COFFEE AND BASIC GRAINS: A REVIEW OF SECTORAL PERFORMANCES, PRICING AND MARKETING MARGINS AND RECENT POLICY CHANGES

(A Report to the Office of Food and Agriculture, USAID Mission, Tegucigalpa, Honduras)

Stephen K. Pollard
California State University--Los Angeles

Douglas H. Graham
The Ohio State University

Carlos E. Cuevas
The Ohio State University

January 1984

ACKNOWLEDGEMENTS

This report could not have been written without the cooperation of various institutions in Honduras. We would like to thank the officials of IHCAFE, BANHCAFE, Banco Occidente, BANADESA, Banco Atlantida, EXCAHO, and FEHCHOCAL for their help and time in providing insight into the coffee sector in Honduras. In the basic grains sector, we wish to thank officials of RECURSOS NATURALES (RRNN), IHMA and various extension agents of RRNN. The data presented in the tables for both crop groups come from a wide variety of sources, all of which are identified at the bottom of the tables in question and some of which are discussed in the text.

TABLE OF CONTENTS

COFFEE AND BASIC GRAINS: A REVIEW OF SECTORAL PERFORMANCE, PRICING AND MARKETING MARGINS AND RECENT POLICY CHANGES

Stephen K. Pollard
Douglas H. Graham
Carlos E. Cuevas

INTRODUCTION

It has long been recognized that agriculture makes an important contribution to the development process. It's contribution to the structural transformation that characterizes modern economic growth has been summarized in four key functions: (1) the production of foodstuffs for the domestic market; (2) the accumulation of savings and capital for future growth; (3) the provision of a market for domestically produced inputs and consumer goods; and, (4) the supply of foreign exchange through export activity or successful import substitution in foodstuffs.

This study documents and evaluates the performance of two important agricultural subsectors in fulfilling these functions, i.e. coffee and basic grains. The report analyzes the market performance and comments on the institutional framework conditioning the growth of these two subsectors. Emphasis here centers on evaluating the growth record and identifying policy implications seen in the structure of prices and marketing margins available through official price

data. Separate studies will analyze the role of IHCAFE in absorbing technical assistance and credit supervision costs in coffee sector loan activity and the differential prices and marketing conditions facing basic grains producers.

I. THE COFFEE SECTOR

1. Review of Growth Record

Among the four major functions for agriculture mentioned above the coffee sector in Honduras has performed a creditable role in generating foreign exchange earnings in the recent period. This has in turn allowed the industrial sector to draw upon the increased import capacity made possible through this contribution. Coffee has thus contributed to the process of import-substitution activity in the economy.

Tables 1 through 5 set forth the growth of domestic production, area, yields and exports for the sector for the past two decades. Tables 2 and 4 present the physical output, cultivated area, yields and exports (in quintales) from 1960 to 1982, while Tables 3 and 5 transform these data into uniform indexes that permit one to view their differential growth over time. All these data came from the Economic Studies Division of the Central Bank and, in part, from IHCAFE.

Table 1 conveniently summarizes the growth history of coffee for selected periods in the past two decades. Panel B indicates an average annual growth of output over this 22 year period of 6.2 percent per year. Furthermore, the growth in coffee yields accounted for a relatively greater part of

Table 1: Average Annual Rates of Growth of Physical Output, Area and Yields for Coffee for Selected Periods in Honduras, 1960-82

Crop Variable	Time Periods				
	1960-82 (1)	1960-70 (2)	1970-82 (3)	1970-76 (4)	1976-82 (5)
A. Calendar Year					
1. Coffee Production	6.26	5.40	6.86	9.25	4.81
2. Domestic Coffee Consumption	2.28	3.26	1.60	3.41	0.04
3. Coffee Exports	8.52	6.42	9.97	15.48	5.25
B. Crop Year					
1. Coffee Production	6.18	6.09	6.24	5.28	7.21
2. Coffee Area	2.46	3.29	1.84	1.19	1.79
3. Coffee Yields	3.71	3.02	4.21	3.35	5.07

Source: Derived from basic data reported in tables 2 and 4.

Table 2. Production, Consumption and Exports of Coffee in Honduras, 1960-1982 (in quintales)[1/]

Calendar Year	Domestic Production (1)	Domestic Consumption (2)	Exports (Col 1 - Col 2) (3)
1960	487,624	160,055	342,261
1961	452,500	163,346	277,162
1962	503,910	170,638	351,227
1963	617,295	175,929	442,177
1964	601,594	182,543	408,488
1965	722,356	187,834	540,363
1966	701,216	194,447	497,392
1967	665,785	201,061	483,544
1968	856,738	208,978	578,529
1969	717,149	213,596	524,299
1970	784,498	221,072	559,094
1971	848,196	228,810	554,027
1972	889,981	236,818	720,234
1973	1,110,529	242,738	878,550
1974	1,082,841	251,234	680,792
1975	1,199,426	261,283	1,073,717
1976	1,175,852	268,599	953,719
1977	1,127,273	273,971	792,340
1978	1,483,208	278,081	1,267,716
1979	1,646,000	212,000	1,456,000
1980	1,599,000	215,000	1,253,000
1981	1,601,000	244,000	1,484,000
1982	1,600,000	251,000	1,266,000

1/ One quintal equals one hundred pounds.

Source: Central Bank of Honduras, Department of Economic Studies.

Table 3. Indices of Production, Consumption and Exports of Coffee in Honduras, 1960-1982. (1960 = 100)

Calendar Year	Coffee Production (1)	Coffee Consumption (2)	Coffee Exports (3)
1960	100.00	100.00	100.00
1961	92.80	102.06	80.98
1962	103.34	106.61	102.62
1963	126.59	109.92	129.19
1964	123.37	114.05	119.35
1965	148.14	117.36	157.88
1966	143.80	121.49	145.33
1967	136.54	125.62	141.28
1968	175.70	130.57	169.03
1969	147.07	133.45	153.19
1970	160.88	138.12	163.35
1971	173.95	142.96	161.87
1972	182.51	147.96	210.43
1973	226.67	151.66	256.69
1974	222.07	156.97	198.91
1975	245.97	163.25	313.71
1976	241.14	167.82	278.65
1977	231.18	171.18	231.50
1978	304.17	173.74	370.39
1979	337.56	132.45	425.41
1980	327.92	134.33	366.10
1981	328.33	152.45	436.51
1982	328.12	156.82	369.89

Source: Table 2.

Table 4. Production, Area and Yields of Coffee in Honduras, 1960-1982.

Crop Year	Production (QQ)[1/]	Area (Manzanas)[2/]	Yields (Quintales per Manzana)
	(1)	(2)	(3)
1960/61	568,750	107,060	4.75
1961/62	472,885	111,181	4.25
1962/63	615,945	115,301	5.34
1963/64	639,650	119,421	5.36
1964/65	645,425	123,542	5.22
1965/66	709,894	115,670	6.14
1966/67	740,200	133,314	5.55
1967/68	772,649	136,088	5.68
1968/69	805,098	138,862	5.80
1969/70	837,547	141,636	5.91
1970/71	848,300	144,410	5.87
1971/72	890,100	147,184	6.05
1972/73	1,110,070	149,958	7.41
1973/74	1,083,000	145,710	7.43
1974/75	1,099,600	155,506	7.07
1975/76	1,117,800	158,280	7.06
1976/77	1,499,999	161,054	9.31
1977/78	1,350,000	163,828	8.24
1978/79	1,599,300	164,439	9.73
1979/80	1,415,899	175,696	8.06
1980/81	1,657,633	175,696	9.43
1981/82	1,574,349	175,696	8.96

1/ Quintales (QQ).
2/ One Manzana equals 1.8 acres or 0.7 hectares.

Sources: Central Bank of Honduras, Department of Economic Studies and IHCAFE.

Table 5. Indices of Production, Area and Yields of Coffee in Honduras, 1960-1982. (1960 = 100)

Crop Year	Production (1)	Area (2)	Yield (3)
1960/61	100.00	100.00	100.00
1961/62	92.95	103.84	89.54
1962/63	121.07	107.69	112.46
1963/64	125.73	111.54	112.76
1964/65	126.86	115.39	109.98
1965/66	139.53	108.04	129.20
1966/67	145.49	124.52	116.89
1967/68	151.87	127.11	119.52
1968/69	158.25	129.70	122.06
1969/70	164.62	132.29	124.49
1970/71	166.74	134.88	123.66
1971/72	174.95	137.47	127.31
1972/73	218.19	140.06	155.84
1973/74	212.87	136.10	156.47
1974/75	216.13	145.25	148.86
1975/76	219.71	147.84	148.67
1976/77	294.84	150.43	196.07
1977/78	265.35	153.02	173.48
1978/79	314.35	153.59	204.75
1979/80	278.30	164.11	169.68
1980/81	325.82	164.11	198.62
1981/82	309.45	164.11	188.64

Source: Table 4.

this growth than area expansion (Column 1, Panel B). It should be borne in mind that while Honduras records the lowest coffee yields of any Central American producer, within this low yield scenario, yields have improved and accounted for a greater proportion (i.e. recorded higher rates of growth) of total output than increases in cultivated area over this 22 year period.

Panel B also underscores the fact that output and exports grew more rapidly in the 1970s than in the 1960s. Yields have also been increasing at an increasing rate from the 1960s (3.02 percent) to the early 1970s (3.35 percent) to the late 1970s and early 1980s (5.07 percent). This pattern reflects the response to the coffee boom that swept Central America from the mid-1970s onwards following the massive frost that destroyed much of the traditional Brazilian supply to world markets in 1975 and 1976. It is of interest to note that increased yields played a much more critical role than increases in cultivated area in promoting the rapid growth of coffee output in the 1970s. In part this is due to starting from such a low yield base and, in part, due to the increased role of IHCAFE in promoting new varieties and practices from 1974 onwards.

In the most recent period, however, from 1979 to 1982, indices from Tables 3 and 5 show that the growth of coffee production, exports and yields have flattened out. This

again reflects the overall decline in world coffee prices and the weakening of coffee export markets from 1978 to the present, along with an unfortunate decline in Honduras' coffee quota within the International Coffee Agreement, a fact that will be commented on later. From 1979 onwards the government has prohibited any further expansion in coffee area.

As a result of the rapid growth in coffee exports from 1970 to 1982 (almost 10 percent per year as can be seen in Panel A, line 3 of Table 1), this sector rapidly increased its relative role in generating foreign exchange earnings for the economy. The share of coffee export earnings in total export earnings increased from an average of 14 percent in the 1960s (Table 6, Column 1) to 25 percent in the mid-to late 1970s.

This rapidly increasing role for coffee export earnings stands out in sharp contrast to the equally rapid deterioration of the relative share for bananas (Column 2, Table 6). Whereas banana earnings accounted for close to one-half of all export earnings in Honduras during the 1960s, (representing a contribution 2 to 4 times that of coffee), by the late 1970s it had fallen to a parity with coffee, accounting for roughly one-quarter of total exports. Thus Honduras diversified its export portfolio in the 1970s with coffee, becoming the fastest growth component within the export portfolio. The recent decline in the share of banana exports can be largely attributed

Table 6. Percentage Shares of Total Export Value for Major Export Commodities in Honduras, 1960-1982.

