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AGRICULTURAL POLICY ANALYSIS PROJECT, PHASE II

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HONDURAS:

QUANTIFYING THE ECONOMIC IMPACT OF POLICY REFORMS IN AGRICULTURE

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ABSTRACT

Honduras has been involved in the process of implementing a structural adjustment program. The Government began implementing a package of economic measures in 1990 to stabilize the economy and set the stage for economic development. This report quantifies the effect of several additional policy reforms in the agricultural sector. These include efforts to liberalize the foreign exchange regime, eliminate price controls and export taxes, remove interest rate ceilings, allow land rental and titling of parcels smaller than 5 ha, and issue "dominio pleno" titles to land occupants.

The selected economic indicators are agricultural value added in 1978 constant lempiras and 1989 U.S. dollars, and the value of exports in U.S. dollars. Each major commodity or group of commodities was analyzed independently, and the results were aggregated. Emphasis was placed on the commodity's contribution to value added, generation of foreign exchange, and growth potential. The major commodity groups are coffee, bananas, basic grains, livestock, nontraditional exports, and poultry.

The study found significant discrepancies in production figures used to estimate national accounts, which shows agriculture contributing less to GDP than it should. On the other hand, agricultural export values are lower than estimates in Central Bank reports due to the Bank's procedures for estimating bananas, shrimp, sugar, and beef.

Estimates for each commodity were based on three growth scenarios, each using a different set of assumptions. Bananas and coffee are expected to continue as the main sources of value added and foreign exchange. While production of other traditional exports is expected to decline or increase only slightly, beef exports could recuperate the position they once held. Nontraditional exports are expected to double, with the major increases occurring in shrimp, palm oil, and other crops. The productivity of coffee and livestock is still very low but could be substantially increased by complementing policy reforms with direct interventions in these areas.

The study concludes with some recommendations that will improve agricultural development and the measurement of policy reform impacts.

EXECUTIVE SUMMARY

Since early 1990, Honduras has been involved in the process of implementing a structural adjustment program. The new Government that took office in January 1990 began work by implementing a package of economic measures to stabilize the economy and set the stage for economic development. The package included measures to devaluate the lempira, decrease the differences in import tariffs, revise the income tax law, reduce the government deficit, increase interest rates, eliminate price controls in some commodities, and tighten money supply policy. The adjustments were made with assistance from international donors, including the U.S. Agency for International Development, the International Monetary Fund, the World Bank, and the Inter-American Development Bank.

This report quantifies the effect of several additional policy reforms in the agricultural sector, which aim to liberalize the foreign exchange regime, eliminate price controls and export taxes, remove interest rate ceilings, allow land rental and titling of parcels smaller than 5 ha, and issue "dominio pleno"[1] titles to land occupants.

The selected economic indicators are agricultural value added in 1978 constant lempiras and 1989 U.S. dollars, and the value of exports in U.S. dollars.

Each major commodity or group of commodities was analyzed independently, and the results were aggregated. Emphasis was placed on the commodity's contribution to value added, generation of foreign exchange, and growth potential. The major commodity groups are coffee, bananas, basic grains, livestock, nontraditional exports, and poultry. The remaining commodities were grouped in a separate category.

According to official statistics from the Central Bank, agriculture contributes around 20 percent of total GDP and over 80 percent of foreign exchange earnings. This report presents evidence that these measurements are inaccurate. Agriculture probably contributes more to GDP and less to foreign exchange earnings than the official data indicate, a discrepancy resulting from inaccurate measurements. In addition, production estimates used by the Central Bank are lower than statistics acquired through other reliable methods. The major discrepancies are in livestock, bananas, and poultry.

Agricultural export values are lower than estimates in Central Bank reports due to the Bank's procedures for estimating bananas, shrimp, sugar, and beef. The Bank uses international published prices, translated into FOB prices after deducting the cost of freight and insurance. However, exporters' reported prices are lower. The most significant disparity is in the calculations on bananas, which companies export to subsidiaries at below international market prices. In the case of shrimp, the Central Bank has been using the international

[1] "Dominio pleno" titles give owners more flexibility than other types of land titles in Honduras, allowing them to sell and mortgage their property.

prices of a type of shrimp that is larger than the one exported from Honduras.

Citing agricultural GDP in 1978 lempiras may also misrepresent agricultural output. Even the Central Bank recognizes the need to change the base year, as well as the entire estimation procedure.

Estimates for each commodity were based on three growth scenarios, each using a different set of assumptions. The low growth scenario assumed little additional intervention in research and technical assistance, while the medium growth scenario assumed that the policy reforms would be complemented with interventions to improve farmers' technological capacity. The high growth scenario, while feasible, would require extremely favorable conditions and heavy investments in technical assistance to farmers. Value added for 1989 was adjusted to reflect higher production levels for some commodities than the Central Bank's estimates.

Value added in 1978 lempiras would decline 1.1 percent in 1991 in the low growth scenario. It would grow at an annual rate ranging between 2 and 4.5 percent from 1992 to 1998. Value added would grow at a rate of between 1.2 percent and 7.5 percent per year in the medium growth scenario and between 4 and 11.4 percent in the high growth scenario for the same period.

Value added in U.S. dollars would stay the same in 1991 in the low growth scenario. It would then grow at a rate ranging between 1.6 and 4.4 percent per year from 1992 to 1998. Value added growth would range between 2 and 6.4 percent per year in the medium growth scenario and between 4.6 and 10.8 percent per year in the high growth scenario. For the estimates in value added dollars, estimated output prices for coffee and bananas were modified.

The value of exports is expected to grow between 1.1 and 7.8 percent per year in the low growth scenario, between 4.4 and 13.5 percent per year in the medium growth scenario, and between 7.3 and 17.8 percent per year in the high growth scenario.

Bananas and coffee are expected to continue as the main sources of value added and foreign exchange. While other traditional exports are expected to decline or increase only slightly, beef exports could recuperate the position they once held. Nontraditional exports are expected to double, with the major increases occurring in shrimp, palm oil, and other crops. The productivity of coffee and livestock is still very low but could be substantially increased by complementing policy reforms with direct interventions in these areas.

The economic indicators used in this report do not reflect the overall impact of the proposed policy reforms. Other indicators that should also be measured are value added to the economy, including multiplier effect; employment generation; farm family income; purchasing power of agricultural GDP; and rural per capita average daily calorie consumption.

The study concludes with the following recommendations for contributing to agricultural development and improving the measurement of policy reform impacts:

1) Pursue the proposed policy reforms. This study by no means analyzes all the policy reforms necessary to promote growth by restructuring the agricultural economy. On the other hand, these reforms would remove significant barriers to improved economic performance. The Government of Honduras (GOH) and the donor community should pursue them with a sense of urgency through dialogue and the allocation of resources necessary for their successful implementation.

2) Promote transparency on all products. Apply the laws and regulations equitably to all products and producers. Clearly communicate the rules of the game even if a situation calls for a special operating system or legislation. One example of such a situation is the price band mechanism for grains, designed to protect local producers from subsidies that producers in industrialized nations receive.

3) Support research and extension activities. Even with fundamental policy reforms to restructure the system of economic incentives, inefficiencies remain in the technical information delivery systems. There is a need to invest in technology generation and transfer activities. The most significant impacts would be obtained from coffee, livestock, and basic grains.

4) Support establishment of a unified agricultural statistics system. A reliable unified agricultural statistics system is needed to monitor the agricultural economy and facilitate the reform process. The Central Bank's current information system has severe deficiencies. Information is not collected on all crops that are important in terms of resource allocation, value added, and foreign exchange. Recommendations to improve this situation are as follows:

   a) Assist the Central Bank in revising its national accounts system. The base year should be updated and better production statistics developed.

   b) Study some crops in more detail. Little is known about the dynamics of certain crops that were important in the past, such as tobacco and cotton. Other products, such as vegetables and poultry, need to be monitored.

   c) Establish a system to monitor the impact of policy reforms. A monitoring system with selected economic indicators is needed to adequately manage the economy. The Central Bank has started a project to provide quarterly estimates of economic indicators, an effort that should be assisted to accelerate its implementation.

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QUANTIFYING THE ECONOMIC IMPACT OF POLICY REFORMS IN AGRICULTURE:
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ACRONYMS AND ABBREVIATIONS

A.I.D.	Agency for International Development
BANADESA	Banco Nacional de Desarrollo Agricola National Agricultural Development Bank
CODA	Consejo de Desarrollo Agricola Agricultural Development Council
CONAL	Comision Nacional de la Leche National Milk Commission
CPI	Consumer Price Index
DGEC	Direccion General de Estadistica y Censos General Directorate of Statistics and Census
FPX or FEPROEXAH	Federacion de Productores Exportadores Agricolas de Honduras
FOB	Free on Board
GDP	Gross Domestic Product
GOH	Government of Honduras
Has.	Hectares
IDB	Inter-American Development Bank
IHCAFE	Instituto Hondureño del Cafe Honduran Coffee Institute
IHMA	Instituto Hondureño de Mercadeo Agricola Honduran Institute of Agricultural Marketing
IMF	International Monetary Fund
INA	Instituto Nacional Agrario National Agrarian Institute
Lps.	Lempiras
MRN	Ministerio de Recursos Naturales
MNR	Ministry of Natural Resources
M.T.	Metric Ton = 1,000 kilograms
Mz.	Manzana = 0.7 Hectares

QQ.	Quintals
Ths.	Thousands
UPCA	Unidad del Projecto de Credito Agropecuario Agricultural Credit Project Unit
UPSA	Unidad de Planificacion del Sector Agricola Agricultural Sector Planning Unit

1. INTRODUCTION

The Honduran economy entered a period of poor economic performance during the last decade, triggering the need for a major structural adjustment program. A.I.D., IMF, the World Bank and IDB promoted significant financial support to the economic reforms that started in 1990. The GOH introduced a complete economic adjustment package that is beginning to have an impact and can set the stage for sustainable economic growth.

The agricultural sector in Honduras contributes about 20 percent of total GDP and over 80 percent of foreign exchange earnings. Due to economic policies adverse to agriculture, recent sector performance has been very poor. During 1982 and 1983 the sector output fell. Growth started to pick up again in 1984, and reached 4 percent in 1987. However, 1988 and 1989 experienced meager growth rates of 1.8 and 2.2 percent, respectively. During these years the situation for the agricultural sector became critical (Exhibits 1.1 and 1.2).

The major donors to Honduras are proposing policy reforms to deepen structural reforms to the economy and to improve rural incomes through increased productivity and prices for producers. This report presents an analysis of the economic impact of these proposed policy reforms. The work was conducted under the auspices of the Agricultural Policy Analysis Project II (APAP II), contract No. DAN-4084-Z-00-8034-00, Order No. 13.

The study quantifies the effect of the proposed policy reforms on several economic indicators, including value added and export growth, as well as production patterns.

The report starts with an executive summary indicating the major results of the analysis. This chapter is followed by a methodology chapter that outlines the general methodology followed in the study. Chapters 3 through 9 present the more detailed methodology used to analyzed the economic impact on major products or product groups. Chapter 10 presents the aggregate results, including some recommendations.

18-Mar-91 date

HONDURAS - POLICY REFORMS - INTRODUCTION

Exhibit 1.1 Total Value Added, Exports and Agricultural Share, 1980 to 1989.

Description	Year									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
VALUE ADDED (MILLION 1978 LEMPIRAS)										
Total	3,657	3,706	3,664	3,647	3,720	3,804	3,954	4,134	4,915	5,030
Agriculture	1,014	1,053	1,047	1,040	1,053	1,084	1,110	1,156	1,177	1,203
Growth		3.8%	-0.6%	-0.7%	1.3%	2.9%	2.4%	4.1%	1.8%	2.2%
Share	27.7%	28.4%	28.6%	28.5%	28.3%	28.5%	28.1%	28.0%	23.9%	23.9%
VALUE ADDED (MILLION CURRENT LEMPIRAS)										
Total	4,549	4,956	5,185	5,419	5,757	6,166	6,767	7,163	8,937	9,788
Agriculture	1,132	1,166	1,186	1,226	1,253	1,328	1,495	1,518	1,630	1,779
Growth		3.0%	1.7%	3.4%	2.2%	6.0%	12.6%	1.5%	7.4%	9.1%
Share	24.9%	23.5%	22.9%	22.6%	21.8%	21.5%	22.1%	21.2%	18.2%	18.2%
EXPORTS VALUE (MILLION DOLLARS)										
Total	822	754	655	672	725	765	854	808	869	940
Agriculture	645	615	560	552	612	646	751	717		
Growth		-4.6%	-9.0%	-1.5%	10.9%	5.6%	16.3%	-4.6%		
Share	78.4%	81.7%	85.6%	82.1%	84.4%	84.5%	87.9%	88.7%		

Source: Department of Economic Studies, as published by UPSA, "Compendio Estadistico Agropecuario 1990." Tegucigalpa, Honduras: Secretaria de Recursos Naturales, 1990. pp. 41-42.

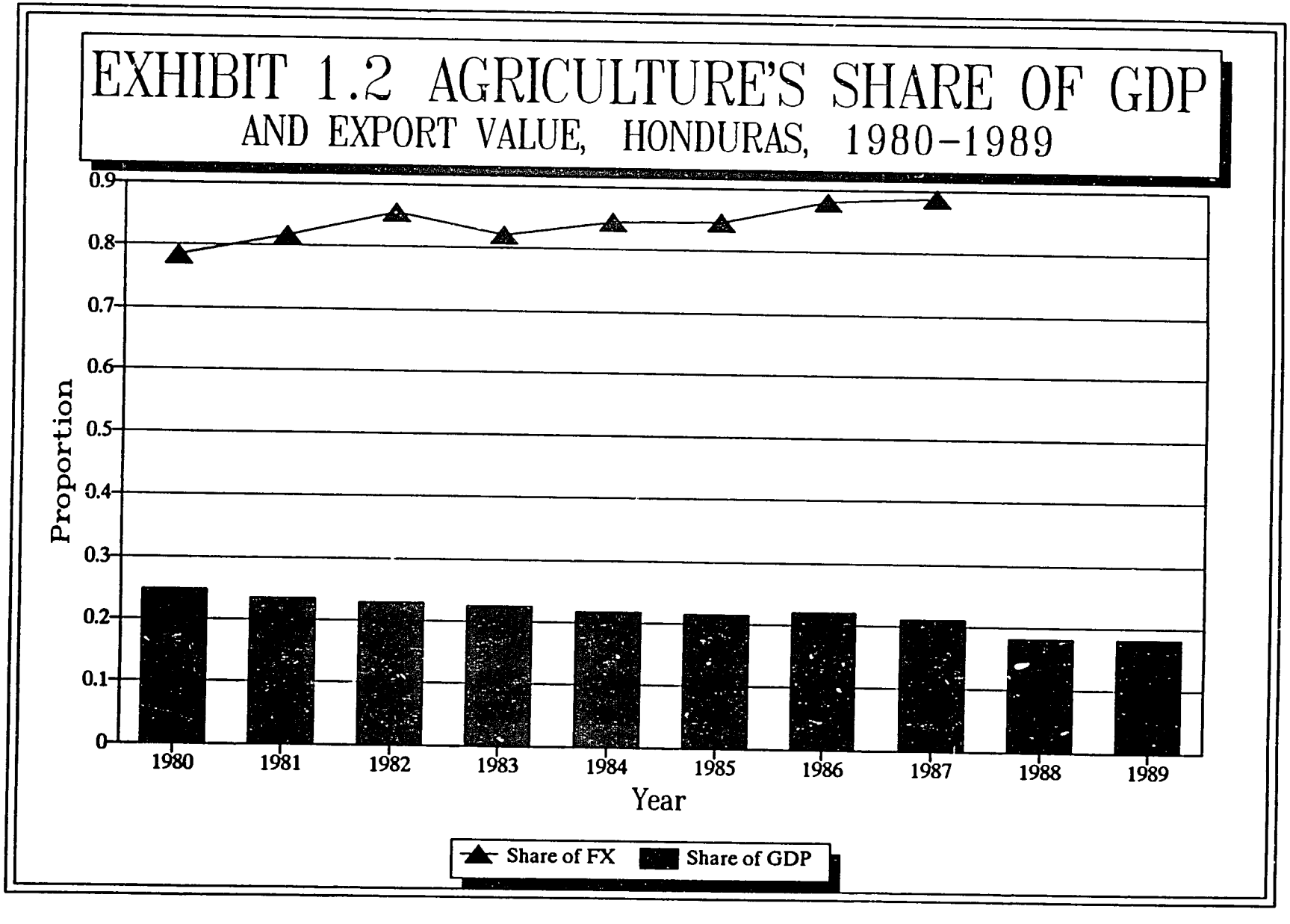


EXHIBIT 1.2 AGRICULTURE'S SHARE OF GDP
AND EXPORT VALUE, HONDURAS, 1980-1989
Proportion
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
Year
Share of FX
Share of GDP

2. METHODOLOGY CONSIDERATIONS

The general methodology consisted of analyzing the economic impacts of the policy reforms on the major agricultural products or groups of products. These individual analyses were then aggregated to estimate the overall impact.

The agricultural products were selected according to their contribution to GDP, and their growth potential. GDP was the major impact indicator selected by the analysis. According to these criteria the major products are: coffee, bananas, basic grains, livestock, shrimp, and poultry.

2.1 Definitions

Gross domestic product (GDP) is the total value of all final goods and services produced in a country calculated at market prices. It is also called value added.

Real agricultural gross domestic product is the contribution of agriculture to GDP at constant prices.

Real agricultural price index is the nominal price deflated by the consumer price index (CPI).

Consumer price index (CPI) is an index that reflects the cost for consumers to purchase the same basket of goods bought in the base year. The base year for Honduras' CPI is 1978.

Real purchasing power of agricultural GDP is the current agricultural income deflated by an index of non-agricultural prices.

2.2 Recent Performance of the Agricultural Sector

The agricultural sector experienced a decline in total output during 1982 and 1983. It started to increase very slowly in 1984, and by 1987 it reached a value added growth in constant 1978 lempiras of 4.1 percent, according to Central Bank figures (Exhibits 2.1 to 2.3). The major agricultural products are bananas, coffee, livestock, basic grains, and forestry (Exhibits 2.4 to 2.6).

Total farm land area has grown over the years, according to reported statistics (Exhibits 2.7 to 2.9). Most of the farm land is in pasture (43 percent), followed by forest and bushland, annual crops, and permanent crops. Not all of the reported growth in farm land from 2.6 million Hectares in 1974 to 3.6 million in 1988 is for real. Some of the difference is due to measuring methods, and improvements in statistical techniques.

The 1974 data were estimated from an agriculture census. An agriculture census usually under counts due to incomplete coverage. To adjust for these, a follow-up survey is usually done. In Honduras these surveys were never conducted. The 1988 data were from an area frame sample. This sample was

HONDURAS - POLICY REFORMS

Exhibit 2.1 Gross Value Added in 1978 Lempiras, 1980 to 1989.

Product	Year 1980	1981	1982	1983	1984	1985	1986	1987	1988	1989 p/
1978 MILLION LEMPIRAS										
Corn	66	83	77	77	82	88	81	70	75	61
Sorghum	11	9	8	9	10	7	6	8	9	10
Rice	16	18	19	25	23	21	24	16	13	14
Beans	21	25	24	20	21	22	24	20	12	16
Total Basic Grain	116	135	128	131	136	138	135	114	109	101
Coffee	260	290	311	277	260	269	281	296	317	330
Tabacco	16	16	16	16	16	12	11	9	10	11
Cotton	17	15	6	11	13	11	7	3	4	2
African Palm	8	9	12	15	23	27	23	19	17	18
Banana	154	130	114	111	122	143	155	181	172	180
Plantain	13	14	14	15	16	16	17	14	14	15
Sugar Cane	38	38	40	41	40	39	39	35	33	35
Other Products	61	66	66	70	72	70	70	77	77	87
Total Agriculture	683	713	707	687	698	725	738	748	753	779
Forestry	122	123	118	117	116	118	119	124	125	114
Livestock	145	145	146	151	154	161	168	183	192	201
Poultry	33	36	39	43	42	39	43	45	46	47
Honey+Fish.+Huntin	31	36	37	42	43	41	42	56	61	62
TOTAL	1,014	1,053	1,047	1,040	1,053	1,084	1,110	1,156	1,177	1,203
PERCENT CHANGE										
Corn		25.8%	-7.2%	0.0%	6.5%	7.3%	-8.0%	-13.6%	7.1%	-18.7%
Sorghum		-18.2%	-11.1%	12.5%	11.1%	-30.0%	-14.3%	33.3%	12.5%	11.1%
Rice		0.0%	5.6%	31.6%	-8.0%	-8.7%	14.3%	-33.3%	-18.8%	7.7%
Beans		19.0%	-4.0%	-16.7%	5.0%	4.8%	9.1%	-16.7%	-40.0%	33.3%
Total Basic Grain		16.4%	-5.2%	2.3%	3.8%	1.5%	-2.2%	-15.6%	-4.4%	-7.3%
Coffee		11.5%	7.2%	-10.9%	-6.1%	3.5%	4.5%	5.3%	7.1%	4.1%
Tabacco		0.0%	0.0%	0.0%	0.0%	-25.0%	-8.3%	-18.2%	11.1%	10.0%
Cotton		-11.8%	-60.0%	83.3%	18.2%	-15.4%	-36.4%	-57.1%	33.3%	-50.0%
African Palm		12.5%	33.3%	25.0%	53.3%	17.4%	-14.8%	-17.4%	-10.5%	5.9%
Banana		-15.6%	-12.3%	-2.6%	9.9%	17.2%	8.4%	16.8%	-5.0%	4.7%
Plantain		7.7%	0.0%	7.1%	6.7%	0.0%	6.3%	-17.6%	0.0%	7.1%
Sugar Cane		0.0%	5.3%	2.5%	-2.4%	-2.5%	0.0%	-10.3%	-5.7%	6.1%
Other Products		8.2%	0.0%	6.1%	2.9%	-2.8%	0.0%	10.0%	0.0%	13.0%
Total Agriculture		4.4%	-0.8%	-2.8%	1.6%	3.9%	1.8%	1.4%	0.7%	3.5%
Forestry		0.8%	-4.1%	-0.8%	-0.9%	1.7%	0.8%	4.2%	0.8%	-8.8%
Livestock		0.0%	0.7%	3.4%	2.0%	4.5%	4.3%	8.9%	4.9%	4.7%
Poultry		9.1%	8.3%	10.3%	-2.3%	-7.1%	10.3%	4.7%	2.2%	2.2%
Honey+Fish.+Huntin		16.1%	2.8%	13.5%	2.4%	-4.7%	2.4%	33.3%	8.9%	1.6%
TOTAL		3.8%	-0.6%	-0.7%	1.3%	2.9%	2.4%	4.1%	1.8%	2.2%

Source: Department of Economic Studies, Central Bank of Honduras, as reported in UPSA, "Compendio Estadistico Agropecuario, 1990." Tegucigalpa, Honduras: SRN, 1990. p.45.

p/ Preliminary.

HONDURAS - POLICY REFORMS

Exhibit 2.2 Gross Value Added in Currrent Lempiras, 1980 to 1989.

Product	Year									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
CURRENT MILLION LEMPIRAS										
Corn	71	85	93	116	95	109	118	97	102	87
Sorghum	12	11	10	13	12	9	8	11	12	13
Rice	21	23	26	35	30	27	33	21	18	20
Beans	26	28	30	26	28	32	27	26	18	23
Total Basic Grain	130	147	159	190	165	177	186	155	150	143
Coffee	218	204	226	155	178	188	330	210	260	356
Tabacco	21	21	22	24	26	27	16	14	15	16
Cotton	19	11	4	12	13	7	7	3	4	2
African Palm	8	11	15	18	27	29	27	24	22	23
Banana	206	184	155	176	189	232	250	326	351	356
Plantain	16	18	19	22	22	23	25	20	28	22
Sugar Cane	50	64	60	65	65	62	58	64	62	69
Other Products	72	81	82	92	97	92	90	117	116	117
TOTAL AGRICULTUR	740	741	742	754	782	837	989	933	1,008	1,104
Forestry	151	173	174	176	166	170	173	192	198	189
Livestock	165	170	180	189	203	206	215	251	271	329
Poultry	39	41	48	55	51	54	56	60	63	64
Honey+Fish.+Huntin	37	41	42	52	51	61	62	82	90	93
TOTAL	1,132	1,166	1,186	1,226	1,253	1,328	1,495	1,518	1,630	1,779
PERCENT CHANGE										
Corn		19.7%	9.4%	24.7%	-18.1%	14.7%	8.3%	-17.8%	5.2%	-14.7%
Sorghum		-8.3%	-9.1%	30.0%	-7.7%	-25.0%	-11.1%	37.5%	9.1%	8.3%
Rice		9.5%	13.0%	34.6%	-14.3%	-10.0%	22.2%	-36.4%	-14.3%	11.1%
Beans		7.7%	7.1%	-13.3%	7.7%	14.3%	-15.6%	-3.7%	-30.8%	27.8%
Total Basic Grain		13.1%	8.2%	19.5%	-13.2%	7.3%	5.1%	-16.7%	-3.2%	-4.7%
Coffee		-6.4%	10.8%	-31.4%	14.8%	5.6%	75.5%	-36.4%	23.8%	36.9%
Tabacco		0.0%	4.8%	9.1%	8.3%	3.8%	-40.7%	-12.5%	7.1%	6.7%
Cotton		-42.1%	-63.6%	200.0	8.3%	-46.2%	0.0%	-57.1%	33.3%	-50.0%
African Palm		37.5%	36.4%	20.0%	50.0%	7.4%	-6.9%	-11.1%	-8.3%	4.5%
Banana		-10.7%	-15.8%	13.5%	7.4%	22.8%	7.8%	30.4%	7.7%	1.4%
Plantain		12.5%	5.6%	15.8%	0.0%	4.5%	8.7%	-20.0%	40.0%	-21.4%
Sugar Cane		28.0%	-6.3%	8.3%	0.0%	-4.6%	-6.5%	10.3%	-3.1%	11.3%
Other Products		12.5%	1.2%	12.2%	5.4%	-5.2%	-2.2%	30.0%	-0.9%	0.9%
TOTAL AGRICULTUR		0.1%	0.1%	1.6%	3.7%	7.0%	18.2%	-5.7%	8.0%	9.5%
Forestry		14.6%	0.6%	1.1%	-5.7%	2.4%	1.8%	11.0%	3.1%	-4.5%
Livestock		3.0%	5.9%	5.0%	7.4%	1.5%	4.4%	16.7%	8.0%	21.4%
Poultry		5.1%	17.1%	14.6%	-7.3%	5.9%	3.7%	7.1%	5.0%	1.6%
Honey+Fish.+Huntin		10.8%	2.4%	23.8%	-1.9%	19.6%	1.6%	32.3%	9.8%	3.3%
TOTAL		3.0%	1.7%	3.4%	2.2%	6.0%	12.6%	1.5%	7.4%	9.1%

Source: Department of Economic Studies, Central Bank of Honduras, as reported in UPSA, "Compendio Estadistico Agropecuario, 1990." Tegucigalpa, Honduras: SRN, 1990. p.45.

EXHIBIT 2.3 TOTAL AGRICULTURAL GDP HONDURAS, 1980 TO 1989

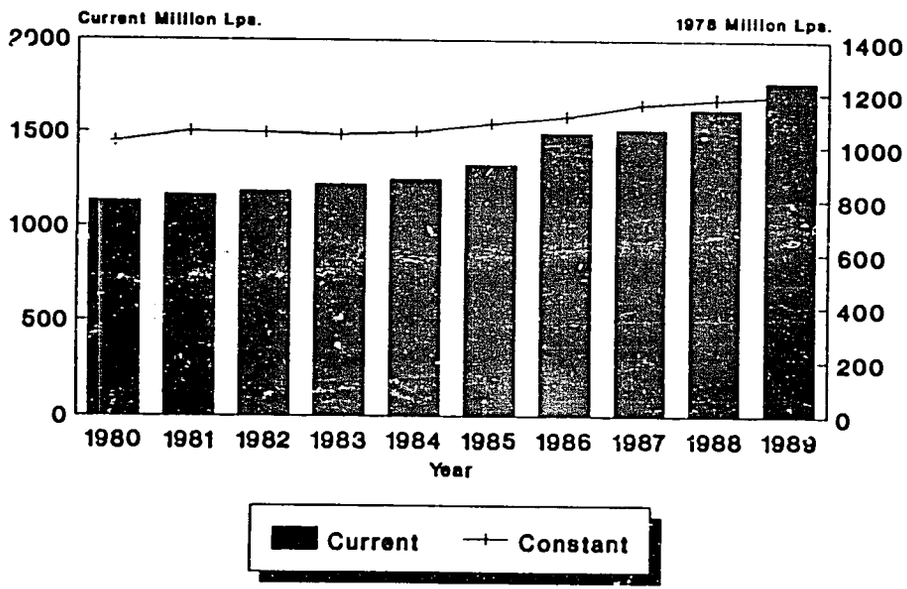


EXHIBIT 2.4 AGRICULTURAL VALUE ADDED, SELECTED COMMODITIES, HONDURAS, 1980-89
1978 Million Lempiras

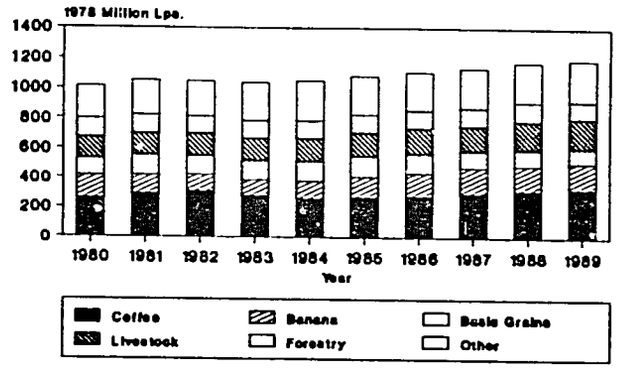


EXHIBIT 2.5 AGRICULTURAL VALUE ADDED SELECTED COMMODITIES, HONDURAS, 1980-89
Current Million Lempiras

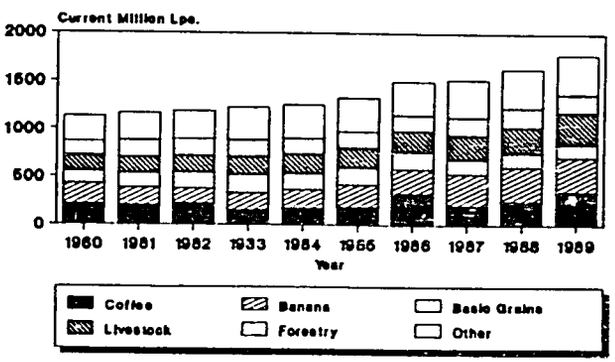
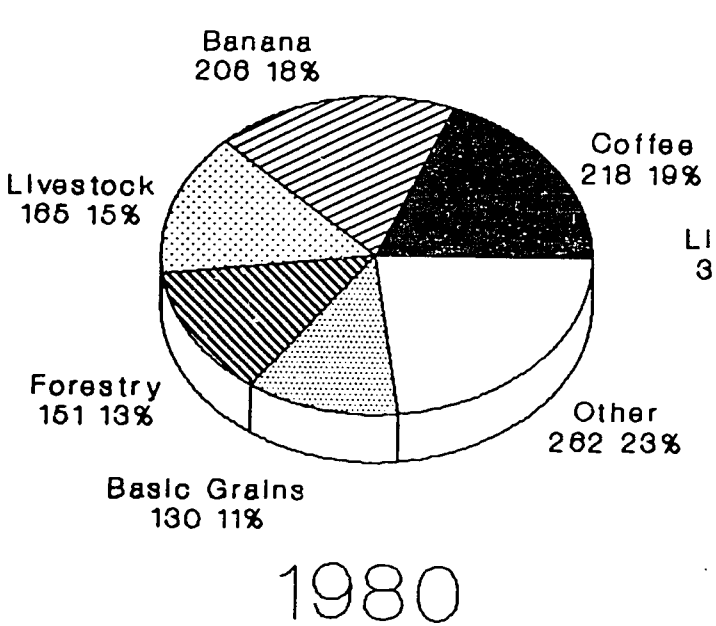
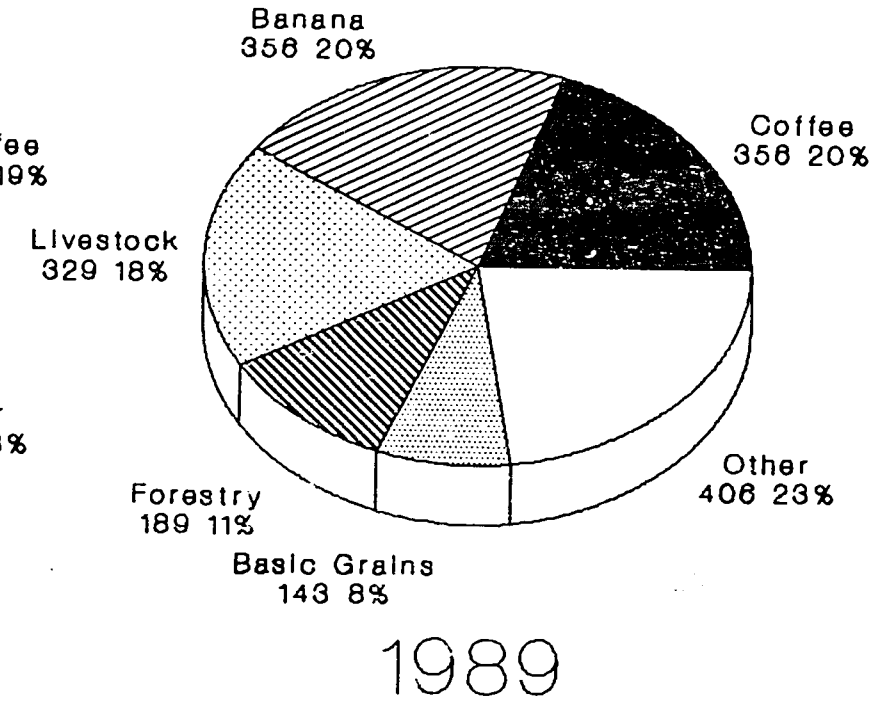


EXHIBIT 2.6 VALUE ADDED, HONDURAS
Selected Commodities, 1980 AND 1989
Current Million Lps.





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HONDURAS - POLICY REFORMS

Exhibit 2.7 Farm Land Use Patterns, 1952, 1965, 1974, 1988.

(Thousand Hectares)

Description	Year			
	1952	1965	1974	1988
AREA (THS. HAS.)				
Annual Crops	295.9	338.9	365.6	477.9
Permanent Crops	175.5	186.4	213.0	364.6
Pasture	822.4	1,120.7	1,346.5	1,562.5
Fallow Land	423.8	249.3	139.4	25.5
Forest & Bushes	727.1	459.9	533.9	1,131.7
Others	62.7	65.4	31.6	75.2
Total	2,507.4	2,420.6	2,629.9	3,637.5
PERCENT				
Annual Crops	11.80%	14.00%	13.90%	13.14%
Permanent Crops	7.00%	7.70%	8.10%	10.02%
Pasture	32.80%	46.30%	51.20%	42.96%
Fallow Land	16.90%	10.30%	5.30%	0.70%
Forest & Bushes	29.00%	19.00%	20.30%	31.11%
Others	2.50%	2.70%	1.20%	2.07%
Total	100.00%	100.00%	100.00%	100.00%

Note: There are three sources of possible differnces in the area reported in farms in 1974 and 1988:

1. Census vs. Survey. The 1974 data were estimated form an agriculture census. An agriculture census is usually incomplete. To adjust for under-counting due to incompleteness a follow-up survey is usually done. In Honduras these surveys were never conducted. The 1988 data are from an area frame sample. The results from the survey are considered to be more representative of the universe than the estimates from the previous census.

2. Strata Exclusion. Stratum III-2 was not adequately studied in the 1974 Census. This stratum includes forest areas with supposedly insignificant farming practices. This stratum was included in the survey of 1988. Significant farming activity was found in this stratum, increasing the area in farms.

3. Growth. There is some growth in farm areas due to population pressure on farm land, pushing farmers to settle in marginal areas not farmed before.

