facilities. The extent to which Turkey's processing capacity for livestock products is expanding is shown by the recent construction of four modern meat processing plants, four milk pasteurizing plants and two milk processing plants.[169]

Because of the nature of the various functions performed by the two agencies it would be difficult to determine the extent to which investment in agriculture has been stimulated by their operations. However, prices of cereals certainly would have fallen more in the absence of T.M.O. and the investment orientation of E.B.K. both suggest a positive contribution to Turkish agricultural investment arising out of the Title I program from this source.

Turkey has suffered from continued inflationary pressures. These pressures arise primarily from increases in development expenditures in conjunction with the low income elasticity of the nation's tax structure.[170] The Title I program by making goods available no doubt contributed to the success of this increased investment budget in several ways. In the first place, more goods were available in the economy to help reduce inflationary pressures and relieve food shortages. In addition, the fact that Title I counterpart funds were not deposited to become available for expenditures until about 1958 helped reduce the competition for goods.[171]

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[169] Op. Cit., West, p. 22. This was in 1958 and thus these particular investments are probably not attributable to Title I funds, however, it does point to the investment orientation of E.B.K.

[170] Op. Cit., Aktan, Part II, p. 12.

[171] No deposits were made until 1957 and no expenditures until 1958, Op. Cit., Aktan, Part II, p. 8.

The United States chose to retain 46 percent of the local currency balances arising out of the Title I program for its own uses. This resulted in some competition for resources as well as a loss in foreign exchange for Turkey. It is this loss of exchange and the failure of the Title I program to channel significant additional amounts of investment expenditure into the agricultural sector which will have the long run impact upon the development of Turkish agriculture and of the nation itself.[172] Many of Turkey's agricultural commodities, cotton, tobacco, fruits, nuts, etc., are in high demand in many European nations. A recent agreement between the Government of Turkey and the E.E.C. will lead to eventual full membership for Turkey in the E.E.C.[173] With this guaranteed market, it would seem that perhaps a heavier commitment to agricultural development would be a promising line for Turkish investment expenditures.

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[172] Less than 4 percent of the local currency balances arising out of the Title I program can be attributed to agricultural investments.

[173] This is to be accomplished in three stages; (1) Turkey will receive preferrential treatment during the period 1963-1968, (2) customs union to be introduced over a period of 12 years, and (3) full membership. Op. Cit., Agricultural Handbook No. 132, pp. 196-197.

CHAPTER IV

A COMPARISON OF THE EXPERIENCES OF THE SIX NATIONS

The purpose of this chapter is to compare the experiences of the six receiving nations, and to draw some conclusions on the basis of their combined experiences. Thus, the first part of this chapter compares the effect of Title I imports of wheat, cotton, feed grain and vegetable oils upon domestic production. The second part of the chapter considers dissimilarities in individual nations experiences as well as the reasons for the dissimilarities and some of their implications.

Wheat. In each of the six nations studied wheat was an important part of the Title I program. However, the effect of wheat imports upon domestic production varies considerably between nations.

In Turkey imports of wheat under Title I contributed to a relative decline in domestic wheat prices as increased supplies relieved the pressure on the government to increase support prices more rapidly. However, in 1960 the support price was raised, the price of wheat started to recover and by 1962 the lag was completely overcome. The relative decline in wheat prices in the period 1955-60 does not appear to have reduced wheat production.

A similar lack of price response is also evident in Pakistan. In this nation, the government allowed the price of wheat to increase as rapidly as those of its major competitors, and faster than the general price level, yet production remained virtually stable. This lagging production in conjunction with a rapid population growth resulted in an

unfilled demand for wheat that was met with Title I imports. Some observers have argued that had rising demand been allowed to push prices of wheat even higher, production would have been greater. However, the pattern of land use in Pakistan during the period 1950 to 1960 suggests that a lack of price responsiveness exists which would have prevented any substantial increases in wheat production.

In India the price and production pattern of wheat compare favorably with that of other field crops. But the use of Title I imports to hold down wheat prices contributed to a loss in potential income at the producer level. It is difficult to say just how much the government of India would have permitted prices to rise in the absence of the Title I program. But a review of the measures adopted, in addition to selling Title I wheat through "Fair Price Stores", to prevent price rises in basic food grains suggests that any loss in income that can be attributed to Title I is negligible.

In Japan, the average domestic production of wheat during the five years preceeding the initiation of the Title I program was greater than it was during the Title I period. However, there does not appear to be any direct relationship between Title I imports of wheat and the decrease in domestic production. The major reasons for the decline in wheat production were rapidly rising yields in the case of one of its principal competitors and rapidly rising prices in the case of the other. Barley yields increased considerably more than wheat yields while the relationship between their prices remained about the same. In addition, wheat prices, which are set without regard to Title I imports, did not increase as rapidly as did those of rapeseed-another major user of wheat land. The shift of acreage formerly devoted to wheat production to the production of barley and

rapeseed was reinforced by falling retail prices for rice, which is a preferred food of the Japanese people.

In Colombia as in Japan, the area devoted to the production of wheat decreased; although, total production of wheat increased due to the adoption of a new variety. The land shifted out of wheat production has gone primarily into barley and corn production, both of which substitute readily for wheat on Colombia's cooler lands. The price of wheat has not kept pace with the price of either corn or barley. The reason for the change in relative prices is partly Title I imports, and partly the nature of the institutional structures in Colombia. As a result of Title I imports, retail prices of wheat were held in check, which has reduced the pressure on the government to stimulate local production through increasing the support price of wheat -- a price already well above world levels. On the other hand, the demand for livestock products has been increasing, which in turn has pushed the price of corn upward. Barley prices have also increased more rapidly than wheat prices, primarily as a result of pressure exerted by the agency which supports barley prices. Thus in Colombia Title I imports have contributed to a decrease in the acreage sown to wheat.

In Israel the situation was just the opposite in that the Title I program actually contributed to an increase in domestic wheat acreage and production. But the increase was due to Title I feed grain imports rather than to wheat imports. Following the initiation of the Title I program in Israel there was a shift of land out of barley production into wheat production and a consequent increase in wheat production. Imports of feed grains under Title I contributed to the shift in land use in two ways. First, feed grain imports helped to hold domestic feed grain prices

down while wheat prices increased. Second, feed grain imports under Title I played a major role in the government's food grain expansion program which provided for the exchange of one ton of domestically produced wheat for one and one-third ton of feed grains. The resulting increase in wheat production in conjunction with Title I imports did, however, result in a decline in commercial wheat imports.

Feed grains. Feed grains were an important part of the Title I program in three nations. These nations include Israel, Japan, and Turkey. In Israel the importation of feed grains under Title I adversely affected domestic feed grain production. The adverse effect was brought about in two ways; (1) Title I imports of feed grains contribute to the stability of feed grain prices and (2) the availability of surplus feed grains contributed to the government's wheat expansion program. As a result of these two forces, the acreage devoted to the three principal feed grains in Israel declined substantially following the initiation of the Title I program.

The lower grain prices in conjunction with rising consumer demand did lead to a rapid increase in the domestic livestock industry of Israel. Thus, although the incomes of feed grain producers were injured by the Title I program, the income and investment of livestock producers were greatly expanded.

There appear to have been no adverse effects upon domestic feed grain production in Turkey in spite of the fact that feed grain prices lagged behind those of most other agricultural products and the general price level. One reason for this production record was the fact that the prices of wheat, the major production substitute of feed, increased even

less. Feed grain prices are the responsibility of a government agency in Turkey and with the supplies imported under Title I, there was less incentive to push them up. Lagging feed grain prices were injurious to the incomes of feed grain producers but in conjunction with rising retail livestock prices resulted in an expanded livestock industry.