Year	Coffee (1)	Banana (2)	Wood (3)	Silver (4)	Meat (5)	Cotton (6)	Shrimp and Lobster (7)	Sugar (8)	Zinc (9)	Tobacco (10)
1960	19.1%	45.5%	13.3%	3.7%	1.8%	1.1%	n.a.	n.a.	n.a.	n.a.
1961	12.5	54.4	10.4	4.0	2.1	.4	n.a.	n.a.	n.a.	n.a.
1962	14.4	47.2	9.0	3.7	3.3	2.7	n.a.	n.a.	n.a.	n.a.
1963	17.3	40.1	10.3	4.3	3.5	3.1	n.a.	n.a.	n.a.	n.a.
1964	17.5	34.3	11.0	3.2	2.6	3.9	n.a.	n.a.	n.a.	n.a.
1965	17.6	42.0	8.0	2.9	2.6	4.9	n.a.	n.a.	n.a.	n.a.
1966	14.0	49.2	7.5	2.2	2.8	4.1	n.a.	n.a.	n.a.	n.a.
1967	9.2	51.6	8.0	2.7	2.9	3.4	n.a.	n.a.	n.a.	n.a.
1968	11.9	45.5	8.2	4.4	2.7	2.2	n.a.	n.a.	n.a.	n.a.
1969	11.1	44.7	9.2	2.9	5.4	2.0	n.a.	n.a.	n.a.	n.a.
1970	14.5	42.0	9.0	3.1	5.3	.6	.8	.7	2.4	1.2
1971	12.3	50.6	10.2	2,2	6.6	.3	1.8	.9	2.6	1.1
1972	13.3	44.3	13.3	2.5	7.8	.3	1.2	1.0	1.8	1.1
1973	18.5	36.3	15.1	2.6	8.4	.6	.9	-	2.8	1.1
1974	15.2	27.6	14.1	4.5	10.9	1.1	1.4	1.6	3.6	1.5
1975	19.2	20.8	13.1	3.7	6.2	1.5	3.5	2.3	5.5	1.9
1976	25.1	26.7	10.2	3.4	6.4	1.1	3.1	.6	3.0	1.5
1977	32.8	25.3	9.2	2.3	4.2	1.3	3.0	.7	2.5	1.8
1978	34.7	23.4	7.0	1.8	6.4	2.6	2.6	.9	2.2	1.5
1979	26.9	27.3	5.7	2.3	8.3	1.5	3.3	1.8	1.5	1.7
1980	24.8	27.7	4.4	3.9	7.4	1.6	2.9	3.6	1.2	1.7
1981	22.9	28.3	5.7	2.1	6.2	1.7	3.5	6.2	1.6	1.8
1982	23.2	33.0	6.8	1.7	5.1	1,0	4.2	3.7	2.3	1.6

Source: Central Bank of Honduras, Department of Economic Studies.

to the devastation of Hurricane Fifi in 1974 and the initial negative production impact associated with the transfer of some multinational banana plantations into domestic hands through agrarian reform measures in the mid-1970s.

The coffee sector has also provided growing public sector savings through its contribution to government revenue. Honduras, along with most LDCs, finances most government expenditures through indirect taxes on imports, exports and domestic commerce. Table 7 illustrates how indirect taxes on imports and commercial activity have generated most of the revenue collected by the government.

Export taxes (Column 4), on the other hand, played an unusually insignificant role as a source of government revenue up to 1976. This evidence allows one to conclude that the multinational banana plantations were very lightly taxed in comparison to other sources of revenue. Whereas bananas predominated as the major contributor of foreign exchange in Honduras up to the mid-1970s (Table 6), export taxes, other than coffee, (Column 4 minus Column 5 in Table 7), accounted for little more than one percent of total government revenue. Clearly Honduras was extracting very little surplus from the multinational export activity in bananas to reinvest in the rest of the economy.

The growing role of coffee, however, changed this picture. From 1975 to the present, tax revenue from coffee activity grew markedly (Column 5, Table 7). Table 8 points out how coffee tax receipts grew as a percent of total government

Table 7. Selected Tax Receipts and Central Government Revenue in Honduras, 1960-1982 (000,000 lempiras).

Calendar Year	Income (1)	Property (2)	Import (3)	Export[1] (4)	Coffee (5)	Commercial (6)	Other (7)	Total Tax Receipts (8)	Total Gov. Rev.[2] (9)
1960	L.10.4	L.0.8	L.34.5	L.3.4	L.2.6	L.18.9	L. .2	L.68.4	L.73.0
1961	9.5	0.7	35.1	3.1	2.2	18.9	.1	67.5	74.1
1962	9.2	0.7	36.6	3.7	2.7	20.5	.9	70.7	76.9
1963	11.3	0.8	35.7	4.2	3.4	2.0	.0	72.0	78.9
1964	12.2	1.1	35.6	4.3	3.1	3.7	.1	83.9	90.4
1965	16.7	1.7	40.9	5.3	4.2	3.0	.1	97.7	108.8
1966	26.9	1.4	40.5	5.1	3.8	34.9	.1	108.9	121.6
1967	34.0	1.4	41.2	4.4	3.7	3.0	.1	118.1	129.4
1968	39.3	1.6	43.4	6.5	4.4	43.4	.1	134.3	148.1
1969	43.2	2.8	39.0	5.6	4.0	49.0	.1	139.7	153.6
1970	42.5	3.0	44.7	5.6	4.3	62.8	.1	158.7	176.0
1971	41.9	2.2	48.0	6.2	4.3	61.5	.1	159.9	180.1
1972	43.5	3.2	51.9	6.1	5.5	6.3	.1	172.1	192.6
1973	46.1	2.4	56.4	11.4	6.7	76.4	.1	192.8	218.4
1974	65.5	2.2	64.9	14.8	5.2	80.8	.1	228.3	252.6
1975	74.5	2.9	61.8	22.3	8.3	85.6	.2	247.3	283.3
1976	73.4	2.8	80.4	49.1	26.7	105.1	.2	311.0	356.1
1977	90.8	4.1	113.4	91.0	55.4	125.8	.2	425.3	468.0
1978	123.2	4.6	129.6	95.1	64.9	12.5	.2	482.2	512.7
1979	148.6	4.5	146.0	111.0	60.5	163.3	.3	573.7	633.3
1980	228.9	7.2	148.7	129.5	64.9	180.9	.4	695.6	756.7
1981	177.4	7.1	201.8	112.5	39.0	194.2	.6	693.6	738.6
1982	198.7	7.4	178.2	93.3	41.6	228.8	.4	715.4	770.1

1/ Includes coffee tax receipts.

2/ The difference between total tax receipts (column 8) and total government revenue (column 9) refers to non-tax revenue, income transfers to the central government from other public sector entities and miscellaneous rents, fees, etc.

Source: Monthly Bulletins of the Central Bank and Central Bank Yearbook; IHCAFE.

Table 8. Coffee Tax Receipts as a Share of Total Export Taxes and Total Central Government Revenue.

Calendar Year	Coffee Tax Receipts as % of Total Export Taxes (1)	Coffee Tax Receipts as % of Total Central Govt. Revenue (2)
1960	76.47	3.6
1961	70.97	3.0
1962	72.97	3.5
1963	80.95	4.3
1964	72.09	3.4
1965	79.25	3.9
1966	74.51	3.1
1967	84.09	2.9
1968	67.69	3.0
1969	71.43	2.6
1970	76.78	2.4
1971	69.35	2.4
1972	90.16	2.9
1973	58.77	3.1
1974	35.13	2.1
1975	37.22	2.9
1976	54.38	7.5
1977	60.88	11.8
1978	68.24	12.7
1979	54.50	9.6
1980	50.12	8.6
1981	34.67	5.3
1982	44.58	5.4

Source: Derived from data in Table 7.

revenue from the mid-1970s onwards. Combined evidence from Tables 6 and 8 highlight another interesting feature of coffee's relative contribution to export earnings and tax receipts. Although coffee export earnings were relatively minor up to the mid-1970s (Table 6), nevertheless they accounted for an overwhelming share of the total export proceeds (Table 8, Column 1). Paradoxically, as coffee exports grew in the late 1970s, their share of total export tax receipts declined. These findings underscore how lightly bananas were taxed during their heyday in Honduran export activity (i.e. up to the mid-1970s); and, how important coffee tax receipts have been throughout as a source of government revenue. Secondly, it is clear that other export activities besides coffee are beginning to make a growing contribution to export tax receipts from the mid-1970s onwards, including bananas. In short, coffee earnings have been an important source of export earnings throughout this period increasing its relative role as a source of government revenue during the coffee boom due to the growth of exports, discussed earlier, and an increase in the export tax per quintal from 7.67 lempiras in 1974 to rates ranging between 3 and 7 times that level in the late 1970s (Table 10, Column 3).

This outflow of resources from the coffee sector to the rest of the economy has been accompanied by an equally impressive inflow of funds through the channeling of credit to coffee producers from both private and public sector banks, primarily

from Occidente, Sogerin and BANADESA. In addition, loans to coffee exporters and coffee cooperatives from these same sources have played an important role in allowing additional liquidity to filter down the hierarchy of marketing channels to producers. This will be discussed further, shortly.

The real value of credit to producers measured either as a flow (i.e. new loans) or a stock (i.e. outstanding balances) had been increasing in size until 1977 (Table 9, Columns 1 and 2). Moreover, from 1976 to 1979 the flow of coffee finance represented unusually high percentages of the value of coffee output, reaching 91 percent in 1977 (Table 9, Column 5). Coffee is the crop receiving the most generous financing through the agricultural portfolio in the banking system. From 1977 to the present, however, the annual flow of new loans to coffee producers has fallen. From 1979 to the present it has fallen sharply in real terms (Column 2, Table 9). In 1976 new loans to finance coffee represented 91 percent of the annual value of coffee output in that year. By 1981 this share had fallen precipitously to only 20 percent. Clearly in the earlier period, given the fungibility of finance, a good part of the financing for coffee was very likely diverted off to other uses. In the later period the sharp contraction in liquidity represents a serious constraint on coffee activities. This reflects the growing shortage of liquidity in the economy as a whole in the early

Table 9. Selected Measures of Coffee Loan Activity and Credit Output Ratios for the Coffee Sector in Honduras, 1960-1982 (in thousands of lempiras).

Year	Real Value of Outstanding Credit Balances for Coffee[1]/ (1)	Real Value of News Loans for Coffee (2)	Real Value of Coffee Output (3)	Credit Balances as % Value of Coffee Output (Col.1/Col.3) (4)	New Loans as % of Value of Coffee Output (Col.2/Col.3) (5)
1960	L. 4,952	L. 5,065	L. 31,262	15.84%	16.20%
1961	5,456	4,766	26,779	20.37	17.80
1962	5,079	6,137	28,809	17.62	21.30
1963	5,807	6,887	33,420	17.38	20.61
1964	6,518	7,624	40,186	16.22	18.97
1965	7,801	8,703	47,914	16.28	18.16
1966	10,327	9,766	44,177	23.38	22.11
1967	11,780	10,289	37,131	31.73	27.71
1968	11,464	11,865	46,401	24.71	25.57
1969	12,208	22,404	36,209	33.72	61.87
1970	14,111	30,334	53,267	26.49	56.95
1971	16,837	29,499	44,480	30.91	54.50
1972	13,508	24,222	52,580	25.69	46.07
1973	11,420	27,212	72,673	15.71	37.44
1974	15,513	21,836	76,960	20.16	28.30
1975	15,445	22,394	63,474	24.33	35.28
1976	24,488	76,671	83,509	29.33	91.81
1977	32,106	113,997	148,721	21.59	76.65
1978	30,431	84,514	148,692	20.47	56.84
1979	36,397	67,568	120,125	30.29	56.25
1980	31,551	34,523	114,664	27.52	30.11
1981	22,931	18,197	90,969	25.21	20.00
1982	30,518	29,230	86,400	35.32	33.83

1/ The real values are nominal values deflated by the implicit GDP deflator (1966=100).

2/ Real value of coffee output has been estimated by multiplying data on domestic production (in Table 2) by the real farmgate price (column 5 of Table 10).

Source: Central Bank of Honduras, Statistical Bulletin, various years for data on the nominal value of coffee loans.

1980s, and the poor world market conditions for coffee exports in the world recession at that time.

This overview of the coffee sector reveals that coffee has been an important source of growth for the Honduran economy. Coffee exports contributed substantially to the foreign exchange earnings needed for continued growth of capital good and consumer good imports. Coffee tax receipts became an important source of government revenue in the mid-1970s through the growth of the tax base during the export boom and an increase in the tax levied on coffee exports. However by the early 1980s the strength of this fiscal support had weakened in the face of declining export growth. The promising growth impulse of the late 1970s with its accompanying upward shift in yields has now flattened out. It is useful now to investigate the market structure and pricing parameters affecting coffee producers during this more recent period and the policies that have been devised to deal with this slowdown in the growth of the sector.

2. The Marketing Environment and Pricing and Marketing Margins

The local marketing structure for coffee can best be described as a pyramid. As one approaches the final stages or upper tier of the marketing chain the number of intermediaries decline in number. At the first or bottom level of this network is the producer farmer. The actual number of

coffee farmers in Honduras is unclear. Estimates range from 40,000 and upwards. The next layer consists of the first stage of wholesalers who purchase coffee from producers. This wholesaler can take on a variety of forms, an agent for an exporter, a coffee cooperative or a private wholesaler (i.e. "coyote" large or small) with no formal connections with exporters. Officials of IHCAFE estimate that approximately 80 percent of the coffee marketing activity is carried out through these private wholesalers or coyotes. They can then sell directly to an export firm (typically in San Pedro Sula) or, more likely, sell their coffee to other larger intermediaries or truckers who in turn will deal with the exporter. Coffee officials state that it is not unusual for much of the coffee harvest to pass through four to five intermediaries before it reaches the exporter. At each stage in the process the intermediaries decline in numbers and become larger in the volume of coffee they handle.