Source: 1952,1965 and 1984 - Agriculture Census, as reported by Raul Ruben, "Notas Sobre la Cuestion Agraria en Honduras." Research Memorandum 1989-39. San Jose, Costa Rica: Universidad Libre de Amsterdam, July 20, 1989. p.7.
1988 - Direccion General de Estadistica y Censos, "Encusta Agricola Narional de Propositos Multiples E.A.N. - 1989, Tomo III." Tegucigalpa, Honduras: Secretaria de Planificacion, Coordinacion y Presupuesto, Octubre 1990. p.8.

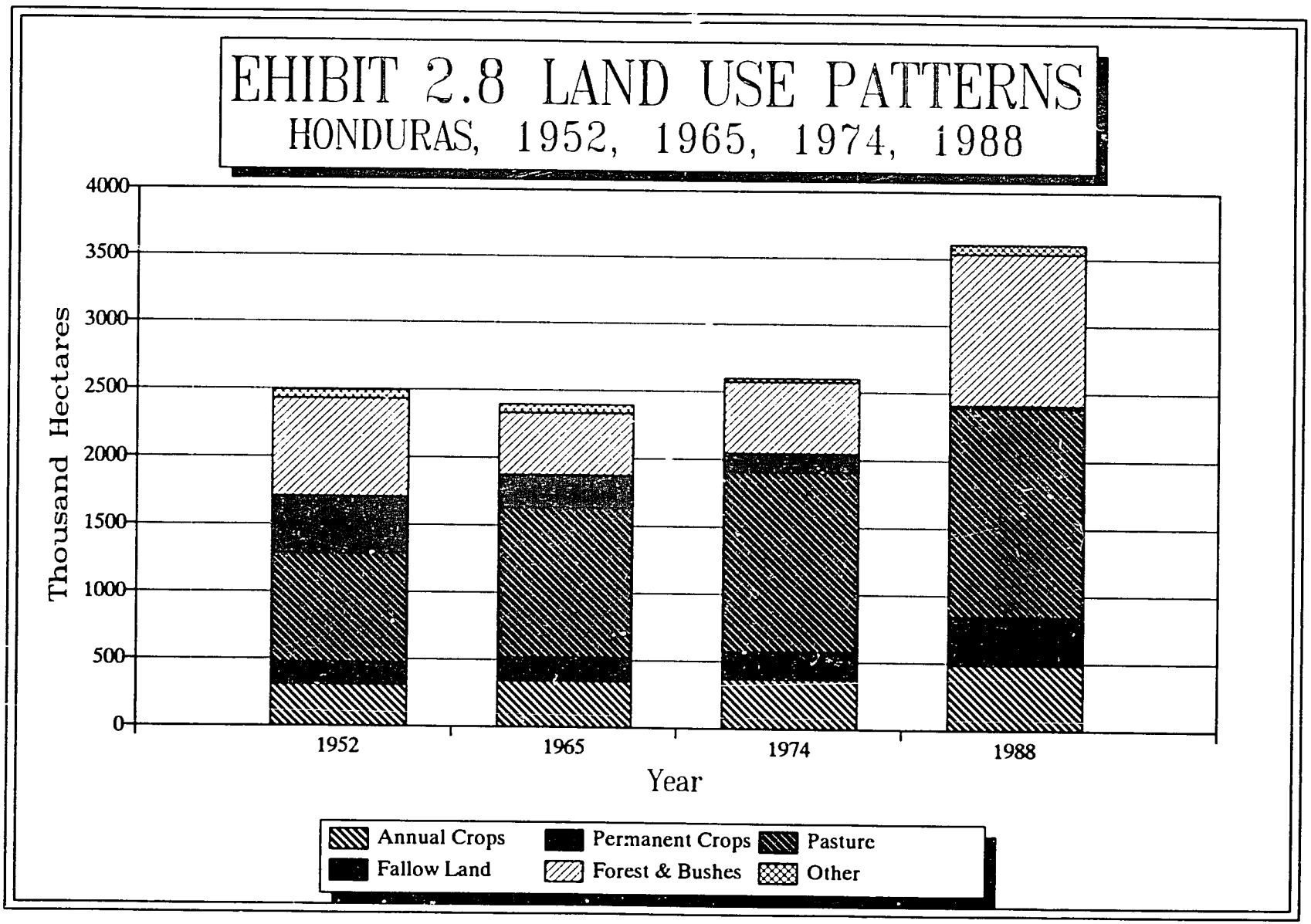
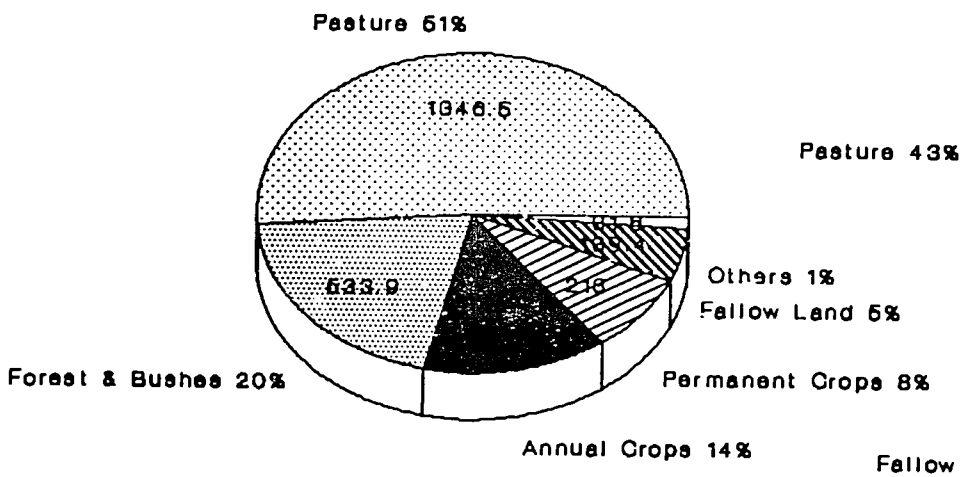
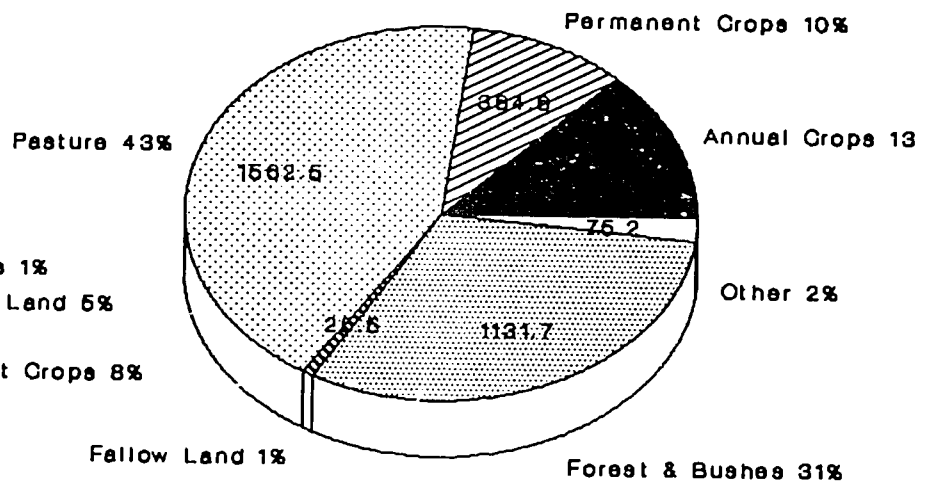

EHIBIT 2.8 LAND USE PATTERNS
HONDURAS, 1952, 1965, 1974, 1988
Thousand Hectares
4000
3500
3000
2500
2000
1500
1000
500
0
1952
1965
1974
1988
Year
Annual Crops
Permanent Crops
Pasture
Fallow Land
Forest & Bushes
Other

EXHIBIT 2.9 LAND USE PATTERNS HONDURAS, 1974 AND 1988
(Thousand Hectares)



1974



1988

extracted from a new area frame. The results from the survey are considered to be more representative of the universe than the estimates from the previous census. One further source of difference was the exclusion of a stratum during the 1974 census. Stratum III-2 was not adequately studied in the 1974 Census. This stratum includes forest areas with supposedly insignificant farming practices. This stratum was included in the survey of 1988. Significant farming activity was found in this stratum, increasing the area in farms.

Agricultural exports represent over 80 percent of all export earnings in Honduras. The major commodities are bananas and coffee, which account for over 70 percent of all agricultural exports (Exhibits 2.10 to 2.13). While banana and coffee exports have been growing during the last decade, other traditional exports have been losing ground (Exhibits 2.14 and 2.14A).[1] There is an effort to diversify export earnings, with shrimp and pineapple contributing the biggest proportion. These two products have very high growth potential (Exhibit 2.15).

Given the importance of agriculture in the generation of foreign exchange, there is a need to implement policy reforms that will stimulate faster growth in the sector. It will take a long time for other sectors in the economy to generate significant amounts of foreign exchange. The dependence of the economy on two export crops also makes the country's capacity to generate foreign exchange very vulnerable to international price fluctuations; thus, the need to diversify. This does not mean, however, that traditional export crops must be abandoned or neglected. Traditional export products, mainly coffee and bananas, must be provided with the right policy environment to foster their growth. The country can expand its area in bananas, and productivity can double in coffee. Policy reforms need to foster development of nontraditional export products, without forgetting the needs of the traditional sector. Both objectives are compatible.

Exhibit 2.16 presents detailed information on area harvested, production, yields, and value added during 1989 for these crops for which information was available. Value added per manzana harvested is one indicator of the returns to alternative uses of land. Exhibit 2.17 graphs this indicator for each crop. Bananas contribute the highest value added per manzana, followed by tobacco, coffee, sugar cane and plantains. Other crops with value added above L.500.00 per manzana are african palm and rice. This is an indicator that must be observed with caution. It does not take into account start-up investments, nor the period of time the crop stays in the ground. Basic grains can be harvested twice on the same ground in some areas; however the indicator only takes into account value added per harvested area.

The observed performance indicators are based on official published data. However, some of these data have questionable sources; thus, they must be taken with caution.

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[1] Exhibit 2.14 and 2.14A are different due to the price of bananas used on each. Exhibit 2.14 presents the international banana prices used by the Central Bank on its estimates. Exhibit 2.14A uses the banana prices reported by the exporters.

HONDURAS - POLICY REFORMS

Exhibit 2.10 Volume of Agricultural Exports, Honduras, 1980 to 1989

Description	Ths. Units	Year									
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Banana	40 Lbs. Box	47,450	42,234	44,736	35,095	41,250	46,540	42,547	49,426	46,859	45,022
Coffee	60 Kg. bags	946	1,133	956	1,238	1,130	1,192	1,324	1,451	1,263	1,420
Wood	Cubic Ms.	269	292	301	262	231	213	219	227	180	144
Refrigerated Beef	Kgs.	28,605	23,846	16,195	15,474	9,519	8,643	10,874	9,681	9,963	8,661
Sugar	Kgs.	81,473	83,053	87,479	106,165	89,632	119,292	63,133	95,577	68,662	20,758
Tabacco	Kgs.	4,566	4,488	3,170	3,125	2,506	2,319	1,498	1,260	1,124	1,800
Cotton	Kgs.	8,796	7,784	5,644	2,939	4,579	5,043	4,728	1,877	508	756
Shrimp+Lobster	Kgs.	3,273	3,645	3,600	4,266	3,944	3,473	3,456	4,500	6,107	6,076
Pineapple	Kgs.	26,425	26,827	33,143	32,917	34,201	30,844	29,044	36,986	32,819	34,096
Palm Oil	Kgs.	0	0	0	0	16,613	19,873	28,385	27,809	18,598	9,155
Melon	Kgs.	2,095	1,627	2,025	3,371	3,599	5,283	12,003	23,376		
Fruits in Conserve	Kgs.	13,583	12,392	15,241	8,412	10,804	10,778	11,436	7,903		
Cocoa	Kgs.	477	467	941	982	1,545	1,529	1,941	2,241		
Grapefruit	Kgs.	10,574	11,207	8,660	10,598	10,777	9,975	15,573	12,986		
Plantains	Kgs.	14,210	14,004	15,795	15,931	18,533	27,376	38,077	47,018	41,084	32,757
Cigars	Kgs.	272	408	434	600	528	423	504	277		
Pro. Seed & Material	Kgs.	2,007	1,936	2,574	2,149	1,689	2,508	2,501	5,116		
Molasses	Kgs.	31,651	36,668	60,880	41,004	45,664	40,745	34,442	23,628		
Fruit Extracts	Kgs.	0	0	1,462	956	1,512	2,358	2,276	999		
Sesame Seeds	Kgs.	3,558	2,158	716	461	1,006	1,424	1,305	883		
Corn Starch	Kgs.	3,543	2,876	2,844	2,511	2,307	1,107	868	531		
Citrus	Kgs.	9,840	3,711	5,933	5,267	4,328	2,877	4,043	6,100		
Coconut	Kgs.	2,765	3,737	2,245	2,076	2,059	1,543	1,882	1,078		
Starches	Kgs.	1,686	2,752	1,364	2,526	2,343	1,362	236	346		
Beans	Kgs.	0	2,757	2,651	2,962	3,393	662	1,362	380		
Elaborated Tabacco	Kgs.	119	262	184	241	134	58	19	14		
Palm Nuts	Kgs.	573	400	962	3,022	1,886	1,658	1,214	378		
Honey	Kgs.	1,065	977	1,191	694	831	646	858	106		
Cut Flowers & Foliage	Kgs.	53	22	1	1	0	0	0	14		
Corn	Kgs.	1	340	6,403	3,190	7,295	21,132	0	0		

Source: Department of Economic Studies, Central Bank.

HONDURAS - POLICY REFORMS

Exhibit 2.11 Prices of Agricultural Exports, Honduras, 1980 to 1989.

Description	Unit	Year									
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Banana	$/40 Lbs. Bo	4.81	5.05	4.88	5.79	5.63	5.88	6.03	6.51	7.37	7.62
Coffee	$/60 Kg. bag	215.76	152.57	160.15	122.13	149.63	155.37	243.26	137.77	152.10	134.44
Wood	$/Cubic Mt.	134.51	147.78	148.42	154.16	150.97	160.02	147.44	152.97	165.37	176.22
Refrigerated Beef	$/Kgs.	2.12	1.95	2.09	2.03	2.23	2.10	1.83	2.33	2.05	2.20
Sugar	$/Kgs.	0.36	0.56	0.25	0.26	0.29	0.18	0.20	0.19	0.21	0.49
Tabacco	$/Kgs.	3.00	2.97	3.40	3.46	3.33	3.73	3.55	3.30	3.38	3.83
Cotton	$/Kgs.	1.53	1.60	1.15	1.44	1.69	1.35	0.98	1.15	1.58	1.26
Shrimp and Lobster	$/Kgs.	7.16	7.20	7.77	8.43	12.62	11.79	13.13	12.98	13.43	13.05
Pineapple	$/Kgs.	0.29	0.26	0.26	0.37	0.41	0.37	0.35	0.35	0.38	0.28
Palm Oil	$/Kgs.					0.68	0.48	0.25	0.34		
Melon	$/Kgs.	0.38	0.28	0.35	0.42	0.36	0.35	0.29	0.29		
Fruits in Conserve	$/Kgs.	0.33	0.44	0.31	0.46	0.47	0.54	0.54	0.56		
Cocoa	$/Kgs.	1.99	1.71	1.91	1.88	2.01	2.06	1.44	1.65		
Grapefruit	$/Kgs.	0.31	0.30	0.30	0.34	0.29	0.26	0.28	0.28		
Plantains	$/Kgs.	0.17	0.16	0.14	0.08	0.04	0.07	0.07	0.08	0.06	0.05
Cigars	$/Kgs.	12.54	13.48	13.20	10.41	12.30	10.60	9.72	8.89		
Pro. Seed & Material	$/Kgs.	0.70	0.83	1.09	0.98	1.36	0.90	0.76	0.45		
Molasses	$/Kgs.	0.09	0.10	0.05	0.06	0.07	0.06	0.07	0.07		
Fruit Extracts	$/Kgs.			0.55	0.73	0.96	1.00	0.92	1.05		
Sesame Seeds	$/Kgs.	0.74	0.58	0.84	1.08	0.89	0.98	0.65	0.68		
Corn Starch	$/Kgs.	0.48	0.66	0.79	0.96	1.11	1.13	0.81	0.85		
Citrus	$/Kgs.	0.13	0.15	0.13	0.06	0.05	0.04	0.04	0.04		
Coconut	$/Kgs.	0.25	0.24	0.24	0.26	0.27	0.28	0.21	0.21		
Starches	$/Kgs.	0.42	0.49	0.59	0.51	0.55	0.55	0.64	0.58		
Beans	$/Kgs.		0.77	0.64	0.52	0.49	0.62	0.41	0.46		
Elaborated Tabacco	$/Kgs.	5.88	6.87	6.52	9.96	8.21	7.76	10.53	10.71		
Palm Nuts	$/Kgs.	0.26	0.25	0.21	0.22	0.34	0.27	0.21	0.13		
Honey	$/Kgs.	0.75	0.67	0.80	0.86	0.60	0.46	0.35	0.47		
Cut Flowers & Foliage	$/Kgs.	1.31	0.55	0.50	1.00				2.89		
Corn	$/Kgs.	1.50	0.26	0.22	0.20	0.19	0.19				

Source: Department of Economic Studies, Central Bank.

HONDURAS - POLICY REFORMS

Exhibit 2.12 Value of Agricultural Exports, Honduras, 1980 to 1989.

Description	Unit	Year									
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Banana	Ths. Dollars	227,998	213,281	218,310	203,127	232,243	273,481	256,771	321,784	345,350	343,050
Coffee	Ths. Dollars	204,106	172,861	153,101	151,192	169,079	185,202	322,071	199,910	192,100	190,900
Wood	Ths. Dollars	36,184	43,153	44,675	40,390	34,875	34,085	32,290	34,725	29,800	25,450
Refrigerated Beef	Ths. Dollars	60,739	46,471	33,922	31,339	21,215	18,129	19,953	22,596	20,400	19,050
Sugar	Ths. Dollars	29,331	46,538	21,591	27,840	25,673	21,464	12,495	18,583	14,400	10,150
Tabacco	Ths. Dollars	13,685	13,329	10,770	10,801	8,345	8,657	5,314	4,162	3,800	6,900
Cotton	Ths. Dollars	13,440	12,474	6,491	4,218	7,723	6,817	4,647	2,163	802	955
TOTAL TRADITIONAL		585,482	548,106	488,858	468,905	499,151	547,834	653,540	603,921	606,652	596,455
Shrimp and Lobster	Ths. Dollars	23,424	26,236	27,977	35,984	49,780	40,948	45,367	58,411	82,000	79,300
Pineapple	Ths. Dollars	7,776	7,104	8,777	12,227	14,137	11,482	10,309	13,129	12,632	9,409
Palm Oil	Ths. Dollars	0	0	0	0	11,250	9,460	7,235	9,364	8,139	4,401
Melon	Ths. Dollars	800	450	700	1,400	1,300	1,850	3,450	6,700		
Fruits in Conserve	Ths. Dollars	4,434	5,402	4,717	3,907	5,049	5,799	6,214	4,410		
Cocoa	Ths. Dollars	950	800	1,800	1,850	3,100	3,150	2,800	3,700		
Grapefruit	Ths. Dollars	3,229	3,384	2,614	3,592	3,159	2,621	4,375	3,648		
Plantains	Ths. Dollars	2,472	2,219	2,220	1,329	750	2,012	2,846	3,606	2,316	1,673
Cigars	Ths. Dollars	3,411	5,499	5,728	6,249	6,497	4,485	4,901	2,463		
Prop. Seed & Material	Ths. Dollars	1,400	1,600	2,800	2,100	2,300	2,250	1,900	2,300		
Molasses	Ths. Dollars	2,750	3,800	2,750	2,550	3,100	2,250	2,450	1,650		
Fruit Extracts	Ths. Dollars	0	0	800	700	1,450	2,350	2,100	1,050		
Sesame Seeds	Ths. Dollars	2,650	1,250	600	500	900	1,400	850	600		
Corn Starch	Ths. Dollars	1,700	1,900	2,250	2,400	2,550	1,250	700	450		
Citrus	Ths. Dollars	1,302	553	750	307	210	127	182	228		
Coconut	Ths. Dollars	683	901	542	541	564	438	391	225		
Starches	Ths. Dollars	700	1,350	800	1,300	1,300	750	150	200		
Beans	Ths. Dollars	0	2,133	1,705	1,533	1,662	408	557	177		
Elaborated Tabacco	Ths. Dollars	700	1,800	1,200	2,400	1,100	450	200	150		
Palm Nuts	Ths. Dollars	150	100	200	650	650	450	250	50		
Honey	Ths. Dollars	800	650	950	600	500	300	300	50		
Cut Flowers & Foliage	Ths. Dollars	70	12	1	1	0	0	0	41		
Corn	Ths. Dollars	2	88	1,394	632	1,395	3,936	0	0		
TOTAL NON-TRADITIONAL		59,400	67,229	71,271	82,748	112,701	98,164	97,524	112,600	105,087	94,783
TOTAL		644,882	615,335	560,128	551,653	611,852	645,998	751,064	716,520	711,739	691,238

Source: Department of Economic Studies, Central Bank.

EXHIBIT 2.13 EXPORTS VALUE, HONDURAS TRADITIONAL, NON-TRADITIONAL & TOTAL 1980 TO 1989

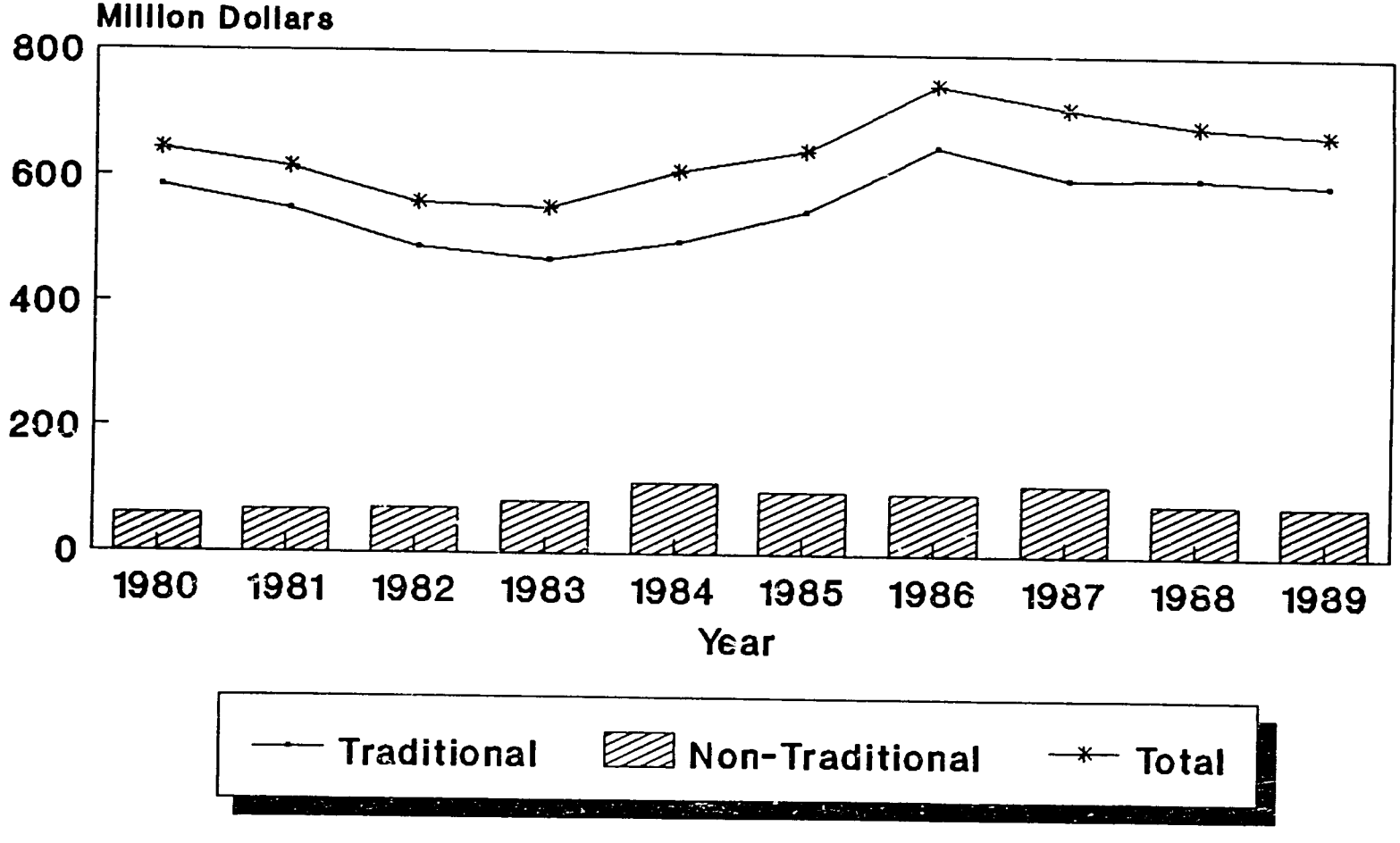


EXHIBIT 2.14 EXPORTS VALUE BANANAS, COFFEE, OTHER TRADITIONAL (PUBLISHED) HONDURAS, 1980 TO 1989

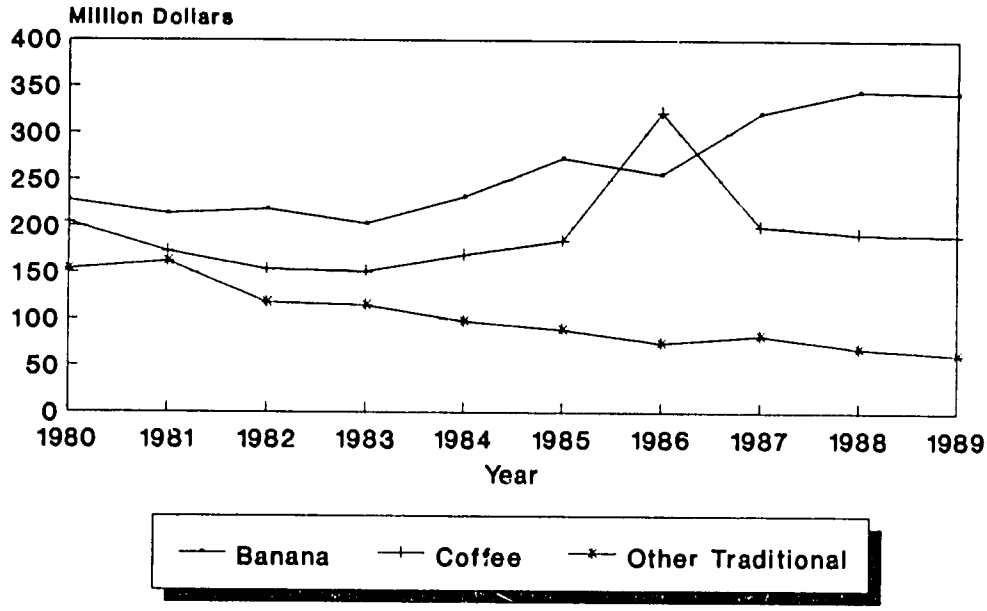


EXHIBIT 2.14A EXPORTS VALUE, HONDURAS, BANANA, COFFEE, OTHER TRADITIONAL, (TRUE BANANA PRICES), 1985-1989

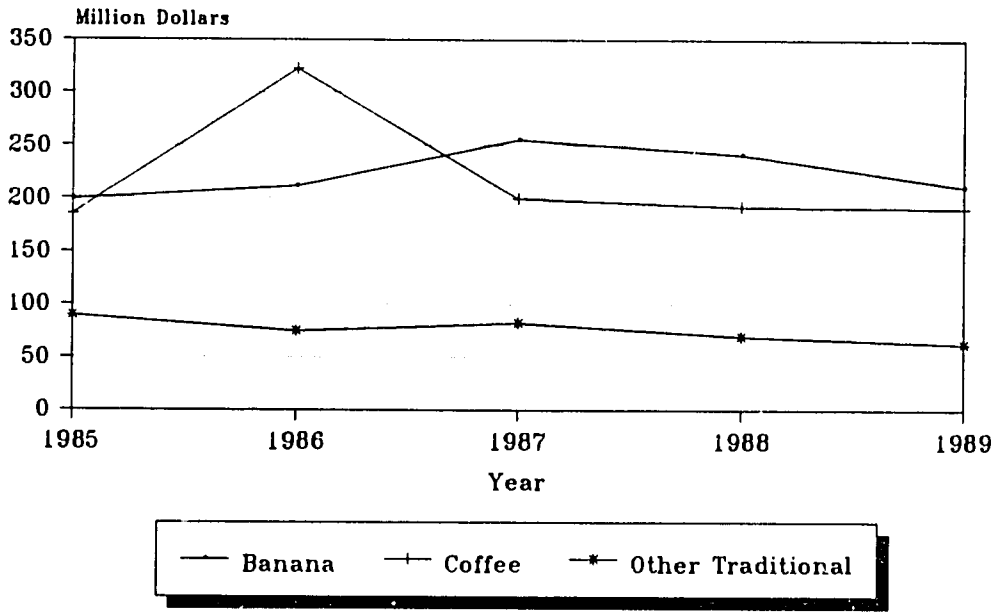


EXHIBIT 2.15 EXPORTS VALUE, HONDURAS SHRIMP+LOBSTER, PINEAPPLE, OTHER NON-TRADITIONAL, 1980 TO 1987

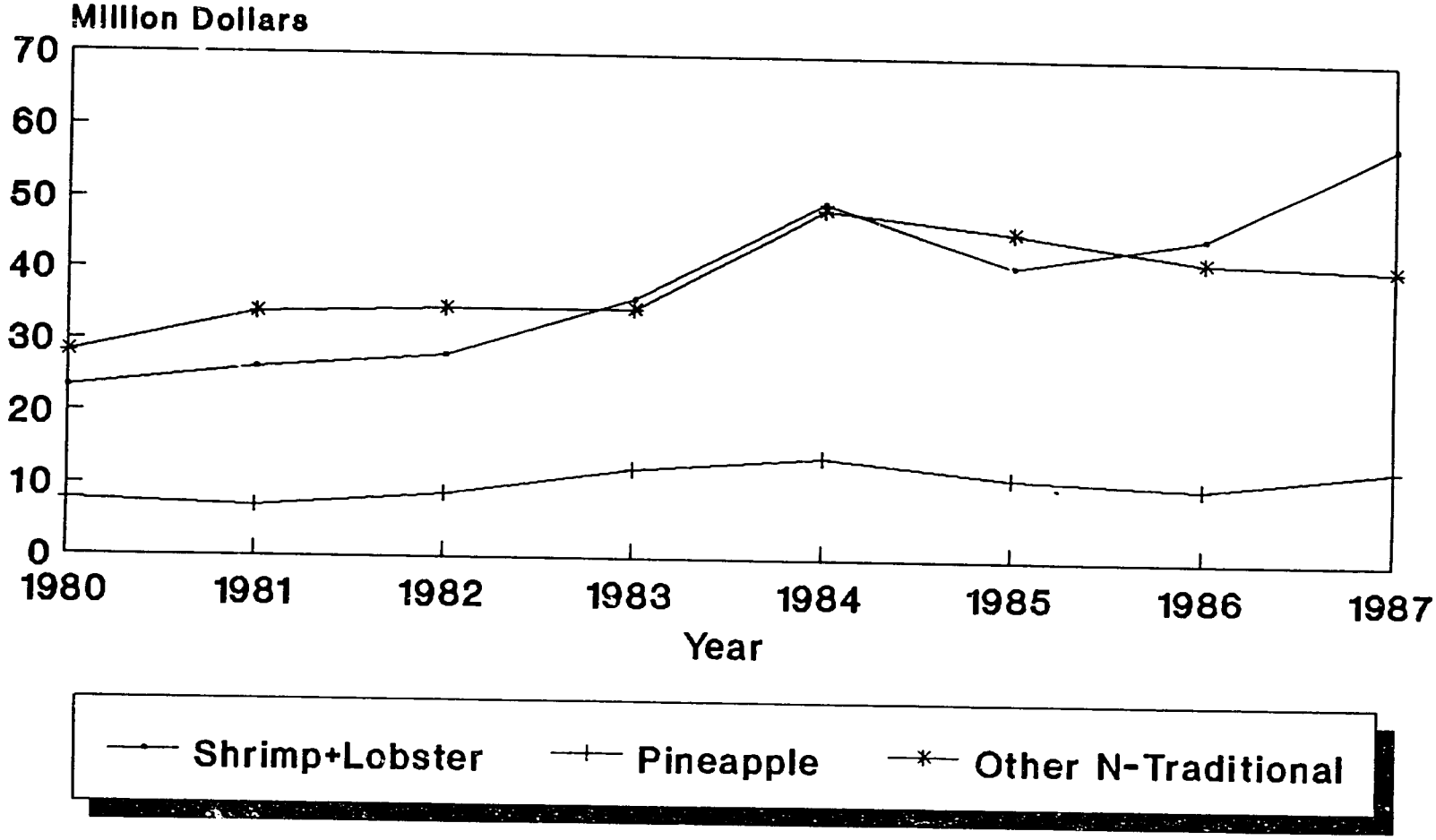


Exhibit 2.16 Land Use and Value Added, by Major Crops, 1988-89.

Land Use	Area Harvested		Production	Yield	1989 1/ Value Added	
	Manzanas	Percent	QQ	QQ/Mz	Million Lps.	Lps./ Mz.
LAND IN FARMS						
Annual crops						
Corn (First)	396,000	7.6%	8,916,890	22.52	87	163.46
Corn (Second)	136,250		2,954,390	21.68		
Beans (First)	34,520		360,130	10.43	23	130.15
Beans (Second)	142,200	2.7%	1,616,120	11.37		
Rice (First)	21,370	0.4%	855,210	40.02	20	782.78
Rice (Second)	4,180		198,690	47.53		
Sorghum (First)	73,450	1.4%	1,029,970	14.02	13	135.09
Sorghum (Second)	22,780		302,100	13.26		
Sesame	2,660	0.1%	27,550	10.36		
Cotton	5,990	0.1%	114,640	19.14	2	333.89
Forage Sorghum	2,410	0.0%	107,740	44.71		
Tobacco	4,920	0.1%	120,360	24.46	16	3,252.03
Potato	830	0.0%	93,640	112.82		
Cantalope *	6,106	0.1%				
Ornamental Plants *	139	0.0%				
Cucumber *	400	0.0%				
Squash *	300	0.0%				
Others	26,564	0.5%				
Sub-total	**683,340**	**13.1%**				
Permanent crops						
Banana 2/	56,440	1.1%	29,063,140	514.94	356	6,307.58
Coffee **	200,865	3.9%	2,170,000	10.80	356	1,772.33
African Palm	27,790	0.5%	8,088,840	291.07	23	827.64
Citrus	17,170	0.3%	1,388,560	80.87		
Sugarcane 1/	58,153	1.1%	58,576,000	1,007.27	69	1,186.53
Pineapple *	10,726	0.2%				
Mango *	761	0.0%				
Cacao *	7,007	0.1%				
Plantain *	21,736	0.4%			22	1,012.15
Cashew *	2,561	0.0%				
Cardamom *	2,288	0.0%				
Others	115,913	2.2%				
Sub-total	**521,410**	**10.0%**				
Pasture						
Natural	1,043,060	20.1%				
Improved	206,230	4.0%				
Cultivated	985,080	18.9%				
Sub-Total	**2,234,370**	**43.0%**			**329**	**147.25**
Brush and forests	**1,618,400**	**31.1%**				
Fallow	36,480	0.7%				
Non-agriculture	68,040	1.3%				
Infrastructure	39,540	0.8%				
TOTAL IN FARMS	**5,201,580**	**100.0%**				
AREA IN FORESTS	**6,222,930**					

Source: Direccion Nacional de Censos, "Encusta Agricola Nacional de Propositos Multiples, E.A.N. - 1989." Tomo III. Tegucigalpa, Honduras: Secretaria de Planificacion, Coordinacion y Presupuesto. Octubre 1990. pp. 7-12.

* FPX, "Bases Para El Desarrollo de Una Politica de Exportacion Agricola y Agroindustrial de Honduras." San Pedro Sula, Honduras: FPX. Marzo 1990. pp. 3-4.