Title I imports of feed grains in Japan were limited to barley and corn. The domestic production of barley increased primarily because rising yields encouraged the planting of barley on lands formerly devoted to wheat production. Domestic corn production in Japan also increased. The increase coming in spite of the fact that the price of corn fell more than 20 percent after 1955, and the fact that the government launched an expansion program for a major competitor of corn, sugar beets. The fall in price was primarily a result of a government decision to sell imported coen at prices substantially below prevailing domestic prices. Title I imports made up between 10 and 15 percent of corn imports and thus contributed to the feasibility of the program. To this extent, Title I imports contributed to a decrease in the income of corn producers. There is, however, no indication that the lower corn prices resulted in an expanded livestock industry in Japan.

Cotton. Imports of cotton under Title I of P.L. 480 were significant in four nations of the six studied. These nations were Colombia, India, Israel and Pakistan.

Domestic cotton production in Colombia expanded greatly between 1955 and 1960. The increase in production stemming from greatly expanded acreage being brought into cotton production in response to a vigorous cotton expansion program. This program, which included import protection,

higher support prices, and guaranteed markets, resulted in over a 380 percent increase in cotton acreage between 1950 and 1960. The success of the cotton expansion program far overshadows any effect that Title I imports of cotton had upon domestic cotton production in Colombia.

In Israel, the government also followed a vigorous cotton expansion program in an attempt to stimulate production of a crop which has only been grown on a commercial basis in Israel since 1953. The expansion program included fixed prices, crop insurance, seed distribution and pest control measures. In addition, cotton producers received substantial government subsidies.[1] The purpose of this vast expansion program was to provide domestic supplies to meet the ever growing needs of Israel's expanding textile industry. In the early years of the expansion program, Title I imports were used so as to allow a more complete utilization of facilities being built in anticipation of greater local supplies. In this way, the imports of cotton contributed to an early expansion of the textile industry yet caused no adverse effects upon domestic cotton production.

In Pakistan the Title I program contributed to an expansion of the domestic cotton textile industry. This rapid expansion is evidenced by a larger per-capita consumption of cotton textiles, in spite of a rapidly growing population, and an increase in textile exports and a decrease in imports. The relationship between this growth and the Title I program stems from the fact that the government allowed Title I imports to lower domestic prices of the industries raw material, cotton.

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[1]About 10 million Israel Lira in 1961-62.

In India Title I imports of cotton appear to have had no effect upon domestic production. Cotton prices lagged somewhat compared with other farm products, primarily as a result of the high prices of the early 1950's. Title I imports do not appear to have stimulated either the domestic textile industry nor India's exports of textiles as was the case in Pakistan.

Vegetable oils. Vegetable oils were important in the Title I program in Colombia, Israel, Pakistan and Turkey. Cottonseed and soybean oils were the major vegetable oils imported and in each case, except Colombia, cottonseed oil was the only vegetable oil both imported under Title I and domestically produced. In Colombia and Israel any effects of Title I vegetable oils upon domestic production were over-shadowed by the various cotton expansion programs pursued by the respective government.

In Turkey Title I imports resulted in no discernable affects upon domestic production. However, the relationships between the various vegetable oils on both the production and consumption sides are very complex, which coupled with disease and pest problems permits any firm statements.

In Pakistan, as may be expected in view of the production record of cotton, cotton-seed production was virtually stable. The fact that Title I imports of vegetable oils were used for the express purpose of lowering domestic prices of cottonseed and cottonseed oil no doubt contributed to this production record; however, the lagging price of cotton lint was probably a more important variable. The government of Pakistan chose to use Title I vegetable oil imports to hold down the domestic price of cottonseed oil in an attempt to stimulate the vanaspati

industry in Pakistan. As was the case with the cotton textile industry, the vanaspati expansion program met with considerable success.

Title I imports, domestic production and producer incomes. The effect of Title I imports upon the distribution of income in the receiving nations were greater than were the effects upon domestic production. The shifts in income occurred at three levels, (1) from producer to consumer, (2) from producer to industrial owner, and (3) among agricultural producers. In each of these instances the income of agricultural producers was injured, and in view of the importance of producer income in determining investment decisions at the farm level these affects could have a significant impact upon long run agricultural output in the receiving nations. But positive effects also accrue from the shifts in income, as lower raw material prices stimulate development of agriculturally based industries, and stable food grain prices contribute to stability not only of a political nature but also in the nations overall price level.

Public policy and Title I imports. The comparison of the experiences of the six receiving nations also points up the fact that the most important variable in explaining the differential impact of Title I imports upon domestic agricultural production is the public policy of the receiving nation. A second and related conclusion the comparison reveals is that Title I imports have contributed significantly to increased flexibility of public policy in the receiving nations.

There are many examples of this increased flexibility, including the food grain and cotton textile programs in Israel, the wheat procurement and cotton textile programs in Pakistan, etc. The wisdom of each individual policy adopted will not be questioned as this is beyond the scope of the study. However, it should be noted that a decision to expand a domestic

industry on the basis of Title I imports, that are non-commercial, temporary supplies, at the expense of domestic producers appears to be quite short sighted. In the case where Title I supplies are treated as temporary, the situation is quite different. The use to which the government of Israel put Title I cotton imports in expanding its domestic textile industry is a good example of wise use of these additional resources. The cotton imports were used to allow an early expansion of the textile industry to a level that permitted substantial economies of scale; at the same time a vigorous cotton expansion program was initiated to insure future supplies from domestic sources.

There are, however, situations in which it would pay a nation to expand an industry on the basis of cheap imported raw materials. This would occur when the nation has a comparative advantage in the manufacture of a commodity but not in the production of its raw material. These are the types of questions that should be considered by each of the receiving nations in advance of industry expansion and not in the future when it becomes ineligible for the Title I program.

CHAPTER V

SUMMARY AND CONSLUSIONS

The overall objective of this study was to determine the relationship between Title I imports and agricultural production in the receiving nations. Six nations were selected for study, primarily because of the availability of data. The six nations were Colombia, India, Israel, Japan, Pakistan, and Turkey.

In the early parts of this chapter a brief summary of the conclusions reached concerning the relationship between Title I imports and comestic production in each of the six nations is presented. The second part of the chapter reviews the conclusions arrived at through the comparisons made in the preceeding chapter and the last part points out some of the policy implications of the study.

Colombia. In Colombia three different Title I commodities, wheat, cotton, and vegetable oils, were related to domestic production. The analysis suggests that Title I wheat imports have contributed to a reduced rate of growth in Colombian wheat production. This stems from the fact that the availability of Title I wheat reduced pressures for the government to stimulate production by increasing domestic wheat prices that were already above the world price level. Cotton and vegetable oils were also imported but a vigorous cotton expansion program over-shadowed any effect of Title I imports upon domestic production and prices.

At the aggregate level the availability of ready production substitutes, barley, dairy, corn, potatoes, prevented any substantial reduction in farm incomes stemming from lagging wheat prices. But for those farmers

who were slow to make adjustments, either because of poor managerial ability or economic barriers, income was reduced. At the national level, the availability of labor and a relatively stable monetary policy suggest that Title I funds spent upon investment have actually increased investment. The fact that much of this additional investment was channelled into agricultural investments should have a favorable long run effect upon agricultural production. In view of the increasing demand for food and foreign exchange in Colombia, the investment in agricultural will have a large pay-off for the nation as a whole.

India. In India two Title I commodities, wheat and cotton, were related to domestic production. The analysis suggests that imports of wheat and cotton had no discernable effect upon domestic production. In spite of the fact that wheat imports were the equivalent of over 25 percent of domestic production, the price level of wheat has not declined. In fact, the real price of wheat as compared with manufactured products showed no downward trend over the past decade and even rose in recent years.[1] Cotton prices have lagged somewhat but probably due mostly to a slump in world demand following the end of the Korean conflict of the early 1950's. Even should it be the case that the government of India would have allowed wheat and cotton prices to increase more rapidly in the absense of the Title I program, the price response coeffients for Indian farmers reported by the N.C.A.E.R. study suggest that output would not have increased greatly.