The greater the number of layers of intermediaries the higher the real costs of marketing as markups accompany transactions at each stage. Within this process farmers will frequently consign their coffee to intermediaries and receive payment later after the coffee has been successfully sold for export. For those who have previously borrowed from the intermediary, repayment is deducted before payment. Abundant liquidity from the banking system for the financing of the

seasonal harvest through exporters can create conditions for prompt payment as the exporter can pay the intermediaries who in turn can either finance or immediately pay for the crop from producers. When there is a shortage of liquidity for working capital purposes, crops become consigned to truckers and shippers with actual payment delayed until export sales are consumated.

Information on the pricing environment offers an insight into the marketing margin characteristic of the sector. This can be documented through price series on FOB export prices and farmgate prices. The farmgate price has been estimated by technicians in the Economic Studies Department of the Central Bank. The procedure followed estimates the marketing costs (i.e. transportation and losses in transit) in several regional settings in the country. These estimates are then subtracted from the regional wholesale coffee prices to arrive at the estimated farmgate price. The separate regional estimates are then weighted and averaged for a national aggregate farmgate price series.

Table 10 sets forth the nominal FOB and farmgate prices as well as the export tax per quintal. The FOB and farmgate prices are then corrected for inflation (using the GDP deflator) and presented in a real price series in Columns 4 and 5. As one would expect there was a substantial rise in real FOB and farmgate prices from the inception of the coffee boom in the mid-1970s. However it is also clear that

Table 10. Annual Average FOB Export Prices, Farmgate Prices and Export Tax per Quintal for Coffee, 1960-1982.

Year	FOB Export Price (per quintal)	Farmgate Price (per quintal)	Export Tax (per quintal)	Real FOB Price[1/] (per quintal)	Real Farmgate Price[1/] (per quintal)
	(1)	(2)	(3)	(4)	(5)
1960	L. 69.08	L. 55.00	L. 7.67	L. 80.72	L. 64.51
1961	65.10	52.00	7.67	74.09	59.18
1962	65.10	52.00	7.67	71.57	57.17
1963	63.24	50.00	7.67	68.48	54.14
1964	83.35	65.00	7.67	85.65	66.80
1965	81.99	65.00	7.67	83.67	66.33
1966	79.87	6.300	7.67	79.87	63.00
1967	76.17	58.00	7.67	73.25	55.77
1968	72.88	57.00	7.67	69.25	54.16
1969	68.87	55.00	7.67	63.22	50.49
1970	96.62	75.72	7.67	86.64	67.90
1971	83.94	72.88	7.65	73.98	64.23
1972	75.68	69.95	7.67	63.92	59.08
1973	108.85	82.56	7.67	86.27	65.44
1974	129.27	100.16	7.67	91.74	71.08
1975	106.03	81.50	17.72	69.03	52.92
1976	210.37	118.61	27.98	125.95	71.62
1977	424.50	250.00	69.96	224.01	131.93
1978	332.89	203.20	51.23	164.24	100.25
1979	270.38	159.17	41.53	123.98	72.98
1980	325.79	172.79	51.78	135.21	71.71
1981	230.56	143.93	26.12	91.01	56.82
1982	241.87	147.98	32.83	88.25	54.00

1/ Nominal FOB and farmgate prices deflated by the implicit GDP deflator (1966 = 100).

Source: Central Bank of Honduras, Department of Economic Studies and IHCAFE.

the real FOB price series (Column 4) rose much more markedly and fell less quickly than the real farmgate price series (Column 5) after 1975. By 1981 both price series had returned to their pre-boom levels.

Table 11 recasts this price data to reflect the changing margin between the FOB and farmgate prices directly. Column 1 presents these findings for the period 1960-82. It highlights the fact that the farmgate price generally accounted for 75 to 80 percent of the FOB price from 1960 to 1975. However this fairly constant share declined abruptly in 1976 and has remained much lower from 1976 to 1982 (55 to 60 percent) than in any of the previous periods leading up to 1976. Thus, after the readjustment from the sharp price rise in the mid-1970s and then comparable price fall by the early 1980s, producers prices (as a percent of FOB prices) had been scaled back some twenty percentage points below their historical levels of the pre-1976 period.

One possible explanation for this growing wedge between the farmgate price and the FOB price centers on the growing role of government export taxes. As seen in Table 10, export taxes per quintal for coffee did rise from 1976 onwards as the government understandably attempted to capture some of the windfall gains accruing to the coffee sector from the coffee bonanza. However, as Column 2 of Table 11 illustrates, the export tax as a percent of the FOB price averaged 10.6

Table 11. Selected Indicators Reflecting the Impact of Prices, Taxes and Implicit Marketing Margin for Coffee Farmers in Honduras, 1960-82

Year	Coffee Farmgate Price as % of FOB Price (1)	Coffee Export Tax as a % of FOB Price (2)	Implicit Marketing Margin as a % of FOB Price[1] (3)	Effective Exchange Rate[2] (lempiras per dollar) (4)
1960	79.6%	11.1%	9.3%	L. 2.33
1961	79.9	11.8	8.3	2.28
1962	79.9	11.8	8.3	2.20
1963	79.1	12.1	8.8	2.17
1964	78.0	9.2	12.8	2.06
1965	79.2	9.4	11.4	2.04
1966	78.8	9.6	11.6	2.00
1967	76.1	10.0	13.9	1.93
1968	78.2	10.5	11.3	1.90
1969	79.7	11.1	9.2	1.83
1970	78.4	7.9	13.7	1.79
1971	86.8	9.1	4.1	1.76
1972	92.4	10.1	-2.5	1.68
1973	75.8	7.1	17.1	1.58
1974	77.5	5.9	16.6	1.41
1975	76.9	7.3	15.8	1.29
1976	56.4	13.3	30.3	1.19
1977	58.9	16.4	24.7	1.05
1978	61.0	15.3	23.7	0.98
1979	58.7	15.4	25.9	0.91
1980	53.0	15.9	31.1	0.83
1981	62.4	11.3	26.3	0.78
1982	61.2	13.6	25.3	0.72

1/ Implicit marketing margin is defined as the residual remaining after subtracting the farmgate price and taxes from the FOB price (100 minus columns 1 and 2).

2/ Effective exchange rate is the nominal average annual exchange rate divided by the implicit GDP deflator (1966 = 100).

Source: Derived from basic price data reported in Table 10.

percent in the 1960s, 11.4 percent in the 1970s and only 14.5 percent from 1976 to 1982, the period in which the farmgate price share fell so sharply. Indeed, after accounting for the farmgate price and the tax share, the resulting marketing margin (Column 3) averaged roughly 10 percent in the 1960s, 20 percent in the 1970s and about 27 percent in the period 1976-82. Clearly this marketing margin has been widening much more rapidly than the minor increase in the tax share alone.

Assuming that the estimation procedure for the farmgate price described above is carried out correctly and accurately, there are two possible explanations for this widening marketing margin. First, one could argue that there has been a growing concentration of market power among the marketing agents of the coffee sector leading to a decline in competitive pricing and an increase in the marketing margins for the intermediaries, reflecting this growing market power. This oligopsony reasoning could explain why farmer-producers are receiving lower and lower shares of the FOB price. Unless or until separate marketing studies are undertaken to determine the validity of this growing "market power" argument, it is difficult to test this hypothesis directly without pricing and marketing information for the leading export firms and key intermediaries. The most one can do is infer the probable existence of some degree of market power within the intermediary hierarchy from the evidence on gross margins in Table 11.

However, one cannot determine whether there has been a growing concentration of marketing shares among the leading intermediaries or whether the "net" marketing margins have increased. Casual empiricism would suggest that there is a relatively small number of export firms and key shippers that predominate in the upper tier of market intermediaries, between 10 to 12 in number. It would not be surprising that they would be in a position to exercise some market power in their price negotiations with intermediaries with whom they deal underneath them. These intermediaries, in turn, would pass on these negotiated prices (including their own margins) to smaller intermediaries and producers. The issue at hand here is what caused this marketing wedge to widen from the mid-1970s onwards.

The second argument would explain the widening marketing margin not so much in terms of increasing oligopsonistic market power, but more in terms of existing market power being sufficient to allow key export and marketing firms to filter out some of the rapid price increases in the post-1975 period, thereby increasing their profit margins from the boom in world markets. At the same time farmers were also benefiting from a rise in this same period. What we are talking about here is the relative distribution of the windfall profits derived from the coffee boom and it is not surprising that while both parties gained, the top layer of intermediaries no doubt gained more than the producers.

The next issue at hand is an explanation for the asymetric adjustment in the marketing margin that left coffee producers relatively worse off in 1981 and 1982 than they had been in the early 1970s. Thus in the adjustment on the downward side of the price cycle producers were unable to reestablish their former relative share of the now lower FOB price. A probable explanation here lies in the rising real costs of marketing over the past eight years. The real costs of fuel rose sharply after 1974-5 and imports of transportation vehicles and spare parts became more difficult and costly by the late 1970s. The most likely scenario is that the leading marketing agents in the coffee sector were successful in cushioning their margins during this period of a downward adjustment by passing on the incidence of their rising costs to farmers in the form of lower farmgate prices for coffee as reflected in Column 1 of Table 11.

This second argument does not deny the existence of some degree of existing market power and that some form of administered pricing naturally results from this market power. However, the argument emphasizes that the probable cause of the initial increase in the gross marketing margin lies the existing market power being sufficient to allocate a growing share of coffee boom profits to non-producers while in the downswing this market power allowed market agents to pass on some or all of the growing real costs of marketing to producers in the form of lower farmgate prices. From the

producers perspective it makes little difference which explanation prevails. In the end the net result for farmers is a lower farmgate price (as a percent of FOB prices) than that which would have ruled in a more competitive pricing environment. In a more competitive marketing setting the increased costs of marketing would have reduced the net profit margins of intermediaries with less of this rise in costs passed on down to producers in the form of lower offer prices.

Another important element negatively affecting producer incentives is the growing overvaluation of the exchange rate. The real exchange rate (the nominal rate divided by the implicit GDP deflator) is presented in Table 11, Column 4 for this period. Alternative purchasing power parity formulae could be drawn upon to estimate other patterns of overvaluation. Regardless of the method chosen, it is difficult not to conclude that a growing overvaluation of the lempira has occurred, particularly, in the last eight years. This, of course, becomes an implicit tax on coffee producers and exporters alike.

Finally the government tax on coffee constitutes an additional policy parameter affecting producer incentives. However, in this case the burden of real taxes, deflated for inflation have not been particularly high although they have increased some in the more recent time period. This was to be expected in the face of a coffee boom with the desire to capture some of the rise in profits for reinvestment in other government programs.

In conclusion the pricing patterns and marketing margins that have emerged from the local market structure for marketing coffee have penalized coffee producers in relative terms. During the upswing of the price cycle in the coffee boom both producers and intermediaries gained through the rise in real prices though the latter experienced a greater relative gain. In the downswing producers have found themselves worse off than their position on the eve of the coffee boom, both in terms of real farmgate price and in terms of their relative share of FOB price.

3. Recent Policy Initiatives and Institutional Change

The most important governmental institution in the coffee sector is the Instituto Hondureno de Cafe (IHCAFE). This institution was founded in 1971 to provide marketing, credit and technical assistance to coffee farmers. IHCAFE also provides for the marketing of coffee for domestic consumers and handles the negotiations for Honduras' quota in the International Coffee Organization (ICO). The funding for these services comes from two sources. One source is the registration of coffee for export. IHCAFE currently receives 5.20 lempiras for each quintal of coffee registered for export. The second source of funds comes from the sale of coffee to the domestic market. All coffee that is marketed is delivered to an exporter. To insure that a sufficient amount of coffee is available to the local market, IHCAFE requires that 8 percent of all coffee

delivered to exporters be surrendered to them, i.e., out of 100 quintals, 8 quintals would be sent to domestic roasters and 92 quintals would be exported. These 8 quintals would be purchased at a price of 90 lps. (currently) and sold to domestic roasters at a price of 102 lps. This interchange of coffee from exporters to domestic roasters is handled by the "Fondo de Intercambio de Calidades" (FIC). The FIC is so named since the 8 percent that is sold to the domestic market can be of poorer quality than that which is exported. The producer determines which 8 bags per 100 will be interchanged. At present these domestic transactions place an implicit tax on coffee consumers because roasters can purchase coffee at 60 lps. per quintal. Even though these transactions are technically illegal, the mechanism to enforce this policy does not exist.