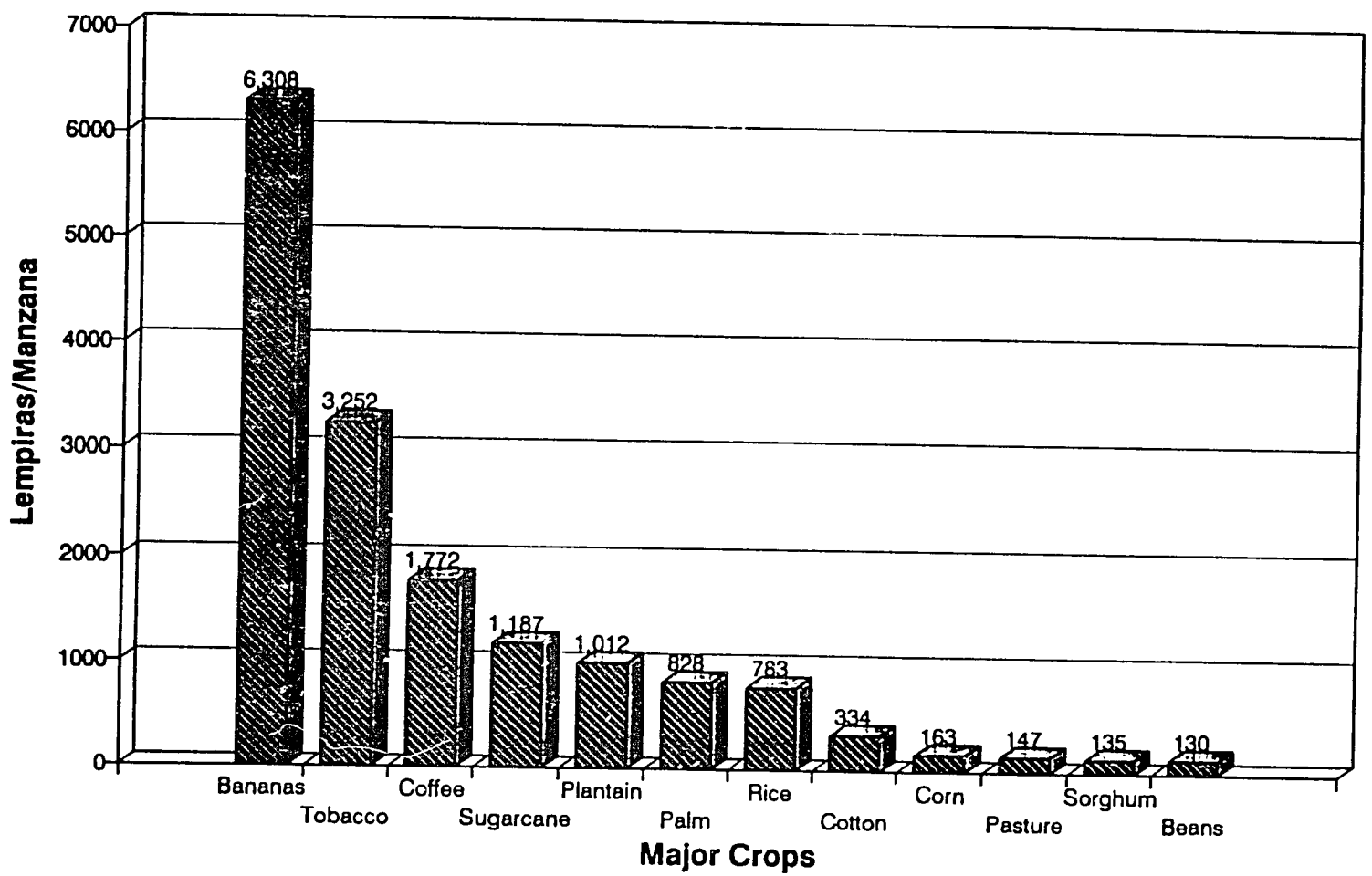
** HICAFE.

*** COHDEFOR figures minus one million manzanas estimated in farms.

1/ UPSA, "Compendio Estadistico Agropecuario 1990." Tegucigalpa, Honduras: SRN, 1990. pp. 13-14, 45 and 50-51.

2/ Export bananas were adjusted to the real export price.

EXHIBIT 2.17 VALUE ADDED PER MANZANA,
CURRENT LPS., HONDURAS, 1989.



2.3 The Proposed Policy Reforms

The list of policy reforms proposed by the major donors is presented on Exhibit 2.18. Each major crop is presented in columns to identify the relevant policy reforms that affect each of them. The proposed policy reforms are expected to:

- Increase farm gate prices;
- Make modern agricultural inputs more readily available;
- Improve land security;
- Allow new investors to enter farming, as land markets are improved.
- Improve access to credit; and
- Improve agricultural sustainability.

The GOH liberalized marketing and prices of many products during 1989, but as of January 16, 1991, a list of products still remained with price controls and/or export restrictions. The list of products is presented on Exhibit 2.19.

Farm gate prices will increase due to several of the proposed policy reforms. A liberalized foreign exchange regime will increase the farm gate prices of exported commodities as exporters will be able to sell dollar revenues at their market value. As prices of imported agricultural products increase due to a higher exchange rate, prices of locally produced commodities will increase in the same proportion. Removal of export taxes will increase the farm gate price, as tax savings are transferred to farmers. Removal of price controls will also increase the farm gate price, as commodities reach market equilibrium prices.

By liberalizing the foreign exchange regime, importers of agricultural inputs will be able to better plan imports, reducing inventory requirements to maintain a constant supply. Marketing of agricultural inputs will become more efficient, since numerous agents will be able to import them.

Land security will be improved as "dominio pleno" titles are issued to land owners, and titling is allowed for parcels smaller than 5 Has. More investors will also enter the markets as land rental is permitted and land owners can sell their land after receiving their titles.

Access to credit will be improved by a variety of measures. The single most important measure will be the liberalization of interest rates on loans and deposits. This will greatly expand the opportunities for investors to obtain capital and for local financial resources to be mobilized for lending. Up until now most agricultural lending has come from donor-financed credit lines. As interest rates increase, Hondurans with foreign deposits will have an incentive to bring in their dollars as the higher interest rates offset the lempira devaluation rate.

This set of policy reforms and interventions will provide an environment for sustained growth in the agricultural sector. Sustainability is becoming an increasingly important element in growth and development. Renewable

HONDURAS - POLICY REFORMS

Exhibit 2.18 Proposed Policy Reforms by Major Products Affected

Description	Crop						Live-stock	Poul-try	N-Tra. Exp.
	Coffee	Banana	Corn	Rice	Beans	Other			
POLICY REFORMS									
Liberalize foreign exchange regime	X	X	X	X	X	X	X	X	X
Remove price controls	X		X	X		X	X	X	
Eliminate export taxes	X	X				X	X		
Permit land rental	X	X	X	X	X	X	X	X	X
Permit titling of parcels > 5 Has.			X	X	X	X			
Issue "dominio pleno" titles	X	X	X	X	X	X	X	X	X
Remove interest rate ceiling	X	X	X	X	X	X	X	X	X

HONDURAS - POLICY REFORMS

Exhibit 2.19 Agricultural Products With Price Controls or Export Restrictions as of January 16, 1991.

Product	Price Control	Export Resctriction
CONSUMER PRODUCTS		
Sugar	X	X
Roasted Ground Coffee	X	
Corn Starch	X	
Shortening	X	X
Hulled Sesame Seed		X
Palm Oil		X
Cotton Seed Oil		X
Chicken Meat		X
Eggs		X
Lard		X
AGRICULTURAL INPUTS		
Feed Concentrates	X	X
Inputs for Concentrates	X	
Fertilizers	X	
Cotton Seed Flour		X
Beef Meal and Bone Meal		X
Cotton Seed Meal		X
Live Livestock		X
Molasses		X
Foliage and Plant Material Except Flowers		X
INDUSTRIAL INPUTS		
Cow Hides		X
Cotton Seed		X
Animal Skins		X

Source: Ministry of Economy, Billy Gonzales, Wilberto Flores and Maria Auxiliadora Corrales.

natural resources must be managed adequately to assure future returns to farm investments. It is essential to adopt the right policies in order to make users pay the right price for the resources they use. Furthermore, the revenues from these receipts must return to the source. One key example of resource use pricing policy is the case of water. Water is used for drinking, farming and power generation. However, none of the users pay a fee to reforest and protect the water sources. The user fees are limited to water use and not to generation, or preservation of infrastructure. The life span of dams is severely shortened as siltation rates rise in relation to original estimates due to lack of proper watershed management.

One key proposed policy reform is flexible exchange rate management. The exchange rate regime has been modified, representing a major improvement over the old system. However, a major improvement is not enough. Agricultural products are tradable goods, highly affected by the foreign exchange regime. The foreign exchange rate affects the farm gate price as well as the availability of inputs. Honduras has been through periods of severe shortages in major agricultural inputs, jeopardizing agricultural growth potential. Farmers must receive a market-based price for their commodities, and enough foreign exchange must be available for inputs, mainly fertilizers.

One additional policy reform element that could have a significant impact in the agribusiness sector is the adoption of an incentives structure to investment promoting agribusiness versus other sectors. Part of the profits generated in commerce, service, industry, and agriculture itself ends up in foreign banks or other activities with less value added per dollar invested than agriculture. Other countries have had favorable experiences in attracting resources to agribusiness development. One example is the agribusiness development law in the Dominican Republic. This law provided incentives for investments in agribusiness from profits generated in commerce, manufacturing and other sectors. It would be useful to analyze alternatives to stimulate higher levels of agribusiness investment in Honduras.

2.4 Theoretical Consideration in Determining Economic Impacts

The analysis in each of the following chapters examines the global impact of policy reforms on key agricultural products. Quantifications are based in part on experts' appreciation of the potential impact of these actions on farm production levels. Budgets were estimated for multiple policy reform scenarios, in order to determine the incremental effects of the reforms.

Theoretically, supply elasticities would aid in determining farmer response to policies that change real prices of the commodities involved. However, the reforms will affect other variables. These include: trade, natural resource and land use, and access to efficient financial, input, output and technology markets.

Production response will come from shifts along the supply curves, as well as from shifts of the supply curves. Present constraints make supply highly inelastic for certain products. The proposed policy reforms will not be sufficient to remove all the constraints. Program interventions will be needed to take full advantage of the proposed policy reforms, causing a structural

change in the supply curve of these products. The time horizon and available technology will not allow the shift of certain constraints that make supply perfectly inelastic at certain points. One example is shrimp production. It is estimated that the technically and economically feasible area to be exploited at the moment is 25,000 Has. Shrimp production can not be expanded beyond those limitations with present technology, at a cost-effective rate.

To isolate the impact of each of the proposed policy reforms is an exercise that is probably not cost-effective. Thus, the approach adopted consisted in looking at the combined effect of all the policy reform measures on each crop or activity.

The nature of the agricultural sector is a key element in considering the likely response to policy changes. The agricultural sector is highly conservative. Policy changes must be made and announced under stable conditions. Policy consistency and stability become extremely important elements in achieving major changes. An environment of erratic policy reforms will scare investment away from agriculture. Policies need to be adequately examined before adoption. The GOH must be fully aware of the consequences before implementing reforms. Major errors that force returning to previous regimes could be more detrimental for sector growth than no reform at all. Likewise, adopting one isolated policy reform measure without the complementary package could also have adverse effects. Policy instability could be a major deterrent to additional investment in agriculture.

Farmers' traditions will cause a lagged effect on policy reforms. Farmers are usually specialized in certain agricultural activities. Switching to other activities, even though they seem more profitable, remains a risk that takes time to overcome. This is even observed in changing technological packages in the same crop, mainly if it involves higher levels of investment. It takes time and evidence to convince a farmer to leave his "comfort zone." A large coffee exporter and successful businessman in Honduras indicated his desire to diversify his business. However, he expressed his fear of switching to perishable crops because neither he nor his employees were ready to handle perishables. He would not be comfortable or sleep well at night if he invested in such activities. This rigidity of farmers must be taken into consideration in analyzing the impact of policy reforms.

2.5 Major Economic Impact Indicators

The key economic indicators estimated were value added and generation of foreign exchange. Value added estimates only consider the impact on agricultural value added. However, expansion of agricultural production demands services and intermediate goods of significant value to the economy. Thus, agricultural value added underscores the impact of these policy reforms and interventions on Honduras' economy.

In the process of conducting the research, it was found that the Central Bank of Honduras has been overestimating the value of foreign exchange for several agricultural export commodities. These are bananas, sugar, beef, shrimp, and lobster. The Balance of Payments Division of the Department of

Economic Studies of the Central Bank has been estimating the value of exports of these commodities by multiplying export volume times an estimated price. FOB estimated price is determined from the reported international prices minus the associated shipping and insurance costs from the port of entry in the foreign market to the port in Honduras.

3. IMPACT ON THE COFFEE SECTOR

3.1 Overview

Coffee is the major contributor to GDP in the agricultural sector (Exhibit 2.1) and the second largest generator of foreign exchange after bananas. It has a major positive impact on income distribution due to the wide distribution of the farm holdings (over 60,000 farmers, mostly small) and the high labor intensity of the crop.

Even though the A.I.D. funded Small Farmer Coffee Improvement Project has introduced modern coffee technology, directly increasing the yields of more than 13,000 farmers, overall productivity is still low. This provides an opportunity for significant improvements in yields. Farm size and location, as well as road conditions in the coffee areas make technical assistance expensive. However, potential economic gains outweigh the high cost of extension services.

Coffee has been the only small farmer crop that has not been dependent on Central Government budgetary support. On the contrary, coffee has been a major contributor to Government tax revenues in the past. However, very little of coffee farmers' contribution to Government revenues has returned to the coffee sector. Survey results indicate that coffee farmers and their families receive fewer services than the rest of the rural sector. They have more limited access to health services. Fewer coffee farmers have access to potable water than their rural counterparts, and electricity services reach fewer coffee farmers than other rural dwellers. However, coffee farmers have larger families, requiring more schools and health services per household. Coffee farmers families have 6.4 members versus 5.6 for the entire rural sector.[1]

Coffee production has increased dramatically throughout the last two decades. This increase has been mostly due to area expansion, although some productivity gains have been made in recent years (Exhibits 3.1 and 3.2). Increased production contributed to increased exports and value added (Exhibit 3.3). Total coffee production was not quantified until 1988 when IHCAFE initiated a survey system. The one parameter of production levels was the registered purchases made by exporters of coffee bought from producers. While these registrations were inflated with the objective of getting a larger share of export quotas, they did not account for coffee consumed in the farm or used as seed for crop expansion or replanting. These statistics also failed to account for coffee smuggled into Guatemala and El Salvador, where prices were more attractive than the prices received by Honduran farmers. The statistics presented on Exhibit 3.1 and graphed on Exhibits 3.2 and 3.3 are from several sources. However, even though they are not precise, they provide useful information on the general trend of coffee production, exports, area harvested and value added.

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[1] Cutberto Parillón and Ralph Franklin, **Un Análisis Socioeconómico del Sector Cafetalero Hondureño: Una Tipología Funcional.** Tegucigalpa, Honduras: IHCAFE, Abril 1990. p.16.

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Exhibit 3.1 Area, Production, Yields and Value Added From Coffee, 1980 to 1990

Description	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Area Harvested (Ths. Mzs.)	173	174	176	177	175	178	176	178	199	201	214
Registered Purchases (Ths. QQ)	1,416	1,649	1,574	1,865	1,396	1,818	1,536	2,036	1,923	2,249	2,268
Production (Ths. QQ)	1,538	1,773	1,698	1,991	1,525	1,948	1,677	1,761	1,934	2,170	2,664
Yield (QQ/Mz.)	8.91	10.17	9.66	11.22	8.72	10.97	9.55	9.88	9.74	10.80	12.44
EXPORTS											
Volume (Ths. QQ)	1,274	1,345	1,188	1,618	1,364	1,675	1,932	1,823	1,597	1,742	2,179
Value (Million $)	225	156	153	151	157	186	355	198	191	194	170
Price ($/QQ)	176.78	116.28	128.89	93.48	115.24	110.82	183.81	108.66	119.75	111.22	78.13
VALUE ADDED											
Million 1978 Lps.	260	290	311	277	260	269	281	296	317	330	N.A.
1978 Lps./Mz.	1,505	1,663	1,770	1,561	1,486	1,515	1,601	1,661	1,597	1,643	N.A.
Million Current Lps.	218	204	226	155	178	188	330	210	260	356	N.A.
Lps./Mz.	1,262	1,170	1,286	874	1,017	1,059	1,880	1,179	1,310	1,772	N.A.
PERCENT CHANGE											
Area Harvested (Ths. Mzs.)		0.98%	0.74%	0.98%	-1.37%	1.47%	-1.15%	1.51%	11.41%	1.19%	6.62%
Registered Purchases (Ths. QQ)		16.45%	-4.52%	18.44%	-25.11%	30.22%	-15.53%	32.55%	-5.55%	16.99%	0.81%
Production (Ths. QQ)		15.28%	-4.23%	17.26%	-23.41%	27.74%	-13.91%	5.01%	9.82%	12.20%	22.79%
Yield (QQ/Mz.)		14.16%	-4.93%	16.12%	-22.34%	25.88%	-12.91%	3.44%	-1.42%	10.88%	15.17%
EXPORTS											
Volume (Ths. QQ)		5.56%	-11.66%	36.17%	-15.69%	22.80%	15.33%	-5.62%	-12.43%	9.09%	25.10%
Value (Million $)		-30.56%	-2.09%	-1.24%	3.94%	18.09%	91.29%	-44.21%	-3.49%	1.33%	-12.13%
Price ($/QQ)		-34.22%	10.84%	-27.47%	23.28%	-3.84%	65.86%	-40.89%	10.21%	-7.12%	-29.76%
VALUE ADDED											
Million 1978 Lps.		11.54%	7.24%	-10.93%	-6.14%	3.46%	4.46%	5.34%	7.09%	4.10%	
1978 Lps./Mz.		10.45%	6.45%	-11.80%	-4.83%	1.96%	5.67%	3.77%	-3.87%	2.88%	
Million Current Lps.		-6.42%	10.78%	-31.42%	14.84%	5.62%	75.53%	-36.36%	23.81%	36.92%	
Lps./Mz.		-7.33%	9.97%	-32.08%	16.44%	4.09%	77.57%	-37.31%	11.13%	35.31%	

Note: Registered purchases are the purchases made by exporters to producers and registed in IHCAFE.
Area, registered purchases, production, and export data are for coffee years that run from october 1 to september 31. 1980 refers to coffee year 1979/1980.
Value added are for calendar years, in addition to registered purchases and exports for 1989 and 1990.

Source: Rregistered purchases, and exports for all years, and production and area from 1988 on - IHCAFE.
Value added for all yearas, and area and production until 1987 - The Central Bank.

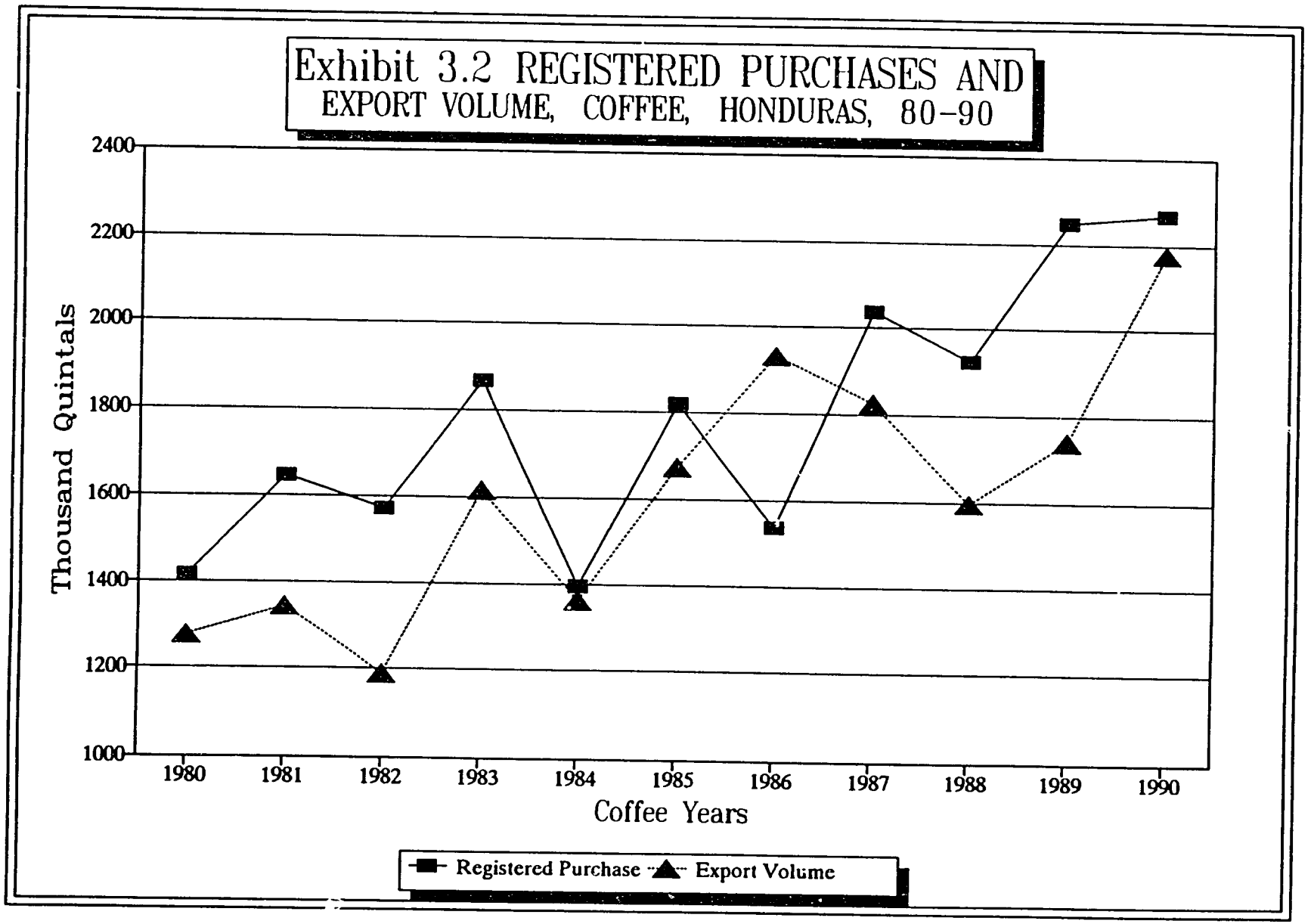
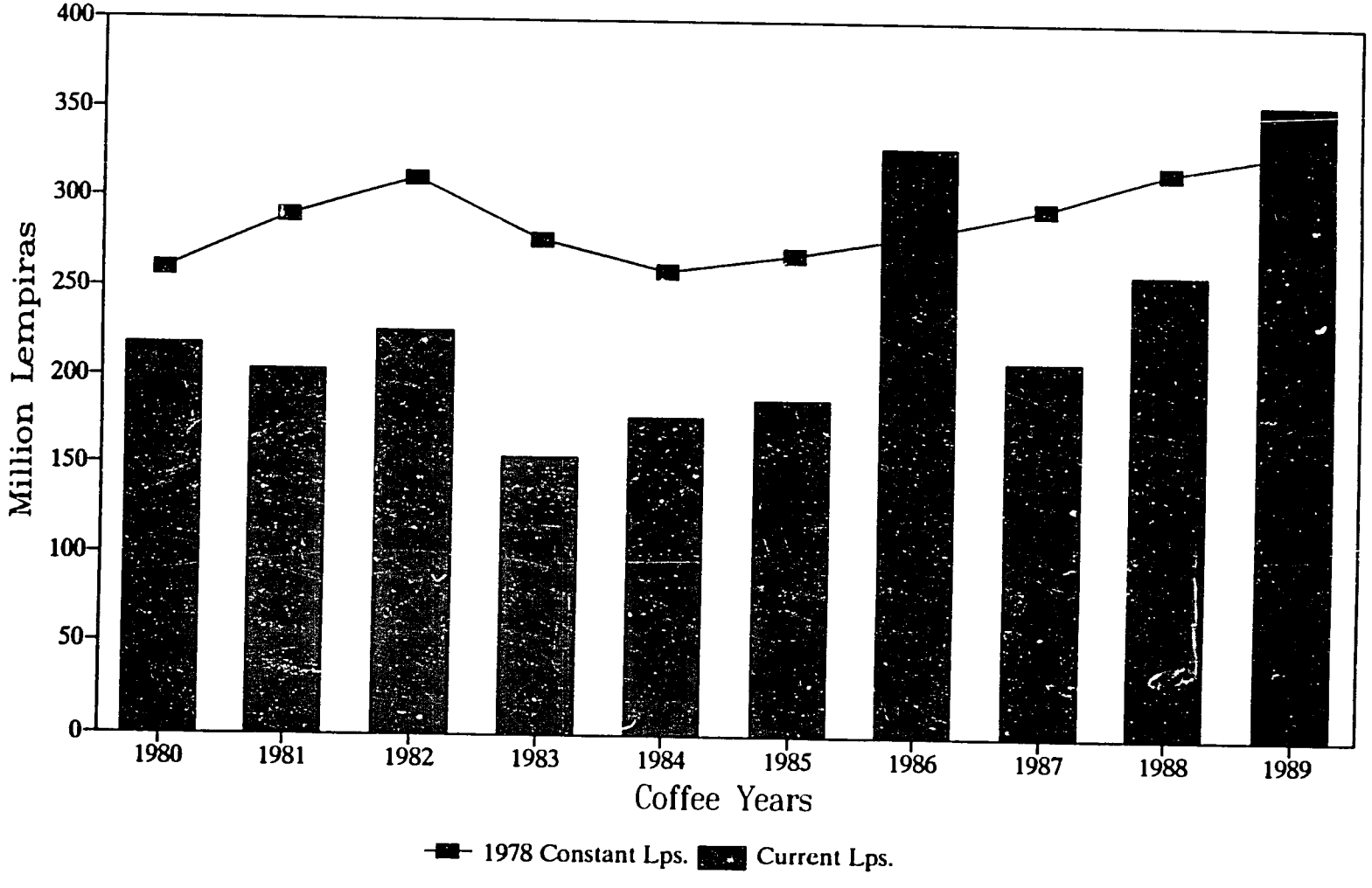


Exhibit 3.2 REGISTERED PURCHASES AND
EXPORT VOLUME, COFFEE, HONDURAS, 80-90
Thousand Quintals
2400
2200
2000
1800
1600
1400
1200
1000
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
Coffee Years
Registered Purchase
Export Volume

Exhibit 3.3 VALUE ADDED, COFFEE
HONDURAS, 1980 TO 1989



Recent productivity gains have been significant. Yields increased from 10.8 quintals/manzana (QQ/Mz.) in coffee year 1988-89[1] to 12.4 QQ/Mz. in 1989/90. This is an increment of 1.6 QQ/Mz., equivalent to 15 percent. Area planted increased from 240 thousand manzanas to 245 thousand, while area harvested increased from 200 thousand to 214 thousand manzanas (Exhibit 3.4).

Exhibit 3.4 Major Coffee Production and Productivity Parameters, Coffee Years 1988/89 and 1989/90.

Coffee Year	Area Planted Manzanas	Area Harvested Manzanas	Production QQ	Yield QQ/Mz
1988/89	239,270	200,865	2,169,907	10.8
1989/90	245,633	214,164	2,664,488	12.4
Change	6,363	13,299	494,581	1.6
Percent Change	2.6	6.6	22.8	14.8

Source: M. Ramirez, O. Romero, and C. Dunkerley, **Pronóstico de Cosecha de Café 1989-1990, Agosto, 1989**. Tegucigalpa, Honduras: IHCAFE, Octubre 1989. Tables 1 and 3.
M. Ramírez, O. Romero, and C. Dunkerley, **Encuesta Nacional de Café Diciembre 1989**. Tegucigalpa, Honduras: IHCAFE, Febrero 1990. Table 1.

3.2 Proposed Policy Reforms That Affect the Coffee Sector

The major policy reforms that will affect coffee production are the following:

1. Increase the farm gate price through:
   - More liberalized foreign exchange regime.
   - Removal of coffee export tax.
   - Removal of coffee price control.

2. Reduce the cost of production through:
   - More liberalized foreign exchange regime, which will provide stability in input markets.

3. Facilitate new entrants to coffee production and expansion of present farmers through:
   - Permitting land rental.
   - Stimulating land markets.

[1]The coffee crop year runs from October 1 to September 30.

3.3 Analysis of the Impact of the Proposed Policy Reforms

Exhibit 3.5 presents a distribution of coffee farms by size according to area in coffee, total area in farms, area planted and harvested in coffee, as well as production and yields for crop year 1989/90. Farmers with more than 20 manzanas in coffee have the highest yield (17 QQ/Mz.), but they only have 20 percent of the total area. This means that most of the coffee areas (80 percent) have significantly low yields with high potentials for improvements. However, this area is distributed in about 50,000 farm units in mountainous terrain, with poor road conditions, which makes technology transfer relatively expensive.

Coffee farmers have more than 1.2 million manzanas, of which only 245 thousand are planted with coffee. Of the one million manzanas not in coffee, it is reasonable to assume that at least 100,000 manzanas are suitable for coffee production. Expansion of the coffee area planted will help increase yields. Coffee planting or renovation requires heavy investments that do not generate positive cash flows until the third or fourth year. A coffee farmer could plant a new manzana, and renovate his old when his cash flow improves from the production of the new area.

The Small Farmer Coffee Improvement Project only allowed renovation of up to 2 manzanas per farmer at first, increasing to 5 manzanas later. These farmers are now ready to renovate more manzanas and improve the rest of their farms. However, due to the intensity of the technology transfer efforts, IHCAFE's extension agents are saturated with the number of producers they have to supervise.

A new approach to increasing coffee production could be to work with the farmer in three types of assistance: 1) plant new area or total renovation; 2) partial renovation; and 3) improved cultural practices. A particular farmer could have a combination of the different alternatives in his entire farm. The type of intervention will be determined by the quality of the land and the farmer's financial and technical capabilities.

The impact level on coffee investments will depend on the combined effect of policy reforms and micro-level interventions that are finally adopted. To stimulate production from the present coffee farmers it is critical to adopt a set of policies that will increase farm gate prices, and reduce costs of production. The single most important policy is the foreign exchange regime. This needs to be complemented by improvements in the research/extension service. More coffee extension agents are needed to provide adequate technical assistance to the many coffee producers. Coffee farmers need help in coffee technology and credit assistance. They do not know how to organize their finances to go to a bank and borrow the needed funds for additional investment.

Substantial training will be needed for extension agents and farmers on the implications of the new economic policies. Farmers do not understand the rapid changes in relative prices, and the effects of new economic policies. At first they are shocked by the escalating cost of inputs, not realizing that the price for their product is also increasing. They are not used to making decisions in an inflationary situation. One aspect that scares them is the interest rate. They do not understand the concept of real interest rates, and

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Exhibit 3.5 Number of Farms With Coffee, Area, and Production By Size. Percent Distribution By Farm Size, 1989/90.

Area in Coffee Mzs.	Number of Farms	Total Area Mzs.	Area Not in Coffee Mzs.	Coffee Area Planted Mzs.	Coffee Area Harvested Mzs.	Estimated Production 1989/90 QQ	Yield QQ/M
< 1	9,209	44,440	40,200	4,240	4,003	28,274	7.06
1 < 2	12,730	86,258	71,065	15,193	13,868	115,611	8.34
2 < 5	20,776	298,383	240,444	57,939	50,581	519,140	10.26
5 < 10	10,443	320,372	253,327	67,045	56,406	707,766	12.55
10 < 15	3,109	195,306	161,569	33,737	29,681	377,780	12.73
15 < 20	1,201	65,623	45,992	19,631	17,102	199,451	11.66
20 <	1,711	237,174	189,326	47,848	42,523	716,466	16.85
Total	59,179	1,247,556	1,001,923	245,633	214,164	2,664,488	12.44
	PERCENT DISTRIBUTION						
< 1	15.6%	3.6%	4.0%	1.7%	1.9%	1.1%	
1 < 2	21.5%	6.9%	7.1%	6.2%	6.5%	4.3%	
2 < 5	35.1%	23.9%	24.0%	23.6%	23.6%	19.5%	
5 < 10	17.6%	25.7%	25.3%	27.3%	26.3%	26.6%	
10 < 15	5.3%	15.7%	16.1%	13.7%	13.9%	14.2%	
15 < 20	2.0%	5.3%	4.6%	8.0%	8.0%	7.5%	
20 <	2.9%	19.0%	18.9%	19.5%	19.9%	26.9%	
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Source: M. Ramirez, O. Romero, and C. Dunkerley, "Encuesta Nacional de Cafe, Diciembre 1989." Tegucigalpa, Honduras: IHCAFE, Febrero 1990. Cuadro No. 1.

the influence of inflation. They only see the amount of interest payments they have to make. It will take some time for farmers to get used to these changes. Thus, it is critical to have good extension agents explaining all these concepts to farmers.

Land tenure issues will be important for newcomers to coffee, and area expansion for current producers. The rate at which new areas enter coffee production will be affected by the land tenure policies adopted.

The combined effects of these policies will influence the level of investments in coffee. The level of investment could be categorized into the three interventions mentioned above: area expansion and total renovation; partial renovation; and improved cultural practices. The projected impact of these policies taken as a group will affect on average the areas presented in Exhibit 3.6 for the medium growth scenario.

Exhibit 3.6 Area Affected Annually by the Set of Policy Reforms, For The Medium Growth Scenario.

Year	New Area and Total Renovation Manzanas	Partial Renovation Manzanas	Improved Cultural Practices Manzanas
1991			18,000
1992	6,000	2,000	20,000
1993	10,000	2,000	20,000
1994	12,000	2,000	20,000

Besides the most likely medium growth scenario, two other scenarios were analyzed: low growth and high growth. The low growth scenario assumed that area harvested would increase at a rate of 1.5 percent per year, and yields would recuperate from their expected drop during the 1990/91 coffee year. Yields are expected to fall to 10.46 quintals per manzana from 12.07 quintals the previous year. This is a 13 percent drop. Yields would recuperate to reach their previous level by 1993. The high growth scenario assumed that area renovated and expansion would have two times the increment experienced under the medium growth scenario.

It is reasonable to expect a faster growth in new areas planted in coffee due to the new policies reforms. More than six thousand manzanas were incorporated to coffee production last year. For the second year it was assumed that 6,000 more manzanas will be incorporated, in addition to 2,000 manzanas of renovation. The combined increment for the third year was estimated at 12,000 manzanas, and for the fourth year 14,000 manzanas. It was assumed that partial renovation would stay at around 2,000 manzanas per year, due to the experience of the Small Farmer Coffee Improvement Project. Improved cultural practices will be widely adopted. It was assumed that on average 18,000 manzanas will use improved cultural practices the first year, and 20,000 manzanas per year after the second year.

There are several alternatives for coffee farmers to increase production and productivity in their farms. These range from new plantings to total renovation to partial renovation and improved cultural practices. Partial renovation could be done with different levels of intensity. Furthermore, technology packages for total renovation vary in plant density, variety and levels of inputs. For the analysis, it was assumed that on the average there will be three standard models of intervention impact. These are total renovation (which includes new areas) with a level of density of 3,333 plants per manzana, partial renovation equivalent to a 50 percent replacement, and improved cultural practices, which would increase yields with a marginal increase in expenditures. The level of technology assumed in this economic analysis is consistent with what can be easily transferred to small farmers.

Coffee area expansion was treated as total renovation. This has a conservative bias, resulting in a lower economic benefits. Area expansion does not have the reduced production cost experienced with total renovation; thus, its impact is more positive. However, it was decided to treat it as renovation.

The main data source was IHCAFE. They provided input prices for 1990, when the exchange rate was 5.50 lempiras per US$ (Annex A, Table 1). These prices were multiplied by the physical input requirements for total renovation (Annex A, Table 2), partial renovation (Annex A, Table 3), and improved cultural practices (Annex A, Table 4) for with and without policy reforms (Annex A, Tables 5 and 6) to develop budgets in 1990 US$ (Annex A, Tables 7 to 11).