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[1] Ezekiel, M., "Impact and implications of foreign surplus disposal on under-developed economies: the international perspective," J.F.E., 42, No. 5, 1960, p. 1068.

The effect of Title I imports on investment at the national level center primarily upon the role of these imports in the second Five Year Plan of India. The Title I program made at least two important contributions to this plan; (1) it helped to offset the inflationary pressure created by the second Plan and, (2) it compensated for the Plan's industrial emphasis. As of 1961, only 13.7 percent of the local currency component of the Title I program had been disbursed, which meant that the Title I commodities were able to absorb a considerable amount of the excess money created by the deficit spending of the Second Plan. The Title I program is playing even a greater role in India's Third Five Year Plan as the timing and long term (4 years) duration of the 1960 agreement permitted the Planning Commission to integrate these expected receipts into this Plan.

Israel. The analysis of the effects of Israel's imports under Title I upon domestic price and production was limited to four commodities, wheat, feed grains, cotton, and vegetable oils. Imports of cotton and vegetable oils appear to have had no effect upon domestic production. However, cotton imports did contribute to the expansion of the domestic textile industry by providing raw materials when domestically produced cotton was not yet available in sufficient quantities.

The effect of Title I imports of wheat and feed grains on domestic production in Israel was greatly influenced by the government's food grain expansion program. This program made use of Title I imports to promote domestic wheat production. As a result there was greatly expanded production of wheat in Israel following the initiation of the Title I program, while the area devoted to the production of the three major feed grains declined.

There was probably some loss in feed grain producer income as compared to what it would have been in the absence of the Title I program. However, this loss was not as great as it would have been had the government of Israel not embarked upon a food grain program. Title I imports in Israel had a substantial positive impact upon income of livestock producers, as livestock production expanded greatly. Ginor estimates that I.L. 14-16 million annually was added to livestock producers incomes and that Title I stimulated over I.L. 10 million additional annual investment in this sector.

At the national level the Title I program had two distinct effects upon investment. First the inflow of commodities permitted additional investment which resulted in the creation of over 5,000 new jobs a year between 1955 and 1960 and at the same time held the price level relatively stable. Secondly, the Title I program resulted in a larger import component in the development expenditures of Israel. Although the investments which can be identified as being made with Title I funds had a small import component, the Title I program made more foreign exchange available for non-food imports. Thus the investment pattern of Israel was influenced in the direction of projects with higher foreign exchange requirements.

Japan. Imports of wheat, feed grains, and tobacco were related to domestic production in Japan. The analysis leads to the conclusion that Title I imports were absorbed by Japan with no detrimental effects upon domestic agricultural production. The Title I program did, however, result in a decline in commercial imports of tobacco and contribute to the government's feed grain price stabilization program.

The structure of the Japanese economy in general and specifically that of agriculture suggest that the investment projects supported with Title I funds are those that will contribute to the agriculture policy objectives of the nation. Japan is primarily an industrial nation with a land poor agricultural sector. Thus, the channelling of most of the Title I funds into industry and utilizing those ear marked for agriculture for intensification through irrigation will lead to increased agricultural incomes. Industrial expansion will permit the transfer of labor out of the agricultural sector and irrigation projects will increase the productivity of those workers remaining in agriculture.

Pakistan. The analysis of the effects of imports under Title I upon domestic production in Pakistan was limited to three commodities, wheat, cotton, and vegetable oils. Imports of wheat appear to have had no adverse effects upon domestic production but did contribute to the government's wheat distribution program, while, cotton and cottonseed oil were used to stimulate the textile and vanaspati industries.

The expansion of the textile industry and consequent increases in textile exports and decreases in textile imports contributed significantly to offsetting a substantial decline in Pakistan's earnings from raw cotton exports. However, there was a net loss in exchange earning from cotton that is partially due to U. S. subsidized cotton exports either through Title I or other programs.

The effect of Title I imports upon the income and investment of wheat and cotton producers was negative. The income of cotton producers was adversely effected by imports of both raw cotton and cottonseed oil as the government utilized these imports to stimulate the domestic textile

and vanaspati industries. At the national level, the Title I program appears to have resulted in a greater emphasis on investments in infrastructure than would have been undertaken in the absence of the program. However, the fact that by 1962 only about one-third of the local currency arising out of the Title I program had been disbursed is a more important aspect of the effects of the program. The lack of increased agricultural production to meet rising demands for food, points up the importance of the commodity impact of the Title I program to both political and price stability in Pakistan. Had more Title I funds been released, the added money in the economy would have created new pressures upon both the food supply and price level and in this way offset many of the benefits stemming from the Title I food imports.

Turkey. In Turkey imports of three different commodities were studied, wheat, feed grains, and vegetable oils. The analysis of the price and production record of these commodities leads to the conclusion that there were no adverse effects upon domestic production, as compared to the pre P.L. 480, period, stemming from the Title I program. Title I imports did contribute to lagging wheat and feed grain prices as the added supplies reduced pressure for increased support prices. However, in 1960 the support prices were increased and by 1962 cereal prices had recovered their relative position. The lower cereal prices of the late 1950's did contribute to a shift in income from cereal producers to both consumers and livestock producers. On the other hand, the price and production records of oil seeds suggests that the effects of Title I imports of vegetable oils on producer income were negligible.

Turkey has suffered from continued inflationary pressures stemming from high development expenditures and a relatively inelastic tax structure. The Title I program by making goods available reduced these pressures.[2] There is some indication that Turkey has chosen to neglect its agricultural development, and that the availability of agricultural commodities under Title I have contributed to this decision.[3] In view of Turkey's position relative to the European Common Market it would seem that a greater investment in agriculture would oontribute more to the long run development of the nation.

Results of six nation comparison. In Chapter IV the experiences of the six receiving nations were compared. As is evident from the results of the individual nation analysis presented above, the experiences of these six nations with the Title I program to not lend themselves to easy generalization. But three rather general conclusions do appear warranted.

(1) Title I imports have been absorbed by the receiving nations with very little detrimental effect upon agricultural production. The most notable exceptions being wheat in Colombia and barley in Israel.

(2) The most important variable in explaining differential impacts of Title I imports upon domestic agricultural prices and production is the public policy of the receiving nation.

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[2]In addition the Title I local currency was not a significant additional source of money bidding for goods, as no expenditures were made until 1958 and as of 1961 less than 50 percent of the local currency balances had been disbursed.

[3]Aktan, R., Final Report on the P.L. 480, Title I program in Turkey, Draft Copy of Chapter V. In addition to Aktan's conclusion on the basis of his analysis of the budgets of the various agencies in Turkey, it should be noted that less than 4 percent of the local currency balances were designated for investment in agriculture.

(3) The additional resources flowing into the receiving nations under Title I have permitted additional flexibility in the public policy of the receiving nations.

Policy implications. The availability of new resources on less than commercial terms on a basis which must be considered temporary puts a responsibility on the decision makers of the receiving nations to consider not only the short run consequences of their actions but also the longer run effects. There are indications that this has not always been taken into account especially where Title I imports have been used to expand new industries or as in the case of Turkey where Title I imports have resulted in a neglect of investment in the agricultural sector. Policies to facilitate the inflow of commodities under Title I without detrimental effects upon domestic agricultural production are necessary. But there should be a greater effort on the part of both the donor and recipient nations to consider not only the short run effects of such policies but also the long run consequences.