IHCAFE also plays an important role in promoting the exports of coffee. Important here is the issue of quotas. Before the creation of the International Coffee Organization (ICO), Honduras sold all of its coffee to what later became member countries of the ICO. In 1980, when the ICO was reactivated, quotas were set for producing countries in order to keep world coffee prices high. Honduras was still able to sell all of its coffee to member countries for the first two years of the ICO era. However, during the latest round of negotiations, Honduras' quota was cut from 1,252,000 bags to 1,007,000 bags (one bag = 46 kilos). This meant that

Honduras could not export all of its coffee at higher prices to ICO member countries. There are several conflicting reports as to why Honduras' quota was cut. One explanation is that falling world prices necessitated that quotas be decreased to help raise world prices. Another belief is that the new negotiating team was inexperienced and did not get the best deal for Honduras (the new chief of the negotiating team did not bother to go to London). The result has been that Honduras has had to sell more of its coffee to non-member countries at lower prices.

Currently, 53 percent of the coffee exported goes to member countries, 39 percent to non-member countries and 8 percent to the domestic market. Further, no exporter can gain an advantage over another because IHCAFE dictates that of every 100 quintals registered for export, 53 are allowed to be exported to member countries, 39 must be exported to non-member countries, and 8 go for the domestic market. The ramifications of this action are severe. First, exporters and ultimately farmers are subsidizing IHCAFE in the hopes of gaining better marketing services (i.e. prices and quotas), however, the opposite result occurs. With a smaller quota not only are FOB prices reduced, but farm prices and incomes decline as well. Second, the government receives no tax receipts from the exports of coffee to non-member countries. Third, foreign exchange earnings are reduced since lower FOB

prices and quotas means less foreign exchange earnings. Thus, an institution that was primarily set up to enhance the sector's export performance has in recent years probably exaccerbated its decline through ineffective quota negotiations.

IHCAFE was also designed to help improve yields and productivity within the coffee sector. Evidence suggests IHCAFE has apparently made a contribution here. We have seen that yields have been increasing substantially in the 1970s. Coffee yields in other Central American countries are generally higher than in Honduras (Table 12). In El Salvador and Costa Rica, for example, yields are twice the level of Honduras. However Table 12 makes it clear that Honduras has experienced the most rapid increase in yields among all the countries in Central America. Prior to the creation of IHCAFE in 1971 agronomical and related research activities were minimal as bananas dominated the export picture. The decade of the 1970s saw increased emphasis on the classic small farmer crop in Honduras, coffee. The introduction of new varieties and development of a national extension network was undertaken with generally promising results despite the obvious difficulties of servicing a widespread small farmer clientele. However the recent falling off of yield increases implies that new challenges face the IHCAFE staff to stem the growth of coffee rust and expand the reach of new inputs and varieties to more farmers. However recent budget cuts

Table 12. Average Coffee Yields[1/] for Central American Countries, 1969-1980

Countries	1969-71	1978-80	% Change in Yields
Costa Rica	870	1,242	4.7
El Salvador	1,122	1,022	-8.9
Honduras	392	572	45.9
Nicaragua	454	598	31.7
Guatemala	544	630	15.8

1/ Yields are defined as kilograms per hectare.

Source: FAO Production Yearbook, Vol. 34, 1980, Various Tables.

in IHCAFE have reduced the number of extension agents available to service the coffee sector and the retooling of the remaining extension agents into part time credit officials may have affected their performance in their regular extension duties. This is being done to facilitate the implementation of a new credit program under the auspicies of IHCAFE and USAID.

This new credit program is designed to raise coffee yields. The problem of low yields is viewed as a direct impact of the coffee rust that has recently spread through Honduras. The IHCAFE-USAID sponsored program is designed to help farmers rehabilitate their coffee farms. The program is presently designed to reach 3,000 small farmers, roughly 5 to 10 percent of all coffee farmers. Participants are chosen by the extension staff in conjunction with the "headman" in each town or area serviced. The loans are issued by BANADESA, BANHCAFE and Banco Occidente at an interest rate of 17 percent (in 1983). Only time will tell whether there is a tradeoff in using extension agents as loan officials. Given the heavy amount of paperwork involved and the supervisory aspect the agents are expected to pay in monitoring and recovering loans, the technical extension aspect may not receive as much attention as it otherwise would. Farmers not in the program will also suffer as the current body of extension agents will become primarily concerned with their credit clients. Credit programs in other countries dealing with similar monocrop programs have met with unpromising results,--with little

Table 13. Change in the Components of the Interest Rate Charged in the IHCAFE/USAID Coffee Rehabilitation Program in Honduras, 1983.

Interest Rate Components	Old Program (1)	New Program (2)
Participating Bank	3.0%	6.0%
Reserve	6.5	4.5
Aval	2.0	0.0
Central Bank	0.5	0.5
USAID	2.0	2.0
IHCAFE	3.0	4.0
Total Interest Rate to Borrower	17.0%	17.0%

Source: USAID, Tegucigalpa

increase in output and poor loan repayment. Moreover, given that the real rate of return to coffee production has been declining in recent years, there may be little incentive by farmers to undertaken rehabilitation even if credit can be obtained. Thus, the possibility exists that current credits may be used in other crop enterprises or for consumption.

Another feature of this program is the role of private banks and public banks in the credit program. Table 11 contains data on the breakdown of the interest rate returns to various sponsors of the program both before and after the recent inclusion of Banco Occidente, a private bank, into the program. Before the inclusion of Banco Occidente, the banks (mainly BANADESA) received a lower share of the interest rate, but allegedly benefited from an aval for bad debts held by IHCAFE. These avals are essentially worthless as BANADESA has discovered. Banco Occidente, being more profit oriented, successfully argued to have the avals drawn into each participating bank's share and further negotiated the right for participating banks to control their own reserves for bad debts and, in the meantime, be free to lend out these reserves at the going ceiling rate of 19 percent. BANADESA, being a public institution, had been less sensitive to these issues perhaps feeling they could draw funds from public sources whenever they had to make up for poor loan recoveries. Banco Occidente also insisted

that the nurseries with the new plants be located close to the coffee farms serviced to reduce the transactions costs for farmers to purchase and transplant young seedlings. In the end the participation of a key private bank in the program did much to restructure the operating procedures in a more viable direction.

In short the problem of low yields is being dealt with for the most part by increasing credit to farmers. The problem of high marketing margins and low farmgate prices is also being handled through increased credit, largely to exporters. These actions grow out of a perception of the marketing problem being viewed as a lack of liquidity in the sector. Increased liquidity will presumably allow exporters and wholesalers to pay cash and possibly a higher price to farmers. This credit expansion is being undertaken in part by a bank set up to deal solely with the coffee sector--BANHCAFE. BANHCAFE is directly financed by a 1.66 lps. "tax" on each quintal delivered for export. Loans are then made to the coffee sector (largely to export firms and marketers) from these funds. These loans are considered to be less risky than producer loans and the resultant liquidity is more easily injected and widely disseminated throughout the sector to producers by this trickle-down method. This is efficient and equitable only if more money is put back than is taken out. This implies that loans should generate positive rates of return over time (i.e. high loan recoveries with realistic interest rates) otherwise the bank will be decapitalized

through delinquency and default. BANHCAFE apparently realizes this as they have begun to diversify their portfolio into non-coffee loans. Currently, 80 percent of the portfolio is tied up in the coffee sector. However, informal conversations with BANHCAFE officials implied that non-coffee loans (i.e. 20 percent of their portfolio) account for 90 percent of their profits. This implies that non-coffee enterprises are far more profitable than coffee. No private bank based on deposit mobilization would ever concentrate its portfolio so heavily into such a current low rate of return area as coffee. BANHCAFE however has a certain obligation to service coffee loan demand since the coffee tax is its main source of funds. BANHCAFE's efforts no doubt relax the liquidity constraint for the sector, but it is at best a holding action until the low rate of return that exists in coffee production is improved through a recovery of world coffee markets and an improvement in yields.

4. Conclusions

The main conclusions of this study highlight the generally positive performance of the coffee sector in Honduras in providing a growing amount of foreign exchange, government revenue and capital for the rest of the economy to draw upon in its current path of economic growth. The sector grew appreciably during the 1960s however it was the decade of the 1970s that saw a marked gorwth of output, exports and

improved yields for the sector. This growth eclipsed that of other export activities with the coffee boom of the mid to late 1970s propelling the essentially small farmer coffee sector ahead of the plantation oriented banana sector as the principal foreign exchange earner in the economy.

Nevertheless by the late 1970s and early 1980s, the rapid growth of output, exports and yields flattened out in the face of a weakening world market for coffee. This decline in real prices was also associated with a marked increase in the marketing margin between the farmgate price and the FOB price thereby worsening the relative position of producer farmgate prices as a percent of FOB prices. This strongly suggests a relatively inefficient internal marketing structure that prevents rapid price rises from being passed on to producers as quickly as to other elements in the marketing chain and allows, in the downward price cycle, a more rapid decline in farmgate prices than FOB prices.

In the last five years coffee farmers have been implicitly and explicitly penalized due to a deterioration of the world coffee market, a still inefficient domestic marketing structure that apparently places high adjustment costs on producers, a growing overvaluation of the exchange rate and government taxes on exports. This accounts for the current levelling of previously promising output and yield performances in the 1970s.

Reinforcing the recent decline has been the performance of IHCAFE. This institution was designed to enhance the coffee

sector's performance, but has contributed to its stagnation through less effective quota negotiations in the ICO. This poor international marketing performance stands out in contrast to its apparently effective technical assistance, given the rapid growth in yields throughout the 1970s. In the most recent years IHCAFE, along with other policymakers, believe that only through an expanded supervised credit program can the sector become more viable. This also explains why a portion of the currently reduced extension staff is being retrained to become part time credit agents. This credit program will only reach a select subset of farmers in Honduras in an attempt to improve the still low rate of return to coffee. The main policy response to the marketing system has been to increase credit to exporters and have it trickle down to the farmers through the intermediary network. Attempts to increase credit is consistent with a recent Ohio State University report that suggests there is a credit shortage in the entire agricultural sector. However, increasing credit to the coffee sector is not the primary solution for the low rate of return that exists for producers in this sector. More agronomical research and a better staffed and larger extension service is needed for this effort.

How should the rate of return to coffee be increased? Three ways come to mind. First, effective technological change is needed to raise farm productivity so that at existing prices farmers can be competitive and earn profits.

However, this leaves in place the inefficient marketing structure. Another approach might emphasize an increased role for the government to establish a government marketing board to compete with private buyers. IHCAFE (or some equivalent entity) would then become an important buyer and exporter of coffee in Honduras, with the intention of insuring that farmers receive a higher price than is currently paid. This approach has been tried in many other lesser developed countries with generally disasterous results. Farmers are usually worse off under these government dominated marketing schemes. A better approach would emphasize ways to make the existing private marketing channels more efficient and competitive so that a greater proportion of the FOB price gets transformed to the farmgate price. A third approach would increase the value of nonfood agricultural exports by raising the opportunity cost of resources used in coffee exports. A way to accomplish this would be by increasing the value of these same labor and material resources used in domestic foodstuffs (i.e. promoting increases in productivity in basic grains). Thus, resources used in coffee production would have to be more productive in order for farmers to meet their higher alternative resource cost-use. This has benefits for the rest of Honduras, as increased productivity of resource use will mean less resources need to be tied up in coffee production and can be transferred to other sectors in the economy. However, this may be met with resistance by Honduran

policymakers who are putting more resources into the coffee sector and have yet to believe that a large amount of resources (i.e. labor) can be transferred out of coffee. However, this natural release of resources is a more efficient and equitable transfer than the current methods of resource extraction--built on inefficient marketing, an overvalued exchange rate and government taxation. The coffee sector has the ability to contribute to continued growth of Honduras. However, the sector cannot meet these contributions when the methods of resource transfer impact negatively on producer incentives and technological change.

5. Future Research

There are three areas identified for future research. The first item is to better understand the current marketing arrangements that exist for coffee within Honduras. The various credit and price relationships that are present at different stages of the marketing chain need to be explored further so that the existing data base can be improved and more satisfactory insights gained into the market imperfection within the marketing area. The analysis would highlight which improvements could be undertaken at the proper place in the chain. The second step would be to identify and evaluate the potential for more profitable uses of resources currently employed in the coffee sector by coffee farmers. This would enable Honduran policymakers to locate and support those

enterprises that have a higher rate of return than coffee and hence earn or save more foreign exchange than coffee. Further, those enterprises that are more labor intensive could also be identified so that unemployment is not a factor in the natural movement of resources. A third thrust could investigate the bottlenecks to technological change in the sector and why yields are still not on par with other Central American countries. Technological breakthroughs could be an important means to release resources to other sectors as well as improve productivity and welfare for coffee producers.