International projected coffee prices were based on projections made by World Bank technicians. These projections are expressed in 1990 constant US$ (Annex A, Table 12), and are equivalent to the New York Coffee and Sugar Exchange prices. A differential is deducted to arrive at Honduras' FOB prices. This differential reflects shipping costs and quality discounts. It is expected that Honduran coffee discounts will fall, thereby reducing the differential to $8.00 by 1995/96.

The Export Certificate paid to IHCAFE is estimated at L.10.00 per exported bag converted to dollar at a 5.30 to one exchange rate. FOB prices minus contributions to IHCAFE result in the FOB prices received by the exporter. A deduction of $13.00 per quintal was made to account for coffee processing and handling to arrive at the farm gate price.

These projections resulted in coffee area expansion of 1.5 percent per year for the low growth scenario, 1.75 percent per year for the medium growth scenarios, and 2.5 percent per year for the high growth scenario. The big differences are expected on yield changes. While in the low growth scenario, yields will be increasing at a rate of 2 percent per year, the medium and high growth scenarios are expected to have very substantial gains in yields.

The Central Bank estimates agricultural value added at the farm gate level, assigning any additional activity to agroindustrial value added. Value added projections in 1978 constant lempiras were based on the relation of value added to production estimated by the Central Bank.

To estimate value added in dollars a different methodology was followed. For 1989, value added estimated by the Central Bank in current lempiras was divided by 2 to convert it to dollars. The rationale for using this conversion factor is that most of the coffee production is exported. The resulting value added was divided by production to determine a ratio of value added per quintal. This ratio was used to project value added under the low growth scenario. For the medium growth scenario, the value added estimates in Annex A Table 17 were added to the value added projections of the low growth scenario. For the high growth scenario, the same procedure was used, adding the results from Annex A Table 17 to the value added of the medium growth scenario (Exhibits 3.7 to 3.11).

Export volume were estimated as 88 percent of projected production. The difference (12 percent) accounts for domestic consumption: 8 percent through commercial channels and four percent consumed by farmers in their farms. The medium growth export prices used were the prices projected by the World Bank. For the low growth scenario, a one percent lower price was assumed, and for the high growth scenario, a one percent higher price (Exhibits 3.7 to 3.11).

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Exhibit 3.7 Projected Area, Production, Exports, and Value Added, Coffee, 1989 to 1998.

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
AREA HARVESTED (THS. MANZANAS)										
Low	201	214	218	222	225	228	232	235	239	242
Medium	201	214	218	222	226	230	234	238	242	247
High	201	214	218	223	227	233	239	245	251	257
YIELD (QQ/MANZANA)										
Low	11.20	12.07	10.46	10.62	11.48	11.71	11.95	12.18	12.43	12.68
Medium	11.20	12.07	10.92	11.12	11.48	11.81	12.70	14.46	16.11	17.17
High	11.20	12.07	11.15	11.37	11.49	11.86	13.30	16.45	19.31	21.00
PRODUCTION (THS. QUINTALS)										
Low	2,250	2,584	2,286	2,355	2,584	2,675	2,770	2,867	2,969	3,073
Medium	2,250	2,584	2,385	2,473	2,596	2,717	2,972	3,444	3,904	4,233
High	2,250	2,584	2,435	2,534	2,608	2,759	3,174	4,021	4,839	5,393
EXPORT VOLUME (THS. QUINTALS)										
Low	1,742	2,179	2,012	2,072	2,274	2,354	2,437	2,523	2,612	2,705
Medium	1,742	2,179	2,099	2,176	2,284	2,391	2,615	3,031	3,435	3,725
High	1,742	2,179	2,143	2,230	2,295	2,428	2,793	3,539	4,258	4,746
EXPORT PRICE (US$/QQ)										
Low	111.22	78.13	79.20	82.17	80.19	87.84	97.82	99.80	99.80	99.80
Medium	111.22	78.13	80.00	83.00	81.00	88.73	98.81	100.81	100.81	100.81
High	111.22	78.13	80.80	83.83	81.81	89.62	99.80	101.82	101.82	101.82
EXPORT VALUE (MILLION $)										
Low	194	170	159	170	182	207	238	252	261	270
Medium	194	170	168	181	185	212	258	306	346	376
High	194	170	173	187	188	218	279	360	434	483
VALUE ADDED (1978 MILLION LEMPIRAS)										
Low	330	379	335	345	379	392	406	421	435	451
Medium	330	379	350	363	381	399	436	505	573	621
High	330	379	357	372	383	405	465	590	710	791
VALUE ADDED (MILLION DOLLARS)										
Low	178	204	181	186	204	212	219	227	235	243
Medium	178	204	189	196	207	217	235	264	311	341
High	178	204	193	201	209	222	252	301	387	439

Source: Exhibit 3.1 and estimates. Production was adjusted to reflect a calendar year.

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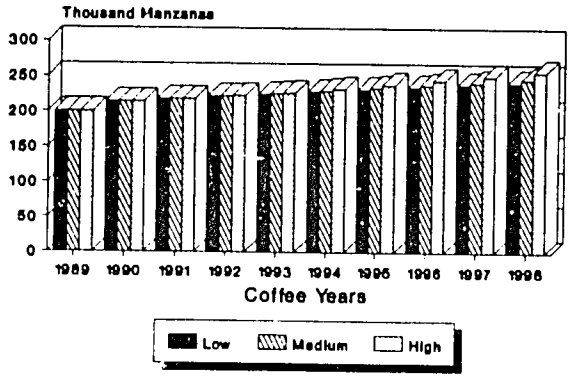
Exhibit 3.8 Percent Change in Projected Area, Production, Exports, and Value Added, Coffee, 1990 to 1998.

Description	Year								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
AREA HARVESTED (THS. MANZANAS)									
Low	6.62%	2.00%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Medium	6.62%	2.00%	1.75%	1.70%	1.75%	1.75%	1.75%	1.75%	1.75%
High	6.62%	2.00%	2.00%	1.90%	2.50%	2.50%	2.50%	2.50%	2.50%
YIELD (QQ/MANZANA)									
Low	7.71%	-13.27%	1.50%	8.11%	2.00%	2.00%	2.00%	2.00%	2.00%
Medium	7.71%	-9.50%	1.88%	3.23%	2.87%	7.48%	13.92	11.38	6.58%
High	7.71%	-7.62%	2.05%	0.98%	3.22%	12.21	23.62	17.39	8.75%
PRODUCTION (THS. QUINTALS)									
Low	14.84%	-11.54%	3.02%	9.73%	3.53%	3.53%	3.53%	3.53%	3.53%
Medium	14.84%	-7.69%	3.67%	4.99%	4.67%	9.36%	15.91	13.33	8.45%
High	14.84%	-5.77%	4.09%	2.90%	5.80%	15.02	26.71	20.32	11.47
EXPORT VOLUME (THS. QUINTALS)									
Low	25.10%	-7.69%	3.02%	9.73%	3.53%	3.53%	3.53%	3.53%	3.53%
Medium	25.10%	-3.68%	3.67%	4.99%	4.67%	9.36%	15.91	13.33	8.45%
High	25.10%	-1.67%	4.09%	2.90%	5.80%	15.02	26.71	20.32	11.47
EXPORT PRICE (US$/QQ)									
Low	-29.76%	1.37%	3.75%	-2.41%	9.54%	11.36	2.02%	0.00%	0.00%
Medium	-29.76%	2.40%	3.75%	-2.41%	9.54%	11.36	2.02%	0.00%	0.00%
High	-29.76%	3.42%	3.75%	-2.41%	9.54%	11.36	2.02%	0.00%	0.00%
EXPORT VALUE (MILLION $)									
Low	-12.13%	-6.42%	6.89%	7.08%	13.41	15.29	5.63%	3.53%	3.53%
Medium	-12.13%	-1.37%	7.55%	2.46%	14.66	21.79	18.26	13.33	8.45%
High	-12.13%	1.70%	7.99%	0.42%	15.89	28.09	29.28	20.32	11.47
VALUE ADDED (1978 MILLION LEMPIRAS)									
Low	14.84%	-11.54%	3.02%	9.73%	3.53%	3.53%	3.53%	3.53%	3.53%
Medium	14.84%	-7.69%	3.67%	4.99%	4.67%	9.36%	15.91	13.33	8.45%
High	14.84%	-5.77%	4.09%	2.90%	5.80%	15.02	26.71	20.32	11.47
VALUE ADDED (MILLION DOLLARS)									
Low	14.84%	-11.54%	3.02%	9.73%	3.53%	3.53%	3.53%	3.53%	3.53%
Medium	14.84%	-7.69%	3.67%	5.74%	4.91%	8.44%	12.06	17.98	9.57%
High	14.84%	-5.77%	4.09%	4.37%	6.27%	13.10	19.49	28.88	13.23

Source: Exhibit 3.7

EXHIBIT 3.9 COFFEE, AREA HARVESTED PROJECTIONS, HONDURAS, 1989 TO 1998



Source: Exhibit 3.7

EXHIBIT 3.10 COFFEE, YIELDS PROJECTIONS, HONDURAS, 1989 TO 1998

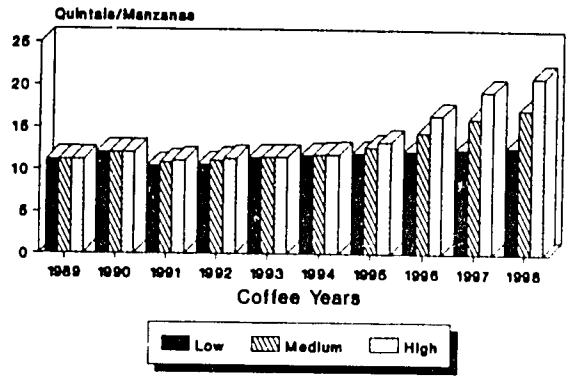
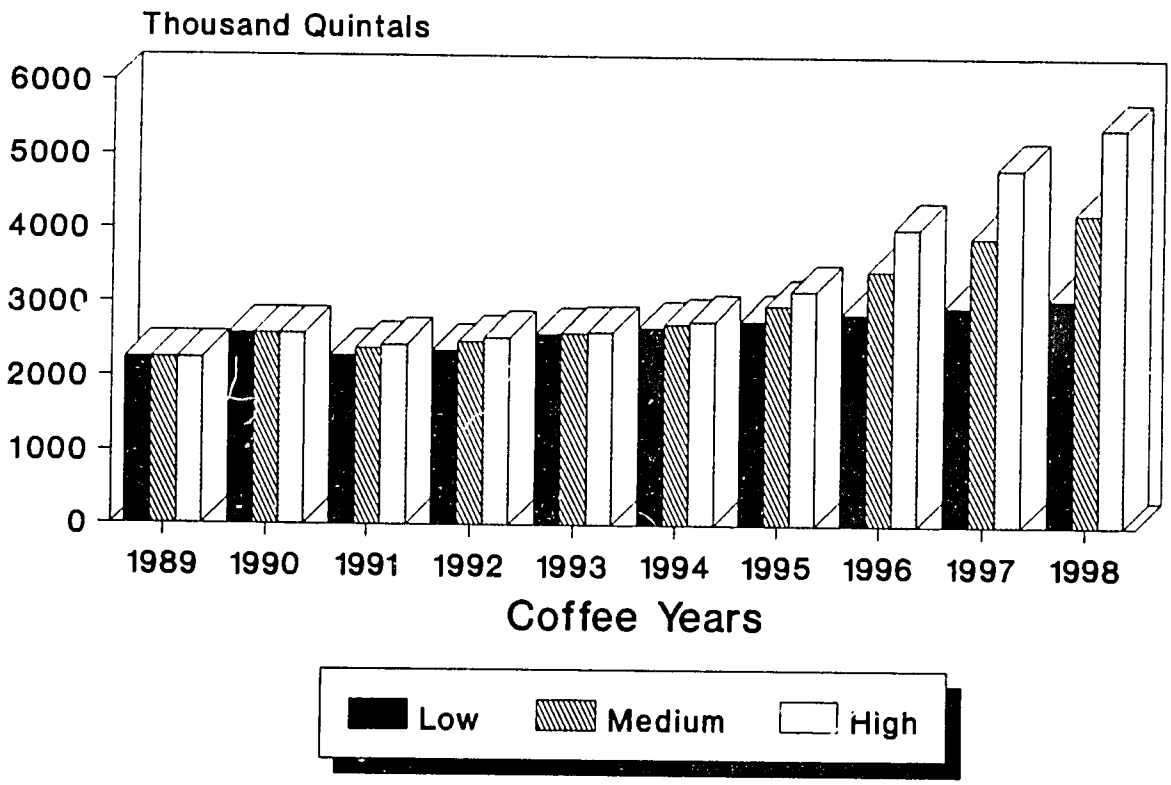


EXHIBIT 3.11 COFFEE, PRODUCTION PROJECTIONS, HONDURAS, 1989 TO 1998



Source: Exhibit 3.8

4. IMPACT ON THE BANANA SECTOR

4.1 Overview

According to Central Bank's published statistics, bananas have been the major source of export earnings in Honduras since 1981. One exception was 1986, when coffee prices rose to exceptional high levels. Even though the published banana export value has been increasing, the volume has stayed constant. Export volume fluctuated between 35 and 49 million 40 lbs. boxes (Exhibit 4.1).[1] Thus, the steady increase in export revenues has been due to a constant rise of published prices.

The banana export price published by the Central Bank of Honduras is a reference FOB price estimated from the average price of bananas in several world markets. The banana companies, however, sell at a different price. For 1990 the banana companies have been exporting at prices that range from $4.13 to $6.47 per box. The Central Bank FOB price estimate for January to September 1990 averaged $9.02 a box. In 1989 the average export price was $4.69 per box, and the estimated export price used by the Central Bank was $7.62. For 1988 the average export price was $5.15 per box, and the estimated price was $7.37 (Exhibits 4.2 and 4.3).[2]

This system of estimating export price for balance of payments is used for bananas, beef, sugar, shrimp and lobster. In all these cases, the Central Bank considers that the difference between the export price as reported by the exporters and the world market prices are significantly different. However, no adjustment is made in other accounts to compensate for these differences. They are studying the possibility of making an adjustment in the "service imports" account starting in 1990. However, no decision has been reached yet. This has serious implications for the balance of payments models used by the IMF, the World Bank, IDB and A.I.D. The most significant difference is in the foreign exchange estimates from bananas. It is possible that the difference in the other commodities returned to Honduras through the black market. However, the difference in the banana sector simply does not return in any form.

One further overestimation bias in the estimated FOB price used by the Central Bank is that it does not consider price differentials due to quality. A banana tree produces several banana sizes (quality) in the same racimo. The best quality is Type A, 8 inches long, followed by Type B, 7.5 inches, Type C, 7.0 inches, and "special". In addition, the racimo has smaller bananas that are good, but the international market doesn't readily accept them. This smaller

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[1] Bananas are exported in 40 lbs. boxes.

[2] This price information was provided by Lic. Elizabeth de Castro in Balance of Payments, and Lic. Evelia Hernandez in National Accounts. These are the two persons in charge of generating the banana figures reported by the Central Bank in value of exports and GDP, respectively. They both work in the Economic Studies Department of the Central Bank.

18-Mar-91 DATE

HONDURAS - POLICY REFORMS - BANANA

Exhibit 4.1 Area, Production, Yields and Value Added From Banana, 1980 to 1989.

Description	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Area Harvested (Mzs.)	29,663	28,697	28,567	27,354	28,164	28,696	28,322	28,503	56,440	30,120
Production (Ths. QQ)	24,177	22,105	23,163	19,292	21,839	24,014	22,448	25,362	29,063	23,738
Yield (QQ/Mz.)	815.06	770.29	810.83	705.27	775.42	836.84	792.60	889.80	514.94	788.11
EXPORTS										
Volume (Ths. 40 Lb. Box)	47,450	42,234	44,736	35,095	41,250	46,540	42,547	49,426	46,859	45,022
Value (Million $)	228	213	218	203	232	274	257	322	345	343
Price ($/40 lbs. box)	4.81	5.05	4.88	5.79	5.63	5.88	6.03	6.51	7.37	7.62
VALUE ADDED										
Million 1978 Lps.	154	130	114	111	122	143	155	181	172	180
1978 Lps./Mz.	5,192	4,530	3,991	4,058	4,332	4,983	5,473	6,350	3,047	5,976
Million Current Lps.	206	184	155	176	189	232	250	326	351	356
Lps./Mz.	6,945	6,412	5,426	6,434	6,711	8,085	8,827	11,437	6,219	11,819
PERCENT CHANGE										
Area Harvested (Ths. Mzs.)		-3.26%	-0.45%	-4.25%	2.96%	1.89%	-1.30%	0.64%	98.01%	-46.63%
Production (Ths. QQ)		-8.57%	4.79%	-16.71%	13.20%	9.96%	-6.52%	12.98%	14.59%	-18.32%
Yield (QQ/Mz.)		-5.49%	5.26%	-13.02%	9.95%	7.92%	-5.29%	12.26%	-42.13%	53.05%
EXPORTS										
Volume (Ths. 40 Lb. Box)		-10.99%	5.92%	-21.55%	17.54%	12.82%	-8.58%	16.17%	-5.19%	-3.92%
Value (Million $)		-6.45%	2.34%	-6.94%	14.32%	1[illegible]6%	-6.19%	25.42%	7.33%	-0.66%
Price ($/40 lbs. box)		5.11%	-3.38%	18.62%	-2.73%	4.38%	2.61%	7.96%	13.21%	3.39%
VALUE ADDED										
Million 1978 Lps.		-15.58%	-12.31%	-2.63%	9.91%	17.21%	8.39%	16.77%	-4.97%	4.65%
1978 Lps./Mz.		-12.74%	-11.91%	1.69%	6.75%	15.04%	9.82%	16.63%	-52.01%	96.10%
Million Current Lps.		-10.68%	-15.76%	13.55%	7.39%	22.75%	7.76%	30.40%	7.67%	1.42%
Lps./Mz.		-7.67%	-15.38%	18.58%	4.30%	20.48%	9.18%	29.57%	-45.63%	90.05%

Source: Department of Economic Studies, Central Bank of Honduras, as reported by UPSA, "Compendio Estadistico Agropecuario 1990." Tegucigalpa, Honduras: Secreteria de Recursos Naturales, 1990. pp. 13, 14, 45, and 50.

The exception are area harvested and production of 1988. These are from DGEC, "Encuesta Agricola Nacional de Propositos Multiples E.A.N. - 1989." Tomo I. Tegucigalpa, Honduras: Secretaria de Planificacion Coordinacion y Presupuesto, Mayo 1990. p. 65.

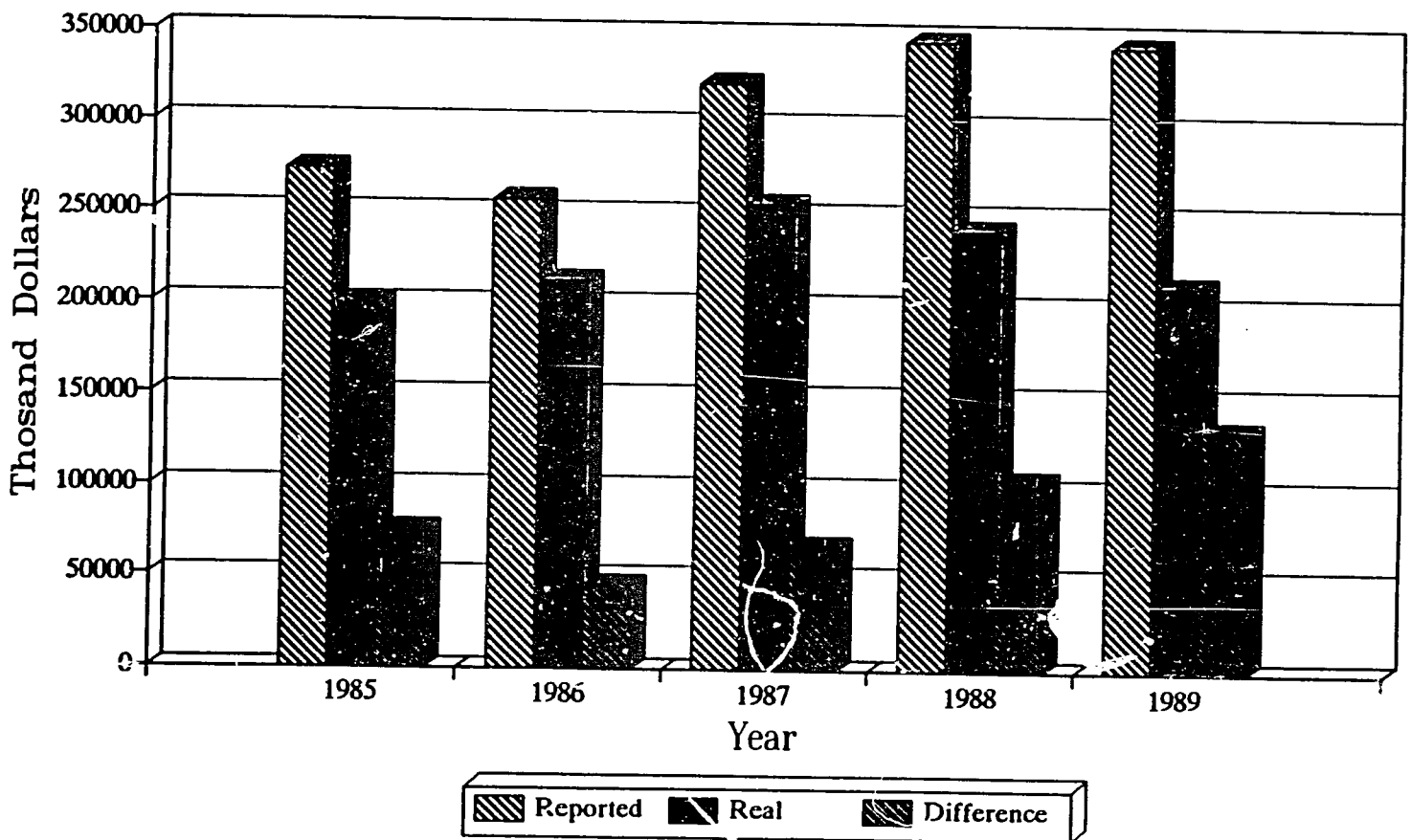
HONDURAS - POLICY REFORMS - BANANAS

Exhibit 4.2 Difference Between True Export Values and Central Bank Estimates, Bananas, 1985 to 1989.

Year	Volum 1,000 Boxes	Cent. Bank Estimate Price US$/Box	Cent. Bank Estimate Value 1000 US$	Reported Price US$/Box	Reported Value 1000 US$	Differenc 1000 US$
1985	46,540	5.88	273,500	4.27	198,948	74,553
1986	42,547	6.03	256,750	4.98	211,956	44,794
1987	49,426	6.51	321,763	5.16	255,031	66,733
1988	46,859	7.37	345,351	5.15	241,267	104,084
1989	45,022	7.62	343,068	4.69	211,117	131,951

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

Exhibit 4.3 Difference in Export Values
Real and Reported, Bananas, 1985-1989



size is called pirracha in Honduras. The banana companies throw away these as discards, or sell them for a nominal price to truckers for the local market. Each export quality type banana is sold at a different price.

Honduras banana exports are controlled by two multinational companies, the Standard Fruit Company, and the Tela Railroad Company, a subsidiary of United Brands. Due to their vertical integration, they are able to transfer profits from one company to another through the pricing mechanism. Banana export revenues are overvalued. The same is not true for the contribution to agricultural GDP. The Economic Studies Department of the Central Bank estimates the contribution of the banana sector according to the prices reported by the banana companies.

Banana production requires large investments and marketing know how. This has limited the expansion of other marketing agents in Honduras. The presence of these two large companies in several countries, gives them a negotiating advantage. This situation places bananas in a position very different from other export products. In 1990 a new competitor entered the Honduran market. It is a British based company called Fyffes. This should increase competition in the market, improving the price received by independent producers.

Honduras is the fourth major exporter of bananas in Latin American. The largest exporter is Ecuador, followed by Costa Rica and Colombia. While Honduras has maintained a constant export volume, Ecuador, Costa Rica and Colombia have been increasing their exports since 1985, when Honduras occupied second place (Exhibits 4.4 and 4.5).

Area planted in bananas vary from 30 to 56 thousand manzanas, depending on the data source. The Ministry of Natural Resources reports 30 thousand manzanas, using Central Bank's data.[1] The Secretariat of Planning, Coordination and Budget reports 56 thousand manzanas.[2] The difference in these figures is probably due to conversion factors, or different definitions of what constitutes a banana farm. Banana farms are measured in acres. These acres are then converted to Hectares by some offices, or to manzanas by others. Banana production is mostly done in technified farms for exports, but the country also has non-technified farms for local consumption. Perhaps one set of statistics only considers technified farms, while the other considers all kinds of farms.

Production is estimated at 29 million quintals, equivalent to 72.6 million 40 lb. boxes. Using the 56 thousand manzanas figure yields an average of 1,287 boxes per manzana in 1988/89.[3] About 47 million boxes are exported,

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[1] Secretaría de Recursos Naturales, Unidad de Planificación Sectorial Agrícola, "Compendio Estadístico Agropecuario." Tegucigalpa, Honduras: MRN, 1990. p.13.

[2] Secretaría de Planificación, Coordinación y Presupuesto, Dirección General de Estadísticas y Censos, "Encuesta Agrícola Nacional de Propósitos Múltiples E.A.N. - 1989. Tomo III." Tegucigalpa, Honduras: DGEC, Octubre 1990. p.12.

[3] Ibid.

07-Feb-91date

HONDURAS - POLICY REFORMS - BANANA

Exhibit 4.4 Banana Exports Volume From Selected Countries, 1980 to 1990.

Million Boxes

Year	Country					
	Colombia	Costa Rica	Ecuador	Guate-mala	Panama	Honduras
1980	39.0	48.9	67.0	15.0	27.6	46.5
1981	44.0	51.3	62.0	20.0	30.2	42.2
1982	40.0	50.7	64.2	18.6	30.3	44.7
1983	45.2	52.2	41.1	17.4	34.9	35.1
1984	50.6	51.6	48.7	14.1	36.1	41.2
1985	42.8	44.6	61.1	17.0	35.9	46.5
1986	47.7	48.9	70.6	17.8	31.2	42.5
1987	49.6	52.9	69.4	17.9	35.5	49.4
1988	50.1	56.6	77.8	19.3	34.0	46.8
1989	56.0	65.4	82.3	20.7	34.4	45.0
1990	62.1	78.4	83.6	22.0	35.0	43.1

Source: El Tiempo, Agosto 28, 1990. p.8.
For Honduras, Exhibit 4.1. Year 1990 are estimates.

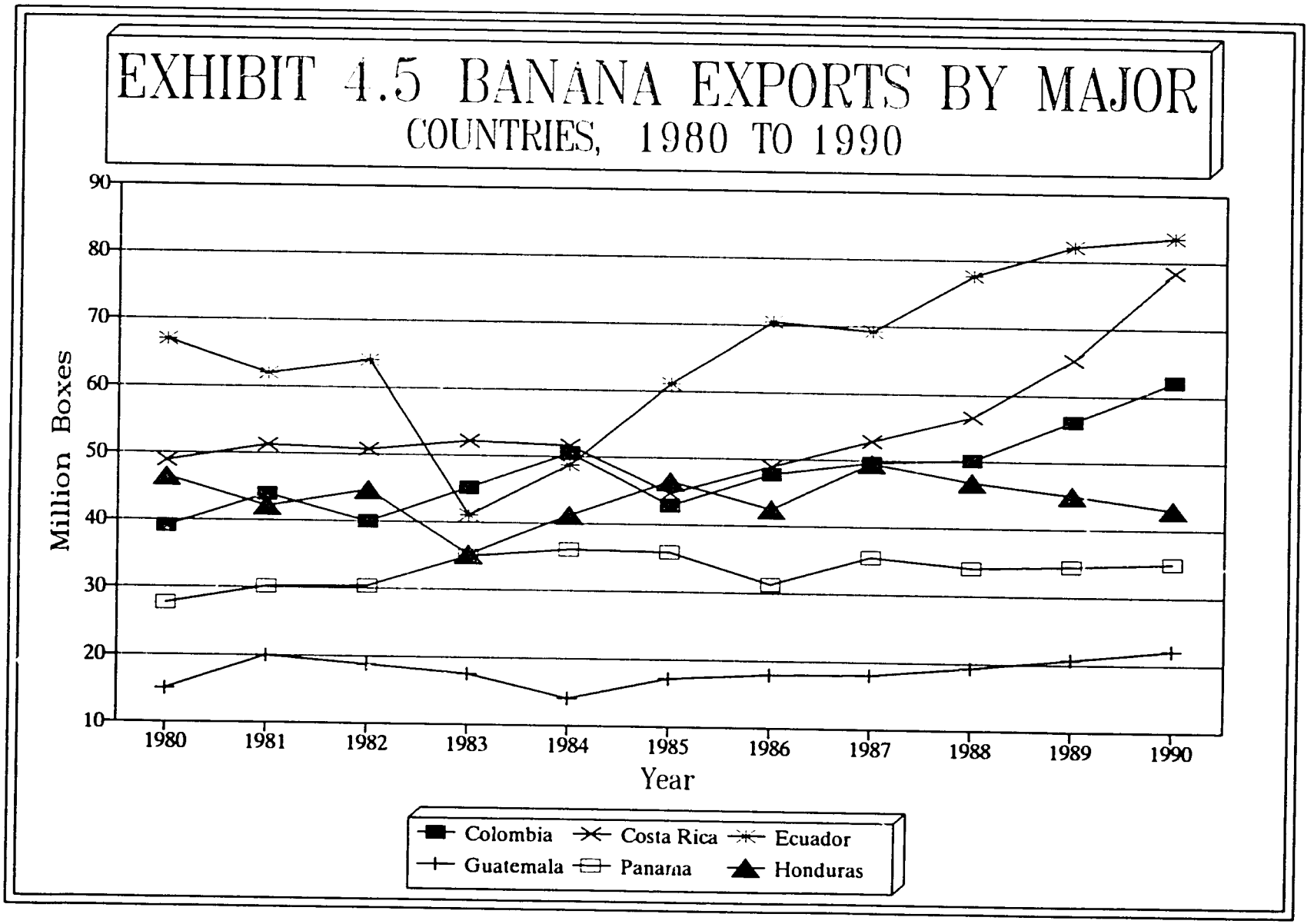


EXHIBIT 4.5 BANANA EXPORTS BY MAJOR COUNTRIES, 1980 TO 1990
Million Boxes
90
80
70
60
50
40
30
20
10
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
Year
Colombia
Costa Rica
Ecuador
Guatemala
Panama
Honduras

leaving the rest, 35 percent (25.6 million), for local consumption, and post-harvest losses. Some bananas are exported by small enterprises to El Salvador and Nicaragua.

Banana production is done in private (32,350 manzanas) as well as agrarian reform farms (24,090 manzanas). In both cases, most of the area is in large farms. Forty-one thousand farms are greater than 20 manzanas in size (Exhibit 4.6).

Export quality banana production requires large investments, and good quality irrigated land. A minimum farm for export is estimated at 100 Has. (143 manzanas). The minimum size requirement is due to the harvest and packing facilities required. According to some experts, the country has the potential of expanding the area in technified banana by 20 thousand Has. (28.6 thousand manzanas). Perhaps some of the area in bananas could be dedicated for export quality production, increasing the potential for exports. This could also increase overall yields.

In 1989 the banana companies produced 58.45% of their exports, buying the rest from independent producers. In 1990 the proportion from their own farms will increase because Standard bought the farm "Isletas." Area expansion could be undertaken by both the transnational companies and private investors. The major obstacles identified by the multinational companies include land tenure constraints, macroeconomic policy uncertainty, and export taxes. Labor unions are viewed as another factor complicating investment decisions by these companies. Banana exports pay two export taxes: L.1.00 per box, and an additional 12 percent on export value (Decree 18-90). The banana companies want to buy more land for expansion, but present land tenure policies are a major obstacle. They have to ask INA's approval, which is difficult to obtain. The companies also perceive a constant change in policies, including the foreign exchange regime and capital repatriation policies. The two banana companies have labor unions. Labor disputes are very common, resulting in unexpected cost increases for the companies. The GOH recently submitted a "Banana Law" that proposes the creation of a commission, which would include independent producers but exclude the banana companies. This is another example of the changing policies and uncertainties experienced by banana producers.

Area expansion by local producers is a function of the price they receive for their bananas. They are limited by the policies mentioned above, as well as by the oligopsony power exercised by the two multinational companies. If the country wants to increase the area farmed by independent producers, there will be a need for policies that will transfer some of the surplus from the marketing agents to the producers. Recent newspaper articles have documented the constant complaints of the independent producers and inflexible the response they receive from the banana companies.

HONDURAS - POLICY REFORMS - BANANA

Exhibit 4.6 Area Planted in Bananas and Production, By Size of Farm and Sector, 1988-89.

Size Manzanas	Area		Production		Yield
	Manzanas	Percent	Quintals	Percent	QQ/Mz.
TOTAL					
Less than 5	9,840	17.4%	3,784,790	13.0%	384.63
5 to less than 10	2,460	4.4%	160,960	0.6%	65.43
10 to less than 20	3,140	5.6%	150,480	0.5%	47.92
20 or bigger	41,000	72.6%	24,966,910	85.9%	608.95
TOTAL	56,440	100.0%	29,063,140	100.0%	514.94
INDEPENDENT					
Less than 5	4,360	13.5%	473,950	3.2%	108.70
5 to less than 10	2,090	6.5%	142,980	1.0%	68.41
10 to less than 20	3,120	9.6%	148,770	1.0%	47.68
20 or bigger	22,780	70.4%	14,101,520	94.8%	619.03
TOTAL	32,350	100.0%	14,867,220	100.0%	459.57
AGRARIAN REFORM					
Less than 5	5,480	22.7%	3,310,840	23.3%	604.17
5 to less than 10	370	1.5%	17,980	0.1%	48.59
10 to less than 20	20	0.1%	1,710	0.0%	85.50
20 or bigger	18,220	75.6%	10,865,390	76.5%	596.34
TOTAL	24,090	100.0%	14,195,920	100.0%	589.29

Source: Direccion General de Estadisticas y Censos, "Encusta Agricola Nacional de Propositos Multiples, E.A.N. - 1989." Tegucigalpa, Honduras: Secretaria de Planificacion, Coordinacion y Presupuesto Octubre 1990. p. 12.

4.2 Proposed Policy Reforms That Affect the Banana Sector

The proposed policy reforms that will affect the banana sector are the following:

- Liberalization of the foreign exchange regime;
- Reduction in export taxes (two at present);
- Allowance of land rental;
- Issuance of "dominio pleno" titles to legitimate occupants; and
- Removal of interest rate ceilings.

The reduction in export taxes will result in a higher price to the banana companies, who will be able to increase the price to the independent producers. In this situation the banana companies and the independent producers will increase their earnings, which will stimulates higher levels of investment and expansion in area planted.

By allowing land rental, the banana companies or independent producers will be able to rent land from individual owners to invest in new plantations. Likewise, as more people get "dominio pleno" titles for their lands they will be able to rent them out or sell their lots to interested investors who will expand the area planted in bananas.

Removal of interest rate ceiling will make more money available to invest in banana production through two effects. Higher interest rates will offset the devaluation risk, making it more attractive for investors to transfer their deposits in dollars in foreign banks to Honduran banks. They could also lend directly to individuals for investments in banana production. With higher interest rates, there will also be higher savings rates and more local credit funds available for profitable investments. Investments in banana production have high returns.

There are still a series of constraints mentioned in the previous section that need to be removed or dampened to increase banana production. Since it is an export crop, transparency in the foreign exchange mechanism is essential. Measures adopted during 1990 are steps in the right direction. However, the Central Bank recently reduced the interbank exchange rate without having sufficient dollars to supply the import requirements of needed inputs. Equilibrium in the foreign exchange regime needs to be reached to assure adequate supply of inputs, and responsive real prices for producers.

The banana companies retain part of their dollar revenues for meeting their imported input requirements. This, however, does not provide the type of efficient input market which would allow independent producers to break the umbilical cord that binds them to a given multinational; thus, reducing their negotiating power. The foreign exchange regime and other policies need to be reformed in order to stimulate growth in the banana sector.

