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**Evaluation of the Impact of Public Law 480
on Prices and Production
within Selected Recipient Countries**

Departmental

INFORMATION REPORT NO. 82-1

The Texas Agricultural Experiment Station
Neville P. Clarke, Director
The Texas A&M University System
College Station, Texas

EVALUATION OF THE IMPACT OF PUBLIC LAW 480
ON PRICES AND PRODUCTION WITHIN SELECTED RECIPIENT COUNTRIES

by

PAUL MARCOTTE

and

CLIVE R. HARSTON

May 1982

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Introduction

It has become commonplace in the circle of 3rd and 4th world agricultural economists and international politicians, as well as within our own circle of U.S. development economists, to be critical of Public Law 480, "Agricultural Trade Development and Assistance Act of 1954". Literature abounds with accusations that domestic production in recipient countries has been destroyed, prices in recipient countries have plummeted, and that welfare mentalities and permanent dependencies on U.S. products have been created as a result of PL 480 imports. It is the purpose of this research paper to attempt to establish whether those accusations can be substantiated by empirical evidence or if they are just popular rhetoric.

There was some difficulty in accomplishing the task due to the tremendous volume of material available on the subject, not only in reviewing the various writings, but in determining fact from fiction as the overwhelming majority of the material was based on opinion rather than data. Nevertheless, there are special substantial studies, and those, combined with economic theory and some statistical analysis, can lead to valid conclusions, and improve understanding of the impact of P.L. 480.

The paper is divided into the following sections: (a) a brief description of the enacting legislation and its subsequent amendments; (b) a summary of the value of the products since the program's inception in 1954; (c) an economic analysis of the theoretical production disincentive in the recipient country; (d) case studies of India, Brazil and Colombia, in which the focus is upon domestic production levels, prices, and areas under production; and (e) conclusions.

The materials presented herein are not purported to be exhaustive nor all inclusive of the subject, but a conscious effort to present the issue as objectively as possible. As the discussion of PL 480 impact is ongoing, no final resolution will be obtained. The reader, however, will be able to draw conclusions from the presentation as to the current state of the discussion.

Agricultural Trade Development and Assistance Act of 1954

The "Agricultural Trade Development and Assistance Act of 1954", commonly known as PL 480, was approved by Congress on July 10, 1954.

Its expressed purpose is as follows:

"It is hereby declared to be the policy of Congress to expand international trade among the United States and friendly nations, to facilitate the convertibility of currency, to promote the economic stability of American agriculture and the national welfare, to make maximum efficient use of surplus agricultural commodities in furtherance of the foreign policy of the United States, and to stimulate and facilitate the expansion of foreign trade in agricultural commodities produced in the United States by providing a means whereby surplus agricultural commodities in excess of the usual marketings of such commodities may be sold through private trade channels, and foreign currencies accepted in payment therefore. It is further the policy to use foreign currencies which accrue to the United States under this Act to expand international trade, to encourage economic development, to purchase strategic materials, to pay United States obligations abroad, to promote collective strength, and to foster in other ways the foreign policy of the United States."

More simply put, there were three principle objectives for PL 480 in 1954. They were: (1) to reduce grain surpluses in the United States; (2) expand export markets and (3) aid foreign countries. So as not to be misled early on, it must be understood that PL 480 while perceived by some to be altruistic in nature, was not based on altruism. It was a response by Congress to a plea by the agriculture production sector in the U.S. to bolster prices by eliminating surpluses. Shipments of surpluses to foreign markets not active in the commercial market, will enhance local farm prices.

In 1966, in response to a critical food situation in India as a result of droughts, there were two objectives added to the original PL 480 legislation in the form of amendments. They are to (1) emphasize combating hunger in the recipient country and (2) increase agricultural production in the recipient country. While these are indeed more altruistic in nature than the first set of objectives in that they were a direct response to India's hunger, these new objectives are also more conservative in that they are formal recognition that recipient countries should strive for self-determination. Population increased from approximately 440 million people in India in 1960-61 to 500 million in 1966, grain harvests failed to show a definite trend (table 1).

Table 1. India Grain Harvest (Million Tons)

Year	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66
Grain Harvested	82	83	78	80	88	72

Source: The Economist, Dec. 17, 1966.

Given the drought in India and the subsequent decrease in production, the opinion has been offered that a famine was avoided by the increase of U.S. P.L. 480 from 2 or 3 million tons per year to 6 million tons in 1965 and 9 million in 1966.^{1/} At the same time that it was recognized that hunger needed to be combated directly and immediately, it was also recognized that self-sufficiency in the recipient countries was necessary. As it was, the 9 million tons offered to India in aid in 1966 constituted 25 percent of the total U.S. grain exports for that year.

Again in 1974, additional objectives were amended to the original act. More political in nature than the original objectives, these are to: (1) act as a U.S. commodity supply management tool; (2) develop export markets; (3) meet humanitarian food needs; (4) foster long-term agriculture and economic growth in recipient countries and (5) use as a foreign policy instrument. This last addition is probably the most important one, certainly the most political, as it has been said that Henry Kissinger carried a P.L. 480 contract in his back pocket to negotiating tables. Whether that statement is true or not is really beside the point as new criteria for consideration were added as a result of this last point. Since 1974 criteria that needs to be met include: (1) Is there an urgent food need? (2) Will saved money be spent for domestic production? (3) Is the recipient friendly to the U.S.? (4) Does the recipient spend too much on defense? (5) Has the country expropriated any U.S. property? and (6) Do they help the U.S. control the trafficking of dangerous drugs? This is obviously quite an extension of the original concept to distribute surplus agricultural products to stabilize prices.

Value of Exports Under P.L. 480

The brief synopsis of the law and its subsequent amendments in 1966 and 1974, provide an evaluation basis for consideration of the value and amount of commodities offered under P.L. 480 since 1954. First of all, the value reported in table 2, totals \$31,616,000,000 since 1954. P.L. 480 accounted for 12 percent of the total U.S. agricultural exports in 1957, it fell to 4 percent in 1978. It is interesting to note that while the P.L. 480 percentage of total agricultural exports has fallen progressively since

Table 2. Value of U.S. Farm Products Shipped Under Public Law 480 Compared with Total Exports of U.S. Farm Products, July 1954 through September 30, 1978,¹ (In Millions of Dollars), ^{2/}