In several of the nations, Title I imports were utilized to restrain rising food prices as domestic agriculture failed to respond to the needs of a growing population and higher incomes. However, in most instances the anti-inflationary affect of the Title I program resulted not only from the inflow of commodities but also from the fact that there were lags between the collection and disbursement of local currencies. Had these monies entered the economy at the same time as the goods, only a cut back in the money supply through some other procedure would have eased inflationary pressures. It should be recognized that local currency balances spent outside the nation's investment plan will call for a reduction of an

equal amount of spending in order to just maintain the prevailing inflationary pressures. The Title I program should not be viewed as an alternative to solving the problems responsible for a nations inflation any more than it should be used to delay a solution to the food production problem.

In the more traditional agricultural sectors of India, Turkey, and Pakistan, the stability of production patterns in the face of changing prices was an important element in determining the effect of Title I imports upon domestic production. However, the importance of the public policy of the receiving nations on the effects of the Title I program, in conjunction with the relatively few cases of adverse effects, speaks well of the receiving nations. For although under such circumstances they must accept the bulk of the responsibility for the adverse effects which did occur, they must also be given major credit for the fact that the majority of the Title I imports were absorbed by the receiving nations with little or no harmful effects.

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Table 1 - Shipments to Colombia Under Title I, P.L. 480, 1955-1960: Quantity

(1000's metric tons)

	1955	1956	1957	1958	1959	1960	Total
Wheat	22.24	49.16	34.02	11.89	74.88	43.16	233.08
Flour	0	0	3.28	3.60	25.41	14.21	46.50
Cotton	1.94	7.74	2.63	4.58	0	0	16.89
Tobacco	0	0	0	.23	0	.27	.50
Anhydrous Milk Fat	0	0	0	.09	0	0	.09
Non-Fat Dry Milk	0	0	0	.36	0	.29	.65
Cottonseed Oil	2.95	3.57	1.53	.50	0	.43	8.98
Soybean oil	0	0	.79	0	5.69	12.70	22.18

*Calendar Year

Source: F.A.S., U.S.D.A., Title I, Public Law 480: Shipments by 6-Month Periods, January 1955 through June 1959, By Country and Commodity, SDS-7-61, May 1961.
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Table 2 - Title I Imports of Colombia by Years and Commodity: 1955-1960

(in 1000's U.S. Dollars)

	1955	1956	1957	1958	1959	1960	Total
Wheat	1,600	3,400	2,334	801	4,899	2,913	15,947
Flour	0	0	303	366	2,264	1,217	4,150
Cotton	1,578	5,856	1,773	2,723	0	0	11,930
Tobacco	0	0	0	482	0	456	938
Anhydrous Milk Fat	0	0	0	116	0	0	116
Non-Fat Dry Milk	0	0	0	83	0	80	163
Cottonseed Oil	988	1,500	638	208	0	117	9,460
Soybean Oil	0	0	266		2,459	3,280	6,005

Source: F.A.S., U.S.D.A., Title I, Public Law 480: Shipments By 6-Month Periods, January 1955 through June 1959, By Country and Commodity, SDS-7-61, May 1961.

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Table 3 - Production of Selected Agricultural Commodities in Colombia
1950-1959

(Thousands of Metric Tons)

Commodity	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Sesame	10.6	7.9	5.2	5.7	7.5	11.2	12.8	15.4	20.8	10.2
Raw Cotton	21.4	19.0	31.7	50.6	80.3	70.1	64.1	57.8	73.2	152.4
Rice	260.9	289.4	287.6	293.8	318.4	345.8	369.9	378.4	410.8	456.3
Coco beans	8.4	8.4	11.1	11.2	11.3	10.9	11.3	12.0	11.7	12.0
Coffee	400.2	440.1	492.2	494.5	485.8	441.9	436.8	550.1	564.1	588.8
Sugar Cane	1,637.8	1,973.1	1,666.7	2,004.3	2,355.3	2,349.8	2,422.0	2,122.3	2,466.9	2,759.5
Rubber	.2	.2	.4	.3	.3	.4	.5	.5	.5	.5
Barley	50.4	56.2	61.0	79.0	65.0	52.0	70.0	60.0	77.2	115.0
Beans	26.1	50.0	55.0	52.0	50.0	69.0	50.0	72.0	60.0	60.0
Corn	620.3	845.0	928.9	890.0	850.0	769.9	790.0	746.0	852.0	650.0
Potatoes	360.0	550.0	600.0	610.0	650.0	665.0	545.0	540.0	700.0	685.0
Raw Tobacco	20.4	22.0	21.1	23.0	25.3	28.7	36.7	37.6	38.0	38.7
Wheat	101.9	130.0	140.0	143.0	146.0	147.0	140.0	100.0	155.6	143.5
Yuca	768.0	870.0	870.0	870.0	870.0	674.0	700.0	700.0	700.0	720.0
Brown Sugar	360.5	349.1	394.5	358.5	333.8	538.1	550.5	506.0	518.2	553.6
Copra	5.0	4.5	4.2	4.0	3.2	2.8	2.2	1.8	1.5	1.5

Source: Banco de la Republica, Estimation De La Produccion A Precios Corrientes De Cada ANO 1950-1959, (Bogota 1960)

Table 4 - Prices of Selected Agricultural Commodities at Farm Levels
In Colombia 1950-1959

(Pesos per Metric Ton)

Commodity	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Sesame	588	588	588	588	588	686	833	1323	1323	1323
Raw Cotton	807	897	953	938	882	858	883	1173	1550	1770
Rice	350	465	345	400	470	475	485	615	411	770
Coco Beans	2150	2250	220	2300	3100	2700	2650	3600	4000	5950
Coffee	1476.3	1875.1	2002.8	2098	2836	2472	3269	3640	3573	2842
Sugar Cane	7.4	9.1	10.6	11.4	11.7	12.2	12.4	20.6	27.0	30.0
Rubber	3419	3419	3135	3180	3500	3500	3500	3543	4793	5288
Barley	300	365	410	390	380	400	425	580	580	630
Beans	1180	1080	880	980	1140	1070	1360	1440	1440	1400
Corn	290	280	205	140	330	300	350	430	385	450
Potatoes	337	282	212	278	319	211	312	311	370	340
Raw Tobacco	1290	1200	1370	1175	1370	1360	1370	1870	1870	1900
Wheat	610	620	630	630	710	650	680	760	870	940
Yuca	110	130	100	107	173	193	198	215	200	250
Brown Sugar	184	205	233	256	243	217	235	423	500	460
Copra	589	832	665	780	698	655	652	1100	1650	2021

Source: Banco De La Republica, Estimation Del Valor De La Produccion A Precios Corrientes De Cada ANO 1950-1959, (Bogota 1960).

Table 5 - Title I Shipments to India: Value 1956-1960

(in 1000's U.S. Dollars)

	1956	1957	1958	1959	1960	Total
Wheat	20,056	149,522	136,301	169,924	265,298	741,101
Corn	0	0	2,991	5,916	5,163	14,070
Grain Sorghums	0	0	3,558	442	1,801	5,801
Rice	5,452	20,942	0	0	37,425	63,819
Cotton	6,345	18,809	3,807	12,398	73,434	114,793
Tobacco	0	1,110	2,932	1,858	488	6,388
Non-fat Dry Milk	0	989	1,185	1,235	0	3,409

Source: F.A.S., U.S.D.A., Title I, Public Law 480: Total Shipments by 6-Month Periods, January 1955 through June 1959, by Country and Commodity, S.D.S.-7-61, May 24, 1961.

F.A.S., U.S.D.A., Title I, Public Law 480: Total Amounts Programmed and Shipped through December 31, 1962, and Shipments by 6-Month Periods, from July 1, 1959, through December 31, 1962.