Other policies that the GOH could adopt would increase the contribution of the banana sector to GDP and foreign exchange revenues, with the

same area planted and the same volume of exports. One example of such a policy would be to require minimum prices for exports. This way the banana companies would transfer part of the surplus from their foreign registered subsidiaries to their Honduran companies. With higher prices the contribution to GDP and real foreign exchange generation would increase. Reduction of capital outflow could be achieved through tax credits on investments made in Honduras.

4.3 Analysis of the Impact of the Proposed Policy Reforms

It is difficult to determine what the banana companies are going to do as a result of the anticipated policy reforms. The policy reforms do not remove all the constraints they would like to see removed. However, President Callejas' desire to increase banana production should give them some reassurance of flexibility in negotiations to improve the policy regime. Thus, it was assumed that the GOH will in fact adopt a set of policies designed to stimulate a significant expansion of the area in bananas to the levels corresponding to optimistic estimates made by the banana companies. The banana companies have expressed a desire to increase their area of production by 3,600 Has. They are also ready to buy more fruit from independent producers. With new policies in place it was assumed that independent producers would plant another 400 Has. This adds to a total of 4,000 Has. (5,720 manzanas) for the medium growth scenario.

This new area to be planted in bananas is Class I land that is producing basic grains, sugarcane or planted with pasture. It was assumed that of the total 4,000 Has. to be expanded, 1,000 were not in production, 1,000 were in pasture, 1,500 in basic grain, and 500 in sugarcane. This was taken as the medium growth, or most likely scenario.

The low growth scenario assumed no expansion in area planted, and just a recuperation of the lost production due to the flooding during 1990. Exports would increase to 47 million boxes in 1990 and to 51 million from 1992 on. For the high growth scenario, an expansion of 7,000 hectares was assumed.

A farm budget was developed based on a 100 Has. farm, to determine the impact of the expansion on value added and generation of foreign exchange. The basic budget was developed from a 1987 budget done by the UPCA unit of the Central Bank. This budget, in combination with the input prices of 1987, was used to determine a physical input matrix (Annex B, Table 2). This physical inputs matrix was multiplied by 1990 prices converted to dollars at a rate of L.5.50 per dollar (Annex B, Table 1) to estimate a 1990 budget (Annex B, Table 3).

Production of export quality banana was estimated from the expansion of the 4,000 Has. (Annex B, Table 4). Based on this projected production and the use of intermediate inputs per Ha. (Annex B, Table 3), total use of intermediate inputs was estimated for each year (Annex B, Table 5). The value of the additional production minus the use of intermediate inputs determined the value added from the additional 4,000 Has. (Annex B, Table 6). Export prices were assumed to increase at a rate of one percent per year from a base price of $4.50 per box in 1990. Annex B, Tables 7, 8 and 9 present the results for the high

growth scenario, which assumed an expansion of 7,000 Has. For the high growth scenario, export prices were assumed to increase at a rate of two percent per year.

Export volume was estimated by adding the production from the 4,000 and 7,000 Has. for the medium and high growth scenario to the export volume of 51,000 boxes, estimated for the low growth scenario. Export values were estimated multiplying volume times price (Exhibits 4.7 to 4.9).

Value added estimates were made after adjusting the value added figures reported by the Central Bank. The Central Bank value added figures for 1989 were adjusted upward in accordance with production levels estimated by the DGEC's Agricultural Multiple purpose survey. Value added projections in 1978 lempiras were estimated using the same relationship of value added per quintal of production as estimated by the Central Bank.

Value added in dollars for 1989 was estimated by dividing the adjusted value added in lempiras by 2, since most of the banana production is exported. Value added in dollars for the medium and high growth scenario was estimated by adding the value added estimates from the additional 4,000 and 7,000 Has. to the value added estimate for the low growth scenario.

Exports were estimated by assuming the additional production from the 4,000 and 7,000 Has. will be exported (Exhibit 4.10).

HONDURAS - POLICY REFORMS - BANANA

Exhibit 4.7 Projected Area, Production, Exports, and Value Added, Banana, 1989 to 1998.

Descriptio	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
AREA HARVESTED (MANZANAS)										
Low	56,440	56,440	56,440	56,440	56,440	56,440	56,440	56,440	56,440	56,440
Medium	56,440	56,440	56,440	57,012	58,728	60,444	62,160	62,160	62,160	62,160
High	56,440	56,440	56,440	57,870	60,730	63,590	66,450	66,450	66,450	66,450
YIELD (QQ/MANZANA)										
Low	514.94	492.62	537.56	583.31	583.31	583.31	583.31	583.31	583.31	583.31
Medium	514.94	492.62	537.56	582.48	586.93	606.27	627.94	652.55	657.66	657.66
High	514.94	492.62	537.56	581.25	594.04	625.74	658.69	697.06	705.03	705.02
PRODUCTION (THOUSAND QUINTALS)										
Low	29,063	27,804	30,340	32,922	32,922	32,922	32,922	32,922	32,922	32,922
Medium	29,063	27,804	30,340	33,208	34,469	36,646	39,033	40,563	40,880	40,880
High	29,063	27,804	30,340	33,637	36,076	39,791	43,770	46,320	46,849	46,849
EXPORT VOLUME (THS. 40 LBS. BOXES)										
Low	45,022	43,071	47,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000
Medium	45,022	43,071	47,000	51,443	53,397	56,768	60,466	62,836	63,328	63,328
High	45,022	43,071	47,000	52,107	55,886	61,640	67,804	71,754	72,575	72,574
EXPORT PRICE (US$/QQ)										
Low	4.69	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Medium	4.69	4.50	4.55	4.59	4.64	4.68	4.73	4.78	4.82	4.87
High	4.69	4.50	4.59	4.68	4.78	4.87	4.97	5.07	5.17	5.27
EXPORT VALUE (MILLION DOLLARS)										
Low	211	194	212	230	230	230	230	230	230	230
Medium	211	194	214	236	248	266	286	300	306	309
High	211	194	216	244	267	300	337	364	375	383
VALUE ADDED (1978 MILLION LEMPIRAS)										
Low	220	211	230	250	250	250	250	250	250	250
Medium	220	211	230	252	261	278	296	308	310	310
High	220	211	230	255	274	302	332	351	355	355
VALUE ADDED (MILLION DOLLARS)										
Low	218	208	228	247	247	247	247	247	247	247
Medium	218	208	228	247	251	261	272	283	286	286
High	218	208	228	247	256	275	296	317	322	324

Source: Exhibit 4.1 and estimates.

HONDURAS - POLICY REFORMS - BANANA

Exhibit 4.8 Percent Change in Projected Area, Production, Exports, and Value Added, Banana, 1990 to 1998.

Description	Year								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
AREA HARVESTED (THS. MANZANAS)									
Low	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Medium	0.00%	0.00%	1.01%	3.01%	2.92%	2.84%	0.00%	0.00%	0.00%
High	0.00%	0.00%	2.53%	4.94%	4.71%	4.50%	0.00%	0.00%	0.00%
YIELD (QQ/MANZANA)									
Low	-4.33%	9.12%	8.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Medium	-4.33%	9.12%	8.36%	0.77%	3.29%	3.57%	3.92%	0.78%	0.00%
High	-4.33%	9.12%	8.13%	2.20%	5.34%	5.27%	5.83%	1.14%	-0.00%
PRODUCTION (THOUSAND QUINTALS)									
Low	-4.33%	9.12%	8.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Medium	-4.33%	9.12%	9.45%	3.80%	6.31%	6.51%	3.92%	0.78%	0.00%
High	-4.33%	9.12%	10.87	7.25%	10.30	10.00	5.83%	1.14%	-0.00%
EXPORT VOLUME (THS. 40 LBS. BOXES)									
Low	-4.33%	9.12%	8.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Medium	-4.33%	9.12%	9.45%	3.80%	6.31%	6.51%	3.92%	0.78%	0.00%
High	-4.33%	9.12%	10.87	7.25%	10.30	10.00	5.83%	1.14%	-0.00%
EXPORT PRICE (US$/QQ)									
Low	-4.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Medium	-4.05%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
High	-4.05%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
EXPORT VALUE (MILLION DOLLARS)									
Low	-8.21%	9.12%	8.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Medium	-8.21%	10.21%	10.55	4.84%	7.38%	7.58%	4.96%	1.79%	1.00%
High	-8.21%	11.30%	13.08	9.40%	12.50	12.20	7.94%	3.17%	2.00%
VALUE ADDED (1978 MILLION LEMPIRAS)									
Low	-4.33%	9.12%	8.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Medium	-4.33%	9.12%	9.45%	3.80%	6.31%	6.51%	3.92%	0.78%	0.00%
High	-4.33%	9.12%	10.87	7.25%	10.30	10.00	5.83%	1.14%	-0.00%
VALUE ADDED (MILLION DOLLARS)									
Low	-4.33%	9.12%	8.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Medium	-4.33%	9.12%	8.59%	1.43%	4.03%	4.42%	4.06%	0.79%	0.21%
High	-4.33%	9.12%	8.76%	3.60%	7.28%	7.72%	6.92%	1.63%	0.69%

Source: Exhibit 4.7.

EXHIBIT 4.9 BANANAS, AREA HARVESTED PROJECTED, HONDURAS, 1989 TO 1998

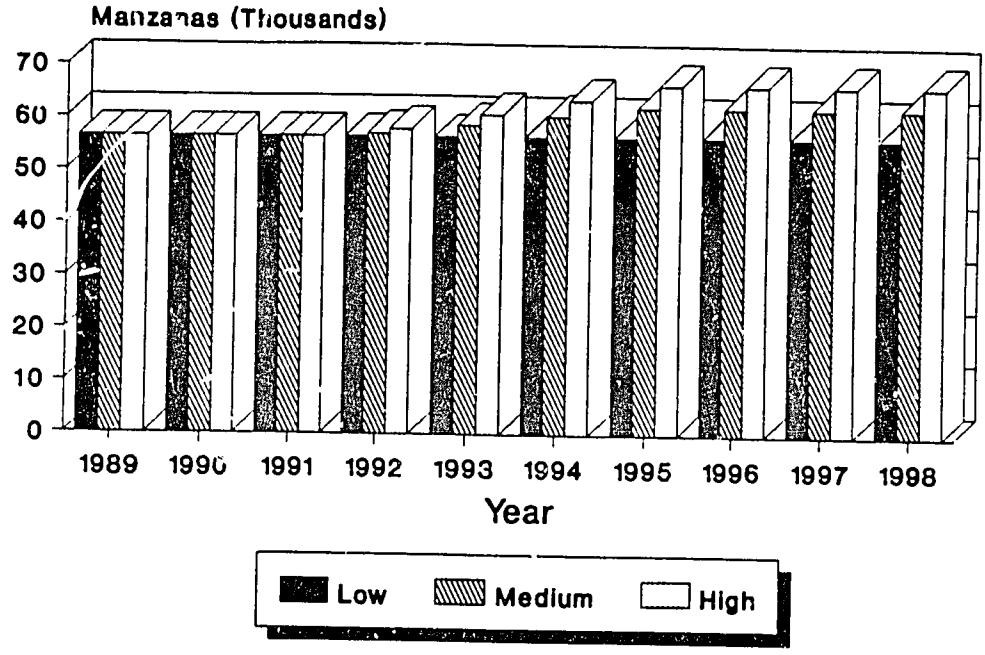
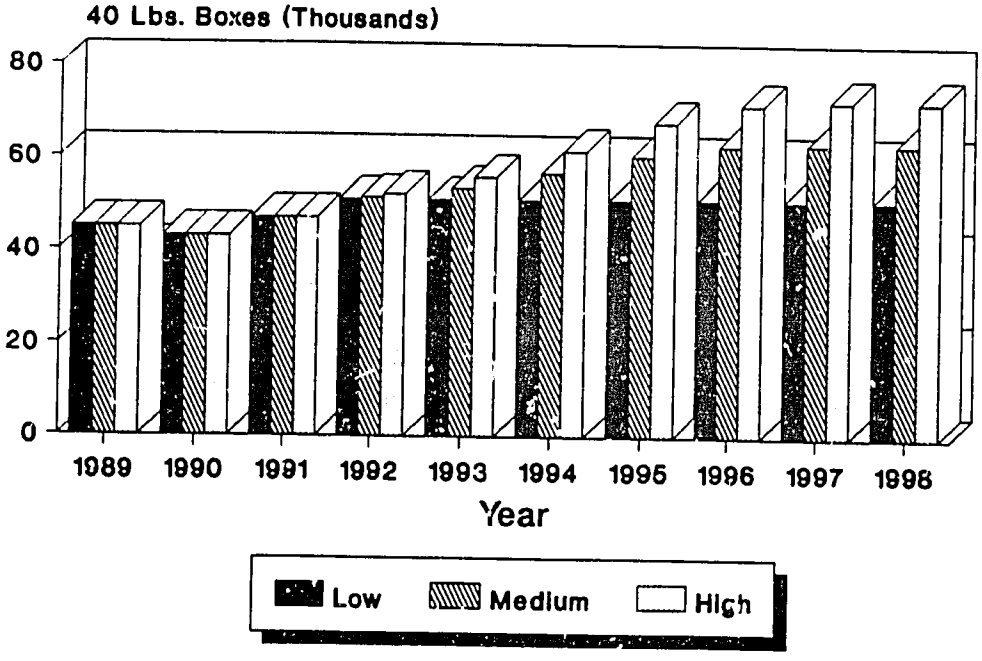


EXHIBIT 4.10 BANANAS, EXPORT VOLUME PROJECTED, HONDURAS, 1989 TO 1998



Source: Exhibit 4.7

5. IMPACT ON BASIC GRAINS

5.1 Overview

Basic grains include corn, sorghum, rice, and beans. As a group they represent the fourth largest contributor to agricultural value added after coffee, bananas, and livestock (Exhibit 2.1). However, basic grains production occupies more land than any agricultural activity other than pasture (Exhibit 2.16). Due to their importance in the Honduran diet and consequently on food security, basic grains have received significant attention from both the GOH and donor agencies. Rice was only exported in 1985. Corn has been exported for many years, but imports usually exceeded them. The only crop that has had a positive balance of trade is beans. However, consumers have experienced seasonal scarcity during recent years.

In 1989, basic grains' gross value added were estimated at 143 million current lempiras. In 1978 lempiras, basic grains' value added totaled L.101 million.[1] Value added in constant 1978 lempiras has been dropping from its peak of L.138 million in 1985. The major contributor to value added is corn, followed by beans and rice, whose contribution is about the same. Sorghum is the least significant crop. Corn is also the major user of land, followed by beans and sorghum, with rice occupying the smallest area. Rice, however is the crop utilizing the most advanced technology. Rice is also the crop with the highest value added per manzana; followed by corn, sorghum, and beans (Exhibit 2.17).

Basic grains are produced by many small farmers. It is estimated that a total of 330 thousand farmers produce basic grains, with an average farm size of 8.3 Has. Sixty-six percent of these producers have less than 2.5 Has., 15 percent between 2.5 and 5 Has., and only 2.7 percent have more than 50 Has.[2] Most of these crops are consumed by the producer's family, except rice. While only 8 percent of the rice production is consumed on farm, 53 percent of sorghum production, 44 percent of bean production, and 48 percent of corn production are consumed by the producer families.[3]

Basic grains are cultivated separately and in association with other crops, excepting rice, which is always cropped by itself. The crop with the largest area cultivated in association with other crops is sorghum. Eighty six percent of the area harvested in sorghum is cultivated in association with other crops. For beans it is 43 percent, and for corn it is only 17 percent.[4]

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[1] Estimates of the Department of Economic Studies of the Central Bank of Honduras.

[2] Secretaría de Recursos Naturales, Dirección de Planificación Sectorial, "Caracterización de los Productores de Granos Básicos." Summary. Lamina No. 2.

[3] Dirección General de Estadística y Censos, "Encuesta Agrícola Nacional de Propósitos Múltiples E.A.N. - 1989." Tomo I. Tegucigalpa, Honduras: Secreetaría de Planificación, Coordinación y Presupuesto, Mayo 1990. pp. 20 and 22.

[4] Ibid. pp. 15 and 17.

Corn and sorghum are used for human and animal consumption, but rice and beans are used only for human consumption. Corn and sorghum are close substitutes in feed concentrates, and in the southern region people use sorghum to make tortillas when corn is scarce. Due to the high degree of substitutability of corn and sorghum, the markets for both are closely interrelated.

Due to the importance of basic grains as a food staple, the GOH has attempted to maintain artificially low prices during recent years. This was implemented via price controls and imports at the subsidized official exchange rates. Significant GOH financial resources have been used to pay for this policy of "cheap" food. However, the group that has paid most heavily for this policy are the more than 330 thousand farmers who produce basic grain.

Exhibits 5.1 to 5.4 present recent trends of corn and sorghum production, area harvested, and value added to the economy. Area and production figures are from estimates of the Dirección General de Estadística y Censos. Value added estimates are from Central Bank's publications.

Corn production reached a peak of 11.5 million quintals in 1984. It dropped in 1985, increasing at variable rates since then. The largest increase was in 1987, reaching 23 percent. This high increase was due mainly to an increase in area harvested of 13 percent. Yields only increased by nine percent. Crop production during the 1990-91 cycle surpassed 1984-85 production levels. Both harvests are expected to reach 12.4 million quintals. This will be achieved on a smaller area harvested than 1984-85, thanks to a record average yield of 24.07 quintals per manzana. This average yield can be further increased with improved technological packages. Region 4 had an average yield of 40 quintals per manzana in the first harvest, and it is projected to have the same yield in the second harvest.

Sorghum production was at its lowest level in the 1987-88 crop year. It has been increasing since then, achieving another record crop during 1990-91. This year the expected harvest is 1.8 million quintals, in a harvested area of 113 manzanas, and an average yield of 16.4 quintals per manzana. Productivity in this crop can also increase considerably. Yields in Region 5 averaged 40 quintals per manzana in the first harvest, and are projected at 67 quintals per manzana during the second harvest.

The combined production of corn and sorghum was 12.7 million quintals in 1984-85 crop year, it dropped to 8.1 million quintals in 1985-86, and it has been steadily increasing since then. Rates of growth have varied between 8 and 13 percent. Production during this crop year 1990-91 is projected at 14.2 million quintals, higher than production during 1984-85 (Exhibit 5.1).

Beans are an important source of protein to the Honduran population. It is a traded commodity, with exports usually exceeding imports. Total production has been very erratic. It has varied from a low of 489 thousand quintals in 1980/81 to a high of 1.2 million quintals in 1986/87 crop year. This high production figure was due to increases in both area planted and yields. In 1987 production dropped by more than half. However, production has been steadily increasing since 1988. This increase has been due to expansion in area harvested

05-Mar-91date

HONDURAS - POLICY REFORMS - BASIC GRAINS

Exhibit 5.1 Area, Production and Value Added of Corn and Sorghum, 1979 to 1990.

	Agricultural Year											
Description	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CORN												
First Harvest												
Area (1,000 Mzs.)						439.4	266.2	317.2	394.0	386.3	396.0	413.6
Production (1,000 qq)						9,178	4,924	5,646	7,759	7,839	8,917	10,063
Yield (qq/Mz.)						20.89	18.50	17.80	19.69	20.29	22.52	24.33
Second Harvest												
Area (1,000 Mzs.)						112.5	124.2	109.8	90.9	105.6	105.2	100.0
Production (1,000 qq)						2,374	2,506	2,257	2,005	2,063	2,319	2,300
Yield (qq/Mz.)						21.10	20.18	20.55	22.06	19.54	22.04	23.00
Both Harvests												
Area (1,000 Mzs.)	475.9	485.4	491.8	426.7	441.1	551.9	390.4	427.0	484.9	491.9	501.2	513.6
Production (1,000 qq)	7,181	8,541	8,896	9,319	10,102	11,552	7,430	7,902	9,765	9,902	11,236	12,363
Yield (qq/Mz.)	15.09	17.60	18.09	21.84	22.90	20.93	19.03	18.51	20.14	20.13	22.42	24.07
SORGHUM												
First Harvest												
Area (1,000 Mzs.)						80.3	51.4	97.5	47.2	73.9	73.5	87.9
Production (1,000 qq)						1,078	625	1,175	212	990	1,030	1,201
Yield (qq/Mz.)						13.43	12.15	12.05	4.50	13.40	14.01	13.66
Second Harvest												
Area (1,000 Mzs.)						5.0	10.4	13.3	2.4	11.6	19.8	25.0
Production (1,000 qq)						78.0	106.0	166.0	30.0	191.0	331.0	650.0
Yield (qq/Mz.)						15.60	10.19	12.48	12.50	16.47	16.72	26.00
Both Harvests												
Area (1,000 Mzs.)	90.0	88.3	78.1	54.4	72.9	85.3	61.8	110.8	49.6	85.5	93.3	112.9
Production (1,000 qq)	840	1,149	921	1,075	1,026	1,156	731	1,341	242	1,181	1,361	1,851
Yield (qq/Mz.)	9.33	13.01	11.79	19.75	14.07	13.55	11.82	12.10	4.88	13.81	14.59	16.40
CORN+SORGHU												
Production (1,000 qq)	8,021	9,689	9,817	10,394	11,128	12,708	8,161	9,244	10,007	11,083	12,597	14,214
VALUE ADDED (CURRENT MILLION LEM												
Corn (Total)		71	85	93	116	95	109	118	97	102	87	145
Corn (Lps./Mz.)		146	173	218	263	172	279	276	200	207	174	282
Sorghum (Total)		12	11	10	13	12	9	8	11	12	13	17
Sorghum (Lps./Mz.)		136	141	184	178	141	146	72	222	140	139	151
VALUE ADDED (1978 MILLION LEMPIRAS												
Corn (Total)		66	83	77	77	82	88	81	70	75	61	65
Corn (Lps./Mz.)		136	169	180	175	149	225	190	144	152	122	127
Sorghum (Total)		11	9	8	9	10	7	6	8	9	10	11
Sorghum (Lps./Mz.)		125	115	147	123	117	113	54	161	105	107	97

Source: Area and production - 1979-1983 - Direccion General de Estadisticas y Censos, Encuesta Agricola Nacional de Propositos Multiples E.A.N. - 1989, Tomo I. Tegucigalpa, Honduras: Secretaria de Planificacion, Coordinacion y Presupuesto, Mayo 1990. p. 37.
1984-1990 - Direccion General de Estadisticas y Censos, Working papers supplied by Pompeyo Lopez.
Value Added - Department of Economic Studies, as reported by UPSA, "Compendio Estadistico Agropecuario 1990." Tegucigalpa, Honduras: Secretaria de Recursos Naturales, 1990. p. 45.

HONDURAS - POLICY REFORMS - BASIC GRAINS

Exhibit 5.2 Percent Change in Area, Production and Value Added of Corn and Sorghum, 1980 to 1990.

Description	Agricultural Year										
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CORN											
First Harvest											
Area (1,000 Mzs.)						-39.42%	19.16%	24.21%	-1.95%	2.51%	4.44%
Production (1,000 qq)						-46.35%	14.65%	37.44%	1.03%	13.75%	12.85%
Yield (qq/Mz.)						-11.44%	-3.78%	10.65%	3.04%	10.96%	8.05%
Second Harvest											
Area (1,000 Mzs.)						10.40%	-11.59%	-17.21%	16.17%	-0.38%	-4.94%
Production (1,000 qq)						5.54%	-9.95%	-11.14%	2.88%	12.41%	-0.82%
Yield (qq/Mz.)						-4.40%	1.86%	7.34%	-11.44%	12.84%	4.34%
Both Harvests											
Area (1,000 Mzs.)	2.00%	1.32%	-13.24%	3.37%	25.12%	-29.26%	9.38%	13.56%	1.44%	1.89%	2.47%
Production (1,000 qq)	18.93%	4.16%	4.76%	8.40%	14.35%	-35.68%	6.36%	23.57%	1.41%	13.47%	10.03%
Yield (qq/Mz.)	16.60%	2.81%	20.74%	4.86%	-8.60%	-9.08%	-2.76%	8.81%	-0.03%	11.36%	7.37%
SORGHUM											
First Harvest											
Area (1,000 Mzs.)						-35.99%	89.69%	-51.59%	56.57%	-0.54%	19.69%
Production (1,000 qq)						-42.06%	88.15%	-81.94%	366.54%	4.04%	16.60%
Yield (qq/Mz.)						-9.49%	-0.81%	-62.70%	197.98%	4.61%	-2.50%
Second Harvest											
Area (1,000 Mzs.)						108.00%	27.88%	-81.95%	383.33%	70.69%	26.26%
Production (1,000 qq)						35.90%	56.60%	-81.93%	536.67%	73.30%	96.37%
Yield (qq/Mz.)						-34.66%	22.46%	0.15%	31.72%	1.53%	55.53%
Both Harvests											
Area (1,000 Mzs.)	-1.89%	-11.55%	-30.35%	34.01%	17.01%	-27.55%	79.29%	-55.23%	72.38%	9.12%	21.01%
Production (1,000 qq)	36.77%	-19.82%	16.69%	-4.56%	12.72%	-36.80%	83.58%	-81.94%	387.61%	15.24%	36.00%
Yield (qq/Mz.)	39.40%	-9.35%	67.53%	-28.78%	-3.66%	-12.77%	2.39%	-59.66%	182.87%	5.61%	12.39%
CORN+SORGHUM											
Production (1,000 qq)	20.80%	1.32%	5.88%	7.06%	14.20%	-35.79%	13.27%	8.26%	10.76%	13.66%	12.84%
VALUE ADDED (CURRENT MILLION LEMPIRAS)											
Corn (Total)		19.72%	9.41%	24.73%	-18.10%	14.74%	8.26%	-17.80%	5.15%	-14.71%	66.67%
Corn (Lps./Mz.)		18.16%	26.10%	20.66%	-34.55%	62.20%	-1.02%	-27.61%	3.66%	-16.29%	62.64%
Sorghum (Total)		-8.33%	-9.09%	30.00%	-7.69%	-25.00%	-11.11%	37.50%	9.09%	8.33%	30.77%
Sorghum (Lps./Mz.)		3.64%	30.51%	-2.99%	-21.11%	3.52%	-50.42%	207.16%	-36.71%	-0.72%	8.07%
VALUE ADDED (1978 MILLION LEMPIRAS)											
Corn (Total)		25.76%	-7.23%	0.00%	6.49%	7.32%	-7.95%	-13.58%	7.14%	-18.67%	6.56%
Corn (Lps./Mz.)		24.12%	6.92%	-3.26%	-14.89%	51.71%	-15.84%	-23.90%	5.62%	-20.18%	3.98%
Sorghum (Total)		-18.18%	-11.11%	12.50%	11.11%	-30.00%	-14.29%	33.33%	12.50%	11.11%	10.00%
Sorghum (Lps./Mz.)		-7.50%	27.61%	-16.05%	-5.04%	-3.38%	-52.19%	197.85%	-34.74%	1.82%	-9.10%

Source: Exhibit 5.1.

EXHIBIT 5.3 CORN, AREA HARVESTED AND YIELD, HONDURAS, 1979 TO 1990

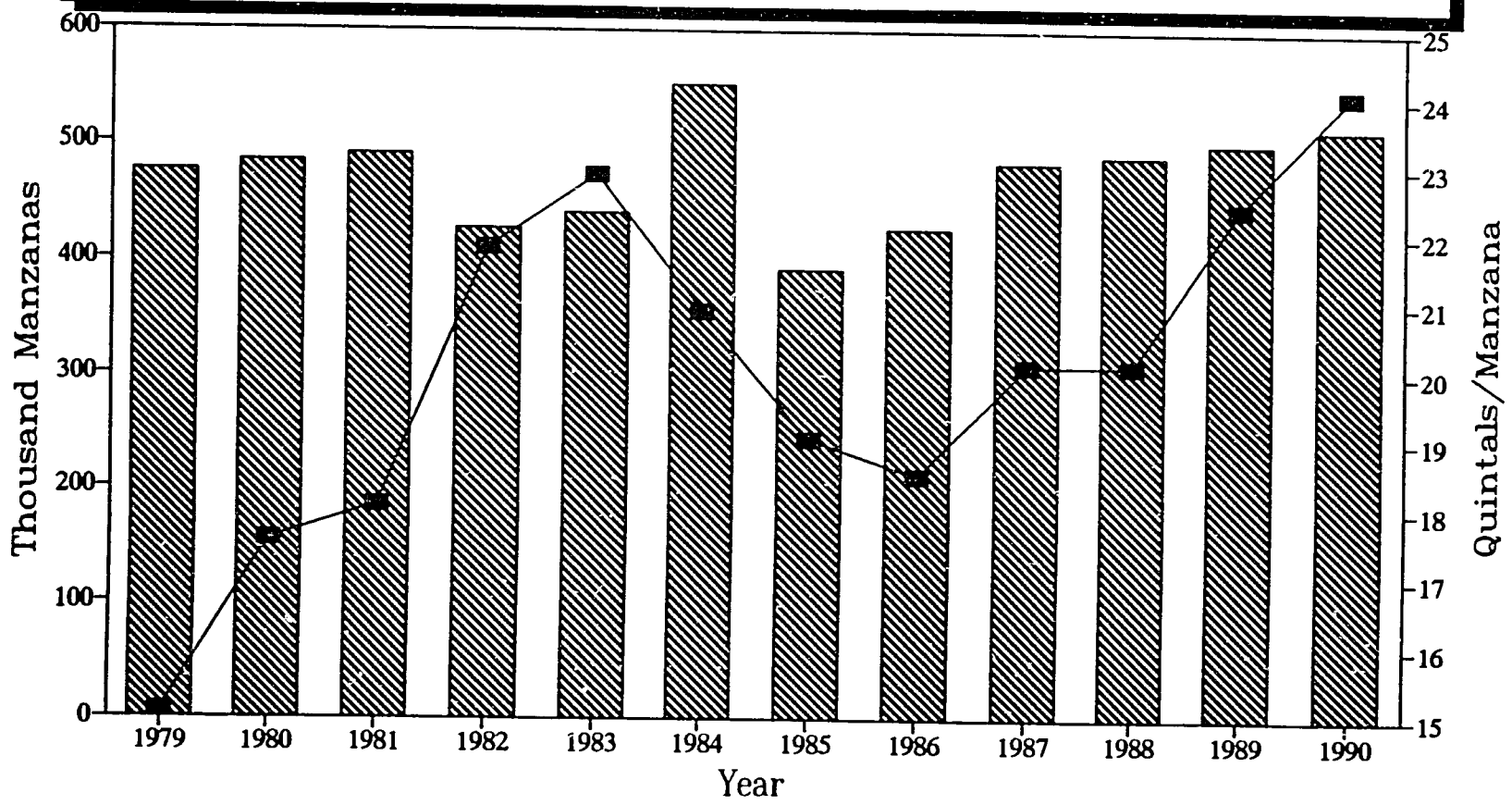
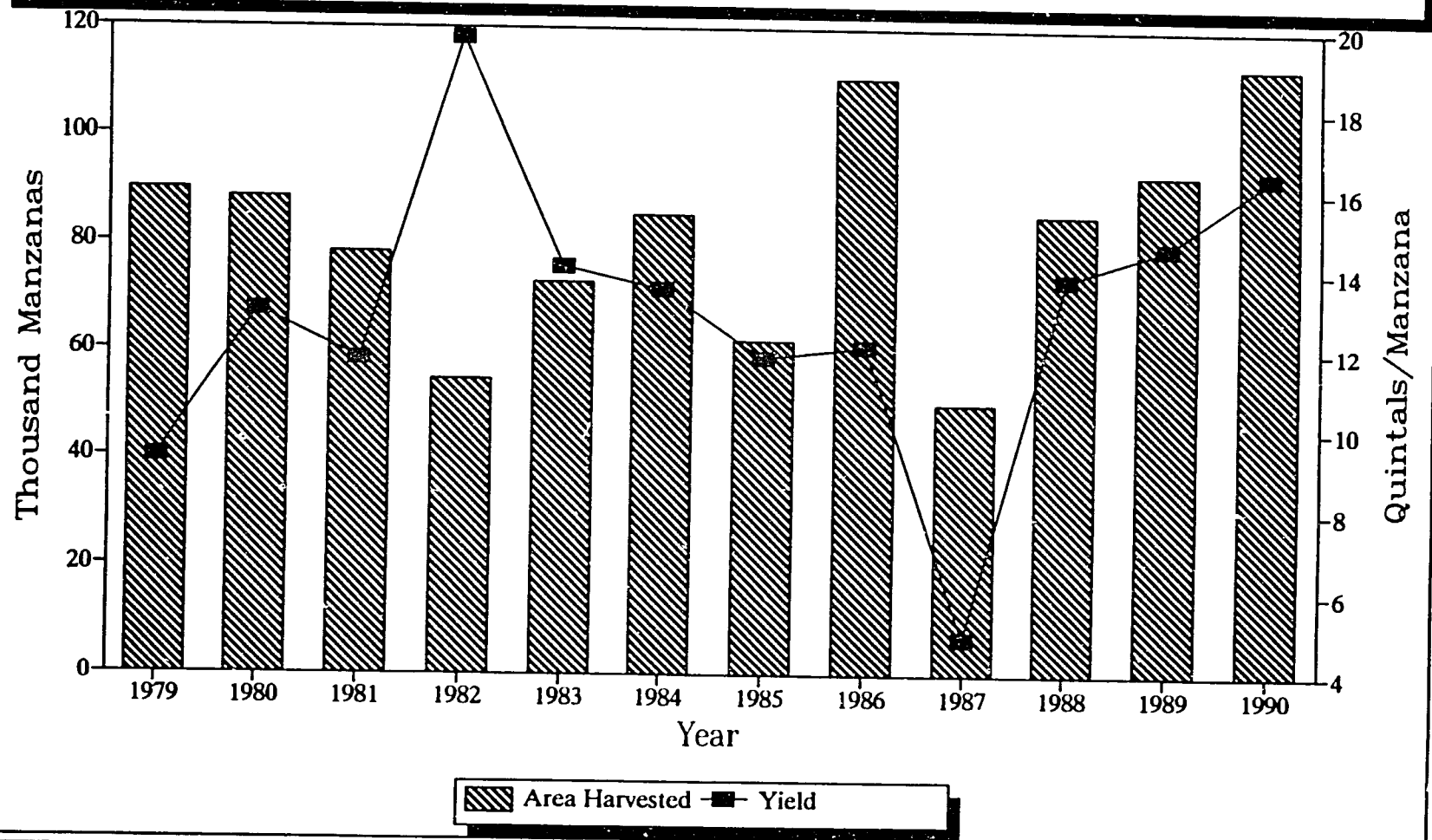


EXHIBIT 5.4 SORGHUM, AREA HARVESTED AND YIELD, HONDURAS, 1979 TO 1990



and yields. The 1990 harvest is projected to result in a record production of 1.4 million quintals (Exhibits 5.5 and 5.6).

The bean variety produced and consumed in Honduras is especially well suited for the food preparation style prevalent in Honduras, El Salvador and Nicaragua. The demand is so inelastic for this type of bean, that IHMA has had difficulty selling imported beans in times of scarcity.

Rice is the basic grain produced with the highest level of technology. It is also the most commercialized. Only 8 percent of the production is consumed by the farmer's family. Even though it is an important element of the Honduran diet, rice policy is not as politicized as corn and beans, due to the smaller number of producers and the small area used for this crop. Imports are made as a normal procedure to cover the deficit between production and consumption.

Area harvested fluctuated between 10.6 thousand manzanas in 1986 and 30.9 thousand manzanas in 1983. From the record low of 1986, production has been increasing steadily every year, except for the present crop year 1990-91. Production in 1986 was 317 thousand quintals. Production increased to one million quintals in 1989 due to an increase in area harvested and yields. Area harvested increased to 24.2 thousand manzanas, and yields increased to 42.48 quintals per manzana. The expected 1990 production drop to 922 thousand quintals is due only to yields reductions. Yields are expected to drop to 37.94 quintals per manzana (Exhibits 5.7 and 5.8).

Rice is the basic grain with the highest value added per manzana. Rice is followed by beans, then corn, and finally sorghum (Exhibits 5.1, 5.5 and 5.7). This is due to the level of intensity that this crop is grown. Rice is the crop with the highest level of technology. Rice value added per manzana is three time the value added per manzana of beans.

5.2 Proposed Policy Reforms That Affect Basic Grains

The following policy reforms will affect basic grains:

- Liberalization of the foreign exchange regime;
- Removal of price controls;
- Allowance of land rental;
- Allowance of titling of parcels of 2 or more hectares;
- Issuance of "dominio pleno" titles to legitimate occupants; and
- Removal of interest rate ceilings.