II. BASIC GRAINS

1. Introduction

We next turn our attention to the basic grains sector, corn, beans, rice and sorghum. This sector has grown in importance in domestic policymaking for agriculture in the past decade. It is the preeminent small farmer crop area in the Honduran economy. As such it has received much attention in the agrarian reform initiatives and represents the principal crop activity on many of the recently created reform group entities in the countryside. A national network of extension agents has been established in the Ministry of Natural Resources (RRNN) to service basic grains farmers and, BANADESA, the public sector agricultural development bank issues substantial short term seasonal credit each year to

service a growing clientele of basic grains farmers. IHMA, the Honduran Marketing Institute, plays an important role in setting guaranteed pre-harvest support prices for these crops and engages in buying, selling, importing and exporting basic grains products. Its domestic market activity may account for anywhere from 10 to 15 percent of the total marketing of basic grains in any given year. However, it holds an exclusive monopoly on the import and export of basic grains as part of its price stabilization role for the sector.

Finally all these public entities, RRNN, BANADESA, IHMA along with CONSUPLANE and other government officials from the Central Bank and the Ministries of Finance and Economy play a role in drawing up, coordinating and implementing a national basic grains program each year. Essentially this becomes an exercise to establish credit targets for BANADESA and the rediscount window of the Central Bank to service producers in the basic grains sector and marketing and pricing goals for IHMA.

Basic grains activity fulfills two of the four basic functions of the agricultural sector described in the initial pages of this report: providing foodstuffs for the domestic economy and the saving of foreign exchange through decreasing the country's reliance on food imports. We shall explore how well the sector has performed in meeting these goals, review the policies that have helped or hindered this performance and discuss what could be done to improve the sector's performance.

2. The Growth and Productivity Record for Basic Grains

Tables 14 through 22 set forth all the relevant data documenting the historical growth in output, yields and area for the four crops comprising the basic grains sector: corn, beans, rice and sorghum. Tables 15, 17, 19 and 21 contain the absolute data on output, area and yields while Tables 16, 18, 20 and 22 transform these data into indices that permit one to compare the differential growth of these variables over time. For the purposes of synthesis Table 14 presents all the relevant findings for all four crops for selected time periods in the past two decades.

Column 1 of Table 14 underscores the fact that for the past two decades Honduras has not experienced a "green revolution" in the production of basic foodstuffs. Rice and corn have recorded higher rates of growth than beans and sorghum. However these rates, along with the aggregate growth for all four crops tabulated on Line 13 (2.74 percent) is substantially below levels that could be associated with any breakthrough with green revolution technology. Except for rice they do not measure up to the probable aggregate demand for food based on the rate of growth of population (3.5 percent) and an increment for the income elasticity of demand for foodstuffs times the growth of per capita income over this period (between 1.0 to 2.0 percent per year).

If one looks at the time profile of output performance, total basic grains production increased about 2.97 percent

Table 14. Average Annual Rates of Growth of Physical Output, Area and Yields for Basic Grains for Selected Periods in Honduras, 1960-82.

Crop Variables	Time Periods (All based on Crop Years) 1960-82 (1)	1960-70 (2)	1970-82 (3)	1970-76 (4)	1976-82 (5)
1. Corn production	3.55	4.17	3.12	1.00	4.95
2. Corn area	1.25	1.77	0.90	2.84	-0.77
3. Corn yields	2.21	2.27	2.17	-1.59	5.40
4. Bean production	1.83	3.17	0.90	-5.40	6.29
5. Bean area	1.25	1.05	1.39	-5.49	7.28
6. Bean yields	0.63	1.92	-0.27	0.69	-1.10
7. Rice production	4.65	1.37	6.95	18.21	-2.69
8. Rice area	3.37	1.75	4.51	12.49	-2.34
9. Rice yields	0.83	-0.54	1.78	4.64	-0.66
10. Sorghum production[1/]	1.58	-0.17	3.04	0.01	6.07
11. Sorghum area	1.71	1.12	2.20	10.52	-6.12
12. Sorghum yields	4.51	4.74	4.31	-4.84	13.46
13. Total basic grains production[2/]	2.74	2.97	2.58	1.89	3.19

[1/] The sum of the average growth rates of area and yields does not coincide with the average growth rate of production due to the existence of outliers in these growth rates series.

[2/] The estimate of aggregate basic grains output is based on a Laspeyres Index using 1970 prices as weights.

Source: Derived from basic data reported in Tables 15, 17, 19 and 21.

Table 15. Production, Area and Yields of Corn in Honduras, 1960-1982

Crop Year	Production (Quintals)[1] (1)	Area (in Manzanas)[2] (2)	Yield (QQ/Mz) (3)
1960/61	5,360,445	349,670	15.33
1961/62	5,696,820	361,475	15.76
1962/63	6,181,770	382,062	16.18
1963/64	6,266,306	377,260	16.62
1964/65	7,366,245	430,530	17.04
1965/66	6,210,972	399,677	15.54
1966/67	7,379,724	401,154	18.40
1967/68	7,401,184	402,180	18.40
1968/69	7,422,707	403,206	18.41
1969/70	7,444,292	404,232	18.42
1970/71	7,487,651	406,284	18.43
1972/73	7,509,425	407,310	18.44
1973/74	7,533,469	411,663	18.35
1974/75	7,575,434	410,620	18.45
1975/76	7,896,752	474,085	16.66
1976/77	8,567,872	546,049	15.95
1977/78	9,238,992	617,799	14.95
1978/79	11,423,599	599,892	19.04
1979/80	7,181,503	476,000	15.09
1980/81	10,596,424	484,266	21,88
1982/83	9,408,171	426,669	22.05

1/ One quintal (QQ) equals 100 lbs.

2/ One manzana (Mz) equals .7 hectares or 1.8 acres.

Source: Ministry of Natural Resources Yearbook, 1983

Table 16. Indices of Production, Area and Yields for Corn in Honduras, 1960-1982 (1960/61 = 100)

Crop Year	Production (1)	Area (2)	Yield (3)
1960/61	100.00	100.00	100.00
1961/62	106.28	103.38	102.80
1962/63	115.32	109.26	105.55
1963/64	116.90	107.89	108.35
1964/65	136.86	123.13	111.16
1965/66	115.87	114.30	101.37
1966/67	137.67	114.72	120.00
1967/68	138.07	115.02	120.04
1968/69	138.47	115.31	120.09
1969/70	138.88	115.60	120.13
1970/71	138.28	115.90	120.17
1971/72	139.68	116.19	120.22
1972/73	140.09	116.48	120.27
1973/74	140.91	117.73	119.69
1974/75	141.32	117.43	120.34
1975/76	147.32	135.58	108.66
1976/77	159.84	156.16	102.35
1977/78	172.36	176.68	97.55
1978/79	213.11	171.56	124.22
1979/80	133.97	136.13	98.42
1980/81	159.33	138.74	114.84
1981/82	197.68	138.49	142.74
1981/83	175.51	122.02	143.84

Source: Table 15.

Table 17. Production, Area and Yields for Beans in Honduras, 1960-1982

Crop Year	Production (in Quintals)[1/] (1)	Area (in Manzanas)[2/] (2)	Yields (qq/mz) (3)
1960/61	869,185	99,993	9.15
1961/62	936,580	99,425	9.42
1962/63	988,746	102,143	9.68
1963/64	1,098,746	110,420	9.95
1964/65	1,274,579	134,714	10.22
1965/66	860,769	94,019	9.16
1966/67	1,170,459	100,093	11.69
1967/68	1,113,223	105,260	10.58
1968/69	1,055,987	104,422	10.11
1969/70	998,751	103,584	9.64
1970/71	941,515	102,746	9.16
1971/72	884,279	101,908	8.68
1972/73	827,043	101,070	8.18
1973/74	752,961	89,034	8.46
1974/75	734,238	88,949	8.25
1975/76	714,562	105,458	6.78
1976/77	682,887	107,732	6.34
1977/78	651,112	110,006	5.92
1978/79	964,451	116,613	8.27
1979/80	760,562	103,745	7.33
1980/81	790,739	97,619	8.10
1981/82	929,621	109,244	8.51
1982/83	972,417	95,134	10.22

1/ One quintal (QQ) equals 100 lbs.

2/ One Manzana (Mz) equals .7 hectares or 1.8 acres.

Source: Same as Table 15.

Table 18. Indices of Production, Area and Yields for Beans in Honduras, 1960-1982 (1960/61 = 100)

Crop Year	Production (1)	Area (2)	Yields (3)
1960/61	100.00	100.00	100.00
1961/62	107.75	104.67	102.95
1962/63	113.76	107.53	105.79
1963/64	126.40	116.24	108.74
1964/65	146.64	141.82	103.40
1965/66	99.03	98.97	100.06
1966/67	134.66	105.37	127.79
1967/68	128.08	110.81	115.58
1968/69	121.49	109.93	110.52
1969/70	114.91	109.04	105.38
1970/71	108.32	108.16	100.15
1971/72	101.74	107.28	94.83
1972/73	95.15	106.40	89.43
1973/74	86.63	93.73	92.43
1974/75	84.46	93.64	90.21
1975/76	82.21	111.02	74.05
1976/77	78.57	113.41	69.28
1977/78	74.91	115.80	64.69
1978/79	110.96	122.76	90.39
1979/80	87.50	109.21	80.12
1980/81	90.97	102.76	88.53
1981/82	106.95	115.00	93.00
1982/83	111.88	100.15	111.71

Source: Table 17.

Table 19. Production, Area and Yields for Rice in Honduras, 1960-1982.

Crop Year	Production (Quintales)[1/] (1)	Area (Manzana)[2/] (2)	Yield (QQ/Mz) (3)
1960/61	279,870	13,520	20.70
1961/62	262,960	13,024	20.19
1962/63	271,960	13,819	19.68
1963/64	233,430	12,177	19.17
1964/65	217,365	11,649	18.66
1965/66	203,050	11,685	18.15
1966/67	246,853	13,311	18.55
1967/68	263,897	13,929	18.95
1968/69	282,167	14,617	19.30
1969/70	301,596	15,339	19.66
1970/71	322,419	16,696	20.03
1971/72	344,680	16,981	26.41
1972/73	368,478	17,725	20.79
1973/74	439,076	19,434	22.59
1974/75	469,392	20,393	23.02
1975/76	762,567	29,678	25.69
1976/77	606,787	25,814	23.51
1977/78	564,356	24,356	23.17
1978/79	694,218	24,271	28.60
1979/80	697,983	27,421	25.45
1980/81	790,647	28,111	28.13
1981/82	807,816	30,303	26.66
1982/83	561,707	24,054	23.55

1/ One quintal (QQ) equals 100 lbs.

2/ One manzana (Mz) equals .7 hectares or 1.8 acres.

Source: Ministry of Natural Resources Yearbook, 1983

Table 20. Indices of Production, Area and Yields for Rice in Honduras, 1960-1982 (1960 = 100)

Crop Year	Production	Area	Yield
1960/61	100.00	100.00	100.00
1961/62	93.96	96.33	97.54
1962/63	97.17	102.21	95.07
1963/64	83.41	90.07	92.61
1964/65	77.67	86.16	90.14
1965/66	72.55	82.73	87.70
1966/67	88.20	98.45	89.59
1967/68	94.29	103.03	91.53
1968/69	100.80	108.11	93.24
1969/70	107.76	113.45	94.99
1970/71	115.20	119.05	96.77
1971/72	123.16	124.93	98.58
1972/73	131.66	131.10	100.43
1973/74	156.87	143.74	109.15
1974/75	167.72	150.84	111.20
1975/76	272.47	219.51	124.13
1976/77	216.81	190.93	113.56
1977/78	201.65	180.15	111.94
1978/79	248.05	179.52	138.18
1979/80	249.40	202.82	122.97
1980/81	282.51	207.92	135.87
1981/82	288.64	224.14	128.78
1982/83	200.70	177.91	112.81

Source: Table 19.

Table 21. Production, Area and Yields for Sorghum in Honduras, 1960-1982.