Fiscal years	Public Law 480						Mutual Security (AID) ³	Total agricultural exports			Public Law 480 as percent of total
	Sales for local currency	Long-term credit sales	Donations through Government and World Food Programs	Donations through voluntary relief agencies	Barter ²	Total Public Law 480		Total Government programs	Commercial sales ⁴	Total agricultural exports	
1955.....	73		52	135	125	385	450	835	2,309	3,144	12
1956.....	439		63	184	298	984	355	1,339	2,157	3,496	28
1957.....	908		51	165	401	1,525	394	1,919	2,809	4,728	33
1958.....	657		51	173	100	981	227	1,208	2,795	4,003	24
1959.....	724		30	131	132	1,017	210	1,227	2,492	3,719	27
1960.....	824		38	105	149	1,116	167	1,283	3,236	4,519	25
1961.....	951		75	146	144	1,316	186	1,502	3,444	4,946	26
1962.....	1,030	19	88	160	198	1,495	74	1,569	3,573	5,142	29
1963.....	1,088	57	89	174	48	1,456	14	1,470	3,608	5,078	29
1964.....	1,056	48	81	189	43	1,417	24	1,441	4,627	6,068	23
1965.....	1,142	158	55	183	32	1,570	26	1,596	4,501	6,097	26
1966.....	866	181	87	180	32	1,346	42	1,388	5,359	6,747	20
1967.....	803	178	110	157	23	1,271	37	1,308	5,513	6,821	19
1968.....	723	300	100	150	6	1,279	18	1,297	5,086	6,383	20
1969.....	346	427	111	154	1	1,039	11	1,050	4,776	5,826	18
1970.....	309	506	113	128		1,056	12	1,068	5,650	6,718	16
1971.....	204	539	138	142		1,023	56	1,079	6,674	7,753	13
1972.....	143	535	228	152		1,058	66	1,124	6,922	8,046	13
1973.....	6	661	159	128		954	84	1,038	11,864	12,902	7
1974.....	(5)	575	147	145		867	76	943	20,350	21,293	4
1975.....		762	148	191		1,101	123	1,224	20,354	21,578	5
1976.....		650	65	192		907	216	1,123	21,024	22,147	4
July-September 1976.....		316	18	51		385	138	523	4,832	5,355	7
1977 (October-September).....		760	92	250		1,102	419	1,521	22,453	23,974	4
1978 (October-September).....		732	111	223		1,066	475	1,541	25,755	27,298	4
1955 thru Oct.-Sept. 1978.....	12,292	7,404	4,400	3,988	1,732	27,716	3,900	31,616	202,165	233,781	12

¹Export market value. Prior fiscal years 1955-76 ends June 30, new fiscal year ends September 30.

²Annual exports have been adjusted for 1963 and subsequent years by deducting exports under barter contracts which improve the balance of payments and rely primarily on authority other than Public Law 480. These exports are included in the column headed "Commercial sales."

³Sales for foreign currency, economic aid, and expenditures under development loans.

⁴Commercial sales for dollars include, in addition to unassisted commercial transactions, shipments of some commodities with governmental assistance in the form of short- and medium-term credit, export payments, sales of Government-owned commodities at less than domestic market prices, and, for 1963 and subsequent years, exports under barter contracts which benefit the balance of payments and rely primarily on authority other than Public Law 480.

⁵Less than \$500,000.

Source: U.S.D.A., Annual Report on P.L. 480, 1978.

the late 1960's, the nominal value of total government programs has actually increased recently. The total government program figure of \$1,541,000,000 in 1978 compares favorably with the average of \$1,317,000,000 since 1954.

Secondly, the quantities by commodities are listed in table 3 since the inception of the program in 1954. Please note the bottom line converts commodity volumes into metric tons. Since 1954, 262,457,000 metric tons have been shipped under P.L. 480. While it is difficult to establish specific amounts of tonnage per commodity, due to the differing weights, it nevertheless provides a significant comparison with the total grain production of India as an example with its 80 million tons average during the early and mid-1960's (table 1). Needless to say, P.L. 480 exports have not been a trifling amount in either value or tonnage.

Theoretical Production Disincentive

The expressed purposes of the law, range from political bargaining at worst to altruism at best. Food aid is generally recognized as genuine altruism yet much criticism persists. This, as one of the major topics of the American Farm Economic Association Annual Meetings in August 1960, was discussed quite thoroughly. Theodore W. Schultz, speaking on the implication of surpluses on underdeveloped recipient economies, discussed the consequences of surpluses in a speculative nature only, claiming that data was insufficient. With respect to India specifically he stated: "... nonfarm consumers would be better off. Cultivators in India, however, would be confronted by some decline in the relative prices of the farm products they produce and sell. Here, too, there would be an income effect reducing their consumption. The incentive to maintain or expand agricultural production would have taken the wrong turn."^{2/}

Table 3. Public Law 480, Exports — Quantities of Commodities Shipped, July 1, 1954, through September 30, 1978 (In Thousands of Units) ^{3/}

Commodity	Unit	Sales for local currency	Long-term credit sales	Donations through Government and World Food Programs	Donations through voluntary relief agencies	Barrat ²	Total Public Law 480
Grains and products:							
Wheat.....	Bushel.....	1,798,560	1,334,286	329,611	76,747	368,471	3,907,675
Wheat flour.....	Hundredweight.....	120,745	79,533	81,277	140,053		421,608
Bulgur wheat.....	Pound.....	13,020	711,359	1,884,697	5,680,539		8,290,115
Roller wheat.....	do.....			128,554	488,495		615,049
Corn.....	Bushel.....	258,481	174,690	78,638	9,985	239,451	761,245
Barley.....	do.....	133,290	5,084	19,507		93,012	270,893
Grain sorghum.....	do.....	235,652	119,570	56,429	1,269	126,092	540,972
Oats.....	do.....	6,807		2,072		41,961	50,800
Boiled oats.....	Pound.....			159,839	463,484		623,323
Rye.....	Bushel.....	4,737				14,266	19,003
Mixed feed grains.....	Pound.....		3,940				3,940
Rye flour.....	Hundredweight.....			11			11
Cornmeal.....	do.....	26	21	10,330	46,381		56,758
Rice.....	do.....	158,737	162,985	13,357	8,867	4,444	348,590
Sorghum grits.....	Pound.....			281,085	205,978		487,063
Fats and oils:							
Lard.....	do.....	213,161	2,526				215,687
Tallow.....	do.....	1,826,615	335,549				2,162,164
Shortening.....	do.....			7,707	254,309		262,016
Soybean oil.....	do.....	6,845,699	3,302,419	943,039	1,255,590		12,346,727
Cocoonseed oil.....	do.....	1,603,707	39,349	87,921	45,872	34,731	1,811,508
Peanut oil.....	do.....			41,548	143,586		185,134
Linseed oil.....	do.....	7,491				8,083	15,574
Vegetable oils, other.....	do.....				599,005		599,055
Oilseeds and meal:							
Peanuts.....	do.....					9,169	9,169
Soybeans.....	Bushel.....		3,316			5,932	9,248
Soy flour.....	Pound.....			11,323	1,081		12,404
Flaxseed.....	Bushel.....					897	897
Oilseed meal.....	Short ton.....		27		1		28
Dairy products:							
Milk (evaporated and condensed).....	Pound.....	570,721	4,700				575,421
Milk (nonfat dry).....	do.....	358,465	14,147	1,298,205	6,930,851	129,341	8,731,009
Milk (whole dry).....	do.....	22,857	48				22,905
Cheese.....	do.....	20,679		66,688	616,725	9,836	713,928
Butter.....	do.....	34,023		36,620	393,826	23,181	437,648
Butter oil, anhydrous milk fat, and ghee.....	do.....	16,951	3,862	11,270	188,392		220,675
Meat and poultry:							
Beef.....	do.....	118,638					118,638
Pork products.....	do.....	19,991					19,991
Poultry.....	do.....	35,416	198				35,614
Dried eggs.....	do.....	4					4
Fruits and vegetables:							
Dried fruits.....	do.....	44,896					44,896
Fresh, canned fruits, and juices.....	do.....	100,905					100,905
Dry edible beans.....	Hundredweight.....	654	333	1,017	3,119	566	5,689
Dry peas.....	do.....	149			357		506
Dry lentils.....	do.....	24					24
Potatoes.....	Pound.....	50,822	25,886				76,708
Other:							
Corn-soya-milk.....	do.....		12,025	845,555	2,775,696		3,633,276
Wheat-soya-blend.....	do.....		1,746	290,000	724,009		934,755
Cocoon (including liners).....	Bale.....	12,522	3,779	97		2,516	18,914
Cocoon products (fabric, yarn).....	Pound.....	18,069	61,676	411			80,156
Wool.....	do.....					11,976	11,976
Tobacco.....	do.....	552,068	178,397			196,677	927,142
Seeds.....	Hundredweight.....	10					10
Cattle hides.....	Number.....	9	9				18
Whey soya beverage powder.....	Gallon.....			24	2,715		2,739
Total, thousand metric tons.....		140,586	57,830	20,362	20,217	23,462	262,457

¹Prior fiscal years 1954-76 ends June 30, new fiscal year ends September 30.