All basic grains have been subjected to price controls as a devise for maintaining low prices for food staples. This price control policy has contributed to lower production levels and has represented a subsidy from farmers to consumers. An overvalued lempira aided the GOH in supporting a low price through grain imports at the official 2 to 1 exchange rate. A market-determined pricing system along with a liberalized foreign exchange rate system will remove the price burden imposed on basic grain farmers. Higher prices will stimulate higher levels of investment, increasing productivity and production.

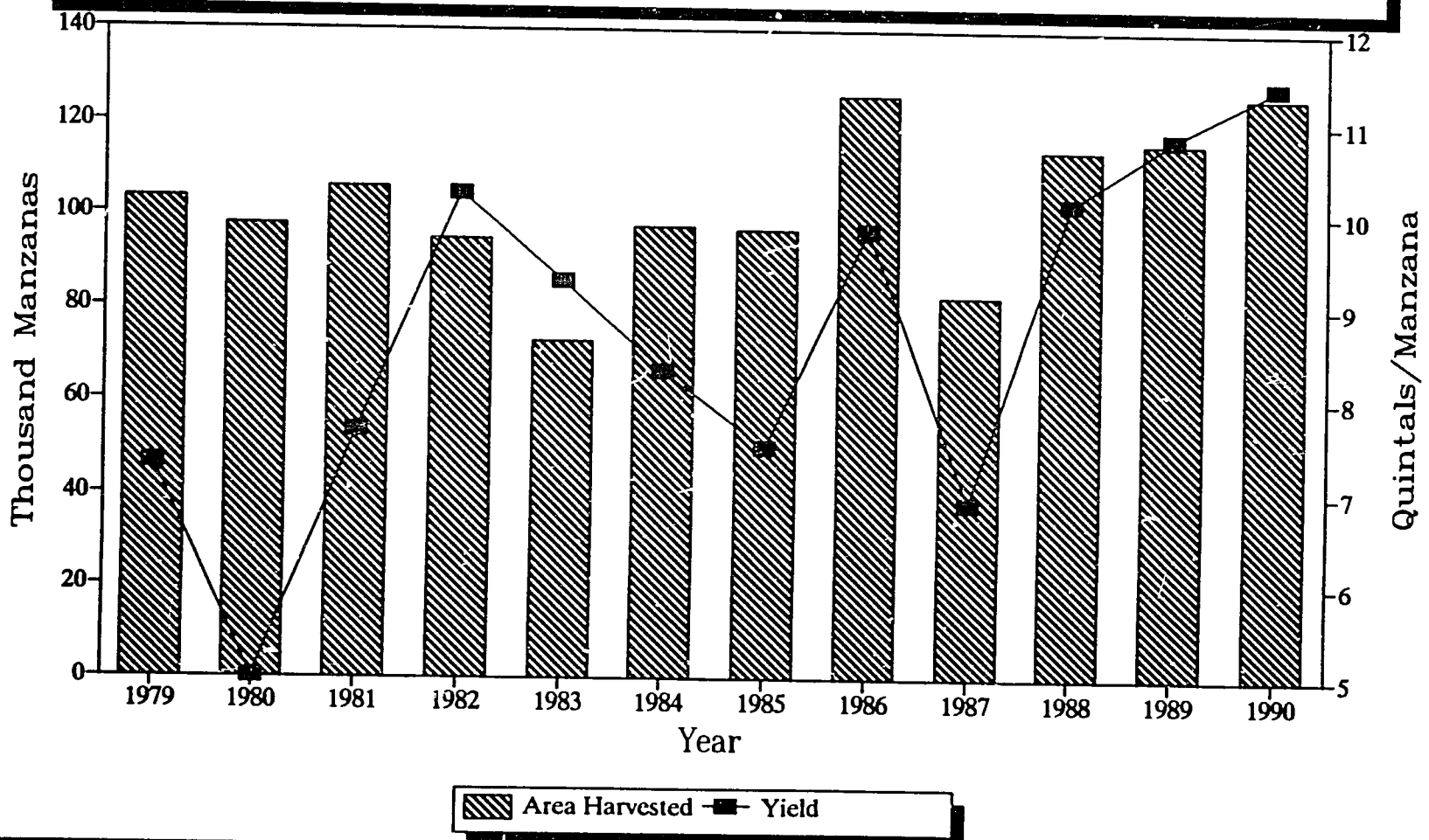
HONDURAS - POLICY REFORMS - BASIC GRAINS

Exhibit 5.5 Area, Production, Value Added, and Exports of Beans, 1979 to 1990.

Description	Agricultural Year											
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
First Harvest												
Area (1,000 Mzs.)						41.5	32.1	41.9	37.2	28.8	34.5	38.0
Production (1,000 qq)						359.0	201.4	250.2	200.3	211.5	360.0	488.0
Yield (qq/Mz.)						8.65	6.27	5.97	5.38	7.34	10.43	12.84
Second Harvest												
Area (1,000 Mzs.)						55.8	64.8	84.0	45.0	85.4	81.5	88.0
Production (1,000 qq)						450.4	525.7	989.4	367.8	946.0	898.0	950.0
Yield (qq/Mz.)						8.07	8.11	11.78	8.17	11.08	11.02	10.80
Both Harvests												
Area (1,000 Mzs.)	103.7	97.6	105.9	94.9	72.6	97.3	96.9	125.9	82.2	114.2	116.0	126.0
Production (1,000 qq)	761	489	812	972	674	809	727	1,240	568	1,158	1,258	1,438
Yield (qq/Mz.)	7.33	5.01	7.67	10.25	9.28	8.32	7.50	9.85	6.91	10.14	10.84	11.41
VALUE ADDED												
Current Million Lps.		26	28	30	26	28	32	27	26	18	23	45
Current Lps./Mz.		266	264	316	358	288	330	214	316	158	198	357
1978 Million Lps.		21	25	24	20	21	22	24	20	12	16	20
1978 Lps./Mz.		215	236	253	275	216	227	191	243	105	138	159
EXPORTS												
Volume (1,000 qq)		0.0	60.8	57.7	65.3	74.8	14.6	30.0	8.4	N.A.	N.A.	N.A.
Price ($/qq)			35.09	29.57	23.47	22.22	27.96	18.55	21.13	N.A.	N.A.	N.A.
Value (Ths. $)		0	2,133	1,705	1,533	1,662	408	557	177	N.A.	N.A.	N.A.
PERCENT CHANGE												
First Harvest												
Area (1,000 Mzs.)							-22.7%	30.5%	-11.2%	-22.6%	19.8%	10.1%
Production (1,000 qq)							-43.9%	24.2%	-19.9%	5.6%	70.2%	35.6%
Yield (qq/Mz.)							-27.5%	-4.8%	-9.8%	36.4%	42.1%	23.1%
Second Harvest												
Area (1,000 Mzs.)							16.1%	29.6%	-46.4%	89.8%	-4.6%	8.0%
Production (1,000 qq)							16.7%	88.2%	-62.8%	157.2%	-5.1%	5.8%
Yield (qq/Mz.)							0.5%	45.2%	-30.6%	35.5%	-0.5%	-2.0%
Both Harvests												
Area (1,000 Mzs.)		-5.9%	8.5%	-10.4%	-23.5%	34.0%	-0.4%	29.9%	-34.7%	38.9%	1.6%	8.6%
Production (1,000 qq)		-35.7%	66.1%	19.7%	-30.7%	20.2%	-10.2%	70.5%	-54.2%	103.7%	8.7%	14.3%
Yield (qq/Mz.)		-31.7%	53.1%	33.6%	-9.5%	-10.3%	-9.8%	31.2%	-29.8%	46.7%	7.0%	5.2%
VALUE ADDED												
Current Million Lps.			7.7%	7.1%	-13.3%	7.7%	14.3%	-15.6%	-3.7%	-30.8%	27.8%	95.7%
Current Lps./Mz.			-0.7%	19.6%	13.3%	-19.6%	14.8%	-35.1%	47.5%	-50.2%	25.8%	80.1%
1978 Million Lps.			19.0%	-4.0%	-16.7%	5.0%	4.8%	9.1%	-16.7%	-40.0%	33.3%	25.0%
1978 Lps./Mz.			9.7%	7.1%	8.9%	-21.7%	5.2%	-16.0%	27.6%	-56.8%	31.3%	15.1%
EXPORTS												
Volume (1,000 qq)				-5.2%	13.3%	14.6%	-80.5%	105.7%	-72.1%			
Price ($/qq)				-15.7%	-20.6%	-5.3%	25.8%	-33.6%	13.9%			
Value (Ths. $)				-20.1%	-10.1%	8.5%	-75.5%	36.5%	-68.2%			

Source: Area and production - 1979-1983 - Direccion General de Estadisticas y Censos, Encuesta Agricola Nacional de Propositos Multiples E.A.N. - 1989, Tomo I. Tegucigalpa, Honduras: Secretaria de Planificacion, Coordinacion y Presupuesto, Mayo 1990. p. 37.
1984-1990 - Direccion General de Estadisticas y Censos, Working papers supplied by Pompeyo Lopez.
Value Added - Department of Economic Studies, as reported by UPSA, "Compendio Estadistico Agropecuario 1990." Tegucigalpa, Honduras: Secretaria de Recursos Naturales, 1990. p. 45.
Exports - Department of Economic Studies, Central Bank of Honduras.

EXHIBIT 5.6 BEANS, AREA HARVESTED AND YIELD, HONDURAS, 1979 TO 1990



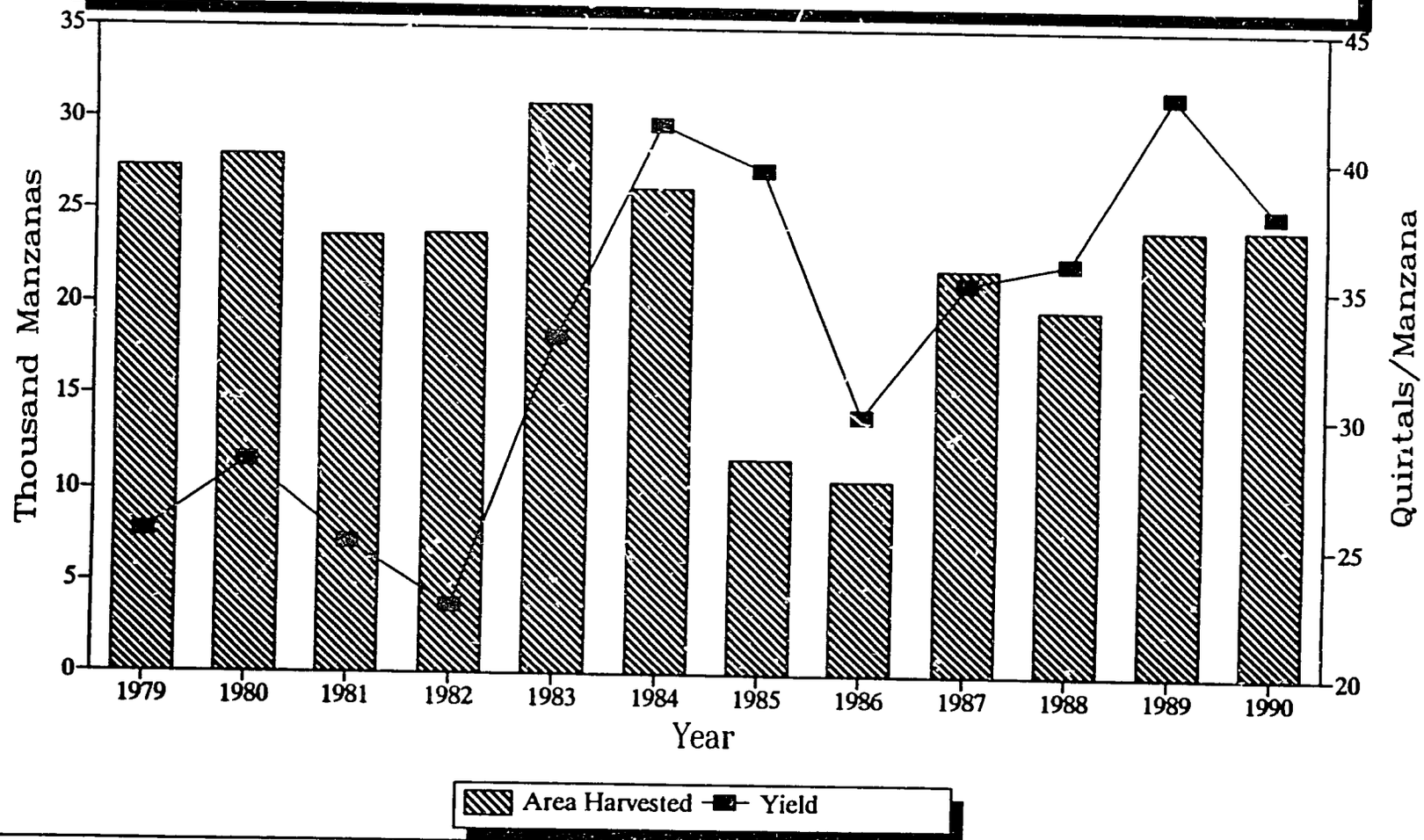
HONDURAS - POLICY REFORMS - BASIC GRAINS

Exhibit 5.7 Area, Production, and Value Added of Rice, 1979 to 1990.

Description	Agricultural Year											
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
First Harvest												
Area (1,000 Mzs.)						25.4	9.5	9.8	20.0	18.3	21.4	21.8
Production (1,000 qq)						1,039.2	367.1	277.8	710.8	625.6	855.0	792.0
Yield (qq/Mz.)						40.91	38.64	28.35	35.54	34.19	39.95	36.33
Second Harvest												
Area (1,000 Mzs.)						0.9	2.2	0.8	2.0	1.5	2.8	2.5
Production (1,000 qq)						46.0	95.0	40.0	63.0	87.0	173.0	130.0
Yield (qq/Mz.)						51.11	43.18	50.00	31.50	58.00	61.79	52.00
Both Harvests												
Area (1,000 Mzs.)	27.3	28.0	23.6	23.8	30.9	26.3	11.7	10.6	22.0	19.8	24.2	24.3
Production (1,000 qq)	697	791	593	540	1,020	1,085	462	318	774	713	1,028	922
Yield (qq/Mz.)	25.55	28.24	25.11	22.68	33.01	41.26	39.50	29.98	35.17	35.99	42.48	37.94
VALUE ADDED												
Current Million Lps.		21	23	26	35	30	27	33	21	18	20	26
Current Lps./Mz.		750	975	1,092	1,133	1,141	2,308	3,113	955	909	826	1,070
1978 Million Lps.		18	18	19	25	23	21	24	16	13	14	16
1978 Lps./Mz.		643	763	798	809	875	1,795	2,264	727	657	579	658
PERCENT CHANGE												
First Harvest												
Area (1,000 Mzs.)							-62.6%	3.2%	104.1%	-8.5%	16.9%	1.9%
Production (1,000 qq)							-64.7%	-24.3%	155.9%	-12.0%	36.7%	-7.4%
Yield (qq/Mz.)							-5.6%	-26.6%	25.4%	-3.8%	16.9%	-9.1%
Second Harvest												
Area (1,000 Mzs.)							144.4%	-63.6%	150.0%	-25.0%	86.7%	-10.7%
Production (1,000 qq)							106.5%	-57.9%	57.5%	38.1%	98.9%	-24.9%
Yield (qq/Mz.)							-15.5%	15.8%	-37.0%	84.1%	6.5%	-15.8%
Both Harvests												
Area (1,000 Mzs.)		2.6%	-15.7%	0.8%	29.8%	-14.9%	-55.5%	-9.4%	107.5%	-10.0%	22.2%	0.4%
Production (1,000 qq)		13.4%	-25.0%	-8.9%	88.9%	6.4%	-57.4%	-31.2%	143.5%	-7.9%	44.3%	-10.3%
Yield (qq/Mz.)		10.5%	-11.1%	-9.7%	45.5%	25.0%	-4.3%	-24.1%	17.3%	2.3%	18.9%	-10.7%
VALUE ADDED												
Current Million Lps.			9.5%	13.0%	34.6%	-14.3%	-10.0%	22.2%	-36.4%	-14.3%	11.1%	30.0%
Current Lps./Mz.			29.9%	12.1%	3.7%	0.7%	102.3%	34.9%	-69.3%	-4.8%	-9.1%	29.5%
1978 Million Lps.			0.0%	5.6%	31.6%	-8.0%	-8.7%	14.3%	-33.3%	-18.8%	7.7%	14.3%
1978 Lps./Mz.			18.6%	4.7%	1.3%	8.1%	105.2%	26.1%	-67.9%	-9.7%	-11.9%	13.8%

Source: Area and production - 1979-1983 - Direccion General de Estadisticas y Censos, Encuesta Agricola Nacional de Propositos Multiples F.A.N. - 1989, Tomo I. Tegucigalpa, Honduras: Secretaria de Planificacion, Coordinacion y Presupuesto, Mayo 1990. p. 37.
1984-1990 - Direccion General de Estadisticas y Censos, Working papers supplied by Pompeyo Lopez.
Value Added - Department of Economic Studies, as reported by UPSA, "Compendio Estadistico Agropecuario 1990." Tegucigalpa, Honduras: Secretaria de Recursos Naturales, 1990. p. 45.

EXHIBIT 5.8 RICE, AREA HARVESTED AND YIELD, HONDURAS, 1979 TO 1990



Modification of the agrarian reform law to allow land rental, titling of small parcels and issuance of "dominio pleno" titles will stimulate investments and area expansion in basic grains. A poultry producer recently interviewed indicated that he used to rent one thousand manzanas to plant corn before the agrarian reform law was passed. When the law was passed the owner asked for her land back to avoid expropriation by INA. She split the farm in several plots, distributed the parcels to her children, and dedicated the land to different uses.

Basic grains, except rice, are mostly planted by small farmers, and produced mostly for home consumption. The proposed policy changes will attract commercial farmers into the sector, who will use high levels of technology and increase productivity levels. In addition, poultry producers will rent or buy land to produce corn or sorghum to use as fee. Cattle and dairy producers might dedicate some of their land to produce the grain needed to feed their animals, as technology levels improve in these areas.

Removal of interest rate ceilings will attract more money into basic grain production to buy modern inputs, and will stimulate commercial production of basic grains. Higher interest rates will provide better margins to banks to compensate for the risk level inherent in agricultural production.

5.3 Analysis of the Impacts of the Proposed Policy Reforms

The proposed policy reforms will have a significant impact on basic grain production. However, due to the seasonality of production, the proposed reforms need to be complemented with other measures. Government intervention by way of rational tariff policies will be needed to reduce wide fluctuations in prices due to speculative behavior. A price band mechanism combined with management of a safety stock could accomplish this objective.

Productivity levels are very low. Basic grains are produced by many farmers, employing low levels of technology. Extensive research and technical assistance are needed to maximize the positive effect of these policy reforms.

5.3.1 Corn and Sorghum

Demand for corn and sorghum has two sources of growth: a) direct human consumption, and b) feed for animal production. Production of corn and sorghum can increase through area expansion and productivity gains. Up to now commercialization of these crops has been limited. With the proposed policy reforms commercialization activities will intensify as production shifts to higher levels of technology. Cattle and dairy farmers will plant these crops to complement grass feeding. Commercial farmers will rent land to plant these crops and market them commercially. The emphasis will shift from white sorghum to red sorghum for feed mixes. Red sorghum can be produced with very high yields and lower costs than white sorghum, which is also used for human consumption.

The largest area harvested in corn was 552 thousand manzanas. This occurred in crop year 1984-85. With the proposed policy reforms it should be possible to reach this level in a relatively short period of time. Under the

medium growth scenario, it was assumed that this level could be reached by 1994. This means a growth rate in area harvested of two percent per year. A more conservative growth scenario assumes a growth rate of one percent per year in area harvested, while under a high growth scenario, a growth rate of three percent per year is envisioned (Exhibits 5.9 to 5.13).

As commercial farmers go into corn production, they will do so employing modern technology.[1] Traditional farmers will also be stimulated to invest in more advanced technological packages. Both actions will contribute to an increase in overall yields. Under the medium growth scenario, yields are projected to increase by two percent per year. For a low growth scenario, the assumption was a one percent growth rate per year in yields. For the high growth scenario, yield were assumed to increase at a rate of 3 percent per year.

The combined effect of expansion in area and yields would result in a corn production increase of 2.01 percent per year for the low growth scenario, 4.04 percent per year for the medium growth scenario, and 6.09 percent per year for the high growth scenario (Exhibit 5.10).

Even though sorghum has lower nutritional characteristics than corn, it has higher yield potential than corn, even when grown under unfavorable conditions. Once the proposed policy reforms are adopted, commercial farmers will be planting red sorghum with high levels of technology that can yield more than 80 quintals per manzana. Area planted with sorghum is relatively small. Area harvested in sorghum during crop year 1990-91 was only 113 thousand manzanas, mostly with white sorghum. This represented an increase of 21 percent over the previous year. Because of the relatively small area planted to sorghum, small expansion in absolute values represent large percent changes.

It was assumed that for the medium growth scenario, area harvested in sorghum would increase 4 percent per year. For the low growth scenario, it would increase 2 percent, and for the high growth scenario 6 percent.

Yields are very low in relation to the potential. Yields are about 14 quintals per manzana. In crop year 1990/91 they increased to 16.4 qq/mz., equivalent to a 12 percent change. This was due to very high yields achieved by commercials farms in Olancho. Yields in the first harvest of 1990 were 66.9 qq/mz. in this region.[2] Due to the expansion of area with high levels of technology, yields are expected to increase considerably. For the medium growth scenario, yields are expected to increase at rate of 4 percent per year. For the low growth scenario they are expected to increase at a rate of 2 percent per year; while for the high growth scenario, they are projected to increase at 6 percent per year.

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[1] It is estimated that only one percent of the area harvested in corn uses high technological levels. ADAI, "Uso Regional de la Tierra y de Agro-Quimicos en Honduras." Tegucigalpa, Honduras: ADAI, Octubre 1989. Cuadro No. 13.

[2] Direccion General de Estadística y Censos, "Encuesta de Granos Básicos - Pronóstico del Ciclo de Postrera (Año Agrícola 1990-91, Validación del Ciclo de Primera (Año Agrícola 1990-91)." Tegucigalpa, Honduras: Secretaría de Planificación, Coordinación y Presupuesto, Diciembre 1990.

HONDURAS - POLICY REFORMS - BASIC GRAINS

Exhibit 5.9 Projection of Area, Production and Value Added, Corn and Sorghum, Low, Medium and High Scenarios, 1989 to 1998.

Description	Agricultural Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
CORN										
AREA (Ths. Manzanas)										
Low	501	514	519	524	529	534	540	545	551	556
Medium	501	514	524	534	545	556	567	578	590	602
High	501	514	529	545	561	578	595	613	632	651
YIELD (QQ/Mz.)										
Low	22.42	24.07	24.31	24.56	24.80	25.05	25.30	25.55	25.81	26.07
Medium	22.42	24.07	24.55	25.04	25.54	26.06	26.58	27.11	27.65	28.20
High	22.42	24.07	24.79	25.54	26.30	27.09	27.91	28.74	29.60	30.49
PRODUCTION (Ths. Quintals)										
Low	11,236	12,363	12,611	12,865	13,124	13,387	13,656	13,931	14,211	14,497
Medium	11,236	12,363	12,862	13,382	13,923	14,485	15,070	15,679	16,313	16,972
High	11,236	12,363	13,116	13,915	14,762	15,661	16,615	17,627	18,700	19,839
SORGHUM										
AREA (Ths. Manzanas)										
Low	93	113	115	117	120	122	125	127	130	132
Medium	93	113	117	122	127	132	137	143	149	155
High	93	113	120	127	134	143	151	160	170	180
YIELD (QQ/Mz.)										
Low	14.59	16.40	16.72	17.06	17.40	17.75	18.10	18.46	18.83	19.21
Medium	14.59	16.40	17.05	17.73	18.44	19.18	19.95	20.74	21.57	22.44
High	14.59	16.40	17.38	18.42	19.53	20.70	21.94	23.26	24.65	26.13
PRODUCTION (Ths. Quintals)										
Low	1,361	1,851	1,926	2,004	2,085	2,169	2,256	2,348	2,442	2,541
Medium	1,361	1,851	2,002	2,165	2,342	2,533	2,740	2,964	3,205	3,467
High	1,361	1,851	2,080	2,337	2,626	2,950	3,315	3,725	4,185	4,702
CORN + SORGHUM (Ths. Quintals)										
Low	12,597	14,214	14,537	14,869	15,208	15,556	15,913	16,278	16,653	17,038
Medium	12,597	14,214	14,865	15,548	16,265	17,018	17,810	18,643	19,518	20,439
High	12,597	14,214	15,196	16,252	17,388	18,611	19,930	21,351	22,885	24,541
VALUE ADDED (1978 MILLION LEMPIRAS)										
CORN										
Low	64	70	71	73	74	76	77	79	81	82
Medium	64	70	73	76	79	82	85	89	92	96
High	64	70	74	79	64	89	94	100	106	112
SORGHUM										
Low	13	17	18	19	19	20	21	22	23	24
Medium	13	17	19	20	22	24	26	28	30	32
High	13	17	19	22	25	28	31	35	39	44
VALUE ADDED (MILLION DOLLARS)										
CORN										
Low	26	29	29	30	30	31	32	32	33	33
Medium	26	29	30	31	32	33	35	36	38	39
High	26	29	30	32	34	36	38	41	43	46
SORGHUM										
Low	5	6	7	7	7	8	8	8	8	9
Medium	5	6	7	8	8	9	10	10	11	12
High	5	6	7	8	9	10	12	13	15	16

Source: Exhibit 5.1 and estimates.

HONDURAS - POLICY REFORMS - BASIC GRAINS

Exhibit 5.10 Percent Change in Projected Area, Production and Value Added, Corn and Sorghum, Low, Medium and High Scenarios, 1990 t0 1998.

Description	Agricultural Year								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
CORN									
AREA (Ths. Manzanas)									
Low	2.47%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Medium	2.47%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
High	2.47%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
YIELD (QQ/Mz.)									
Low	7.37%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Medium	7.37%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
High	7.37%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
PRODUCTION (Ths. Quintals)									
Low	10.03%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%
Medium	10.03%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%
High	10.03%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
SORGHUM									
AREA (Ths. Manzanas)									
Low	21.01%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Medium	21.01%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
High	21.01%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
YIELD (QQ/Mz.)									
Low	12.39%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Medium	12.39%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
High	12.39%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
PRODUCTION (Ths. Quintals)									
Low	36.00%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%
Medium	36.00%	8.16%	8.16%	8.16%	8.16%	8.16%	8.16%	8.16%	8.16%
High	36.00%	12.36%	12.36%	12.36%	12.36%	12.36%	12.36%	12.36%	12.36%
CORN + SORGHUM (Ths. Quintals)									
Low	12.84%	2.27%	2.28%	2.28%	2.29%	2.29%	2.30%	2.30%	2.31%
Medium	12.84%	4.58%	4.59%	4.61%	4.63%	4.65%	4.67%	4.69%	4.72%
High	12.84%	6.91%	6.95%	6.99%	7.04%	7.08%	7.13%	7.18%	7.24%
VALUE ADDED (1978 MILLION LEMPIRAS)									
CORN									
Low	10.03%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%
Medium	10.03%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%
High	10.03%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
SORGHUM									
Low	36.00%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%
Medium	36.00%	8.16%	8.16%	8.16%	8.16%	8.16%	8.16%	8.16%	8.16%
High	36.00%	12.36%	12.36%	12.36%	12.36%	12.36%	12.36%	12.36%	12.36%
VALUE ADDED (MILLION DOLLARS)									
CORN									
Low	10.03%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%
Medium	10.03%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%
High	10.03%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
SORGHUM									
Low	36.00%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%
Medium	36.00%	8.16%	8.16%	8.16%	8.16%	8.16%	8.16%	8.16%	8.16%
High	36.00%	12.36%	12.36%	12.36%	12.36%	12.36%	12.36%	12.36%	12.36%

Source: Exhibit 5.9.

EXHIBIT 5.11 CORN, AREA HARVESTED PROJECTION, HONDURAS, 1989 TO 1998

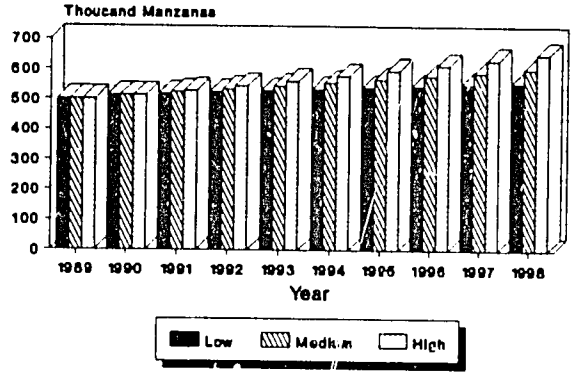


EXHIBIT 5.12 CORN, YIELD PROJECTION, HONDURAS, 1989 TO 1998

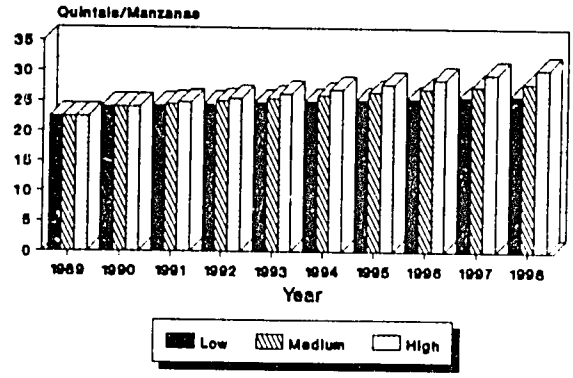
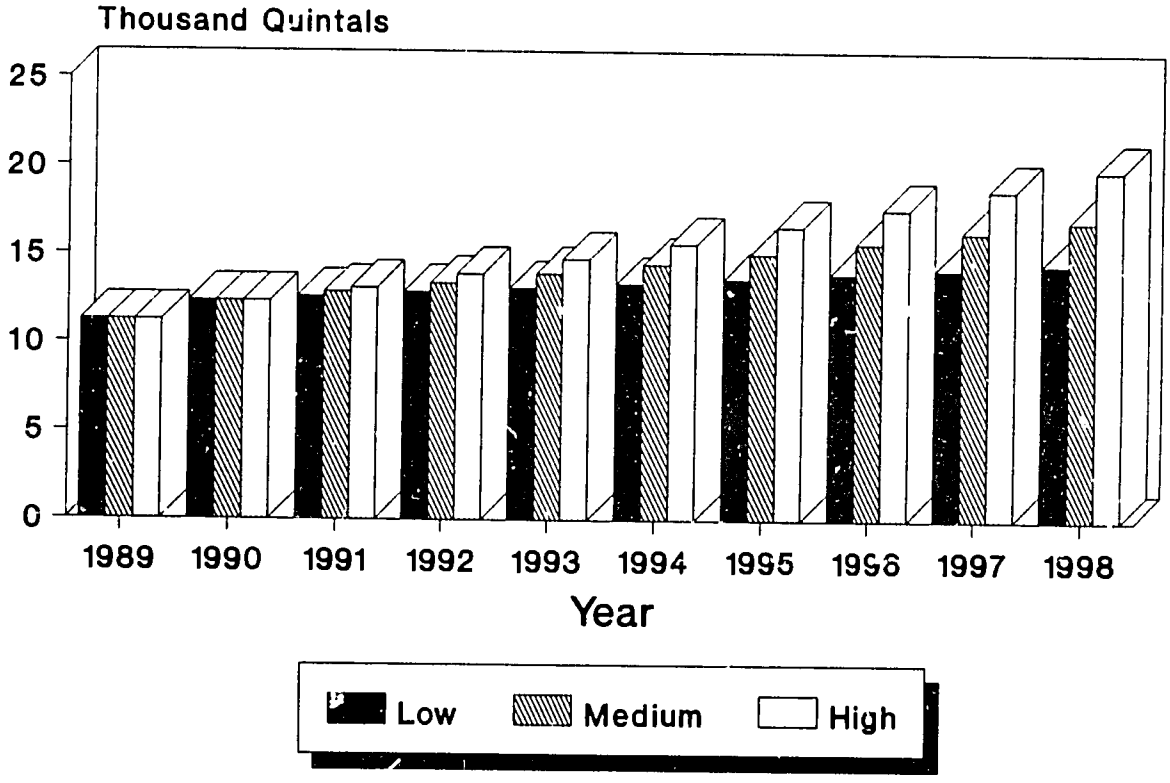


EXHIBIT 5.13 CORN, PRODUCTION PROJECTION, HONDURAS, 1989 TO 1998



Source: Exhibit 5.9

The combined effect increases in area harvested and yield result in sorghum production growth rates of 4.04, 8.16, and 12.36 percent per year for the low, medium, and high growth scenarios (Exhibit 5.9, 5.10, and 5.14 to 5.16). Total production of corn plus sorghum results in projected growth rates of 2.27 to 2.31 percent for the low growth scenario, 4.58 to 4.72 percent for the medium growth scenario, and 6.91 to 7.24 percent for the high growth scenario (Exhibit 5.17).

Central Bank's published value added figures were adjusted for 1989 to account for disparities in production estimates. Estimates used by the Central Bank differ from those made by the Dirección General de Estadística y Censos (DGEC). However, the estimate of DGEC are more accurate due to the methodology used in the estimation procedure. Value added in 1978 lempiras were projected assuming the same ratio of value added per quintal as in 1989. To estimate the value added in dollars, the value added of 1989 was divided by 3.5. The resulting value added in dollars per quintal in 1989 was used to project value added in dollars for the following years. Projected value added and percent changes are presented on Exhibits 5.9 and 5.10.

5.3.2 Beans

Beans production has usually surpassed consumption, generating a surplus for export. Honduras exported 74 thousand quintals in 1984. However, it is mostly a locally consumed good. With liberalized prices and a transparent foreign exchange regime, prices should be very attractive to producers. Production is estimated to increase by 14 percent in crop year 1990-91. This increase is due to an 8.6 percent growth in area harvested, and a 5.2 percent increase in yields (Exhibit 5.5).

Even though yields reached a record high of 11.4 quintals per manzana in 1990/91, this is still a very low yield for the varieties planted in Honduras. For the first harvest of crop year 1990-91 the Atlantic Region (No. 4) had an average yield of 33.3 quintals per manzana.[1] This is an indication of the potential that exists to improve bean productivity. However, it should be noted that beans are produced primarily by small farmers whose families consume 44 percent of the production.[2]

It is possible that if the proposed policy reforms are adopted, commercial farmers will begin to plant beans. It might be financially attractive to plant beans for export to El Salvador, Nicaragua, and the ethnic markets in the United States.

Projections were based on estimates of growth in area and yields. Both area and yields were assumed to grow at 2 percent per year for the medium

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[1] Dirección General de Estadística y Censos, "Encuesta de Granos Básicos - Pronóstico del Ciclo de Postrera (Año Agrícola 1990-91, Validación del ciclo de Primera (Año Agrícola 1990-91)." Tegucigalpa, Honduras: Secretaría de Planificación, Coordinación y Presupuesto, Diciembre 1990.

[2] Dirección General de Estadística y Censos, "Encuesta Agricola Nacional de Propósitos Múltiples E.A.N. - 1989, Tomo I. Tegucigalpa, Honduras: Secretaría de Planificación, Coordinación y Presupuesto, Mayo 1990. p.20.