Table 6 - Domestic Production of Selected Agricultural Commodities: India 1950-1960

(1000's Metric Tons)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Wheat	6391	6476	6183	7501	8017	9043	8760	9463	7997	9929	10251
Barley	2379	2376	2367	2895	2952	2980	2815	2872	2292	2715	2717
Corn	1728	1990	2870	3011	2986	2602	3057	3113	3435	4070	3978
Sorghum	5490	5597	7377	7814	9239	6725	7365	8185	8854	8132	9231
Rice	30930	31649	34347	41268	37387	41335	43104	37829	46262	47190	51361
Sugar Cane	57060	60850	50990	46880	57836	60543	68073	64980	71587	76408	86410
Potatoes	1655	1622	1956	1996	1764	1859	1701	2013	2364	2766	2699
Dry Beans	862	855	853	730	1197	1339	1454	1240	1469	1385	1374
Chick Peas	3726	3650	4208	4624	4832	5621	5418	6365	4890	6991	5590
Peanuts	3492	3086	2929	3832	4194	3862	4267	4339	4889	4005	4424
Cotton Seed	1186	1114	1136	1399	1503	1422	1684	1691	1666	1308	1918
Linseed	367	314	372	361	388	420	390	275	454	438	417
Sesame Seed	460	448	471	539	598	467	449	369	519	365	293
Tobacco	255	229	209	245	272	255	303	299	240	265	286
Cotton	593	685	557	700	752	711	842	845	833	654	959

Source: F.A.O., Production Yearbook, United Nations, Rome, 1950-1961.

Table 7 - Domestic Prices of Selected Agricultural Commodities: India 1950-1960*

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Wheat	13.0	12.8	12.8	14.7	12.4	13.7	16.5	15.1	18.1	16.0	15.4
Barley	8.4	8.4	8.4	10.1	6.6	7.0	11.3	10.0	13.9	11.3	10.8
Corn	9.8	12.9	11.6	10.4	7.4	11.2	13.5	13.2	13.9	11.2	12.6
Sorghum	13.9	10.0	10.4	9.0	6.1	12.8	12.5	10.2	10.4	14.2	11.6
Rice	16.1	16.1	16.8	16.8	16.5	16.8	18.4	21.3	23.9	23.4	26.0
Sugar Cane	1.8	1.8	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.6	1.6
Dry Beans	N.A.	28.6	26.3	27.4	19.1	15.8	20.0	22.7	26.9	28.8	N.A.
Chick Peas	11.9	12.4	14.2	13.0	8.0	7.8	12.0	11.2	16.1	12.1	15.4
Peanuts	32.7	29.7	24.9	31.6	19.3	18.2	24.4	24.2	26.9	29.5	34.2
Cotton Seed	13.5	13.1	11.0	11.7	10.4	7.9	10.7	11.3	12.1	15.0	16.8
Linseed	30.7	28.1	20.9	21.0	18.3	19.5	22.7	21.4	24.6	24.3	25.3
Tobacco	3.1	3.2	3.0	3.3	3.6	3.1	3.0	2.8	N.A.	N.A.	N.A.
Cotton	75.8	71.2	69.1	73.0	65.2	72.1	77.4	72.0	69.9	81.3	80.8

*All price Rupees per 82.28 lbs. except tobacco (R's per Lb.) and Cotton (R's per 784 Lbs.).

Source: F.A.O., Production Yearbook, United Nations, Rome, 1961.

Table 8 - Volume of P.L. 480 Title I Shipments to Israel by Year: 1955-1960

	1955	1956	1957	1958	1959	1960	Total
Wheat*	97.8	143.5	81.5	147.9	163.5	180.2	814.5
Barley*	18.9	10.1	0	31.2	33.4	52.8	146.3
Corn*	0	34.2	45.9	33.1	90.0	123.7	326.9
Grain Sorghum*	68.8	58.0	0	221.2	216.7	166.8	731.4
Rice**	270	0	0	0	4200	7020	11490
Cotton**	1450	1680	70	1140	1540	1840	7720
Tobacco**	140	150	20	80	120	130	640
Butter*	1.1	2.1	.3	7.7	0	0	11.2
Cheese**	0	590	1580	2560	0	0	4730
Dried Whole Milk**	0	0	0	210	0	0	210
Non-fat Dried Milk*	0	1.2	1.2	9.1	9.0	0	20.4
Cottonseed Oil*	2.2	6.0	0	2.2	5.8	5.3	21.8
Soybean Oil*	0	0	0	3.5	1.0	11.7	16.2
Tallow**	0	480	0	1870	0	0	2350
Beef*	0	6.4	4.9	0	0	0	11.3
Prunes**	0	0	0	320	0	0	320
Dry Edible Beans**	0	1850	0	1000	960	0	3810

*Expressed in 1000's of metric tons.
**Expressed in metric tons.

Source: Ginor, F., Analysis and Assessment of the Economic Effect of the U.S. Public Law 480 Title I Program in Israel, Tel-Aviv, Oct. 1961, pp. 389-390.

Table 9 - The Value of P.L. 480, Title I Shipments to Israel: 1955-1960

(in 1000's of dollars)

Commodity	1955	1956	1957	1958	1959	1960	Total
Wheat	6245	8736	4990	9266	10146	11100	50483
Barley	941	485		1419	1592	2606	7043
Grain Sorghum	2732	2145		9022	9177	6870	29946
Corn	0	1898	2364	1644	4358	6313	16577
Cotton	1210	1359	48	737	979	1014	5347
Tobacco	200	189	41	109	196	200	935
Butter	962	1795	255	6634	0	0	9646
Cheese	0	300	800	1300	0	0	2400
Dried Whole Milk	0	0	0	200	0	0	200
Non-fat Dried Milk	0	255	271	1929	1459	0	3914
Cottonseed Oil	700	2200	0	808	1749	1695	7152
Soybean Oil	0	0	0	1212	310	2537	4059
Tallow	0	100	0	400	0	0	500
Beef	0	5662	4337	0	0	0	9999
Prunes	0	0	0	100	0	0	100
Dry Edible Beans	0	275	0	152	179	0	606
Rice	44	0	0	0	500	754	1298

Source: Ginor, F., Analysis and Assessment of the Economic Effect of the U.S. Public Law 480 Title I Program in Israel, Bank of Israel, Tel-Aviv, October, 1961, pp. 389-390.

Table 10 - Domestic Production of Non-Title I Commodities in Israel
1950-1960

(1000's Metric Tons)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Sugar Beets	...*	...*	...*	...*	21	29	59	61	122	169	245
Potatoes	36	37	46	55	79	82	92	93	98	88	82
Onions	...*	...*	15	16	20	23	21	19	24	23	28
Tomatoes	...*	...*	...*	...*	70	67	93	81	104	103	110
Grapes	17	13	20	22	30	25	33	44	48	58	53
Lemons	7	8	11	12	16	16	12	16	20	20	19
Olives	3	3	14	14	22	3	25	7	20	8	7
Groundnuts	1	3	3	8	15	19	14	18	13	15	17
Sesame Seed	...*	.1	.2	.4	.7	.4	1.5	1.5	1.0	1.0	1.1
Sunflower Seed	...*	.5	.9	.9	1.6	.5	1.0	2.8	1.5	2.4	2.7
Poultry Meat	7.4	7.2	7.0	8.1	9.3	16.3	23.2	22.2	34.2	40.7	45.7
Eggs**	330	392	367	369	414	504	510	630	886	1027	1114
Pond Fish	4	3.9	4.6	4.7	5.8	7.3	6.7	7.6	7.7	7.9	8.7

*Not available
**In millions

Source: F.A.O., United Nations, Production Yearbook 1950-1961, Rome.

Ginor, F., Analysis and Assessment of the Economic Effect of the U.S. Public Law 480 Title I Program in Israel, Bank of Israel, Tel-Aviv, Oct. 1961, pp. 222 and 461.