²Includes exports after Dec. 31, 1962, made under barrat contracts with result in balance-of-payments benefits and rely primarily on authority other than Public Law 480.

Source: U.S.D.A., Annual Report on P.L. 480, 1978.

Basically, what Schultz was referring to is illustrated in figure 1 where SS is the domestic supply prior to P.L. 480 input and SS' represents the supply after the receipt of P.L. 480. Simply stated, the recipient apprehension about P.L. 480 is that the increased supply, represented by SS', will establish a new equilibrium point B which indicates that price will decrease from P_1 to P_2 while consumption will increase from Q_1 to Q_2 . Domestic production in the recipient country, however, due to the external input of P.L. 480, will actually contract to Q_3 and expanded P.L. 480 in-shipments will be needed to retain that new price. So, in effect, while the consumer is happy with the lower price and increased quantity, the domestic production decreases and suffers a long-term detrimental effect.

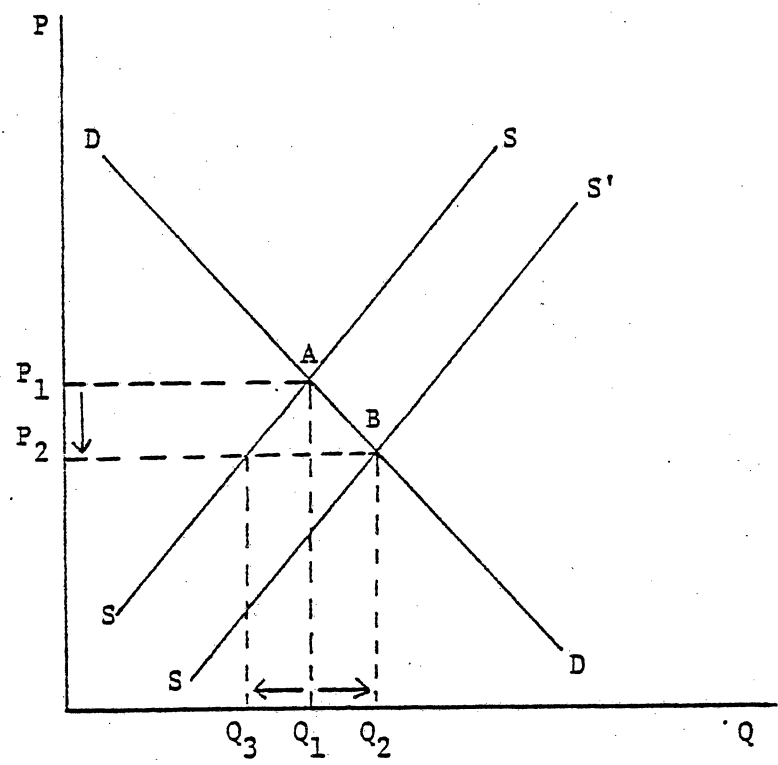


Figure 1, Theoretical Impact of P.L. 480 Imports on Internal Prices and Production

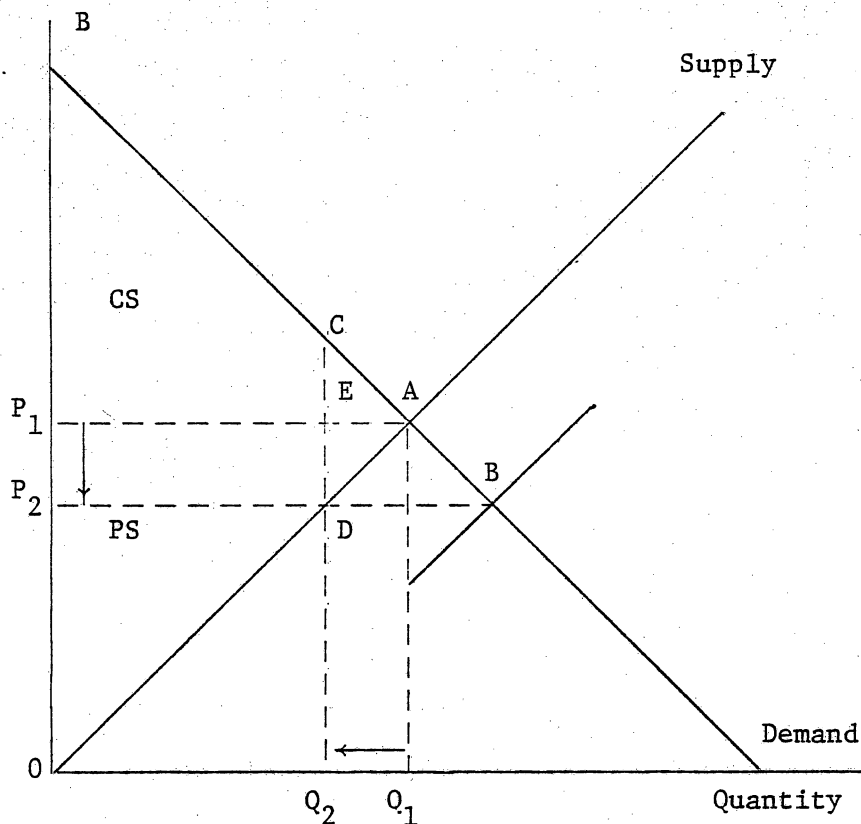


Figure 2. Consumer-Producer Surplus - Distribution with P.L. 480 Inshipments

Figure 2 illustrates the lower price condition that the recipient country faces with the additional supply situation as a result of the P.L. 480 imports. The price falls from P_1 to P_2 and the quantity domestically produced at the lower price is contracted from OQ_1 to OQ_2 . In this situation, the consumer is benefited as the increase to consumer surplus equals $P_1 P_2 B A$ however, producer surplus is lessened considerably by the extraction of $P_1 P_2 D A$. The area ADB represents a net increase to the society from the inshipments but producers were unable to capture any of these benefits.

So that, as precisely as can be stated in economic terms, is the problem. The consumer surplus is increased in the recipient country as a result of the lower prices from the shifting supply curve with the additional P.L. 480 commodities. The domestic producer suffers from the

lower prices, however, and the substitution for local commodities is made with U.S. products. Once this shift has occurred, some domestic producers go out of business, and the consumers are dependent upon the U.S. commodities to a greater extent.

Case Studies: India

The statement that the P.L. 480 surpluses have depressed prices in recipient countries and therefore interfered with development has been made often. But empirical evidence does not add support. India the recipient of the largest share of P.L. 480 shipments is an appropriate case study.

According to S. R. Sen, from the Planning Commission of New Delhi, India, the initial response to P.L. 480 was twofold. Either the recipients felt that the aid was a generous offer or they were skeptical. This skepticism was based on the perception that the aid was charity which would affect morale, weaken the spirit of self-reliance and eventually create a welfare mentality. As stated above, there was fear that the "dumping" would negatively affect domestic production.

As a response to these concerns, India authorities developed a three point program in which: (1) P.L. 480 was integrated into their own national development program; (2) no program would be started on the basis of P.L. 480 assistance which could not be carried out later with their own resources; and (3) there was an understanding that the program would continue for at least a minimum of time.