Crop Year	Production (Quintals)[1/] (1)	Area (Manzanas) (2)	Yields (QQ/Mz) (3)
1960/61	1,061,908	61,382	17.30
1961/62	1,033,387	57,925	17.84
1962/63	1,106,511	60,202	18.38
1963/64	1,139,988	60,253	18.92
1964/65	1,171,413	60,227	19.45
1965/66	972,460	86,245	11.28
1966/67	874,806	42,533	20.57
1967/68	909,939	44,864	20.28
1968/69	945,072	47,195	20.02
1969/70	980,205	49,526	19.79
1970/71	1,015,338	51,857	19.58
1971/72	1,050,471	54,188	19.39
1972/73	1,085,604	56,519	19.21
1973/74	895,763	75,735	11.83
1974/75	1,155,870	61,181	18.89
1975/76	1,152,566	79,755	14.45
1976/77	964,759	87,065	11.08
1977/78	776,952	94,376	8.23
1978/79	1,165,906	105,495	11.05
1979/80	840,115	90,385	9.29
1980/81	1,148,747	88,439	12.99
1981/82	1,278,197	83,377	15.33
1982/83	1,074,485	54,431	19.74

1/ One quintal (QQ) equals 100 lbs.

2/ One manzana (Mz) equals .7 hectares or 1.8 acres.

Source: Ministry of Natural Resources Yearbook, 1983.

Table 22. Indices of Production Area and Yields for Sorghum in Honduras, 1960-1982

Crop Year	Production (1)	Area (2)	Yields (3)
1960/61	100.00	100.00	100.00
1961/62	97.32	94.37	103.12
1962/63	104.20	98.08	106.24
1963/64	107.35	98.16	109.36
1964/65	110.31	98.12	112.43
1965/66	91.58	140.51	65.18
1966/67	82.38	69.29	118.89
1967/68	85.69	73.09	117.24
1968/69	89.00	76.89	115.75
1969/70	92.31	80.68	114.40
1970/71	95.61	84.48	113.18
1971/72	98.92	88.28	112.06
1972/73	102.23	92.08	111.03
1973/74	82.83	123.38	75.24
1974/75	108.85	99.67	109.21
1975/76	108.53	129.93	85.53
1976/77	90.85	141.84	64.05
1977/78	73.17	153.75	47.59
1978/79	109.80	171.87	73.89
1979/80	79.11	147.25	53.73
1980/81	108.18	144.08	75.08
1981/82	120.37	135.83	88.61
1982/83	101.18	88.68	114.11

Source: Table 21.

in the 1960s, dropped in the early 1970s to a rate of 1.89 percent, then increased slightly up to 3.2 percent in the late 1970s and early 1980s. This is not a strong aggregate performance, however, during certain subperiods some crops did perform at respectable rates of growth. Corn grew at a promising rate of growth in the 1960s (4.2 percent), then declined sharply in the early 1970s (1.0 percent) and then just as sharply rose again in the late 1970s and early 1980s (5.0 percent). The growth in corn output in the 1960s was due both to area expansion and yield increases, the stagnant growth in the early 1970s derived from sharp declines in yield while the rapid growth and recovery in the past six years up to 1982 was due exclusively to high yield increases. Fluctuations in weather no doubt played a major role in influencing the yield performances over time. Poor weather very likely prejudiced yields in the early 1970s while much better weather conditions in the late 1970s and early 1980s contributed to much higher yield increases for corn. Increased attention to extension activities and the supply of credit may also have made a difference in the more recent period along with more favorable prices growing out of Honduras' role in supplying increased black market demand from war-torn Nicaragua and El Salvador.

Beans experienced modest growth in the 1960s, a disastrous decline in the early 1970s and a recovery for the more recent period. Throughout the longer time span of the decade of the 1960s and of the 1970s bean production and yields have been unimpressive.

Rice presents an interesting contrast over time. During the 1960s it records stagnant growth and negative yields. As we shall see shortly, this period also registered substantial rice imports, a finding consistent with this unimpressive performance in domestic output. In the first half of the 1970s, however, there was a veritable explosion in rice output. This came largely from area increases rather than yields. In the more recent period we see a negative performance overall, due to declines in area and yields. The growth performance of rice is by far the most volatile of all crops suggesting its vulnerability to changing weather and market conditions.

A final feature in Table 14 merits comment and this is the marked and obvious substitution of land among crops through time. As one moves from the 1960s to the early 1970s (from Column 2 to Column 4) one can see very large increases in area recorded for rice and sorghum and a sharp decline in area for beans. As we move from the early 1970s to the late 70s and early 80s (from Column 4 to Column 5) we can see a reversal of this pattern in area substitution with beans growing rapidly and, very likely, at the expense of area devoted to rice and sorghum, both of which registered sharp declines.

These findings suggest first that differential prices and incentives emerge among these crops over time, promoting the expansion or contraction of specific crops according to

sharply different relative rates of return. Second, given the generally poor productivity record recorded for all crops over any sustained period of time, it is difficult to expand the output of one crop except at the expense (in land area) of another crop. Thus one sees certain crop-specific spurts of output for relatively short periods of time rather than a generalized sustained expansion of basic grains as a whole.

3. Basic Grains: Foreign Trade Trends and Indices of Comparative Advantage and Nominal Protection

Tables 23 through 28 assemble information on the foreign trade trends for the basic grain crops in Honduras. These trends offer insights into the performance of the sector that compliment the trends in domestic production and productivity discussed in the previous section. Tables 23 and 25 sharply portray the contrasting roles of basic grains in the 1960s and the 1970s. In the earlier decade, Honduras was exporting a substantial amount of corn and beans, while imports of these items were marginal either in absolute terms or as a percent of domestic production. For corn and beans, exports represented a substantial portion of domestic output during this period reaching between 30 to 50 percent of domestic output for beans and averaging 12 to 13 percent for corn (Table 26). This activity grew out of Honduras' role as a principal supplier of domestic foodstuffs within the early years of the Central American Common Market.

Table 23. Volume of Basic Grain Imports in Honduras, 1960-1982[1/]

Year	Corn (1)	Beans (2)	Rice (3)	Sorghum (4)
1960	184	25	1,393	312
1961	1,655	73	1,755	2,759
1962	147	98	894	223
1963	881	166	1,863	164
1964	868	101	1,161	150
1965	1,920	139	1,488	75
1966	1,105	731	7,829	277
1967	3,436	107	6,011	2,233
1968	1,969	61	7,211	226
1969	223	48	9,116	47
1970	449	4	10,119	435
1971	495	4	2,659	5
1972	107	4	4,513	5
1973	1,894	172	20	24
1974	367	97	1,187	6
1975	42,986	387	10,615	21
1976	665	4	1,344	15
1977	12,813	156	2,044	4
1978	37,116	161	4,383	20
1979	7,393	298	4,900	9
1980	48,284	2,771	3,804	1
1981	17,669	7	1,684	25
1982	5,706	57	2,752	-

1/ In thousands ('000) of kilograms (i.e. metric tons)

Source: Central Bank of Honduras, Department of Economic Studies.

Table 24. Basic Grain Imports as a Percent of Total Production of Basic Grains in Honduras, 1960-82[1/]

Calendar Year	Corn (1)	Beans (2)	Rice (3)
1960	.1%	.0%	10.9%
1961	.6	.2	14.7
1962	.1	.2	7.2
1963	.3	.3	17.6
1964	.3	.2	21.9
1965	.7	.4	16.1
1966	.3	1.4	69.8
1967	1.0	.2	50.1
1968	.6	.1	56.2
1969	0.0	.1	66.5
1970	.1	.1	69.0
1971	.1	.0	17.0
1972	0.0	.0	26.9
1973	.8	.5	0.1
1974	.1	.3	5.7
1975	11.9	1.2	30.6
1976	.2	0.0	4.9
1977	3.1	.5	8.0
1978	7.1	.4	13.9
1979	2.3	.9	15.4
1980	12.4	7.7	10.6
1981	3.7	0.0	4.6
1982	1.3	.1	10.8

1/ To convert import quantities (i.e. metric tons) into the same units as production data (i.e. quintales) we used the following equivalent measure: one metric ton equals 22 quintales.

Source: Derived from data in Tables 15, 17, 19 and 23.

Table 25. Volume of Basic Grain Exports in Honduras, 1960-1982[1/]

Year	Corn (1)	Beans (2)	Rice (3)	Sorghum (4)
1960	17,528	9,409	456	283
1961	9,433	12,016	216	128
1962	40,198	13,483	135	498
1963	23,199	14,951	108	796
1964	51,902	17,062	37	1,706
1965	65,386	22,585	1,499	1,674
1966	44,756	16,497	97	94
1967	25,456	16,646	233	331
1968	44,168	21,778	1,943	78
1969	14,724	17,812	10	173
1970	15,013	9,268	-	310
1971	13,252	12,388	-	-
1972	8,294	10,842	-	499
1973	1,144	989	4	20
1974	213	6,133	-	2,464
1975	-	3,373	-	-
1976	17,447	1,353	-	8,117
1977	516	2,316	-	-
1978	2	80	-	-
1979	379	30	-	-
1980	1	-	-	-
1981	340	2,757	-	-
1982	6,402	2,615	-	-

1/ In thousands ('000) of kilograms (i.e. metric tons).

Source: Same as Table 23.

Table 26. Basic Grain Exports as a Percent of Total Basic Grains in Honduras, 1960-82[1/]

Year	Corn (1)	Beans (2)	Rice (3)
1960	7.2%	23.8%	3.6%
1961	3.6	28.2	1.8
1962	14.3	30.0	1.1
1963	8.1	29.9	1.0
1964	15.6	29.5	.4
1965	23.2	57.7	16.2
1966	13.3	31.0	.9
1967	7.6	32.9	1.9
1968	13.1	45.4	15.2
1969	4.4	39.2	.1
1970	4.4	21.7	.0
1971	3.9	30.8	.0
1972	2.4	28.8	.0
1973	.3	2.9	.0
1974	.0	18.4	.0
1975	.0	10.4	.0
1976	4.5	4.4	.0
1977	1.2	7.8	.0
1978	.0	.2	.0
1979	1.2	.1	.0
1980	.0	.0	.0
1981	.1	.5	.0
1982	1.5	5.9	.0

1/ To measure export data and production data in same units, see note to Table 24.

Source: Derived from basic data in Tables 15, 17, 19 and 25.

In the 1970s this changed first through Honduras withdrawing from the regional commonmarket and secondly through a decline in its exports and a rise in imports for corn, beans and rice. In the case of rice, imports represented a substantial portion of domestic production in the 1960s (from 50 to 70 percent); however, this relative share declined substantially in the 1970s (Table 24). This pattern for rice is consistent with the substantial rise in domestic output recorded in the early 1970s as domestic supply replaced imports. In this sense rice made a contribution to the saving of foreign exchange in the early to mid 1970s over what would have been expended without this rise in domestic output.

The case of corn was less clear. In the 1960s the net trade balance for corn favored exports, substantially so. Corn exports represented a significant proportion of total output for many years during that earlier decade. In the 1970s Honduras lost its export trend in corn and, by the end of the 1970s, began to import corn in large quantities (as compared to earlier years). Still this importation of corn rarely represented a significant proportion of its output except for two years (1975 and 1980) when it reached 12 percent of output (Table 24, Column 1). Yet in this latter period corn output grew at roughly 5.00 per year (Table 14, Column 5) with substantial increases in yields, following a period of relative stagnation in the early 1970s.

Thus corn activity shifted from being a partially successful export commodity in the 1960s to relatively self-sufficient production for the domestic market alone in the early 1970s and becoming, in the most recent period, a marginal importer to make up for shortfalls in meeting growing domestic demand. While yield and output grew in the late 70s and early 80s, there was an actual decline in area devoted to corn production. The net result was an occasional need for imports to meet growing local demand.

Bean trade and production trends fit a more consistent pattern. In the 1960s Honduras was a significant exporter of beans with exports representing between 30 to 40 of local bean production. By the 1970s this trend had shifted to one emphasizing a virtual disappearance of exports and a marginally growing need for imports. Throughout this period bean production and yields have stagnated, proving incapable of serving domestic demand effectively. Of all the basic grains crops beans register the most unimpressive growth record throughout this period. Given the difficulties of importing beans (there are no well established world trade markets in beans), this stagnant domestic growth no doubt is reflected in a decline in bean consumption in local diets in comparison to other basic grains (especially corn and rice).