Table 11 - The Domestic Production of Title I Commodities in Israel 1950-1960.

(1000's Metric Tons)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Barley	37	28	93	64	90	42	85	74	53	65	27
Corn	15	3	6	11	23	26	23	38	28	15	8
Grain Sorghum	...*	1	6	14	20	11	26	38	24	41	16
Feed Grains	52	32	105	89	133	79	134	150	105	121	51
Wheat	27	14	31	30	34	36	74	83	62	74	41
Milk**	105	118	138	152	177	192	209	225	258	301	315
Tobacco	...*	...*	...*	1.5	3.1	2.6	1.2	1.6	1.5	2.5	1.8
Rice	...*	...*	...*	...*	...*	...*	...*	.2	1.4	.7	.4
Beef	.9	1.1	1.3	1.4	2.0	3.1	3.9	4.7	5.1	9.5	12.6
Cotton	...	...	...	.03	.2	2.2	3.0	4.0	4.9	7.3	10.7
Butter		Total 2,913 tons						Total 9,689 tons			
Hard Cheese	.2	.4	.4	.8	.9	.9	1.0	1.1	1.2	1.1	2.5

*Not Available.
**In Metric tons.

Source: F.A.O., United Nations, Production Yearbook: 1950-1961, Rome.

Ginor, F., Analysis and Assessment of the Economic Effect of the U.S. Public Law 480 Title I Program in Israel, Bank of Israel, Tel-Aviv, Oct. 1961, pp. 203, 222, 228, 231, 439, 440, 450.

Table 12 - Domestic Production of Title I Commodities in Japan 1950-60

(Thousands of Metric Tons)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Wheat	1338	1490	1537	1374	1516	1468	1375	1330	1281	1416	1531
Barley	1960	2169	2158	2091	2583	2408	2340	2160	2076	2308	2301
Corn	90	102	71	66	56	100	83	97	111	104	115
Rice	12064	11302	12404	10298	11392	14818	12623	14328	14992	15626	16073
Tobacco	92	96	96	101	113	150	153	145	138	129	121

Source: F.A.O., United Nations, Production Yearbook, 1950-61, Rome.

Table 13 - Domestic Production of Non-Title I Commodities in Japan 1950-1960

(in thousands of metric tons)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Millets & Sorghum	158	124	151	123	98	118	100	95	104	88	83
Oats	135	140	138	146	163	166	162	188	196	173	161
Dry Beans	128	143	206	157	155	291	185	250	297	306	312
Dry Peas	12	17	17	11	15	28	13	17	15	17	23
Broad Beans	27	34	34	25	25	25	25	21	21	24	23
Soybeans	447	474	521	429	376	507	455	459	391	426	418
Sweet Potatoes	6290	5534	6205	5391	5226	7180	7073	6227	6370	6981	6277
Flaxseed	5	5	4	4	2	4	3	4	4	4	4
Rapeseed	119	179	282	289	220	270	320	286	267	262	264
Beet sugar	175	215	240	266	299	375	463	673	911	999	1074
Meat*	136	116	152	176	162	206	249	259	291	335	293
Poultry**	16812	21845	30273	36586	41805	45715	42589	45341	50291	48219	54627
Eggs			250	276	335	361	356	395	424	437	512
Tea	42	44	57	57	68	73	71	72	75	80	78
Milk	397	496	579	706	921	992	1154	1362	1548	1715	1887

*Includes beef, veal, pork, mutton, and lamb.
**In thousands.

Source: F.A.O., United Nations, Production Yearbook, 1950-61, Rome.

Table 14 - Prices of Title I Commodities in Japan 1950-1960[1]

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Wheat[2]	2.78	3.04	3.33	3.42	3.56	3.55	3.51	3.66	3.66	3.66	3.76
Naked Barley[2]	2.76	3.27	3.47	3.79	3.74	3.70	3.66	3.82	3.82	3.82	3.90
Rice[2]	4.23	4.97	5.76	7.12	6.67	6.84	6.64	6.84	6.84	6.93	6.95
Tobacco[3]	300	370	400	420	420	420	410	410	410	410	410
Corn[4]	...[5]	...[5]	...[5]	...[5]	1985	1702	1518	1642	1347	1264	1317[6]

1. Does not include cotton.
2. 1000 yen per Kg.
3. Yen per Kg.
4. Yen per 60 Kg of 2nd or 3rd grade.
5. Not available.
6. Average of January, February and March.

Source: For all commodities except corn, F.A.O., United Nations, Production Yearbook, 1961, Rome, Italy.

For corn, Ministry of Agriculture and Forestry, Japan, Abstract of Statistics on Agriculture, Forestry, and Fisheries Japan, 1960, Japan, March 1961, p. 108-109.

Table 15 - Prices of Non-Title I Commodities in Japan 1950-1960

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Soybeans, Dried[1]	698	698	628	682	752	643	620	597	597	571	564
Broadbeans, Dried	468	531	468	420	484	468	437	468	445	426	422
Sweet Potatoe[1]	112	114	114	119	144	131	117	136	129	86	86
Cow Milk[1]	374	331	283	294	315	272	288	293	256	254	255
Meat Hen[1]	1168	1263	1242	1325	1374	1299	1371	1419	1304	1405	1471
Beef Cattle[1]	1215	1548	1452	1585	1480	1283	1392	1504	1443	1511	1588
Hen Eggs[1]	1817	1843	1819	1968	1880	1880	2056	1910	1792	1873	1880
Tea[2]	179	198	211	268	276	227	218	199	186	181	276
Rapeseed[3]	...[4]	...[4]	...[4]	2736	3505	4133	3579	3054	2952	3390	...[4]

1. Yen per 10 Kg.
2. Yen per Kg.
3. Yen per 60 Kg.
4. Not available.

Source: Data for tea from, F.A.O., United Nations, Production Yearbook, 1961, Rome.

Data for other crops from, Ministry of Agriculture and Forestry, Abstract of Statistics on Agriculture, Forestry, and Fisheries, for 1960, 1959, 1957, and 1940-52, Japan.

Table 16 - Imports of Title I Type Commodities by Japan 1955-1960

(1000's Metric Ton)

	1955	1956	1957	1958	1959	1960
Wheat	2287.5	2277.0	2239.5	2280.1	2412.2	2678.0
Barley	576.4	922.4	852.6	716.0	488.4	...*
Rice	1246.4	759.6	347.2	505.5	277.4	174.6
Tobacco	10.5	5.7	2.3	2.7	5.7	6.8
Corn	342.6	344.8	515.9	666.2	813.5	1353.7
Cotton	517.3	601.6	588.6	509.9	607.4	701.4

*Not Available

Source: F.A.O. United Nations, Trade Yearbook, 1955-61, Rome.

Table 17 - Shipments of Title I Commodities to Pakistan 1955-1960: Quantity

(in 1000's metric tons)

	1955	1956	1957	1958	1959	1960	Total
Wheat	0	465.6	595.3	485.6	929.7	1078.6	3554.8
Wheat Flour	0	0	0	5.3	6.0	15.3	26.7
Tobacco	1.19	1.52	0	0	.76	1.59	4.96
Ghee	0	.88	1.98	.97	0	0	3.83
Non-fat Dry Milk	0	0	.21	.08	.52	1.98	2.79
Cottonseed Oil	0	0	5.89	12.06	10.93	18.76	47.64
Soybean Oil	0	0	.34	10.52	.80	25.25	39.91
Linseed Oil	1.16	.26	0	0	0	0	1.42
Tallow	0	0	.94	.20	0	0	1.14
Rice	17.34	238.73	162.16	40.99	19.36	130.67	609.25
Cotton	16.27	19.92	1.75	2.89	1.48	1.35	43.66
Bulgur	0	0	0	0	0	1.0	1.0

Source: F.A.S., United States Department of Agriculture, Title I, Public Law 480; Total Amounts Programmed and Shipped Through December 31, 1962, and Shipments by 6-Month Periods, From July 1, 1959, Through December 31, 1962, By Country and Commodity, S.D.S.-6-63, Mar. 15, 1963.