The result of this conscientiously planned approach was that P.L. 480 assisted in mitigating shortages in the India harvest and prevented

their domestic price from skyrocketing during the shortage years. At the time of the report of Mr. Sen, in 1960, prices had not fallen and domestic production had not been discouraged. In fact, the Indian economic plan included developing an additional demand for food and P.L. 480 assisted in that development. One of the vehicles for that support was the fair-price shop concept, the revenue from which went for their domestic farm price support system. The production of wheat, which was the major P.L. 480 items, actually increased from 8.7 million tons in 1956 to 10.2 million tons in 1960.

It was surmised, in an article by Keith Rogers, Urma K. Srivastova and Earl O. Heady in the early 70's, that the original questions raised on the disincentives to domestic producers had not yet been put to a rigorous enough analysis.^{3/} They maintained that a simple, one demand equation model was not sufficient. They found strong evidence "that the distribution of food aid commodities, through a concessional market provides for market differentiation and, in turn expanded demand as a result of a real income effect of lower prices in the concessional market as compared to open market".^{3/} In other words, their evidence indicated that the availability of the imported commodities at concessional prices represented an increase in real income and therefore implied a shift in the aggregate demand curve.

Rogers and associates concluded that: (1) the shift in demand resulted in a 9 percent less impact on the domestic supply than the original estimation; (2) the domestic supply showed a decrease of 12,600 metric tons instead of 143,200 metric tons as projected; (3) the negative impact of imports can be reduced significantly by a demand creating situation; (4) 93 percent of the

imports were accounted for in the fair price shops; (5) domestic prices were only depressed by a fraction of 1 percent; and (6) previous studies have underestimated the net contribution of food aid to domestic supply because income effect has been ignored.

There is further proof, as is evidenced by the following table 4, that the tremendous infusion of imported grains into the domestic market did not alter significantly the patterns of increased production and area harvested. Consumption in India increased in every year since 1955, with the exception of the drought years 1966 and 1967. In the late 1960's, with the advent of the Green Revolution, yields, production, total consumption and area harvested were all increasing, and yet, P.L. 480 imports were equal to the early 60's and considerably above the 1950's levels.

Development economists such as Sudhir Sen, layed the blame for precarious domestic supply situations in India on P.L. 480. In "A Richer Harvest" in 1974, Sen wrote: "They did (P.L. 480 imports), however, have an inflationary effect in another and more subtle sense -- via retardation of domestic production. The imports as seen elsewhere, helped peg wheat prices to an artificially low level; this price deterrent kept down India's own production of wheat even at a time of rising demand, and thereby in the end contributed to higher wheat prices."^{4/} Elsewhere in Sen's book it was stated that P.L. 480 served a social objective in that "it helped protect the 'poor and vulnerable' sections of the population at a time of rising prices." He went on to state, however, that this vulnerability caused an emergency in 1965 when the transatlantic foodgrains upon which they relied were stopped. Table 4 indicates that Sen's contention was incorrect as 1965 and 1966 were the largest import years of the 1954 to

Table 4. India: Wheat Production, Imports, PL 480 Share and Area Harvested.

Year	Production	Imports	Total	PL 480	% of Total	Area Harvest
			(1000 MT)			(1000 HA)
1955	9043	442	9485	141	1.5	11259
1956	8760	1097	9857	193	2.0	12367
1957	9463	2856	12319	1930	15.7	13589
1958	7997	2712	10709	2143	20.0	11729
1959	9929	3545	13474	3357	24.9	12602
1960	10251	4338	14589	3173	21.7	13169
1961	10997	3347	14344	3095	21.6	12927
1962	12072	3269	15341	2342	15.3	13570
1963	10776	4075	14851	3556	23.9	13590
1964	9853	5625	15478	4502	29.1	13499
1965	12257	6582	18839	6000	31.8	13422
1966	10424	7795	18219	7299	40.0	12656
1967	11393	6430	17823	4113	23.1	12838
1968	16540	5559	22099	4809	21.8	14998
1969	18652	3094	21746	2217	10.2	15958
1970	20093	3586	23679	2208	9.3	16626
1971	23833	1907	25740	1631	6.3	18241
1972	26410	771	27181	355	1.3	19139
1973	24735	2230	26965	273	1.0	19464
1974	21778	4458	26236	0	0	18583
1975	24104	7015	31119	800	2.6	18107
1976	28846	6289	35135	N/A	N/A	20454
1977	29010	851	29861	N/A	N/A	20922
1978	31328	160	31488	N/A	N/A	21203

Source: Production, Yield and Area Harvested FAO Production Yearbook, 1955 through 1978; Imports FAO Trade Yearbook, 1955 through 1978; PL 480 U.S. Agricultural Exports Under PL 480, ERS-Foreign 395, USDA.

1978 period. P.L. 480 provided the major share of the imports and 31.8 percent of total India consumption in 1965 and 40 percent in 1966.

While it would not be possible to prove such a statement, it is quite possible that to accuse the U.S. of creating developmental problems, when in fact the problems were internal, was politically efficacious and certainly popular. Its quite likely, however, that while P.L. 480 grain imports had an impact on India's domestic market, the roots of the problems lay elsewhere.

A number of Indian domestic policy issues created disincentives for expanding food production. The first of these was a consumer oriented pricing policy. "India's grain pricing policies in recent years have been increasingly oriented to urban consumers, rather than farmers' interests."^{5/} In order to implement this policy, the government procured grain itself and distributed it through fair price shops. This policy stimulated farmers to shift to other, lower yielding crops as well as to hoard grain.

A second major problem was the governments restrictive policies on the interstate movement of grains. This policy created a surplus in some areas, the result of which was lower prices, and starvation in other areas.

A third problem was credit. Credit distribution has been uneven and a large majority of Indian farmers were unable to avail themselves of the new Green Revolution technology as they were too small to receive credit.

A fourth problem was accessability to water. Less than half of the Indian irrigation potential was utilized.

A fifth problem, and probably the worst, was land tenure. Large landowners blocked redistribution attempts and circumvented legal limits to size. "India is regarded as a country of small farmers; the average size farm holding is 6.5 acres and 62 percent of the farmers have less than 5 acres. However, about 5 percent of the farmers take up about 30 percent of the farm area and 20 percent take up 60 percent of the farm area."^{6/}

Case Study: Brazil

Brazil began importing P.L. 480 products in 1956, however, due to its established trade patterns, it is useful to review the period prior to 1956. Table 5 illustrates these patterns quite clearly. Imports have played a major role in total wheat consumption since 1948. While the percent imported has decreased somewhat, subsequent to the termination of the P.L. 480 program, the import percent nevertheless constitutes a majority of consumption.

Both consumption and production have climbed during the period of this study and continued to increase during the P.L. 480 years according to Professor Hall's statistics. It should additionally be noted that P.L. 480 imports were greatest during the period in which there was fluctuation in domestic production, i.e., 1960 through 1964, thereby acting as a stabilizing agent allowing for the continued gradual increase in total consumption.

This pattern can be directly attributed to the government's policy, specifically to the Marketing Department for National Wheat (CITRIN). This department has conducted all sales and purchases of domestic and imported wheat and has intervened extensively in the pricing of grain. Figure 3 Brazilian Wheat Import Revenues illustrates how this policy was enacted in order to support a high domestic price to encourage domestic production.