EXHIBIT 5.14 SORGHUM, AREA HARVESTED PROJECTION, HONDURAS, 1989 TO 1998

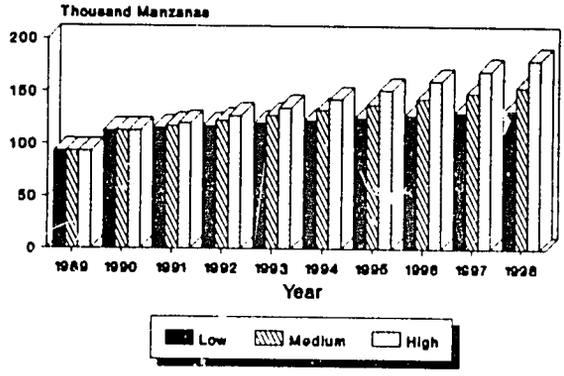


EXHIBIT 5.15 SORGHUM, YIELD PROJECTION, HONDURAS, 1989 TO 1998

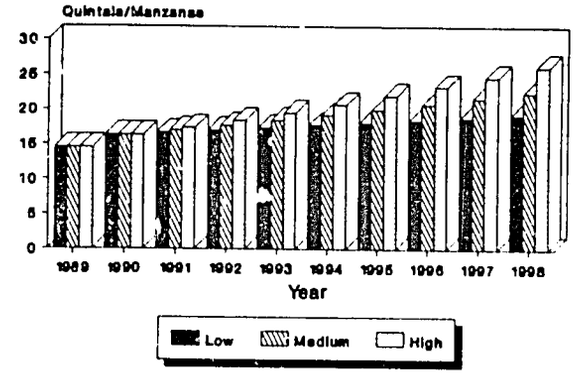
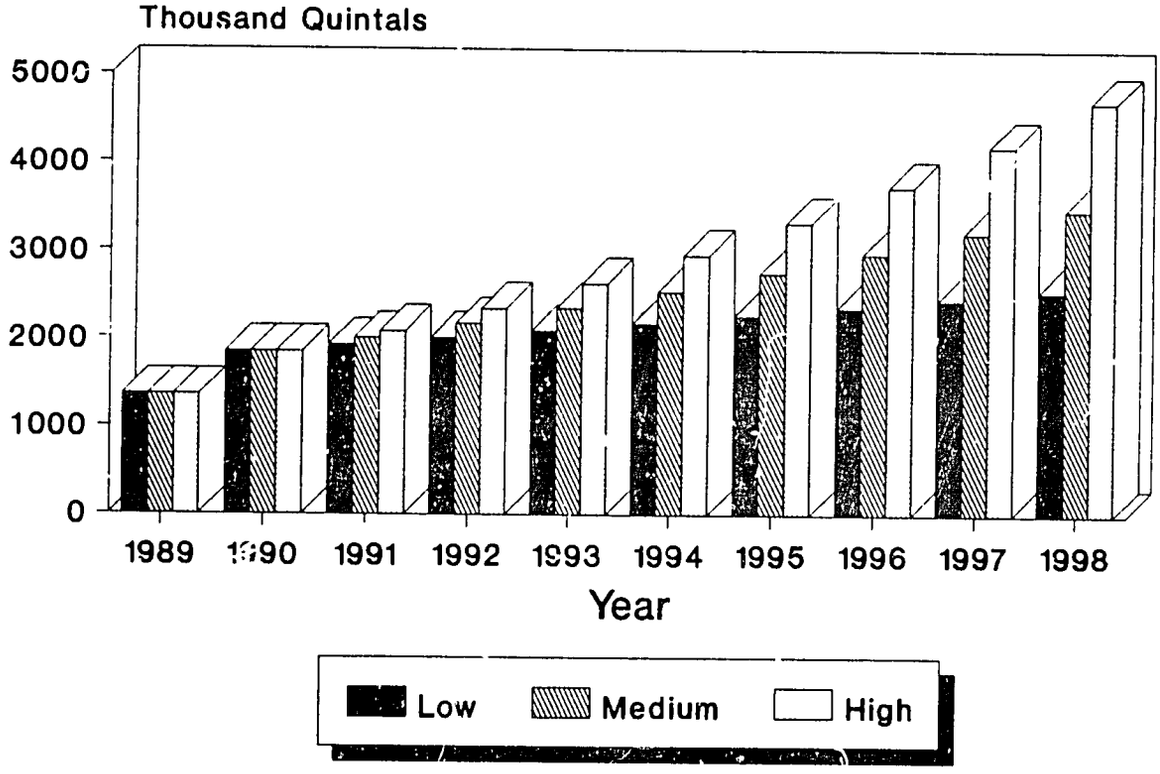
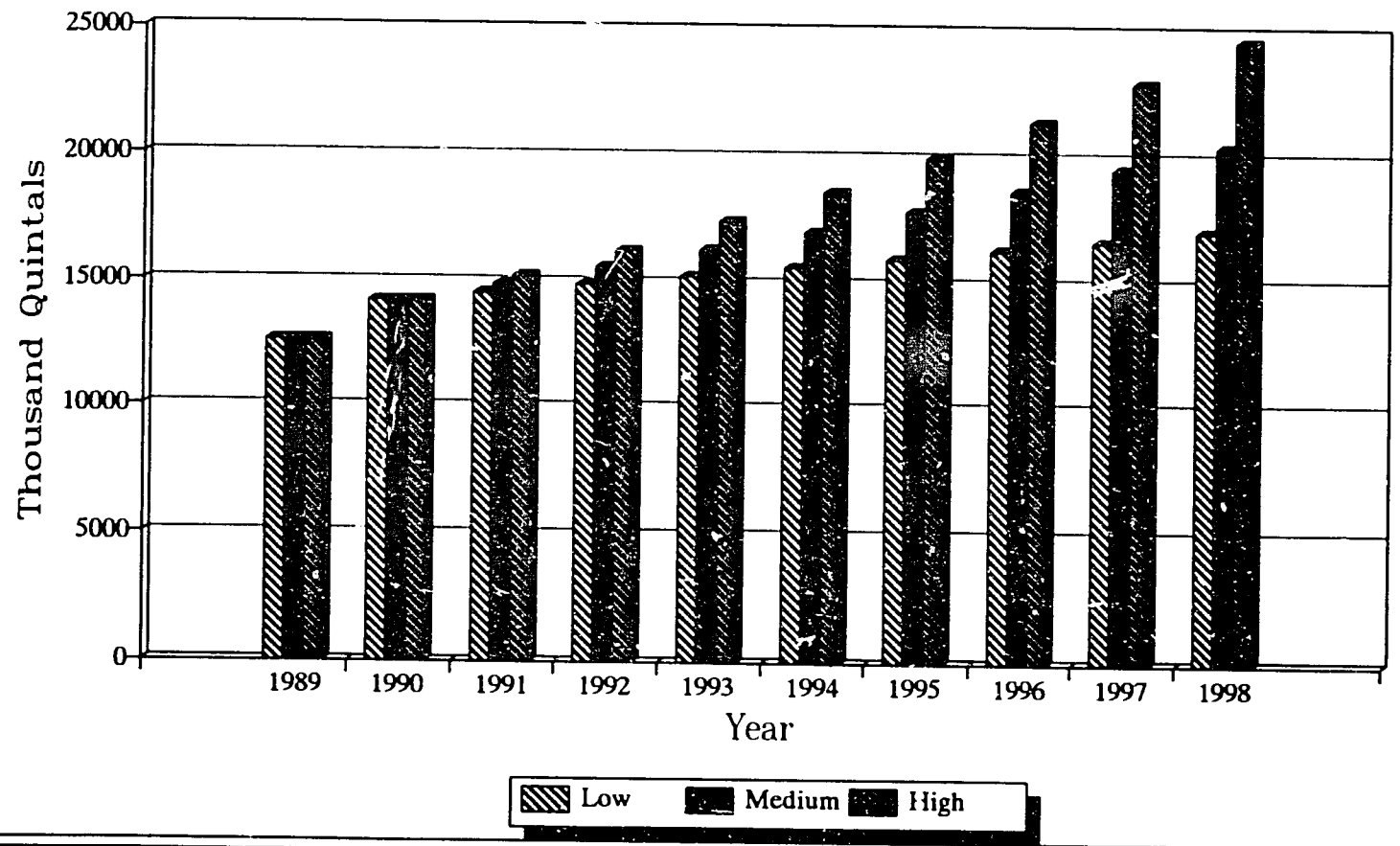


EXHIBIT 5.16 SORGHUM, PRODUCTION PROJECTION, HONDURAS, 1989 TO 1998



Source: Exhibit 5.9

EXHIBIT 5.17 CORN + SORGHUM, PRODUCTION
PROJECTION, HONDURAS, 1989 TO 1998



and most likely scenario. A one percent per year growth was assumed for the low growth scenario, and a 3 percent per year rate for the high growth scenario. The combined effect of the growth in area and yields resulted in production growth rates of 2.01, 4.04 and 6.09 percent for the low, medium and high growth scenarios. Results are presented on Exhibits 5.18 to 5.21.

Value added were adjusted for 1989 to account for production differences between estimates used by the Central Bank and the DGEC. Value added in 1978 lempiras were projected assuming the same ratio of value added per quintal as in 1989. To estimate value added in dollars, 1989 value added was divided by 3.5. The resulting value added in dollars per quintal in 1989 was used to project value added in dollars for the following years. Projected value added and percent changes are presented on Exhibit 5.18.

5.3.3 Rice

Rice is produced in a relatively small area. The maximum area harvested in rice was 30 thousand manzanas. This occurred in crop year 1983-84. Most rice is produced with high levels of technology; thus, little can be achieved in yield improvements. Production growth would be achieved through area expansion. Yields were highest in 1989-90, when they reached an average of 42.5 quintals per manzana. Unfortunately, due to bad weather, yields dropped to 37.94 qq/mz. in 1990-91, a drop of 10.7 percent.

It was assumed that the previous yield level of 42.48 qq/mz. will be reached in crop year 1991/92 under the high growth scenario. Yields would continue to grow at a rate of 3 percent per year for the following years, reaching 52 qq/mz. in 1998. For the medium growth scenario, it was assumed that yields will increase 4 percent in 1991/92 and 2 percent per year for the rest of the years. For the low growth scenario, yields will increase at a constant one percent per year rate (Exhibit 5.22).

Area is assumed to increase at a 1.5 percent per year for the low growth scenario. For the medium growth scenario, area increases at a rate of 2.5 percent per year, and 4 percent per year for the high growth scenario.

The combined effect of area and yield growth will increase production by 2.5 percent per year for the low growth scenario. For the medium growth scenario, production will increase by 6.6 percent in 1991/92 and 4.5 percent per year during the remaining years. Under the high growth scenario, production will increase 14.7 percent in 1991/92, recuperating 1989/90 levels. Growth for the remaining years would be 7.1 percent. Normal weather conditions are assumed in all projections (Exhibits 5.22 to 5.25).

Value added for 1989 was adjusted to account for the differences in production estimates. In this case the production estimated by the DGEC was less than the figures reported by the Central Bank. Projections of value added in 1978 lempiras were based on value added per quintal in 1989. For the estimate of value added in dollars, value added in 1989 was divided by 3.5. The resulting ratio of value added in dollar per quintal for this year was used to estimate value added for the remaining years.

HONDURAS - POLICY REFORMS - BASIC GRAINS

Exhibit 5.18 Projection of Area, Production and Value Added, Beans, Low, Medium and High Scenarios, 1989 to 1998.

Description	Agricultural Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
AREA (Ths. Manzanas)										
Low	116	126	127	129	130	131	132	134	135	136
Medium	116	126	129	131	134	136	139	142	145	148
High	116	126	130	134	138	142	146	150	155	160
YIELD (QQ/Mz.)										
Low	10.84	11.41	11.53	11.64	11.76	11.88	11.99	12.11	12.24	12.36
Medium	10.84	11.41	11.64	11.87	12.11	12.35	12.60	12.85	13.11	13.37
High	10.84	11.41	11.76	12.11	12.47	12.85	13.23	13.63	14.04	14.46
PRODUCTION (Ths. Quintals)										
Low	1,258	1,438	1,467	1,496	1,526	1,557	1,588	1,620	1,653	1,686
Medium	1,258	1,438	1,496	1,557	1,619	1,685	1,753	1,824	1,897	1,974
High	1,258	1,438	1,526	1,618	1,717	1,822	1,933	2,050	2,175	2,308
VALUE ADDED (1978 MILLION LEMPIRAS)										
Low	17	20	20	21	21	22	22	22	23	23
Medium	17	20	21	22	22	23	24	25	26	27
High	17	20	21	22	24	25	27	28	30	32
VALUE ADDED (MILLION DOLLARS)										
Low	7.16	8.19	8.35	8.52	8.69	8.87	9.05	9.23	9.41	9.60
Medium	7.16	8.19	8.52	8.86	9.22	9.59	9.98	10.39	10.80	11.24
High	7.16	8.19	8.69	9.22	9.78	10.37	11.00	11.68	12.39	13.14
PERCENT CHANGE										
AREA (Ths. Manzanas)										
Low		8.62%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Medium		8.62%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
High		8.62%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
YIELD (QQ/Mz.)										
Low		5.24%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Medium		5.24%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
High		5.24%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
PRODUCTION (Ths. Quintals)										
Low		14.31%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%
Medium		14.31%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%
High		14.31%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
VALUE ADDED (1978 MILLION LEMPIRAS)										
Low		14.31%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%
Medium		14.31%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%
High		14.31%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
VALUE ADDED (MILLION DOLLARS)										
Low		14.31%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%	2.01%
Medium		14.31%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%	4.04%
High		14.31%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%

Source: Exhibit 5.5 and estimates.

EXHIBIT 5.19 BEANS, AREA HARVESTED PROJECTION, HONDURAS, 1989 TO 1998

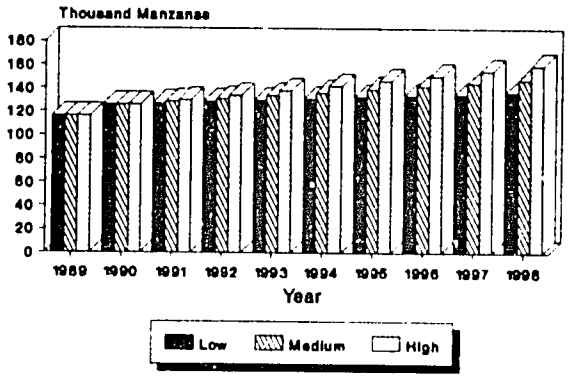


EXHIBIT 5.20 BEANS, YIELD PROJECTION, HONDURAS, 1989 TO 1998

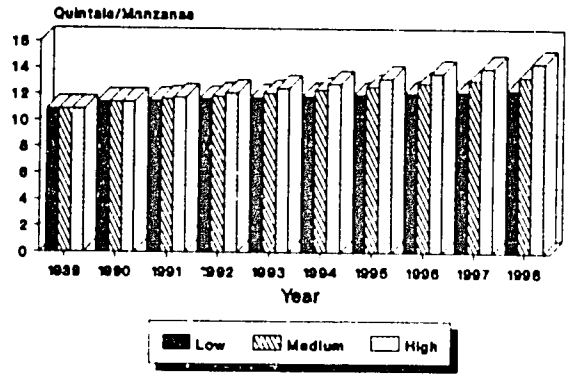
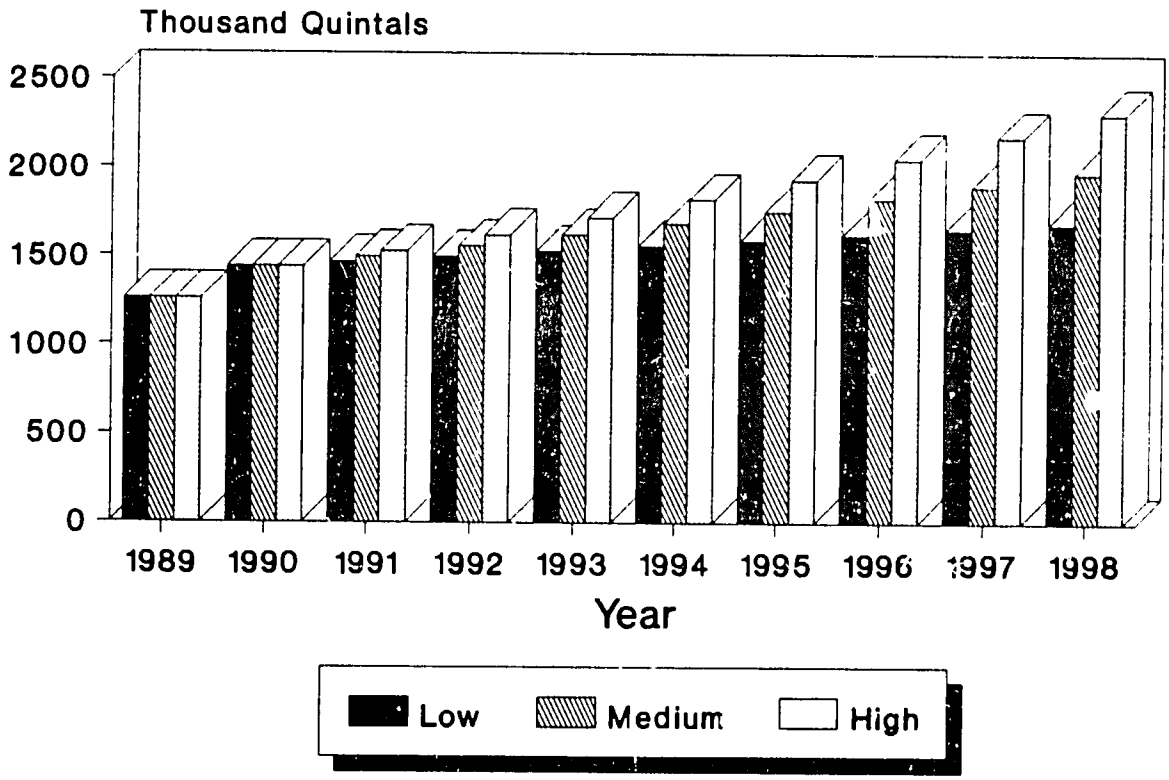


EXHIBIT 5.21 BEANS, PRODUCTION PROJECTION, HONDURAS, 1989 TO 1998



Source: Exhibit 5.18

HONDURAS - POLICY REFORMS - BASIC GRAINS

Exhibit 5.22 Projection of Area, Production and Value Added, Rice, Low, Medium and High Scenarios, 1989 to 1998.

Description	Agricultural Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
AREA (Ths. Manzanas)										
Low	24.2	24.3	24.7	25.0	25.4	25.8	26.2	26 6	27.0	27.4
Medium	24.2	24.3	24.9	25.5	26.2	26.8	27.5	28.2	28.9	29.6
High	24.2	24.3	24.9	25.9	26.9	28.0	29.1	30.3	31.5	32.8
YIELD (QQ/Mz.)										
Low	42.48	37.94	38.32	38.71	39.09	39.48	39.88	40.28	40.68	41.09
Medium	42.48	37.94	39.46	40.25	41.05	41.88	42.71	43.57	44.44	45.33
High	42.48	37.94	42.48	43.75	45.07	46.42	47.81	49.25	50.72	52.25
PRODUCTION (Ths. Quintals)										
Low	1,028	922	945	969	993	1,018	1,044	1,070	1,097	1,125
Medium	1,028	922	983	1,028	1,074	1,123	1,174	1,228	1,284	1,342
High	1,028	922	1,058	1,133	1,214	1,301	1,393	1,492	1,599	1,712
VALUE ADDED (1978 MILLION LEMPIRAS)										
Low	12	10	11	11	11	12	12	12	12	13
Medium	12	10	11	12	12	13	13	14	15	15
High	12	10	12	13	14	15	16	17	18	19
VALUE ADDED (MILLION DOLLARS)										
Low	4.76	4.27	4.38	4.49	4.60	4.72	4.83	4.96	5.08	5.21
Medium	4.76	4.27	4.55	4.76	4.97	5.20	5.44	5.69	5.94	6.21
High	4.76	4.27	4.90	5.25	5.62	6.02	6.45	6.91	7.40	7.93
PERCENT CHANGE										
AREA (Ths. Manzanas)										
Low		0.41%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Medium		0.41%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
High		0.41%	2.50%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
YIELD (QQ/Mz.)										
Low		-10.68%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Medium		-10.68%	4.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
High		-10.68%	11.96%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
PRODUCTION (Ths. Quintals)										
Low		-10.31%	2.51%	2.51%	2.51%	2.51%	2.52%	2.51%	2.51%	2.51%
Medium		-10.31%	6.60%	4.55%	4.55%	4.55%	4.55%	4.55%	4.55%	4.55%
High		-10.31%	14.76%	7.12%	7.12%	7.12%	7.12%	7.12%	7.12%	7.12%
VALUE ADDED (1978 MILLION LEMPIRAS)										
Low		-10.31%	2.51%	2.52%	2.51%	2.51%	2.51%	2.51%	2.51%	2.51%
Medium		-10.31%	6.60%	4.55%	4.55%	4.55%	4.55%	4.55%	4.55%	4.55%
High		-10.31%	14.76%	7.12%	7.12%	7.12%	7.12%	7.12%	7.12%	7.12%
VALUE ADDED (MILLION DOLLARS)										
Low		-10.31%	2.51%	2.52%	2.51%	2.51%	2.51%	2.51%	2.51%	2.51%
Medium		-10.31%	6.60%	4.55%	4.55%	4.55%	4.55%	4.55%	4.55%	4.55%
High		-10.31%	14.76%	7.12%	7.12%	7.12%	7.12%	7.12%	7.12%	7.12%

Source: Exhibit 5.7 and estimates.

EXHIBIT 5.23 RICE, AREA HARVESTED PROJECTION, HONDURAS, 1989 TO 1998

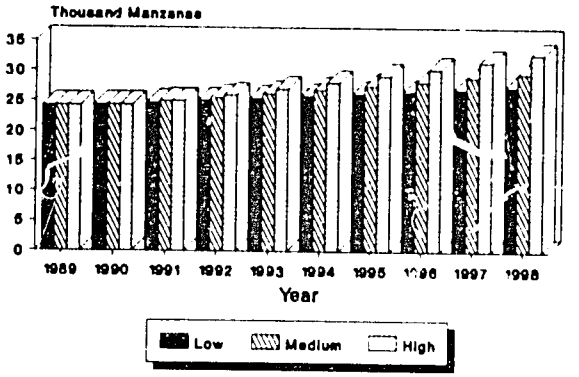


EXHIBIT 5.24 RICE, YIELD PROJECTION, HONDURAS, 1989 TO 1998

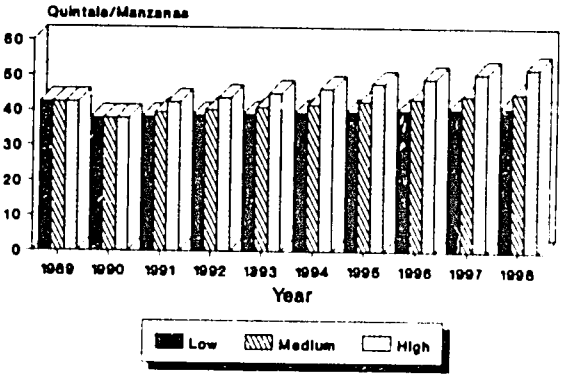
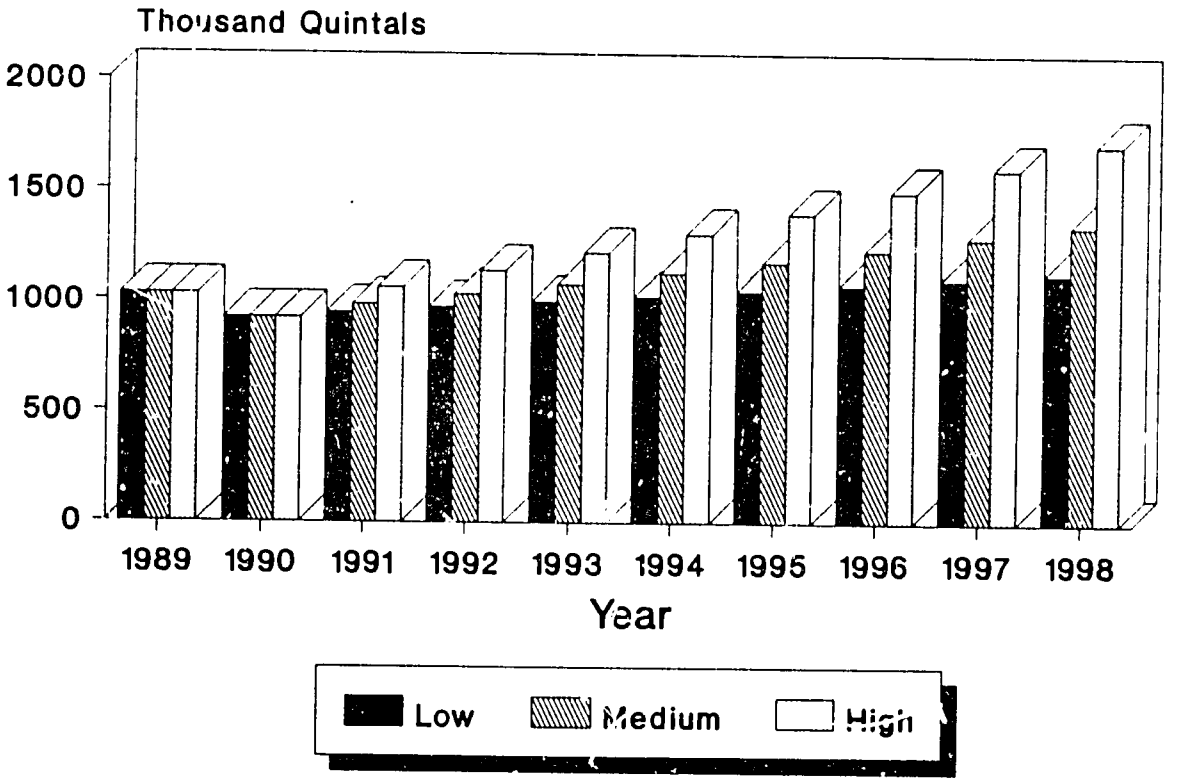


EXHIBIT 5.25 RICE, PRODUCTION PROJECTION, HONDURAS, 1989 TO 1998



Source: Exhibit 5.22

6. IMPACT ON THE LIVESTOCK SECTOR

6.1 Overview

The Central Bank of Honduras groups milk, beef, pork, mutton and lamb into the livestock category. According to their statistics, livestock is the third major contributor to value added after coffee and bananas. Of these products, beef has been the most important agricultural export commodity.

Exhibit 6.1 presents the evolution in production, producer prices, value of production, and value added of these commodities as estimated by the Central Bank. The major contributor to value added is milk, followed by beef, and pork. Mutton and lamb have been of minor significance. The Central Bank only provided total value added for all livestock products. Contribution of each commodity was estimated from their share in value of production.

All these statistics must be used with caution. Actual output is probably higher than the numbers reported by the Central Bank for several reasons. The Central Bank estimates milk production from purchases made by the milk processing plants, and per capita consumption as reported by surveys. Exhibit 6.1 shows total milk production of 316 million liters for 1989. However, the agricultural production survey conducted in 1989 by the General Directorate of Statistics and Census reports a production of 11.5 million bottles[1] per week in the dry season and 15.9 million during the wet season. This is equivalent to 8.6 million liters per week for the dry season and 11.9 million liters during the wet season. The average resulting is 10.3 million liters per week, equivalent to 534.4 million liters a year. This is 218 million liters higher than the Central Bank figures, a difference of 69 percent.

Beef production estimates may be more accurate than milk production estimates, due to sanitary requirements for slaughtering and sale of beef. However, some experts estimate that contraband of live animals may be up to 100,000 heads of cattle a year, due to price differentials paid by the local packers in comparison to Guatemalans and Salvadorans. While local packers were paying L.1,400 for a 900 lbs. steer, the same animal was worth L.2,200 in Guatemala or El Salvador. The Central Bank says it takes contraband into account, although less than fully. During 1990, even though there was a change in the foreign exchange regime which reduced contraband incentives, beef exporters still had to pay a 12 percent export tax, plus a L.0.35 per pound fee, and other local taxes. With the gradual elimination of the export tax, local packers will be able to compete with smugglers who take live animals into neighboring countries.

Production figures for the other species grouped under livestock probably exhibit the same type of estimation error. These smaller animals are slaughtered at the local level and not reported through official channels.

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[1] One bottle = 0.75 liters.

HONDURAS - POLICY REFORMS - LIVESTOCK

Exhibit 6.1 Production, Prices and Value of Production For Beef, Pork, Mutton and Lamb, and Milk, 1978 to 1989.

Description	Year										p/	e/
	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
PRODUCTION												
Beef (Million lbs.)	145.9	150.5	142.2	136.0	137.3	131.0	130.4	140.3	155.0	162.4	176.4	179.2
Pork (Million Lbs.)	17.0	17.4	17.6	17.1	19.1	19.7	20.4	21.0	21.6	22.2	22.8	23.4
Mutton and Lamb (Ths. Lbs.	631	649	667	686	696	715	736	757	780	802	825	849
Milk (Million Lts.)	218.6	227.4	231.8	233.8	236.6	244.4	249.7	257.9	269.3	282.7	298.7	316.9
PRODUCER PRICES												
Beef (Lps./QQ)	79.5	80.1	84.2	83.4	85.9	88.2	90.9	89.2	89.1	94.2	94.6	95.3
Pork (Lps./QQ)	89.0	92.0	100.0	107.0	110.0	122.0	129.0	131.0	132.0	133.0	134.0	140.0
Mutton and Lamb (Lps./QQ	107.0	108.0	114.0	114.0	118.0	122.0	126.0	127.0	128.0	128.0	128.0	129.0
Milk (Lps./Liter)	0.36	0.39	0.45	0.46	0.49	0.48	0.49	0.51	0.52	0.53	0.54	0.64
VALUE OF PRODUCTION (Million Lps.)												
Beef	116.0	120.5	119.6	113.4	117.9	115.6	118.5	125.1	138.1	153.0	166.9	170.8
Pork	15.1	16.0	17.6	18.3	21.0	24.1	26.3	27.5	28.5	29.5	30.6	32.8
Mutton and Lamb	0.68	0.70	0.76	0.78	0.82	0.87	0.93	0.96	1.00	1.03	1.06	1.10
Milk	78.7	88.7	104.3	107.6	115.9	[illegible]	122.3	131.5	140.1	149.8	161.3	202.8
Total	211	226	242	240	256	[illegible]	268	285	308	333	360	407
VALUE OF PRODUCTION (PERCENT DISTRIBUTION)												
Beef	55.1%	53.3%	49.4%	47.2%	46.1%	46.8%	44.2%	43.9%	44.9%	45.9%	46.4%	41.9%
Pork	7.2%	7.1%	7.3%	7.6%	8.2%	9.3%	9.8%	9.6%	9.2%	8.8%	8.5%	8.1%
Mutton and Lamb	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Milk	37.4%	39.3%	43.1%	44.8%	45.3%	45.5%	45.6%	46.1%	45.5%	45.0%	44.8%	49.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
VALUE ADDED (MILLION LPS.)												
Beef			81.5	80.3	83.0	84.7	89.8	90.4	96.5	115.2	125.7	137.9
Pork			12.0	12.9	14.8	17.6	19.9	19.8	19.9	22.2	23.0	26.5
Mutton and Lamb			0.52	0.55	0.58	0.64	0.70	0.69	0.70	0.77	0.80	0.88
Milk			71.0	76.2	81.6	86.0	92.6	95.0	97.9	112.8	121.5	163.7
Total			165.0	170.0	180.0	189.0	203.0	206.0	215.0	251.0	271.0	329.0
VALUE ADDED (1978 MILLION LPS.)												
Beef			71.59	68.50	67.35	67.69	68.09	70.67	75.43	83.99	89.08	84.23
Pork			10.52	11.04	11.98	14.10	15.09	15.51	15.54	16.19	16.30	16.19
Mutton and Lamb			0.46	0.47	0.47	0.51	0.53	0.54	0.55	0.56	0.56	0.54
Milk			62	65	66	69	70	74	76	82	86	100
Total			145	145	146	151	154	161	168	183	192	201
REFRIGERATED BEEF EXPORTS												
Volume (Ths. Kilograms)			28,605	23,846	16,195	15,474	9,519	8,643	10,874	9,681	9,963	8,661
Price ($/Kg.)			2.12	1.95	2.09	2.03	2.23	2.10	1.83	2.33	2.05	2.20
Value (Million Dollars)			61	46	34	31	21	18	20	23	20	19

p/ Preliminary; e/ Estimates.

Source: Lic. Manuel Rodriguez, Economic Studies Department, Central Bank of Honduras.

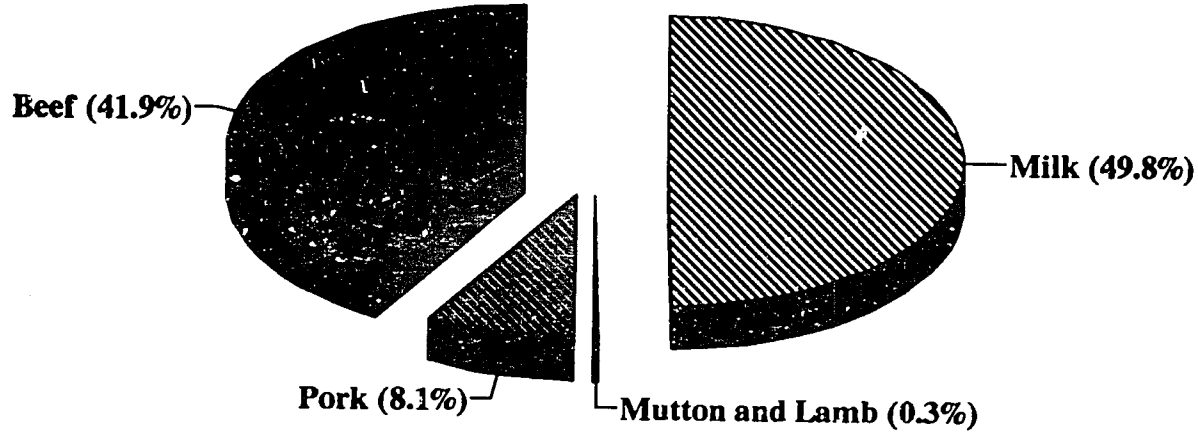
HONDURAS - POLICY REFORMS - LIVESTOCK

Exhibit 6.2 Percent Growth in Production, Prices and Value of Production For Beef, Pork, Mutton and Lamb, and Milk, 1979 to 1989.

Description	Year									p/	e/
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
PRODUCTION											
Beef (Million lbs.)	3.0%	-5.9%	-4.5%	0.9%	-4.8%	-0.5%	7.1%	9.5%	4.5%	8.0%	1.5%
Pork (Million Lbs.)	2.5%	0.9%	-3.0%	10.5%	3.3%	3.1%	2.9%	2.7%	2.8%	2.8%	2.8%
Mutton+Lamb (Ths. Lbs.)	2.8%	2.7%	2.8%	1.4%	2.7%	2.9%	2.8%	2.9%	2.7%	2.8%	2.8%
Milk (Million Lts.)	3.9%	1.9%	0.9%	1.2%	3.2%	2.1%	3.2%	4.2%	4.7%	5.3%	5.7%
PRODUCER PRICES											
Beef (Lps./QQ)	0.7%	4.8%	-0.9%	2.9%	2.6%	2.9%	-1.9%	-0.1%	5.4%	0.4%	0.7%
Pork (Lps./QQ)	3.3%	8.0%	6.5%	2.7%	9.8%	5.4%	1.5%	0.8%	0.8%	0.7%	4.3%
Mutton+Lamb (Lps./QQ)	0.9%	5.3%	0.0%	3.4%	3.3%	3.2%	0.8%	0.8%	0.0%	0.0%	0.8%
Milk (Lps./Liter)	7.7%	13.3%	2.2%	6.1%	-2.1%	2.0%	3.9%	1.9%	1.9%	1.9%	15.6%
VALUE OF PRODUCTION (Million Lps.)											
Beef	3.7%	-0.7%	-5.5%	3.9%	-2.0%	2.5%	5.3%	9.4%	9.7%	8.4%	2.2%
Pork	5.7%	8.8%	3.7%	12.9%	12.9%	8.4%	4.4%	3.5%	3.5%	3.5%	6.9%
Mutton and Lamb	3.7%	7.8%	2.8%	4.8%	5.8%	5.9%	3.5%	3.7%	2.7%	2.8%	3.6%
Milk	11.3%	15.0%	3.0%	7.2%	1.2%	4.1%	7.0%	6.1%	6.5%	7.1%	20.5%
Total	6.8%	6.7%	-1.0%	6.1%	0.8%	3.8%	6.0%	7.3%	7.7%	7.4%	11.7%
VALUE ADDED (MILLION LPS.)											
Beef			-1.4%	3.3%	2.0%	5.6%	0.7%	6.3%	16.2%	8.4%	8.8%
Pork			7.5%	12.4%	16.3%	11.3%	-0.2%	0.2%	10.5%	3.5%	13.2%
Mutton and Lamb			6.5%	4.2%	9.6%	8.9%	-1.1%	0.4%	9.7%	2.8%	10.1%
Milk			6.8%	6.6%	5.1%	7.2%	2.5%	2.9%	13.2%	7.1%	25.8%
Total			2.9%	5.6%	4.8%	6.9%	1.5%	4.2%	14.3%	7.4%	17.6%
VALUE ADDED (1978 MILL. LS.)											
Beef			-4.5%	-1.7%	0.5%	0.6%	3.6%	6.3%	10.2%	5.7%	-5.8%
Pork			4.7%	7.9%	15.0%	6.6%	2.7%	0.2%	4.0%	0.7%	-0.7%
Mutton and Lamb			3.7%	-0.7%	8.2%	4.1%	1.9%	0.4%	3.3%	-0.0%	-4.3%
Milk			3.9%	1.8%	3.6%	2.2%	5.4%	2.9%	7.0%	4.4%	14.0%
Total			0.0%	0.7%	3.3%	1.9%	4.3%	4.2%	8.2%	4.7%	4.5%
REFRIGERATED BEEF EXPORTS											
Volume (Ths. Kgs.)			-20.0%	-47.2%	-4.7%	-62.6%	-10.1%	20.5%	-12.3%	2.8%	-15.0%
Price ($/Kg.)			-9.0%	7.0%	-3.4%	9.1%	-6.3%	-14.3%	21.4%	-14.0%	6.9%
Value (Million Ls.)			-30.7%	-37.0%	-8.2%	-47.7%	-17.0%	9.1%	11.7%	-10.8%	-7.1%

Source: Exhibit 6.1.