F.A.S. United States Department of Agriculture, Title I, Public Law 480: Total Shipments by 6-Month Periods, January 1955 through June 1959, by Country and Commodity, SDS-7-61, May 24, 1961.

Table 18 - Shipments of Title I Commodities to Pakistan 1955-1960: Value

(in 1000's of dollars)

	1955	1956	1957	1958	1959	1960	Total
Wheat	0	27695	36932	29282	54807	63879	212595
Wheat Flour	0	0	0	389	403	1034	1826
Tobacco	2075	2783	0	0	1597	3429	8784
Ghee	0	1064	2369	1147	0	0	4580
Non-fat Dry Milk	0	0	67	27	129	414	637
Cottonseed Oil	0	0	2106	3846	3109	5230	14291
Soybean Oil	0	0	119	2800	248	7149	10316
Linseed Oil	356	82	0	0	0	0	438
Tallow	0	0	201	38	0	0	239
Rice	2319	32176	23429	5133	2227	13096	78371
Cotton	12296	12898	1262	2417	1434	1647	31954
Bulgur	0	0	0	0	0	83	83

Source: F.A.S., United States Department of Agriculture, Title I, Public Law 480: Total Amounts Programmed and Shipped Through December 31, 1962, and Shipments by 6-Month Periods, From July 1, 1959, through December 31, 1962, By Country and Commodity, S.D.S.-6-63, Mar. 15, 1963.

F.A.S. United States Department of Agriculture, Title I, Public Law 480: Total Shipments by 6-Month Periods, January 1955 through June 1959, by Country and Commodity, SDS-7-61, May 24, 1961.

Table 19 - Domestic Production of Non-Title I Commodities in Pakistan
1950-1960*

(in 1000's of metric tons)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Barley	157	164	139	114	158	125	145	132	171	141	151
Corn	374	402	354	444	433	461	461	449	474	443	446
Millet & Sorghum	603	482	486	746	578	599	622	561	526	561	527
Chickpeas	722	755	500	374	655	668	747	741	699	583	637
Sugar Cane	5550	...**	11130	12830	12472	12235	12691	15121	15665	14332	15660
Sesame	35	35	37	37	37	38	37	37	35	35	35
Cottonseed	459	478	639	513	568	618	618	651	550	589	608
Rape & Mustard	282	307	232	276	329	326	317	320	300	337	323
Flaxseed	10	12	12	12	14	13	15	12	14	14	15
Jute	808	1149	1238	454	846	1015	1000	1125	1089	973	1021
Eggs	...**	...**	18.4	...**	16.6	16.6	16.6	16.6	19.5	19.5	23.2
Meat***	264	...**	186	...**	264	264	264	339	339	339	339

*Includes oil crops reported by F.A.O. as produced in Pakistan for which the data is reasonably complete for the period 1950-60 with the exception of fruits.
**Not available.
***Beef, veal, mutton and lamb.

Source: F.A.O., Production Yearbook, 1950-1961, United Nations, Rome.

Table 20 - Domestic Production of Title I Commodities In Pakistan 1950-1960[1]

(in 1000's metric tons)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Wheat	4022	4016	3112	2471	3742	3215	3368	3662	3601	3915	3938
Rice	12490	11800	12416	13946	12816	10981	13723	12888	12028	14424	16053
Cotton	264	282	319	256	284	309	309	306	275	295	304
Milk[2]	3340	...[3]	6135	...[3]	6410	6410	6410	5938	6341	6341	6341
Tobacco	68	67	81	75	93	110	91	87	92	91	100

1. Does not include tallow and vegetable oils.
2. Includes cow, goat and buffalo milk.
3. Not available.

Source: F.A.O. Production Yearbook, 1950-1960, United Nations, Rome.

Table 21 - Prices of P.L. 480 Title I Commodities in Pakistan 1950-1960

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Wheat[1]	8.1	8.5	14.0	13.8	10.6	9.6	13.2	13.6	13.0	13.0	16.2
Rice[1]	19.4	23.2	25.8	22.4	14.1	15.8	21.4	20.2	28.3	32.4	31.1
Cotton[2]	128.1	106.7	77.0	79.0	79.8	96.2	94.2	94.0	82.5	90.9	97.7

1. Rupees per 82.28 lb.
2. Rupees per 400 lb.

Source: F.A.O., Production Yearbook, 1961, United Nations, Rome.

Table 22 - Prices of Selected Non-Title I Commodities in Pakistan 1950-1960

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Chickpeas[1]	...[3]	...[3]	...[3]	...[3]	...[3]	9.6	11.7	12.7	15.9	16.6	16.4
Sugar Cane[1]	13.1	29.9	22.4	14.2	12.2	15.8	25.8	21.4	11.7	19.6	26.9
Jute[2]	212	198	93	123	146	166	209	200	184	218	379
Sorghum[1]	...[3]	...[3]	...[3]	...[3]	...[3]	10.4	11.4	12.7	13.8	13.7	13.5

1. Rupees per 82.28 lb.
2. Rupees per 400 lb.
3. Not Available

Source: F.A.O., Production Yearbook: 1961, United Nations, Rome.

Table 23 - Commercial Imports of Title I Commodities by Pakistan 1955-1960*

(in 1000's metric tons)

	1955	1956	1957	1958	1959	1960	Total
Wheat & Flour	40.0	455.3	729.3	764.5	613.9	1184.0	3787.0
Tobacco	1.3	1.3	.4	.2	.3	.2	3.7
Cottonseed Oil	8.3	...**	5.3	.2	16.2	9.6	39.6
Soybean Oil	...**	...**	...**	...**	11.3	10.6	21.9
Linseed Oil	.6	.9	.2	.3	1.0	.5	3.5
Rice	...**	440.8	431.0	331.0	291.6	323.0	1817.4
Cotton	3.1	.1	7.8	2.7	2.2	1.0	16.9

*No dry milk imports during this period.
**Not available.

Source: F.A.O., Trade Yearbook 1955-1961, United Nations, Rome.

Table 24 - Cotton and Cotton Products: Pakistan, Value of Exports, Imports, and Net Exchange Balance, 1950-60.

(Million Rupees)

Year	Exports			Imports			Net Exchange* Balance
	Cotton	Cotton Textiles	Total	Cotton	Cotton Textiles	Total	
1950	519.2	N.A.	519.2	N.A.	427.9	427.9	91.3
1951	961.9	.3	962.2	5.2	548.9	554.1	408.1
1952	864.0	.7	864.7	3.8	469.2	473.0	391.7
1953	630.9	.9	631.8	4.3	62.7	67.0	564.8
1954	348.7	.8	349.5	3.1	78.1	81.2	268.3
1955	403.0	7.5	410.5	13.1	36.8	49.9	360.6
1956	363.8	60.9	424.7	.4	64.3	64.7	360.0
1957	331.7	20.4	352.1	29.8	18.1	47.9	304.2
1958	240.5	15.4	255.9	11.2	5.7	16.9	239.0
1959	120.7	148.4	269.1	8.9	4.4	13.3	255.8
1960	211.2	190.5	401.7	6.4	21.8	28.2	373.5

*In each case the exchange balance is a net export balance.

Source: Minyard, J. O., Cotton In Pakistan, FAS - M-151, U.S. Department of Agriculture, September, 1963, p. 20.