Table 5. Brazil Wheat Supply and Consumption

Year	Total Imports (1,000 tons)	% PL 480	Domestic Production (1,000 tons)	Total Consumption (1,000 tons)	% Import
1948	871		215	1086	80
1949	988		243	1231	80
1950	1241		263	1504	83
1951	1393		319	1712	81
1952	1265		254	1519	83
1953	1658		414	2072	80
1954	1646		462	2108	78
1955	1855		522	2377	78
1956	1497	35	661	2158	69
1957	1475	29	513	1988	74
1958	1552	28	468	2020	77
1959	1825	28	354	2179	84
1960	2033	24	366	2399	85
1961	1887	79	342	2229	85
1962	2200	37	106	2306	95
1963	2187	36	336	2523	87
1964	2622	58	128	2750	95
1965	1889	11	275	2164	87
1966	2420	22	283	2703	90
1967	2480	12	368	2848	85
1968	2355	2.2	856	3211	73
1969	1969	4.4	1373	3342	59
1970	1710	15.8	1844	3554	48
1971	1796	0	2011	3808	47
1972	2945	0	982	3928	75
1973	2399	0	2031	4430	54
1974	2443	0	2858	5302	46
1975	3428	0	1787	5215	66

Source: P.M. Greenston, "The Food for Peace Program and Brazil: Valuation and Effects of the Commodity Inflow," 1972. Lana Hall, "The Effects of P.L. 480 Wheat Imports on Latin American Countries," 1980.

The government imports the P.L. 480 grains at P_1 purchase price, thereby expanding the amount available to consumers to Q_2 . Q_2 is then sold to consumers at \bar{P} , which provides profit ABCD. This revenue is utilized in turn to subsidize domestic producers AEEG to the support price P^* . Although the ability to accomplish this subsidy is dependent upon low priced imports, CITRIN was able to maintain the policy throughout the program, as is evidenced in figure 4.

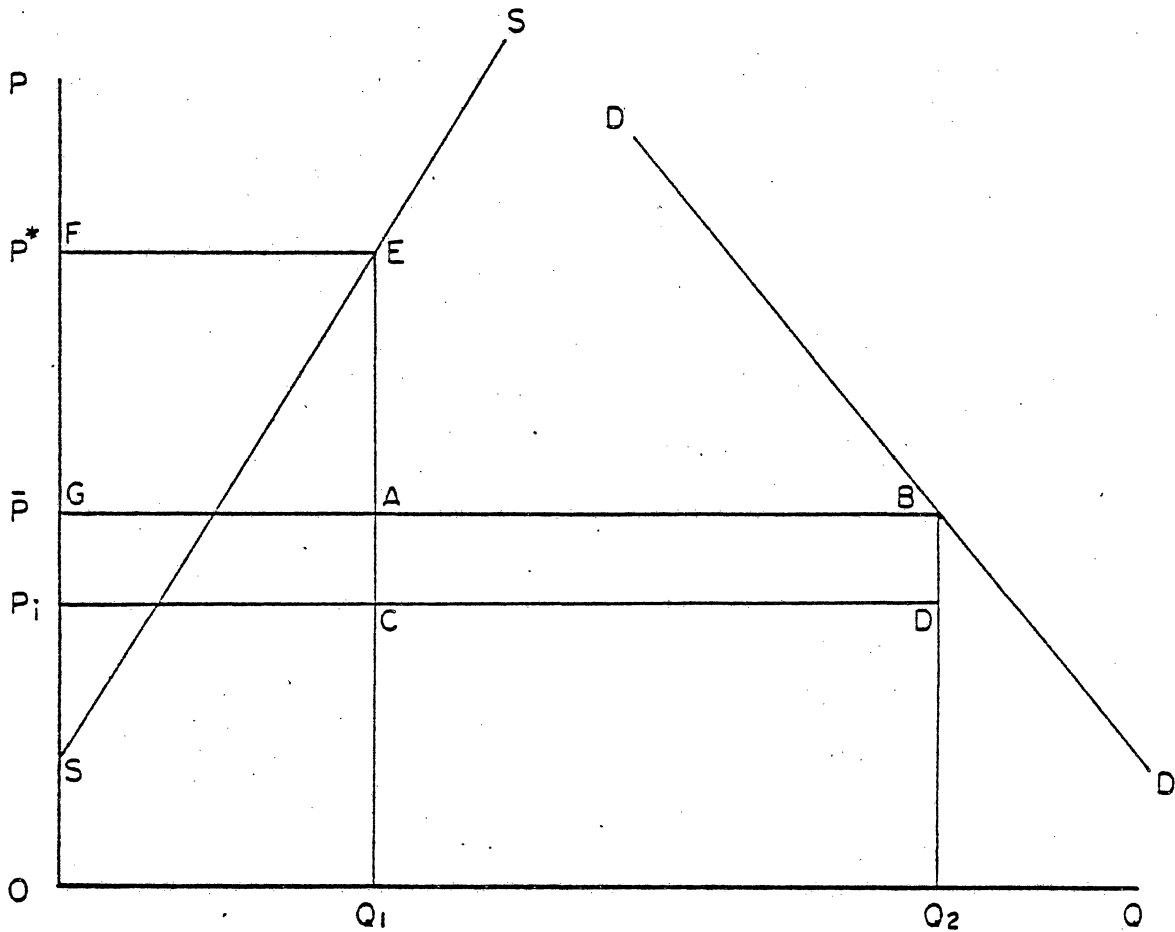


Figure 3. Brazil Wheat Import Revenues.

Source: Lana Hall, "The Effects of P.L. 480 Wheat Imports on Latin American Countries," 1980.