Tables 27 and 28 round out this discussion by presenting indices of comparative advantage and nominal protection for basic grains. In Table 27 the ratio of the farmgate price

(estimated by the central bank staff in the Economic Studies Department) to the CIF import price indicates the comparative advantage of Honduras in growing basic grains. If this ratio is greater than one, Honduras is incurring an opportunity cost in terms of economic efficiency (in the use of scarce resources) by growing the crop locally instead of importing it. If the ratio is less than one, Honduras enjoys a comparative advantage in using local resources to grow the crop rather than importing it and transferring local resources to other uses. Honduras has enjoyed a comparative advantage in corn production throughout this two decade period. The same can largely be said for beans. The case of rice is more interesting. Honduras did not enjoy a comparative advantage in growing rice in the 1960s (Table 27, Column 3). This is consistent with the fact that Honduras imported most of its supply for domestic consumption with imports ranging as high as 60 to 70 percent of local production during this period (Table 24, Column 3). In the 1970s, however, Table 27 shows that the ratio of farmgate price to import price (CIF) for rice began dropping below one, indicating that rice producers were beginning to acquire a comparative advantage in producing their crop in competition with imports. As a result domestic rice output grew substantially in the early to mid 1970s (Table 14) and rice imports as a percent of total production began to decline (Table 24, Column 3).

Table 27. Ratio of Farmgate Price to Import Price for Basic Grains in Honduras, 1961-1982

Year	Corn (1)	Beans (2)	Rice (3)	Sorghum (4)
1961	.66	.75	1.12	.70
1962	.56	.69	1.07	1.04
1963	.74	.78	1.13	.92
1964	.87	.88	1.15	.84
1965	.80	.95	1.24	.49
1966	.76	1.02	1.20	1.18
1967	.81	1.24	1.27	.96
1968	.80	.86	1.39	.90
1969	.40	.55	1.79	1.11
1970	.42	.38	1.60	.95
1971	.27	.37	1.30	.28
1972	.29	.38	1.08	.42
1973	.76	.91	1.65	.34
1974	.27	.84	.46	.23
1975	.68	.85	.65	.16
1976	.34	.46	.60	.23
1977	.97	.74	1.10	.24
1978	.94	.56	.92	.19
1979	.84	.38	.99	.29
1980	.64	.38	.46	.29
1981	.69	.23	.82	.18
1982	.20	.51	1.21	n.a.

Source: Derived from basic price series in IHMA and Central Bank of Honduras, Department of Economics Studies.

Table 28. Ratio of Farmgate Price to Export Price for Basic Grains in Honduras, 1961-1982

Year	Corn (1)	Beans (2)	Rice (3)	Sorghum (4)
1961	1.09	1.26	2.28	1.22
1962	.89	1.09	1.75	1.06
1963	.88	1.02	1.58	1.01
1964	.93	1.03	1.62	1.37
1965	.87	1.08	1.52	.60
1966	1.03	1.17	2.26	1.33
1967	.97	1.06	1.71	1.65
1968	1.08	.98	1.01	1.33
1969	1.04	.99	.76	1.57
1970	1.08	1.06	-	1.92
1971	1.00	.94	-	-
1972	.88	1.00	-	1.58
1973	.43	.79	1.98	1.69
1974	.92	.41	-	1.10
1975	-	.90	-	-
1976	1.11	.96	-	.98
1977	1.27	.99	-	-
1978	.05	1.25	-	-
1979	.66	.10	-	-
1980	.10	-	-	-
1981	.58	.45	-	-
1982	.71	.52	-	-

Source: Same as Table 27.

Finally Table 28 rounds out this discussion by presenting the ratio of farmgate prices to export FOB prices for the same crop. This is a rough proxy for a nominal protection coefficient. If this ratio is greater than one then the crop enjoys protection (i.e. a subsidy) since farmers receive a higher price than the internationally traded price. If the ratio is less than one then farmers no longer enjoy protection and, depending upon the appropriate margin for marketing and processing costs, may be experiencing negative protection (i.e. implicit taxation) through unusually low prices in comparison to the FOB export price of the crop.

The results in Table 28 suggest that basic grains in the 1960s largely received net protection. In the 1970s this began to decline for corn and beans. In the most recent period it would appear that some degree of implicit taxation may have occurred for these two crops, however, several caveats are in order. The wide fluctuation in these coefficients in the more recent years suggest that the FOB prices used in the estimation probably reflected very thin and unrepresentative markets. Also no explicit deduction for marketing and processing costs is possible so that the results are at best rough proxies. For example a ratio of .80 (rather than 1.00) may represent the breakeven point between protection (i.e. subsidization) and implicit taxation of producers once one deducts the necessary margin for marketing and processing costs implicit in the prices used here.

The most we can say from the evidence on prices in Table 28 is that the degree of protection in the 1960s has declined in the 1970s, particularly in the more recent period.

4. The Institutional Setting Conditioning Basic Grains Pricing Performance: IHMA -- The Honduran Marketing Institute for Basic Grains

The major policies designed to enhance the performance of basic grains have been directed largely through IHMA. The main thrust of policies has been to stimulate production and raise farm income through an announced guaranteed price system, to stabilize retail and wholesale prices and to reduce import dependency. Each of these areas will be discussed below.

(a) Price Policy

The guaranteed farmgate price policy was designed to improve farm income and stimulate production. Until 1980 the maximum price a farmer would receive from IHMA was announced at the beginning of each crop season. After 1980 the minimum price paid by IHMA was used as the announced price. This change was undertaken because apparently very few farmers actually received the maximum price under the former scheme.

The effectiveness of this policy can be seen and interpreted in two ways through the results in Table 29. This table presents the ratio of the average annual farmgate price (estimated by the Economic Studies Department of the Central Bank) to the maximum-minimum (after 1980) prices

Table 29: Ratio of Estimated Farm-gate Prices to Maximum and Minimum Prices Paid by IHMA, 1965-1982

Year	Corn (1)	Beans (2)	Rice (3)	Sorghum (4)
1965	1.11	1.45	1.96	n.a.
1966	.96	1.48	1.80	n.a.
1967	1.01	1.21	1.99	n.a.
1968	.98	1.27	2.21	n.a.
1969	.94	1.33	2.94	n.a.
1970	1.02	1.21	2.91	n.a.
1971	.95	1.20	2.49	n.a.
1972	.95	1.17	2.23	n.a.
1973	1.02	1.20	2.05	n.a.
1974	.84	.88	1.50	.71
1975	.64	.99	1.35	1.22
1976	.85	.83	1.66	1.08
1977	.90	.92	1.64	1.05
1978	.80	.86	1.63	1.00
1979	.88	.93	1.49	.90
1980	.86	.75	1.51	.92
1981	.79	.57	1.55	.87
1982	.81	.61	.96	.56

Source: IHMA files and Economic Studies Department, Central Bank

paid by IHMA. If this ratio is less than one then farmers would have been better off selling to IHMA. With a ratio greater than one farmers would have been better off selling to a private wholesaler.

Farmers selling corn over the period 1965-1974, if they could obtain the maximum price from IHMA, would have been just as well off selling to either market. However, from 1974-1979 corn farmers could have improved their income by selling only to IHMA. In the case of beans, the correct action was to sell to IHMA during 1974-1979, but farmers appear to have been better off selling to the private market before 1974. In 1980 the policy was changed to a minimum price policy. Comparison of the farmgate price to the minimum price reveals that farmers should have sold beans, corn and sorghum to IHMA since the lowest price from IHMA exceeded the farmgate price. Rice farmers, regardless of the type of price policy followed, would not have been inclined to sell to IHMA, if the data in Table 29 accurately reflects the differential prices from IHMA and non-IHMA sources. These findings are consistent with the results of the separate study by Loria and Cuevas on marketing channels selected by basic grains farmers. Very few rice farmers chose to market their crop through IHMA. Due to limited storage and marketing capacity, IHMA can only purchase between 10 to 15 percent of the marketable surplus of basic grains. Hence, while prices may induce farmers to try to sell to IHMA

there is a structural constraint that may prevent this from happening. If a farmer realizes there is little chance of consumating his sale to IHMA then the announced price has minimal impact even if this price is above the market price.

(b) Price Stabilization Scheme

The second policy initiative undertaken by IHMA has been directed towards reducing price fluctuations at both the wholesale and retail levels. This has been undertaken by purchasing and selling grains at selected periods of the year. In principle, IHMA is expected to buy grain when supply is plentiful (prices are low) and sell grain when supply is short (prices high). This raises the price during periods of excess supply and lowers the price during periods of grain shortage so that the monthly price stays relatively constant.

The effectiveness of this policy was evaluated through the calculation of the coefficient of variation (CV) for each basic grain crop on a yearly basis at both the wholesale and retail level (Tables 30 and 31). The coefficient of variation measures the average fluctuation of average monthly prices around the average annual price. The monthly price series was made available through IHMA's files on retail and wholesale prices for basic grains. We then compared the average CV from 1966-1976 with the average CV from 1977-1982 for each crop at both the retail and wholesale levels. These

Table 30. Mean, Standard Deviation and Coefficient of Variation for Basic Grain Retail Prices in Honduras, 1966-1982

	Corn			Beans			Rice			Sorghum		
Year	Mean	Std. Dev.	CV	Mean	Std. Dev.	CV	Mean	Std. Dev.	CV	Mean	Std. Dev.	CV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1966	8.42	1.24	.15	19.00	2.67	.14	26.67	1.67	.06	n.a.	n.a.	n.a.
1967	8.92	1.31	.15	22.50	2.50	.11	25.58	1.51	.06	n.a.	n.a.	n.a.
1968	9.08	1.56	.17	21.50	1.68	.08	24.83	1.53	.06	n.a.	n.a.	n.a.
1969	8.08	.52	.06	21.00	2.41	.11	24.41	.79	.03	n.a.	n.a.	n.a.
1970	10.83	1.64	.15	23.50	2.97	.13	28.33	2.46	.09	n.a.	n.a.	n.a.
1971	14.00	2.56	.18	21.92	2.78	.13	32.92	4.50	.14	n.a.	n.a.	n.a.
1972	8.50	1.24	.15	20.92	2.23	.11	30.42	1.73	.06	n.a.	n.a.	n.a.
1973	9.08	1.31	.14	30.67	4.79	.16	28.83	1.34	.05	n.a.	n.a.	n.a.
1974	10.50	1.09	.10	30.00	3.13	.10	37.00	4.47	.12	n.a.	n.a.	n.a.
1975	18.08	6.10	.34	31.67	3.23	.10	47.33	1.23	.03	n.a.	n.a.	n.a.
1976	11.83	.72	.06	31.50	2.88	.09	47.08	2.19	.05	n.a.	n.a.	n.a.
1977	21.50	4.38	.20	42.33	7.90	.19	52.58	4.14	.08	25.92	5.02	.19
1978	19.30	1.70	.09	46.55	8.57	.18	60.56	4.67	.08	20.89	3.95	.19
1979	17.19	1.47	.09	40.36	7.97	.20	65.09	2.74	.04	18.45	2.46	.13
1980	24.33	3.43	.14	89.11	15.91	.18	69.22	1.09	.02	24.22	2.73	.11
1981	21.75	1.36	.06	75.08	5.40	.07	75.08	3.65	.05	23.17	1.45	.06
1982	20.42	1.44	.07	53.17	8.68	.16	77.67	1.67	.02	21.92	2.94	.13

Source: IHMA files on retail prices.

Table 31. Mean, Standard Deviation and Coefficient of Variation for Basic Grain Wholesale Prices in Honduras, 1966-1982

	Corn			Beans			Rice			Sorghum		
Year	Mean	Std. Dev.	CV	Mean	Std. Dev.	CV	Mean	Std. Dev.	CV	Mean	Std. Dev.	CV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1966	5.04	.39	.08	17.39	5.19	.30	23.31	1.65	.07	n.a.	n.a.	n.a.
1967	7.27	1.39	.19	17.76	3.06	.17	21.34	1.64	.08	n.a.	n.a.	n.a.
1968	6.82	1.11	.16	16.96	2.01	.12	19.10	1.50	.08	n.a.	n.a.	n.a.
1969	5.45	.56	.10	15.18	1.75	.12	17.49	1.09	.06	n.a.	n.a.	n.a.
1970	6.94	2.32	.33	17.86	4.9	.27	20.50	1.19	.06	n.a.	n.a.	n.a.
1971	5.80	.528	.09	13.58	1.41	.10	27.31	3.39	.12	n.a.	n.a.	n.a.
1972	6.52	.96	.15	16.40	2.88	.18	25.35	1.55	.06	n.a.	n.a.	n.a.
1973	7.64	1.25	.16	26.03	4.68	.18	23.45	1.09	.05	n.a.	n.a.	n.a.
1974	9.07	.90	.10	24.76	3.16	.13	32.13	4.10	.13	n.a.	n.a.	n.a.
1975	14.65	4.07	.28	26.16	3.19	.12	41.50	4.06	.10	n.a.	n.a.	n.a.
1976	9.84	.715	.07	26.21	1.92	.07	40.00	1.73	.04	n.a.	n.a.	n.a.
1977	17.81	3.34	.19	37.27	7.70	.21	46.59	3.36	.07	n.a.	n.a.	n.a.
1978	15.86	2.73	.17	38.91	9.24	.24	52.29	2.99	.06	5.36	2.39	.16
1979	14.96	1.34	.09	36.87	10.36	.28	57.07	1.90	.03	14.92	2.13	.14
1980	21.54	8.91	.41	78.31	13.40	.17	60.20	.75	.01	20.54	2.75	.13
1981	18.45	1.22	.07	59.17	8.77	.15	66.29	4.03	.06	17.40	1.29	.07
1982	17.21	1.74	.10	41.08	4.71	.11	68.71	1.77	.03	17.14	2.41	.14

Source: IHMA files on wholesale prices.

periods were chosen because after 1976, the price stabilization scheme was undertaken with a more concentrated effort within IHMA. The coefficients of variation are reported in Tables 30 and 31. IHMA was apparently only successful in stabilizing the price of rice at the wholesale level. The average CV for rice wholesale prices decreased dramatically after 1976, while for beans and corn wholesale price fluctuations increased even more after IHMA's intervention in the grain markets. Conceivably weather variations may have been more extreme and uneven during this period. At the retail level IHMA was more successful as retail prices for corn and rice varied less on a yearly basis after 1976, while for beans retail price fluctuations increased after 1976.