Table 25 - Shipments of Title I Commodities to Turkey 1955-1960: Quantity

(1000's metric tons)

	1955	1956	1957	1958	1959	1960
Wheat	213.26	650.30	289.08	9.99	314.04	454.04
Barley	146.10	27.95	9.76	0	0	0
Corn	2.35	49.39	41.28	0	25.54	0
Oats	49.92	0	0	0	0	0
Rice	0	9.90	0	5.24	0	10.35
Butter	0	0	.41	0	0	0
Cheese	0	0	2.26	0	0	0
Anhydrous milk fat	0	0	.15	0	0	0
Non-fat dry milk	0	0	1.09	0	0	0
Cottonseed oil	12.30	14.31	33.72	13.39	43.28	0
Soybean oil	0	0	27.57	29.69	32.70	0
Tallow	0	20.18	.25	0	0	0
Beef	0	1.98	4.64	0	0	0
Poultry	0	0	0	3.10	0	0

Source: F.A.S., U.S.D.A., Title I, Public Law 480: Total Shipment by 6-Month Periods, January 1955 through June 1959, by Country and Commodity, S.D.S.-7-61, May 24, 1961.

F.A.S., U.S.D.A., Title I, Public Law 480: Total Amounts Programmed and Shipped through December 31, 1962, and Shipments by 6-Month Periods, from July 1, 1959, through December 31, 1962, by Country and Commodity, S.D.S.-6-63, March 15, 1963.

Table 26 - Shipments of Title I Commodities to Turkey 1955-60: Value

(in 1000's of dollars)

Commodity	1955	1956	1957	1958	1959	1960
Wheat	13357	40913	17978	602	19531	27854
Barley	7962	1277	444	0	0	0
Corn	157	2762	2173	0	1307	0
Oats	3034	0	0	0	0	0
Rice	0	1385	0	695	0	1373
Butter	0	0	399	0	0	0
Cheese	0	0	1300	0	0	0
Anhydrous milk fat	0	0	200	0	0	0
Non-fat dry milk	0	0	300	0	0	0
Cottonseed oil	4144	5218	13954	5232	16911	0
Soybean oil	0	0	9940	9239	9488	0
Tallow	0	4341	56	0	0	0
Beef	0	1314	3083	0	0	0
Poultry	0	0	0	2247	0	0

Source: F.A.S., U.S.D.A., Title I, Public Law 480: Total Shipments by 6-Month Periods, January 1955 through June 1959, by Country and Commodity, S.D.S.-7-61, May 24, 1961.

F.A.S., U.S.D.A., Title I, Public Law 480: Total Amounts Programmed and Shipped through December 31, 1962, and Shipments by 6-Month Periods, from July 1, 1959 through December 31, 1962 by Country and Commodity, S.D.S.-6-63, March 15, 1963.

Table 27 - Domestic Productions of Title I Commodities in Turkey 1950-1960

(in thousands of metric tons)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Wheat[1]	3872	5600	6576	8134	5010	7016	6510	8419	8671	7987	8590
Barley	2047	2700	3189	3500	2400	2985	2900	3650	3600	3300	3700
Oats	316	350	405	413	325	356	382	475	480	479	530
Maise	628	848	837	759	914	855	858	750	900	1000	1090
Rice	86	107	158	180	183	102	153	192	200	153	183
Soybeans	2	2	3	4	4	4	5	4	8	5	6
Cottonseed	192	309	338	254	260	285	294	270	319	316	306
Poultry[2]	21.4	21.3	22.3	24.4	23.7	24.3	25.0	25.7	26.8	27.9	28.5
Beef	36	40	44	49	61	...[3]	80	84	66	69	...[3]
Milk	3173	3345	3486	3376	2563	3480	3657	3335	4178	4404	4192

1. Includes spelt.
2. In millions of units.
3. Not available.

Source: F.A.O., Production Yearbooks 1951-1961, United Nations, Rome.

Table 28 - Production of Non-P.L. 480 Title I Commodities in Turkey 1950-1960*

(thousands of metric tons)

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Rye	443	600	669	763	440	650	566	700	780	665	700
Millet	89	70	78	103	88	92	74	70	65	56	57
Sugar beets	855	1363	1069	1170	1165	1736	1791	2198	2338	3469	4385
Potatoes	605	676	873	1000	1000	1116	1100	1200	1472	1500	1400
Onions	173	193	222	302	285	300	358	464	405	424	400
Dry beans	93	96	102	112	105	114	125	125	162	169	152
Dry peas	1	1	1	1	1	1	1	1	2	2	2
Dry broad beans	38	38	36	40	37	38	40	42	49	51	51
Chick peas	85	78	95	83	75	76	89	90	86	95	97
Lentils	43	50	77	76	64	77	52	73	70	74	98
Groundnuts	4	9	12	12	15	16	17	20	25	24	16
Linseed	28	25	22	24	15	18	14	16	24	26	22
Rapeseed	3	3	3	3	2	2	2	1	2	3	4
Sesame seed	30	28	29	40	48	51	46	44	48	47	44
Sunflower seed	66	108	99	114	120	138	102	95	95	128	123
Cotton	122	155	165	139	142	157	165	135	180	195	176

*Includes all crops reported by F.A.O. as being grown in Turkey with the exception of fruits, tea, tobacco and flax and hemp fiber.

Source: F.A.O., Production Yearbooks 1951-61, United Nations, Rome.

Table 29 - Production of Oil Seeds in Turkey 1950-1960

(1000 metric tons)

Year	Cottonseed	Sesame	Sunflower
1950	192.2	29.9	66.1
1951	308.0	27.8	107.5
1952	338.0	29.0	99.0
1953	253.6	40.0	114.0
1954	260.0	48.0	120.0
1955	285.0	51.0	138.0
1956	294.0	46.0	120.0
1957	270.0	44.0	95.0
1958	319.0	48.0	95.0
1959	316.0	46.5	127.6
1960	305.0	44.0	123.0

Source: Bedri Gursay, Analysis and Assessment of the Economic Effects Public Law 480 Title I Program Turkey, Ankara, Turkey, June, 1963, Table XXXII and XXXIII.

Table 30 - Farm Prices of Oil Seeds in Turkey
1950-1960

(Kurush per Kilogram)

Year	Cottonseed	Sesame	Sunflower
1950	25.74	73.46	29.94
1951	29.35	83.10	37.80
1952	30.67	88.14	36.96
1953	23.90	87.44	33.44
1954	29.65	91.57	42.07
1955	35.67	97.02	44.31
1956	41.68	118.79	57.78
1957	55.95	177.50	77.76
1958	56.95	213.50	102.63
1959	67.59	204.17	100.69
1960	73.10	204.50	109.30

Source: Bedri Gursay, Analysis and Assessment of the Economic Effects Public Law 480 Title I Program Turkey, Ankara, Turkey, June, 1963, Table XXVIII.

Table 31 - Commercial Imports of Title I Commodities by Turkey 1955-1960

(1000's metric tons)

	1955	1956	1957	1958	1959	1960
Wheat	222.6	185.4	444.5	59.7	...*	98.9
Rice	...**	8.7	...*	...*	5.5	.3
Barley	120.9	...*	...*	...*	...*	...*
Maize	...*	4.5	.1	9.5	...*	...*
Oats	41.8	...*	...*	...*	...*	...*
Soybean oil	...*	...*	...*	26.3	25.9	16.6
Cottonseed oil	12.5	...**	13.8	19.9	40.2	20.4
Butter	...*	...*	...*	.5	.1	...*
Cheese	.1	...*	...*	1.7	...*	...*
Beef	...*	...*	...*	1.1	...*	...*
Poultry	...*	...*	...*	...*	1.3	...*

*Negligible amount.
**Not available.

Source: F.A.O., Trade Yearbook 1954-61, United Nations, Rome.