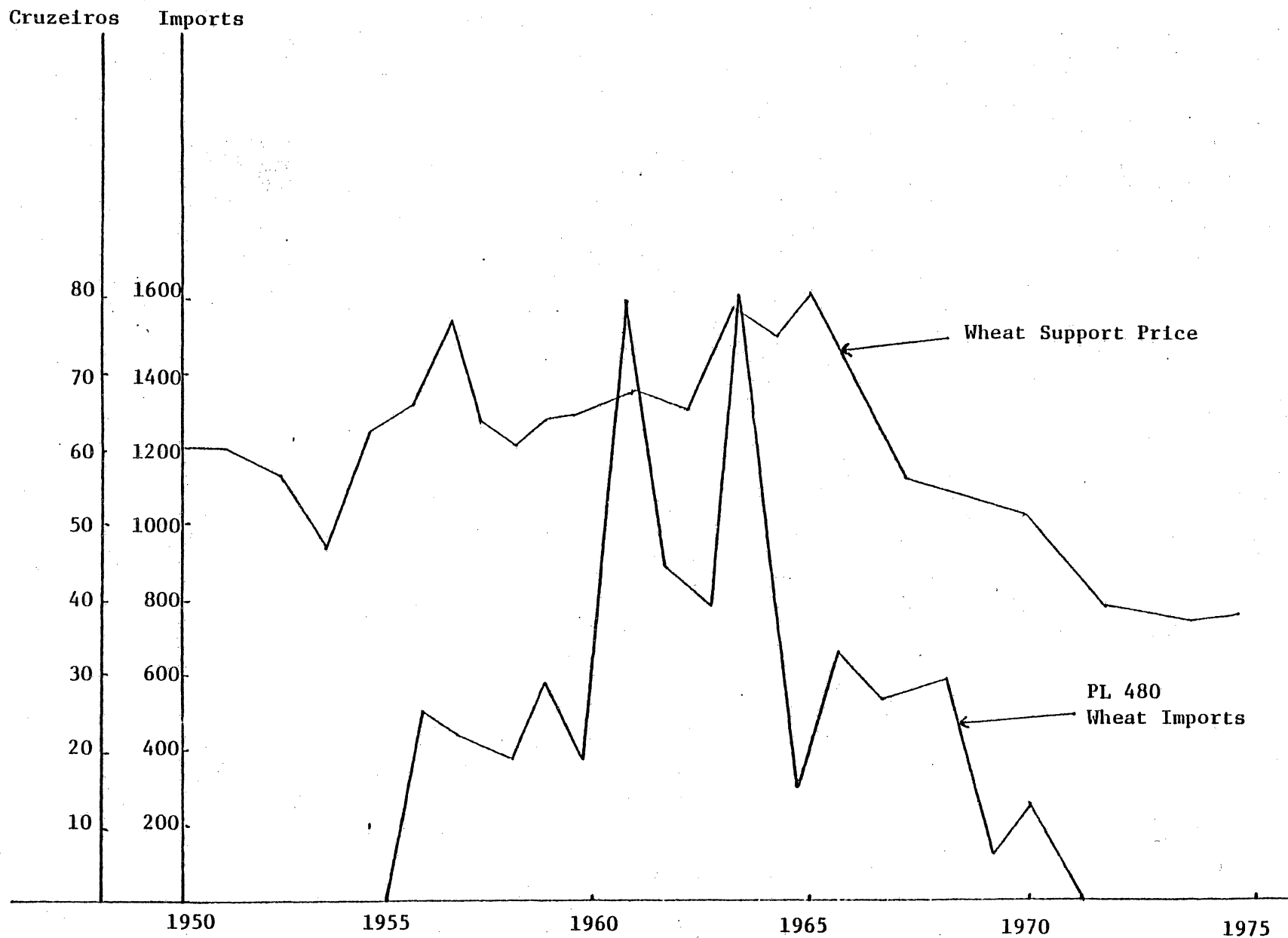


Figure 4. Brazil Wheat Support Prices (100 Cruzeiros per Metric Ton) and P.L. 480 Title I Wheat Imports (1000 Metric Tons).

Source: Lana Hall, "The Effects of P.L. 480 Wheat Imports on Latin American Countries," 1980.

As can be seen, figure 4 illustrates that the wheat support price increased as P.L. 480 wheat imports increased. The support price remained above the pre-P.L. 480 support price for almost the entirety of the program, with the exception of the final years as P.L. 480 imports dwindled.

It has been suggested by some developmental economists, that this support price program has enabled Brazil to develop not only their wheat production capabilities but also their other grains. The supposition is that the infrastructure buildup and such things as the seasonal and machinery commonality between the wheat and soybean industries have allowed for the other crops to benefit from the support program as well. The trends and dramatic changes in Brazil are demonstrated in Table 6.

Table 6. Brazil: Wheat, Corn, Rice and Soybeans, Production, Area Harvested and Consumption Per Capita 1950 and 1975 compared.

Commodity	Production (1000 Metric Tons)		Area Harvested (1000 Hectares)		Consumption Per Capita (kilo)	
	1950	1975	1950	1975	1950	1975
Wheat	532	1787	652	2931	35	49
Corn	6023	16353	4681	10670	115	142
Rice	3217	7537	1964	5198	60	71
Soybeans	61	9892	34	5823	0.7	61
Total	9833	35569	7331	24622	210.7	323

Source: Lana Hall, "The Effects of P.L. 480 Wheat Imports on Latin American Countries," 1980.

As is indicated in these data, there has been a significant increase in all commodities in production, area harvested and consumption per capita.

While it would certainly be difficult to attribute these increases to P.L. 480 imports in their entirety, these imports have not provided a disincentive to production. Professor Hall concluded that, primarily due to the price support program utilized to encourage domestic production, domestic consumption had increased "... it appears that Brazil has managed to use P.L. 480 wheat imports in a beneficial way for domestic production."^{8/}

Case Study: Colombia

The final example of the early results of P.L. 480 is Colombia. Their program evaluators also feared that the external commodity input would lower domestic agriculture prices and therefore hamper development.

In a six year period 1955-1960, in a study done by Theodore J. Goering, while P.L. 480 imports accounted for 7.8 percent of agricultural imports into Colombia, its value was less than 1 percent of domestic agriculture production. For some of the specific commodities, the imports were more substantial such as 13 percent of the wheat crop in 1955 to 56 percent in 1959, 39 percent of the edible oil crop for the entire period and 18 percent of the cotton crop also for the entire period.^{9/}

The following table 7 illustrates Colombian domestic price and production during that time.

Table 7. Colombian Domestic Price and Production

Commodity	Price Change % 1955 to 1960	Production Change % 1955 to 1960
Cotton, Barley	+ 80%	+100%
Sesame	+121%	+ 67%
Wheat, corn, potato, bean	+35 to +54%	+ 6% (beans declined)
Total products	+ 30%	
General Price Level	+ 58%	

Source: T.J. Goering, "P.L. 480 in Colombia," AJFE, Nov. 1962, page 994.

Farm prices for barley, cotton and sesame rose more than the general level of prices while prices for the other four commodities rose less. The production levels increased for all P.L. 480 items except beans. Wheat domestic production expanded very little but another P.L. 480 commodity (cotton) increased 138 percent. Production of a close substitute for P.L. 480 edible oil imports has increased substantially. Production trends did not show a meaningful relationship with P.L. 480 imports.

As the National Food Supply Institute (INA) viewed P.L. 480 as a device to meet domestic flour and wheat consumption levels, a price support system for local wheat production was not instituted, therefore the relatively small increase 6 percent. What was accomplished with the P.L. 480 wheat, however, was that the INA realized more than 13 million pesos annually from the resale of the P.L. 480 wheat. With this money other operations such as price supports, commodity storage, etc., were financed.

Additionally there was a shift from wheat to barley production as they are competitive crops and the same machinery can be utilized in production. Barley production and revenues increased steadily from 1955 to 1960 as can be seen in table 8.

Table 8. Gross Receipts From Wheat and Barley Products

	1955	1956	1957	1958	1959	1960
Barley	20.8	29.8	28.8	44.8	72.5	95.4
Wheat	95.6	95.2	76.0	135.4	134.9	130.7
Total	116.4	125.0	104.8	180.2	207.4	226.1

Source: T.J. Goering, "P.L. 480 in Colombia," AJFE, Nov. 1962.

A concluding statement from Mr. Goering, albeit somewhat noncommittal, was: "... it is probable that the program (P.L. 480) has contributed to Colombia's economic growth."^{10/}

The early information provided by Goering proved not only to be insufficient to support a strong opinion but also proved to be overly optimistic. In a study conducted 13 years later by Dudley and Sandilands, they offered the following opinion of Goering's study: "Early appraisals of the effects of P.L. 480 in Colombia reached ... approving conclusions. Goering, Goering, and Witt, and Adams et al. indicated that there had been no fall in local wheat production and only a very slight fall in deflated wheat prices. Unfortunately, this optimism proved premature. During the 1960's, Colombia wheat production fell continuously, until in 1971 it amounted to less than one-third of peak levels of the 1950's ..."^{11/} At the same time this was occurring, imports of wheat, P.L. 480 and commercial combined, continued to increase until they constituted 90 percent of total consumption.

This trend is illustrated dramatically in the following figure (figure 5).