This analysis of price variation reveals that wholesale prices have varied more than retail prices for all grains. A major reason for this contrast is very likely due to the additional supply provided by imports at various times of the year to smooth out retail prices. This may explain why retail price fluctuations have been reduced for corn and rice while retail price fluctuations for beans have increased. Corn and rice can be handled through well established international trade channels. Beans cannot.

(c) Reduction of Imports

IHMA's performance in reducing imports has also been mixed. Earlier examination of the import data (Tables 23 and 24) revealed that corn imports have increased since 1977, while bean and sorghum imports have been steadily declining over the same period. Rice imports have remained fairly constant in absolute terms, however, with the increase in domestic rice production, the constant absolute value of rice imports have been declining as a percent of rice production.

IHMA generally imports basic grains to make up for production shortfalls. Whether Honduras should import more or less of a grain crop could be evaluated according to comparative advantage criteria. We already established the fact that Honduras has a comparative advantage in producing corn, beans and sorghum and is apparently gaining more efficient production in rice from our interpretation of data in Table 27. Additional data can be brought to bear on this by looking at the ratio of retail prices (of basic grains) to CIF import prices. This is presented in Table 32. If we accept the need for a marketing margin here between the retail and the CIF price the results in Table 32 suggest that, except for certain extreme outlier years (such as 1977 and 1978), corn, beans and sorghum should not have been imported in any great amount, if at all, in the last seven years. The retail/CIF ratio is less than one or close enough

Table 32. Ratio of Retail Prices to CIF Prices for Basic Grains in Honduras, 1966-1982

Year	Corn (1)	Beans (2)	Rice (3)	Sorghum (4)
1966	1.02	1.24	1.77	n.a.
1967	1.10	1.77	1.63	n.a.
1968	1.13	1.11	1.73	n.a.
1969	.57	.72	2.12	n.a.
1970	.73	.52	2.22	n.a.
1971	.60	.48	1.90	n.a.
1972	.40	.46	1.47	n.a.
1973	1.00	1.55	2.11	n.a.
1974	.37	1.36	.75	n.a.
1975	1.28	1.30	1.26	n.a.
1976	.43	.69	1.12	n.a.
1977	1.89	1.36	1.95	1.75
1978	1.68	1.05	1.71	.34
1979	1.11	.57	1.80	.46
1980	1.19	1.12	.83	.60
1981	1.09	.55	1.49	.51
1982	.29	.88	2.16	.28

Source: Derived from retail price data in IHMA and farm-gate price data estimated by the Central Bank of Honduras, Department of Economic Studies.

to one if one makes allowance for a presumed small marketing margin.

The case is different for rice. Here the retail/CIF ratio is considerably above one throughout most of the entire period. Consumers are paying substantially more than the CIF cost of rice. This suggests substantial protection of rice production (which we discovered earlier) with the consumer bearing the cost through higher prices. In the short run consumer welfare would be enhanced by allowing for greater imports. In the long run, however, Honduras could try to move ahead with an import-substitution program in rice. This is in fact what is happening. Our earlier analysis discovered that Honduras has just barely achieved a comparative advantage in producing rice (see Table 27 and related discussion in text). It is the basic grain crop in which Honduras had the least natural comparative advantage (in the 1960s) and considerable investment and development were necessary to lower costs. Imports still occur but at a declining share of total production so that Honduras is apparently reducing its import dependence on this crop. However consumers are still paying a high price for this progress as seen in Table 32.

(d) Marketing Margins

An import issue in the basic grains sector concerns the costs and efficiency of marketing. This issue was discussed

at length with respect to coffee in the first half of this report. This final section rounds out this discussion by focusing on the issue of marketing margins for basic grains.

Tables 32, 33 and 34 summarize the available data on marketing margins. Table 32, Columns 1 through 4, shows that the farmgate price, on the average, generally accounted for a higher share of the retail price in the earlier period (1966-76) than in the more recent period (1977-82) for corn, beans and rice. As a result the gross marketing margins (in columns 5-7) for these crops have also increased (on average) from the earlier to the later period.

Table 33 offers further insights by showing that within this gross marketing margin there has been an unusual divergent behavior over time between the trend for the first stage marketing margin (from farmgate to wholesaler) and the trend for the second stage marketing margin (from the wholesaler to the retailer). The second stage marketing margins have declined substantially over time for the three major crops (Columns 5-7). It has been the rapid increase in the first stage marketing margin (Columns 1-3) that accounts for the rise in the overall gross marketing margin identified above. Table 34 merely portrays these same results from another perspective in which the first and second stage marketing margins are presented as a percent of the gross margin.

Table 32. Ratios of Farmgate and Wholesale Prices to Retail Prices and Marketing Margins for Basic Grains in Honduras, 1966-1982

Year	Ratio of Farmgate Price to Retail Price				Gross Marketing Margin [1 - Farmgate Price / Retail Price]			
	Corn	Beans	Rice	Sorg.	Corn	Beans	Rice	Sorg.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1966	.49	.82	.67	n.a.	.51	.18	.33	n.a.
1967	.74	.70	.77	n.a.	.26	.30	.23	n.a.
1968	.70	.61	.80	n.a.	.30	.39	.20	n.a.
1969	.69	.77	.84	n.a.	.31	.23	.16	n.a.
1970	.55	.72	.73	n.a.	.45	.28	.27	n.a.
1971	.44	.76	.68	n.a.	.56	.24	.32	n.a.
1972	.73	.80	.74	n.a.	.27	.20	.26	n.a.
1973	.76	.59	.78	n.a.	.24	.41	.22	n.a.
1974	.73	.63	.63	n.a.	.27	.37	.37	n.a.
1975	.54	.65	.51	n.a.	.46	.35	.49	n.a.
1976	.80	.65	.54	n.a.	.20	.35	.46	n.a.
1977	.52	.56	.56	n.a.	.48	.44	.44	n.a.
1978	.56	.54	.53	.56	.44	.46	.47	.44
1979	.75	.66	.55	.64	.25	.34	.45	.36
1980	.54	.33	.56	.53	.46	.67	.44	.47
1981	.61	.42	.55	.61	.39	.58	.45	.39
1982	.68	.56	.55	.68	.32	.44	.45	.32

Source: Derived from basic price series in IHMA and Central Bank of Honduras, Department of Economic Studies.

Table 33. Changing Profile of First and Second Stage Marketing Margins for Basic Grains in Honduras, 1966-1982[1/]

Year	First Stage Marketing Margins[2/]				Second Stage Marketing Margins[2/]			
	Corn	Beans	Rice	Sorg.	Corn	Beans	Rice	Sorg.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1966	11%	10%	20%	-	40%	8%	13%	-
1967	8	9	6	-	18	21	17	-
1968	5	18	-3	-	25	21	23	-
1969	-2	1	-8	-	33	22	28	-
1970	9	4	0	-	36	24	27	-
1971	-3	-14	15	-	59	38	17	-
1972	4	-2	9	-	23	22	17	-
1973	8	26	3	-	16	15	19	-
1974	13	20	24	-	14	17	13	-
1975	27	18	37	-	19	17	12	-
1976	3	18	31	-	17	17	15	-
1977	31	32	33	-	17	12	11	-
1978	26	30	33	18	18	16	14	26
1979	12	25	33	17	13	9	12	19
1980	35	55	31	32	11	12	13	15
1981	24	37	33	14	15	21	12	25
1982	16	21	33	10	16	23	12	22

1/ The first and second stage marketing margins in the table add up to the gross marketing margins set forth in Table 30 for the respective crops in question.

2/ First stage margin is the markup between farmgate and wholesale prices; second stage margin is the markup between wholesale and retail prices.

Source: Derived from Table 31.

Table 34. Changing Profile of First Stage and Second Stage Marketing Margins as a Percent of the Gross Margin of Basic Grains in Honduras, 1966-1982

Year	First Stage Marketing Margins as a % of Gross Margin[1/]				Second Stage Marketing Margins as a % of Gross Margin[1/]			
	Corn	Beans	Rice	Sorg.	Corn	Beans	Rice	Sorg.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1966	21.6%	55.6%	60.6%	--	78.4%	44.4%	39.4%	--
1967	30.8	30.0	26.1	--	69.2	70.0	73.9	--
1968	16.7	46.2	-15.0	--	83.3	53.8	115.0	--
1969	-6.5	4.4	-50.0	--	106.5	95.6	150.0	--
1970	20.0	14.3	0	--	80.0	85.7	100.0	--
1971	5.4	-58.3	46.9	--	94.6	158.3	53.1	--
1972	14.8	-10.0	34.6	--	85.2	110.0	65.4	--
1973	33.3	63.4	13.6	--	66.7	36.6	86.4	--
1974	48.2	54.1	64.9	--	51.8	45.9	35.1	--
1975	58.7	51.4	75.5	--	41.3	48.6	24.5	--
1976	15.0	51.4	67.4	--	85.0	48.6	32.6	--
1977	64.6	72.7	75.0	--	45.4	27.3	25.0	--
1978	39.1	65.2	70.2	40.9%	40.9	34.8	29.8	59.1%
1979	48.0	73.5	73.3	56.8	52.0	26.5	26.7	43.2
1980	76.1	82.1	70.5	68.1	23.9	17.9	29.5	31.9
1981	61.5	63.8	73.3	35.9	38.5	36.2	26.7	64.1
1982	50.0	47.7	73.3	31.2	50.0	52.3	26.7	68.8

1/ The gross margin in the difference between the farmgate price and the retail price. The first stage margin is the markup between wholesale and farmgate prices; the second stage is the markup between wholesale and retail prices. The percentages in this table add up to 100 percent.

Source: Derived from Tables 31 and 32.

An important implication of the above findings is that higher retail prices may not act as a stimulant for increased production if it is all absorbed in higher marketing margins. It would appear that beans and rice register the highest marketing margins in recent years. Corn generally records lower and presumably more efficient (i.e. competitive) margins.

Further research and field studies are needed to identify the nature of these rising wholesale-farmgate margins. The study by Loria and Cuevas strongly suggests that there is substantial competition at the farmgate through multiple marketing channels. However the layer of intermediaries above this level may very likely represent less competitive and higher markups.

5. Conclusion

The basic grains sector has not experienced any substantial productivity breakthrough on a sustained basis. Short spurts in output and improved yields have been recorded for specific crops for shorter periods of time. In the 1960s this sector engaged in substantial export activity however in the 1970s this trend disappeared and, on occasion, Honduras became a net importer of basic grains.

Honduras does enjoy a comparative advantage in the production of corn and beans. It did not initially experience a comparative advantage in the production of rice but has recently achieved this status after an import substitution

effort in that crop. Given the rapid growth of the population and the income elasticity of demand for basic grains in a low income setting, it is likely that the aggregate demand for basic grains will frequently outstrip domestic supply unless more sustained yield increases can be maintained for more than short periods of time.

A final puzzling feature of our investigation has identified an apparent marketing obstacle in that the first stage marketing margin between the farmgate and wholesale prices has grown appreciably in recent years. This raises important questions about the efficiency and competitiveness of the marketing chain at this stage. More research and analysis at the intermediary level is clearly called for to sort out the factors causing this widening marketing margin and identifying policy measures that could resolve this problem.