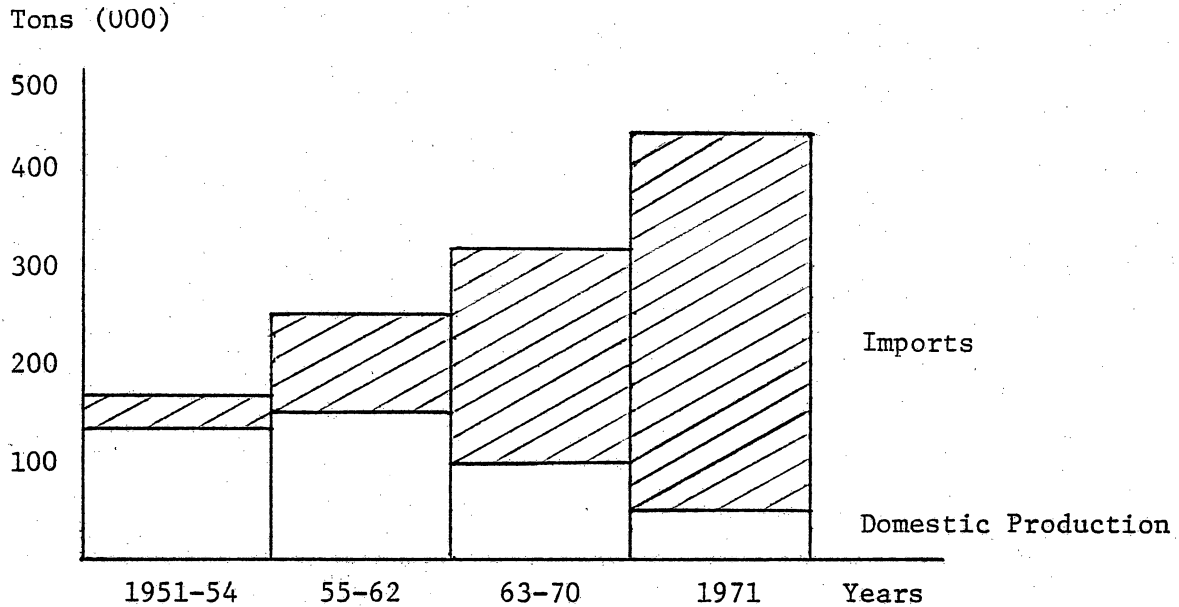


Figure 5. Domestic Production, Imports and Total Consumption of Wheat in Colombia, 1951-1971.

Source: Dudley and Sandilands, "The Side Effects of Foreign Aid: The Case of P.L. 480 Wheat in Colombia," Economic Development and Cultural Change, Jan. 1975.

As is clearly indicated, this illustration shows a continually increasing dependency on imported wheat and a continuing disintegration of the domestic production. The following table 9 gives the data specifically from 1951 to 1971, from which the illustration was drawn, and indicates an absolute decrease in production to one-third of the 1950's harvest and only 11 percent domestic share of consumption of wheat by 1971.

Table 9. Production, Imports, and Consumption of Wheat in Colombia, 1951-71, Annual Averages

Period	Production		Imports		Consumption
	Tons	Consumption (%)	Tons	Consumption (%)	Tons
1951-54	139,750	78	38,900	22	178,700
1955-62	145,400	60	97,200	40	242,600
1963-70	99,000	33	205,500	67	304,500
1971	49,000	11	384,900	89	433,900

Source: Dudley and Sandilands, "The Side Effects of Foreign Aid: The Case of P.L. 480 Wheat in Colombia," Economic Development and Cultural Change, Jan. 1975.

These data are supported by the study done in 1980 by Professor Hall.^{12/} While the actual numbers are somewhat different, the trends are identical: decreased area harvested, decreased domestic production, and increased reliance on ever growing import totals.

It is interesting to note at this point, that Colombia did not utilize the wheat imports, as Brazil had, to generate revenue that could be used for a domestic wheat price support program. The Instituto de Mercadeo Agropecuario (IDEMA), the government organization responsible for the integration of price and agricultural policy, intentionally sold wheat at a low price in order to keep the prices low for the consumer. It did not attempt to intervene in the market, nor did it separate producer and consumer prices. However, even with this policy, the government was able to generate some revenue due to the extremely low international price of wheat.

This revenue was utilized to support rice prices which had been kept relatively high. The results of this policy are illustrated by the upward trend in rice production (table 10).

Table 10. Area in Wheat, Barley, Potatoes, and Rice, 1955 and 1971 in 1000 Hectares.

Year	Wheat	Barley	Potatoes	Total	Rice	Total
1955	211.7	57.0	56.2	324.9	133	457.9
1971	46.0	76.4	95.0	217.4	372	589.4

Source: Dudley and Sandilands, "The Side Effects of Foreign Aid: The Case of P.L. 480 Wheat in Colombia," Economic Development and Cultural Change, Jan. 1975.

The wheat, barley and potatoes statistics in the above table are abstracted from the Dudley and Sandilands article. They had maintained that the 165,000 hectares lost to the wheat producers was not offset by the gains of other producers. Their study indicated an overall loss of 107,500 hectares of productive farmland due to the lack of a price support system. While that statement is correct according to their study, they did not include rice which was being supported. With this inclusion, there was a net gain of area under production of 131,500 hectares.

Even though rice was neglected in the Dudley and Sandilands article, the validity of their findings is not completely negated. For example, probably the most critical point of their article is valid with or without rice. They constructed a theoretical model for marketing the wheat imports and discovered a discrepancy between the socially optimal point and the price at which government revenues are maximized. The result of this discrepancy allowed for an estimated importing of 1,400,000 tons of wheat which could have been produced domestically at a lower opportunity cost. The discrepancies between socially optimal, revenue maximizing and actual price are illustrated in figure 6.

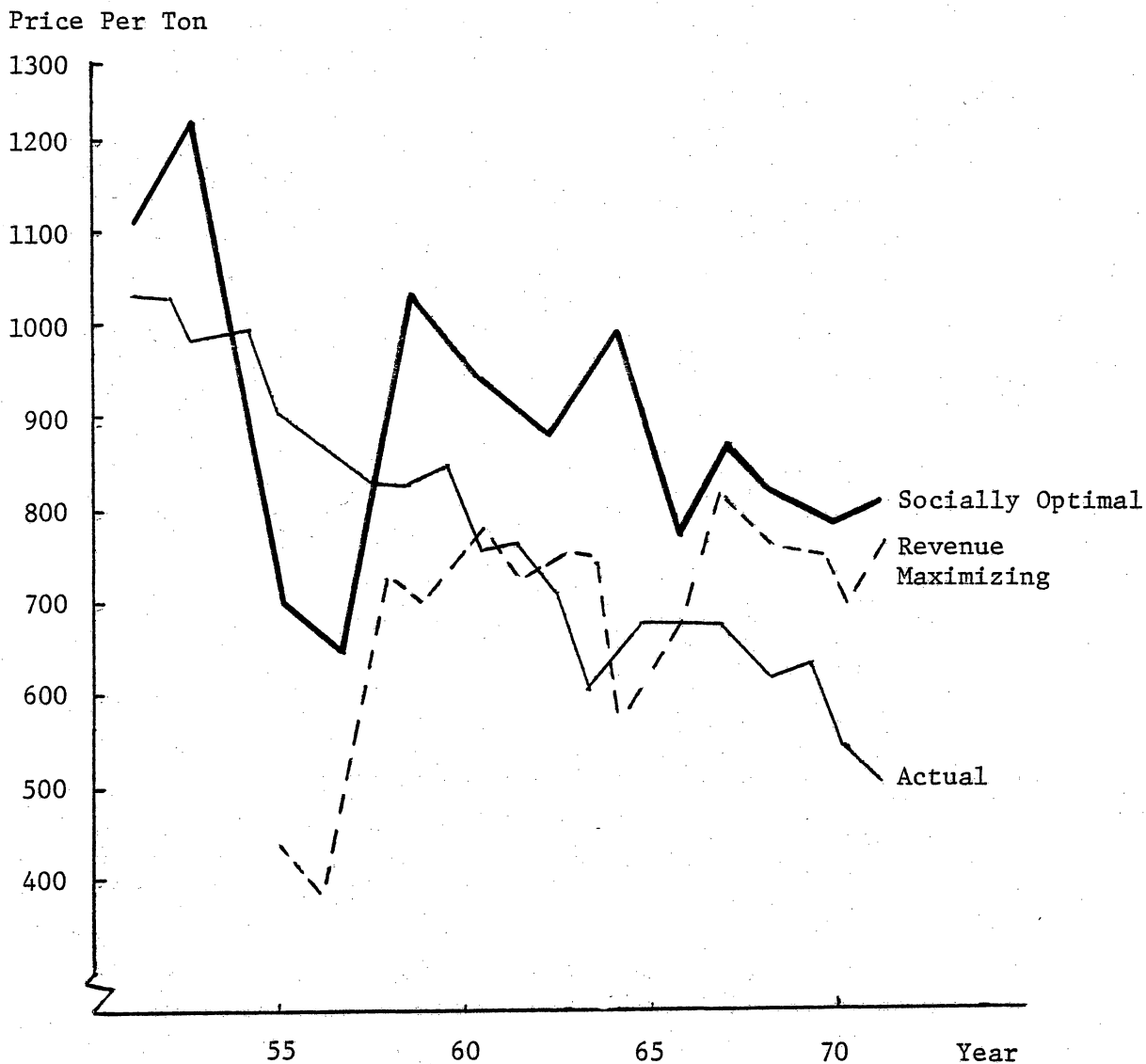


Figure 6. Actual Price, Socially Optimal Price, and Government Revenue Maximizing Price Per Ton of Domestic Wheat, 1951-71 in 1958 pesos in Colombia.

Source: Dudley and Sandilands, "The Side Effects of Foreign Aid: The Case of P.L. 480 Wheat in Colombia," Economic Development and Cultural Change, Jan. 1975.

The conclusion reached by Dudley and Sandilands of this policy is as follows: "This pricing policy appears to be the result of a medium-term profit maximizing behavior on the part of the Colombian government, through its marketing agency. In effect, the marketing agency sold imported wheat

at a price low enough to eliminate the greater part of domestic production, but still high enough to yield substantial revenues on the imports which replaced it. Although the net gains to Colombia from P.L. 480 were probably still positive, this internal pricing policy, made difficult to resist by the terms of the agreement, cost the country the greater part of the potential benefits from the aid program."^{13/}

As with the study of Brazil, there is one final point at which we may look. That is, the comparison of domestic production, area harvested and kilograms of consumption per capita from 1950 to 1975. While not nearly as dramatic as the increases in Brazil, the statistics indicate increases in Colombia as well (table 11).

Table 11. Domestic Production, Area Harvested and Consumption Per Capita in Colombia: 1950-1975.

Commodities	Domestic Production (1000 Metric Tons)		Area Harvested (1000 Hectares)		Consumption Per Capita (Kilos)	
	1950	1975	1950	1975	1950	1975
	Wheat	102	45	145	35	13
Corn	620	757	652	579	54.7	33.8
Rice	241	1614	133	372	31.4	75.4
Barley	50	122	44	81	4.4	5.2
Total	1013	2538	974	1067	103.5	129.0

Source: Dudley and Sandilands, "The Side Effects of Foreign Aid: The Case of P.L. 480 Wheat in Colombia," Economic Development and Cultural Change, Jan. 1975.

The 129 kilos consumption per capita of the selected four products indicates a 125 percent level of 1950 consumption. Only rice, the commodity that was supported, compares favorably with Brazil (75 to 71 kilos). Wheat and corn consumption was significantly less than in Brazil.

Summary

As was stated in the introduction, the information contained in this study is not purported to be exhaustive nor all inclusive. The opinions offered by authors of the many reports, journal articles, theses, etc. which were reviewed, ranged the entire spectrum from P.L. 480 being a capitalist plot to keep developing nations subserviant, to P.L. 480 being the most humanistic and valuable program ever conceived. What was surprising is that there was an overwhelming body of evidence that indicated that with proper use, P.L. 480 was not a detriment to development as commonly thought, but rather was an important tool assisting in economic development as well as a means for consumption expansion. India, and Brazil, at least at the time the material reviewed were written, appeared to be examples of the proper utilization. Colombia as a case study was less rational in its policy.

Since these examples are contrary to common opinion, it might be useful for a moment to review the consequences of action taken.

First and foremost, these governments apparently perceived, and instituted as policy, the fact that P.L. 480 was not a temporary, give-away welfare type program. An honest effort was made to incorporate the imported products into the domestic markets with the least amount of disruption. Through vehicles, such as fair price shops, the governmental organizations were able to distribute the additional food items, increase domestic consumption and at the same time, using the income derived from the sales, institute price support programs to foster domestic production increases. In those particular commodities in which the markets may have been saturated, alternative crops were developed,

such as barley in lieu of wheat. In other words, the P.L. 480 shipments were incorporated into government programs consciously with developmental purposes in mind.

A second conclusion from the program, which assisted in the long-range outlook, is that the receipt of the goods in many cases proved to have a stabilizing effect on the domestic market. This stable supply offered to the consumers contributed to the establishment of an upward consumption trend which had a positive impact on domestic producers' long-range plans. It has also been theorized, that in the absence of the food aid, in the years where there was crop shortfall domestically, foreign exchange would have been used for commercial imports rather than capital goods needed for long-term economic development.

A third and possibly the most important aspect of success of the P.L. 480 program, has been the investment in human capital. The value of this aspect is incalculable but cannot be overlooked. The quality of human capital has improved through better nutrition which is positively related to economic and social welfare. For example, in a study conducted early in the program, it was determined in 26 Title I recipient countries between 1955 and 1959, that the average consumption of wheat had increased by 7.4 pounds. Four pounds of this increase were attributed to P.L. 480 imports while the remainder was attributed to increases in local production in response to the expanded demand.

The continuing debate about the virtues of P.L. 480 was evidenced recently on the Texas A&M campus when on February 12, 1981, Peter T. Bauer, Chairman of the Department of Economics at the London School of Economics

debated Dr. Douglass J. Bennet, former Administrator of the U.S. Agency for International Development. In this debate, Bauer called for the demise of aid as it patronizes the recipient while Bennet stated, "Aid, when used properly, can facilitate economic policy choices by the recipient governments which are not only appropriate and desirable in the interest of development, but which wouldn't occur in the absence of the assistance."

The underlying official Policy of the U.S. Government remains relevant. "The Congress hereby declares it to be the policy of the United States to expand international trade; to develop and expand export markets for United States agricultural commodities; to use the abundant agricultural productivity of the United States to combat hunger and malnutrition and to encourage economic development in the developing countries..."

There is no doubt that the first and second points of the legislation were accomplished. With respect to the third point, the more rigorous studies indicate that conscientious application of the commodities through established institutional settings have created beneficial economic development situations. Approaches not well thought out or administered apart from planned economic development programs have created problems that AID and USDA officials have become aware of and attempted to deal.

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