EXHIBIT 6.3 PRODUCTION VALUE OF LIVESTOCK, HONDURAS, 1989



The country has a total of 2.4 million head of cattle in over 70 thousand farmers. Even though there are many farmers who own cattle, 76 percent of these are owned by farmers with more than 20 manzanas (Exhibit 6.4). Cattle in Honduras are mostly double purpose: they produce milk and beef. Of the total population, only 7 percent are pure bred, and the majority (74 percent) are cross bred. Brahman is the predominant breed for beef production, while Brown Swiss are preferred for milking.

Productivity levels are very low for several reasons. The genetic stock is poor. Cattlemen's dual purpose mentality has kept the genetic potential low, since the cattle which are bred are neither high producers of milk nor fast gainers of weight. Management practices are poor. Birth rates are below 50 percent. Cut grass is poorly handled, reducing their protein content potential. Nutrition practices are very poor. Farmers do not take full advantage of local feed to increase production.

There are some programs that have achieved technological improvements, but much more needs to be done. All current programs combined cover only a small proportion of the entire livestock sector. Very little research is done to determine proper management and optimum feed rations for different areas in Honduras. This is a very important sector of the economy that hasn't received its fair share of attention and support in relation to its growth potential.

Besides lack of access to high production technology, the livestock sector faces other constraints. The foreign exchange regime, in addition to the export tax, have had a negative effect on beef exports. The prohibition on exports of live animals has also affected exports, contributing to the illegal sale of live animals to Guatemala and El Salvador. Local price controls of beef and milk have maintained relatively low prices to farmers, providing low incentives to invest in the sector. The agrarian reform and campesino invasions have also halted investments, due to the risk these factors add to additional ranching investments.

The economic forces of supply and demand, however, have found a way around the controls. Cattle raisers sell to Guatemalan and Salvadoran purchasers, who take live animals across the border. Cheese makers pay higher prices to producers, thereby diverting milk production from pasteurization plants to artisanal cheese makers. These policies contribute to economic inefficiency. Illegal export of live animals transfers resources to informal marketing agents, reducing the participation of producers, and consequently their investment incentives. Milk sales for artisanal cheese production escape sanitary controls, increasing contamination levels, and adversely impacting on public health.

HONDURAS - POLICY REFORMS - LIVESTOCK

Exhibit 6.4 Number of Cattle by Type and Breed, 1989.

Description	Size (Maznana)					Percent
	1-<5	5-<10	10-<20	>20	Total	
TOTAL	210,320	134,650	224,730	1,853,820	2,423,520	100.00%
Percent	8.68%	5.56%	9.27%	76.49%	100.00%	
All cows	82,630	49,180	83,420	686,830	902,060	37.22%
Dry	34,720	16,560	29,390	285,780	366,450	15.12%
Milking	47,910	32,620	54,030	401,050	535,610	22.10%
Heifers	36,980	24,460	42,690	391,540	495,670	20.45%
Female Calfs	25,450	17,740	28,730	226,910	298,830	12.33%
Male Calfs	34,100	21,690	29,760	245,780	331,330	13.67%
Bulls	3,950	3,700	7,460	42,160	57,270	2.36%
Young bulls	10,560	4,750	13,770	149,220	178,300	7.36%
Steers	2,530	3,280	6,100	72,810	84,720	3.50%
Oxen	14,120	9,850	12,800	38,570	75,340	3.11%
BREED						
Total	210,320	134,650	224,730	1,853,820	2,423,520	100.00%
Pure Bred	4,640	4,960	1,760	163,180	174,540	7.20%
Cross Breed	97,060	65,460	144,390	1,478,180	1,785,090	73.66%
Native	108,620	64,230	78,580	212,460	463,890	19.14%

Source: Direccion General de Estadistica y Censos, "Encuesta Agricola Nacional de Propositos Multiples, E.A.N. - 1989." Tomo II. Tegucigalpa, Honduras: Secretaria de Planificacion, Coordinacion y Presupuesto, Agosto 1990. p. 8.

6.2 Proposed Policy Reforms That Affect the Livestock Sector

The proposed policy reforms that affect the livestock sector are the following:

- The foreign exchange regime;
- Removal of price controls;
- Elimination of export taxes;
- Allowance of land rental;
- Allowance of titling of parcels larger than 2 Has.;
- Issuance of "dominio pleno" titles to legitimate land owners; and
- Removal of the interest rate ceiling.

All the proposed policy reforms will affect the livestock sector. An open foreign exchange regime, along with removal of price controls and export taxes will increase the price received by farmers. Beef is exported, and as the foreign exchange regime is liberalized along with removal of export taxes, the packers will receive more lempiras for their exports. This will allow them to compete with smugglers from Guatemala and El Salvador. Removal of local price controls will also raise the price of beef. This will raise the price paid to farmers, stimulating investment in the livestock sector.

With the removal of milk price controls, milk prices will rise, achieving an equilibrium price level. These higher prices received by farmers will stimulate investment in dairy production, increasing productivity levels and production.

The land market policy reforms will provide better assurance of land ownership to livestock producers. This will reduce the risk of invasion by campesinos, which has limited investment expansion in the sector (although overall the agrarian reform law provides better protection against expropriation actions to cattle raisers than farmers). However, it is unlikely that a significant amount of land currently in pasture will be shifted towards crops activities. Some land might shift to high cash export crops like melons in the south and bananas in the north. However, the reduction in land dedicated to pasture will probably not be large. A livestock farmer usually likes raising cows. He has minimal knowledge of crop growing technology and, more importantly, derives considerable social utility from raising cattle. Implementation of the proposed policy reforms will increase the desirability of beef and dairy production, which will become more profitable, stimulating additional investment in the sector.

6.3 Analysis of the Impacts of the Proposed Policy Reforms

The analysis is done for each of the components of the sector, and later aggregated to determine the total effect. Value added was the main economic indicator estimated. Exports were estimated only for beef. Milk and beef are the major components. Pork, mutton and lamb are less significant.

6.3.1 Milk and Beef

Most cattle raised in Honduras are double purpose. They are raised to produce milk and beef. Due to this characteristic, production of these two commodities are closely tied together. As the number of cattle increases, so does the production of milk and beef.

A model was developed to estimate the number of milking cows and pounds of beef produced according to three alternative scenario: high, medium and low growth. The model uses relationships and parameters that impose constraints on growth possibilities. An accounting balance was established between births, slaughtered, number of milking cows, and other types of cattle. Productivity parameters were varied in the three scenarios (Exhibit 6.5). The base data used by the model were the number of animals as reported on Exhibit 6.4. It was assumed that 90 thousand animals were smuggled out of Honduras in 1989, and 80 thousand in 1990. Smuggling would fall to 60 thousand cattle in 1991, 20 thousand in 1992, and 10 thousand in 1993. No further smuggling would be observed from 1994 on if the right policies of foreign exchange regime and no export taxes are maintained.

For the high growth scenario, it was assumed that the number of dry cow per milking cow would fall by 0.01 from 0.68 in 1990 to 0.60 in 1991. The weight gain was assumed to be 0.73 pound per growing animal per day in 1989 and 1998, increasing by 0.01 pound per day from 1991 to 1994, and by 0.005 pounds per day in 1995. Birth rates were assumed at 43% in 1989 and 1990, increasing by one percent from 1991 to 1995. The yield weight would increase gradually from 518 lbs. in 1990 to 550 in 1995.

For the medium growth scenario, the ratio of dry cows per milking cow was assumed to stay the same. Weight gains were assumed to increase by 0.005 pound per day per year. Birth rates were assumed to increase by one half percent per year in 1991 and 1992, falling to 0.25 percent per year until 1996. Yield weight would increase gradually, but at a lower pace than under the high growth scenario. For the low growth scenario, only the birth rates were assumed to improve at a rate of 0.15 percent in 1991, and 0.25 percent per year from 1992 to 1994. All other variables were assumed constant.

Milk is the largest component of the livestock sector's value added. It has a natural local market for expansion due to the deficit in local production, not covered by imports. Imports represent both purchases and donations. Population growths would strengthen this natural local market, providing another source of market expansion. Honduras population was estimated at 4.4 million people in the 1988 Population Census, with an annual growth rate of 2.8 percent. The population profile is young, 49.7 percent is under fourteen years of age. This age strata is the group with the highest milk consumption levels.

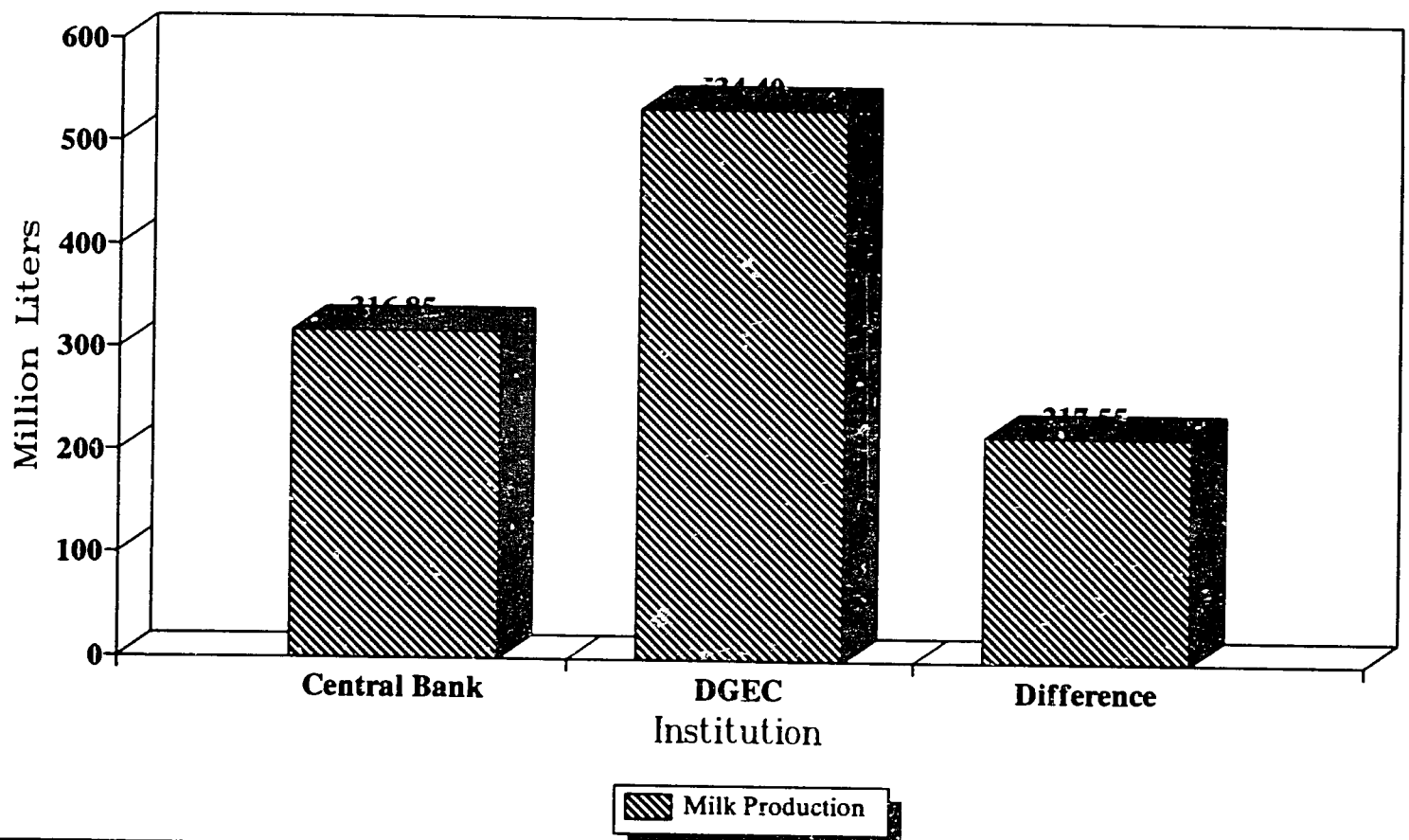
According to the Central Bank, milk production in 1989 was 316 million liters (Exhibit 6.1). However, the national agricultural survey reports a weekly production of 11.5 million bottles for the dry season, and 15.9 million for the wet season. Converting these production figures in bottles to liters results in an average of 10.25 million liters per week for the entire year. An

Exhibit 6.5 Cattle Production Posibilities, High, Medium and Low Scenario, 1989 to 1998.

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
HIGH GROWTH SCENARIO										
Begening (Ths. Heads)	2,424	2,585	2,723	2,835	2,926	2,978	3,036	3,104	3,210	3,346
Dry/milking cow	0.68	0.68	0.67	0.66	0.65	0.64	0.63	0.62	0.61	0.60
Milking Cows (Ths. Heads)	536	527	518	520	531	553	585	630	676	723
Dry Cows (Ths. Heads)	366	361	349	345	347	356	371	393	415	437
Total Cows (Ths. Heads)	902	887	868	865	879	908	956	1,023	1,091	1,159
Heifers (Ths. Heads)	496	488	480	481	491	511	541	583	626	669
Bulls (Ths. Heads)	57	56	55	56	57	59	63	67	72	77
Oxen (Ths. Heads)	75	75	75	75	75	75	75	75	75	75
Total Adult	1,530	1,507	1,478	1,477	1,502	1,554	1,635	1,749	1,865	1,980
Young (Ths. Heads)	893	1,078	1,244	1,358	1,424	1,423	1,401	1,355	1,345	1,365
Beef/day (lbs./Head)	0.730	0.730	0.740	0.750	0.760	0.770	0.775	0.775	0.775	0.775
Total beef (Ths. lbs.)	237,988	287,179	336,062	371,752	395,085	400,075	396,296	383,196	380,451	386,174
Births (No./cow)	43.00%	43.00%	44.00%	45.00%	46.00%	47.00%	48.00%	48.00%	48.00%	48.00%
Births (Ths. Heads)	601	591	593	606	630	667	719	771	824	877
Slaughter (% of births)	14.44%	14.44%	15.44%	17.44%	19.44%	20.44%	21.44%	21.44%	21.44%	21.44%
Slaughters (Ths. Heads)	350	373	420	494	569	609	651	666	688	717
Contraband (Ths. Heads)	90	80	60	20	10					
Weight (Lbs./Head))	518	518	525	532	539	547	550	550	550	550
Total Beef (Ths. Lbs.)	228,004	234,872	252,356	273,908	312,330	332,696	358,148	366,136	378,595	394,633
Ending (Ths. Heads)	2,585	2,723	2,835	2,926	2,978	3,036	3,104	3,210	3,346	3,506
MEDIUM GROWTH SCENARIO										
Begening (Ths. Heads)	2,424	2,585	2,723	2,858	2,960	3,037	3,094	3,129	3,147	3,185
Dry/milking cow	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Milking Cows (Ths. Heads)	536	527	518	516	519	529	541	557	577	597
Dry Cows (Ths. Heads)	366	361	355	353	355	362	370	381	395	409
Total Cows (Ths. Heads)	902	887	873	869	875	890	912	939	972	1,006
Heifers (Ths. Heads)	496	488	480	477	481	489	501	516	534	553
Bulls (Ths. Heads)	57	56	55	55	56	57	58	60	62	64
Oxen (Ths. Heads)	75	75	75	75	75	75	75	75	75	75
Total Adult	1,530	1,507	1,484	1,477	1,486	1,512	1,546	1,589	1,643	1,698
Young (Ths. Heads)	893	1,078	1,239	1,381	1,474	1,525	1,549	1,539	1,504	1,487
Beef/day (lbs./Head)	0.730	0.730	0.735	0.740	0.743	0.745	0.747	0.747	0.747	0.747
Total beef (Ths. lbs.)	237,988	287,179	332,401	373,014	399,521	414,796	422,505	419,952	410,459	405,746
Births (No./cow)	43.00%	43.00%	43.50%	44.00%	44.50%	44.75%	45.00%	45.25%	45.25%	45.25%
Births (Ths. Heads)	601	591	588	592	603	617	636	658	681	705
Slaughter (% of births)	14.44%	14.44%	14.44%	16.44%	17.44%	18.44%	19.44%	20.44%	20.44%	20.44%
Slaughters (Ths. Heads)	350	373	393	470	516	560	602	640	643	651
Contraband (Ths. Heads)	90	80	60	20	10					
Weight (Lbs./Head))	518	518	522	525	527	529	531	531	531	531
Total Beef (Ths. Lbs.)	228,004	234,872	236,446	257,328	277,412	296,199	319,227	339,344	341,361	345,482
Ending (Ths. Heads)	2,585	2,723	2,858	2,960	3,037	3,094	3,129	3,147	3,185	3,239
LOW GROWTH SCENARIO										
Begening (Ths. Heads)	2,424	2,585	2,723	2,853	2,957	3,010	3,028	3,016	2,993	2,970
Dry/milking cow	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Milking Cows (Ths. Heads)	536	527	518	512	508	507	510	512	514	516
Dry Cows (Ths. Heads)	366	361	355	350	348	347	349	350	352	353
Total Cows (Ths. Heads)	902	887	873	862	856	855	858	862	866	870
Heifers (Ths. Heads)	496	488	480	474	470	470	472	474	476	478
Bulls (Ths. Heads)	57	56	55	55	54	54	54	55	55	55
Oxen (Ths. Heads)	75	75	75	75	75	75	75	75	75	75
Total Adult	1,530	1,507	1,484	1,466	1,456	1,454	1,460	1,466	1,472	1,478
Young (Ths. Heads)	893	1,078	1,239	1,387	1,502	1,556	1,569	1,550	1,521	1,492
Beef/day (lbs./Head)	0.730	0.730	0.730	0.730	0.730	0.730	0.730	0.730	0.730	0.730
Total beef (Ths. lbs.)	237,988	287,179	330,140	369,644	400,109	414,648	417,947	412,931	405,241	397,460
Births (No./cow)	43.00%	43.00%	43.15%	43.40%	43.65%	43.90%	43.90%	43.90%	43.90%	43.90%
Births (Ths. Heads)	601	591	584	580	579	581	584	586	589	592
Slaughter (% of births)	14.44%	14.44%	14.45%	15.95%	17.45%	18.70%	19.70%	20.20%	20.45%	20.70%
Slaughters (Ths. Heads)	350	373	393	455	516	563	597	609	612	615
Contraband (Ths. Heads)	90	80	60	20	10					
Weight (Lbs./Head))	518	518	518	518	518	518	518	518	518	518
Total Beef (Ths. Lbs.)	228,004	234,872	234,978	246,180	272,625	291,707	309,185	315,695	317,188	318,588
Ending (Ths. Heads)	2,585	2,723	2,853	2,957	3,010	3,028	3,016	2,993	2,970	2,947

Source: Exhibits 6.1, 6.4, and estimates.

EXHIBIT 6.6 MILK PRODUCTION ESTIMATES
CENTRAL BANK AND DGEC, HONDURAS, 1989



expansion of this average results in 534.4 million liters per year, a significant difference from the 316.8 million liters reported by the Central Bank.

The three large milk processing plants only process 12 percent of total production. In 1989 they processed 63.6 million liters of fluid milk, in addition to 4.7 million liters of dry, used to complement the fluid milk supply (Exhibit 6.7). The use of dry milk has been dropping from its peak of 9.5 million liters in 1988. The growth of total volume of processed milk by these plants has been growing at rates that vary from 2.2 to 6.7 percent per year. However, due to the drop in the use of dry milk, the growth rate in the use of fluid milk is much higher (Exhibit 6.7).

Milk production growth can come from two sources: a) an increase in the number of milking cows, and b) an increase in productivity per cow. The number of milking cows in 1989 was 535 thousand head. An estimated production of 534 million liters results in an average production per cow of 2.73 liters per day (Exhibit 6.8).

The proposed policy reforms will contribute to an increase in relative farm gate milk prices. Milk prices began to increase in 1990, but they have not reached their equilibrium level. Processing plants are having difficulty in buying enough milk, resulting in shortages of pasteurized milk in the market place. Powdered milk sold in the supermarkets sells for L.3.00 per liter, while pasteurized fluid milk still sells for L.2.00. The Ministry of Economy liberalized fluid milk prices on September 21, 1990. However, there is an informal agreement with the processing plants to increase the price gradually to avoid major resistance from consumers.

The exchange rate regime of the past contributed to lower prices of imported dry milk. This is no longer the case. Milk donations from Europe have all been sold to the processing plants. No donations entered the country during 1990. The allocations for this year are expected to arrive in February 1991. Under the new policy this milk will be valued at the interbank exchange rate. In addition, it will pay an import tariff of 15 percent, plus a 10 percent surcharge from Decree 54, and 5 percent from Decree 55-84. This will result in a relative high cost to the processing plants. This higher price for the alternative substitute will stimulate the processing plants to pay higher prices to local milk producers. A.I.D. should monitor these milk imports to make sure this stated policy is not changed. Influential owners of processing plants will probably put pressure on the GOH to eliminate or reduce the import duties, using consumer interests as an excuse.

Cheese makers are paying higher prices than the processing plants with lower quality requirements. This will also contribute to increase milk prices. Higher milk prices will stimulate producers to increase their herds, dedicating more cows to milking. As the number of milking cows increases, it is probable that more cows with lower production capacity will be milked, reducing the overall average production per cow. However, higher prices will also stimulate higher investments in pasture and feeds, as well as other production practices that will contribute to an increase in productivity.

HONDURAS - POLICY REFORMS - LIVESTOCK

Exhibit 6.7 Milk Processed by Sula, Leyde and Delta, 1985 to 1990.

Description	Year					1/
	1985	1986	1987	1988	1989	1990
THOUSAND LITERS						
SULA						
Fluid Milk	27,376	28,997	27,970	28,152	25,771	28,122
Dry Milk 2/	0	1,914	2,464	3,224	2,178	2,223
Total	27,376	30,910	30,434	31,375	27,950	30,345
LEYDE						
Fluid Milk		23,276	25,251	28,772	35,444	36,151
Dry Milk		2,554	4,038	4,034	1,756	562
Total		25,830	29,289	32,806	37,200	36,713
DELTA						
Fluid Milk	98	106	91	483	2,395	2,815
Dry Milk 2/	2,465	2,978	2,901	2,252	812	629
Total	2,563	3,084	2,992	2,735	3,207	3,444
TOTAL						
Fluid Milk		52,378	53,312	57,407	63,610	67.088
Dry Milk 2/		7,446	9,402	9,510	4,746	3,414
Total		59,824	62,714	66,917	68,356	70,502
PERCENT CHANGES						
SULA						
Fluid Milk		5.9%	-3.5%	0.6%	-8.5%	9.1%
Dry Milk			28.7%	30.9%	-32.4%	2.1%
Total		12.9%	-1.5%	3.1%	-10.9%	8.6%
LEYDE						
Fluid Milk			8.5%	13.9%	23.2%	2.0%
Dry Milk			58.1%	-0.1%	-56.5%	-68.0%
Total			13.4%	12.0%	13.4%	-1.3%
DELTA						
Fluid Milk		8.2%	-14.2%	430.8%	395.9%	17.5%
Dry Milk		20.8%	-2.6%	-22.4%	-63.9%	-22.6%
Total		20.3%	-3.0%	-8.6%	17.3%	7.4%
TOTAL						
Fluid Milk			1.8%	7.7%	10.8%	5.5%
Dry Milk			26.3%	1.1%	-50.1%	-28.1%
Total			4.8%	6.7%	2.2%	3.1%

Note: 1/ Estimate. 2/ Dry milk was converted to fluid milk, with a convertion ratio of 2.268 liters per lb.

Source: Comision Nacional de la Leche.

Exhibit 6.8 Production and Value Added Estimate for Milk, 1989 to 1998

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Number of Milking Cows (Thousand Heads)										
Low	535.6	526.9	518.4	511.8	508.1	507.5	509.7	511.9	514.1	516.4
Medium	535.6	526.9	518.4	515.9	519.3	528.7	541.3	557.3	577	597.3
High	535.6	526.9	518.4	519.8	531.1	552.5	585	630.1	676.1	722.5
Production per Milking Cow (Lts/day)										
Low	2.73	2.73	2.75	2.76	2.77	2.79	2.80	2.82	2.83	2.84
Medium	2.73	2.73	2.76	2.79	2.82	2.84	2.87	2.90	2.93	2.96
High	2.73	2.73	2.79	2.84	2.90	2.96	3.02	3.08	3.14	3.20
Production (Million Lts.)										
Low	534.4	525.7	519.8	515.7	514.6	516.5	521.4	526.3	531.2	536.2
Medium	534.4	525.7	522.4	525.1	533.9	549	567.7	590.3	617.2	645.4
High	534.4	525.7	527.6	539.6	562.3	596.7	644.4	708	774.9	844.7
Value Added (1978 Million Lps.)										
Low	169	166	164	163	162	163	165	166	168	169
Medium	169	166	165	166	169	173	179	186	195	204
High	169	166	167	170	178	188	203	224	245	267
Value Added (Million Dollars)										
Low	79	78	77	76	76	76	77	78	78	79
Medium	79	78	77	78	79	81	84	87	91	95
High	79	78	78	80	83	88	95	105	114	125
PERCENT CHANGE										
Number of Milking Cows (Thousand Heads)										
Low		-1.6%	-1.6%	-1.3%	-0.7%	-0.1%	0.4%	0.4%	0.4%	0.4%
Medium		-1.6%	-1.6%	-0.5%	0.7%	1.8%	2.4%	3.0%	3.5%	3.5%
High		-1.6%	-1.6%	0.3%	2.2%	4.0%	5.9%	7.7%	7.3%	6.9%
Production per Milking Cow (Lts/day)										
Low		0.0%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Medium		0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
High		0.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Production (Million Lts.)										
Low		-1.6%	-1.1%	-0.8%	-0.2%	0.4%	0.9%	0.9%	0.9%	0.9%
Medium		-1.6%	-0.6%	0.5%	1.7%	2.8%	3.4%	4.0%	4.6%	4.6%
High		-1.6%	0.3%	2.3%	4.2%	6.1%	8.0%	9.9%	9.4%	9.0%
Value Added (1978 Million Lps.)										
Low		-1.6%	-1.1%	-0.8%	-0.2%	0.4%	0.9%	0.9%	0.9%	0.9%
Medium		-1.6%	-0.6%	0.5%	1.7%	2.8%	3.4%	4.0%	4.6%	4.6%
High		-1.6%	0.3%	2.3%	4.2%	6.1%	8.0%	9.9%	9.4%	9.0%
Value Added (Million Dollars)										
Low		-1.6%	-1.1%	-0.8%	-0.2%	0.4%	0.9%	0.9%	0.9%	0.9%
Medium		-1.6%	-0.6%	0.5%	1.7%	2.8%	3.4%	4.0%	4.6%	4.6%
High		-1.6%	0.3%	2.3%	4.2%	6.1%	8.0%	9.9%	9.4%	9.0%

Source: Exhibit 6.1, 6.7, and estimates.

EXHIBIT 6.9 NUMBER OF MILKING COWS, PROJECTION, HONDURAS, 1989 TO 1998

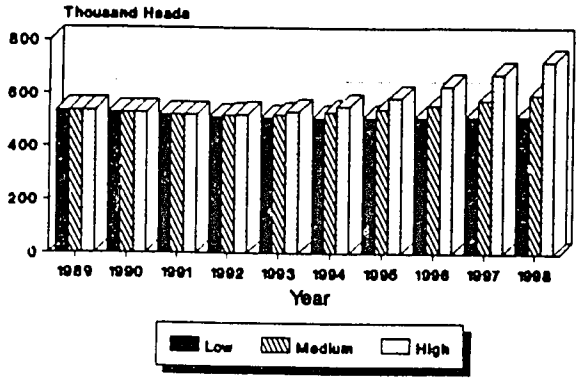


EXHIBIT 6.10 MILK PRODUCTION PER COW, PROJECTION, HONDURAS, 1989 TO 1998

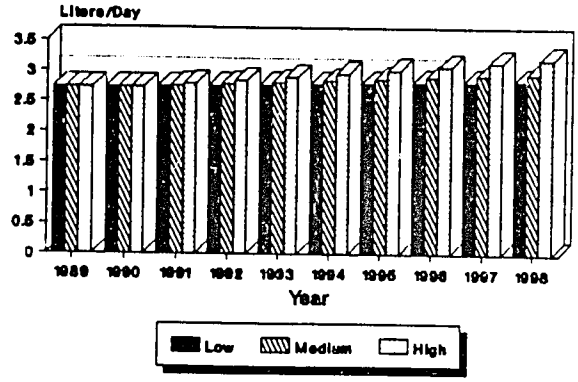
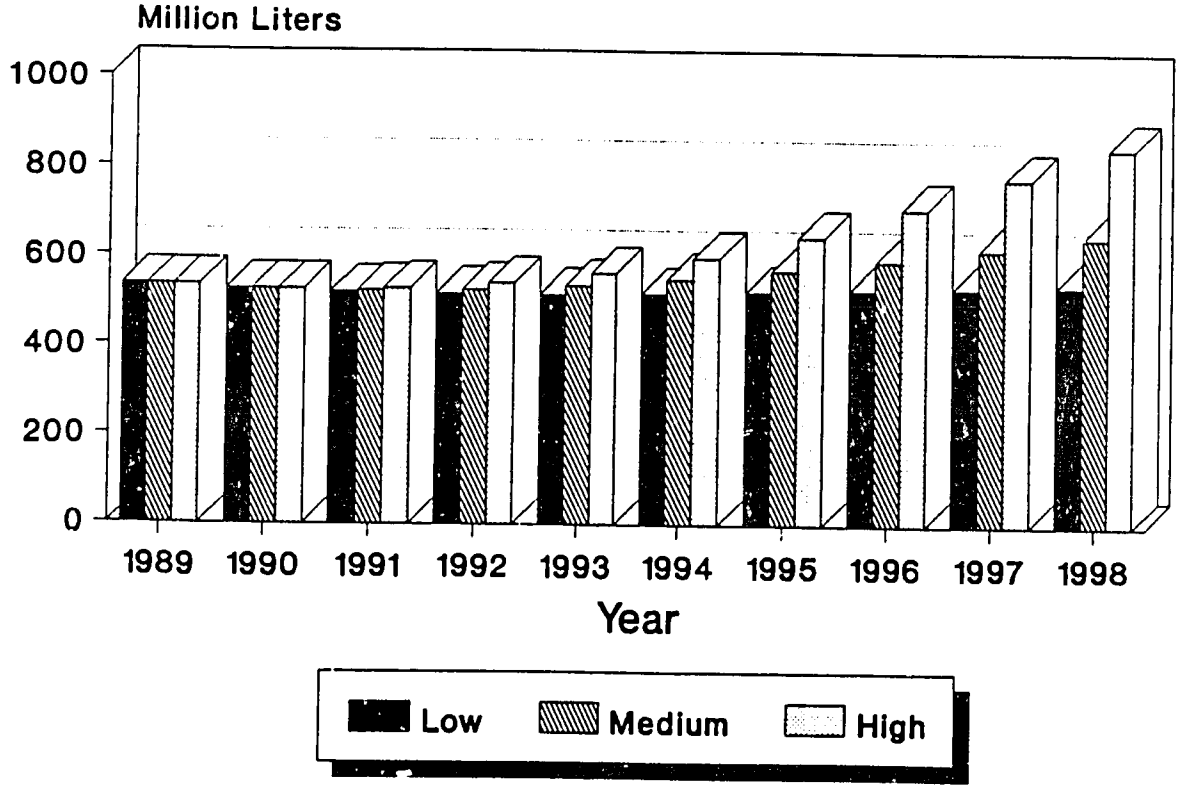


EXHIBIT 6.11 MILK PRODUCTION, PROJECTION, HONDURAS, 1989 TO 1998



Source: Exhibit 6.8

The number of milking cows can be increased by raising the birth rates, and by buying production stock from other countries. Productivity increases can be achieved by genetic improvements and better management of the existing herds. Better management encompasses a wide variety of practices, including two milkings per day instead of one, and better feeding. Genetic improvements take a long time, while management practices can be improved immediately. However, most producers ignore many of these practices, and the extension service is very limited.

The results of the model developed on Exhibit 6.5 were used to estimate total milk production, assuming different rates of productivity increase. Productivity increases were estimated at 2 percent per year for the high growth scenario, one percent for the medium growth scenario, and 0.5 percent for the low growth scenario. The combined effect of the growth in the size of herds and productivity increases results in the growth rates presented on Exhibit 6.8.

The resulting production levels were used to estimate value added. Value added figures estimated for 1989 (Exhibit 6.1) was used to estimate value added per liter. This factor was then used to estimate value added for the total production of 535 million liters. The resulting value added in lempiras was divided by 3.5 to convert it to dollars. This is estimated as the market clearing rate had a liberalized exchange rate regime existed in 1989. A constant value added per liter in dollars was used to project value added for the other years. Exhibit 6.8 presents these projections.

The proposed policy reforms will have a positive impact on milk production. However, the impact of these reforms can be magnified with good programs that will reduce other production constraints, mainly the lack of knowledge of appropriate technology. The study conducted by the National Cooperative Business Association on September 1988 pointed out a number of significant constraints and made recommendations applicable to the present situation.[1]

Significant improvements need to be made in reproduction rates. The major problems causing low reproduction rates are from nutrition and reproductive diseases. Farmers practice selection on a very limited basis. Artificial insemination would reduce contamination of reproductive diseases, but very little artificial insemination is practiced in Honduras. Artificial insemination would also increase productivity as resources used to raise and maintain reproductive bulls are dedicated to milk and beef production.

Milk is so cheap in Honduras that milk replacers are not used to feed calves. As a result, a significant amount of fluid milk is used to feed calves. Other problems include poor availability of medicine and poor quality of concentrates. Veterinary laboratories are deficient, and there are no laboratories to analyze feedstuff quality. Funds generated from the sale of imported milk donations should be used to develop projects that will contribute

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[1] Richard O. Wheeler, et. al., "Dairy Policy Development in Honduras, A Policy Report to CONAL." Washington, D.C.: National Cooperative Business Association, September 1988.

to increasing productivity on dairy farms.

In Contrast to milk, beef demand growth potential is primarily from exports. Per capita beef consumption will decrease as beef prices reach equilibrium levels, indirectly increasing the demand for chicken. The U.S. has been a traditional market for Honduras' beef, but other closer markets are expanding, mainly for the less desirable cuts not sold in the U.S. market. These new markets are Mexico, El Salvador and Nicaragua. Some of the livestock sold to Guatemala is reexported to Mexico.

Beef production growth can be expected from improvements in birth rates, production of beef per head of cattle, and carcass yield. Three scenarios were tested based on assumptions on each of these variables (Exhibit 6.5).

The resulting beef production for the three scenarios were used to estimate value added and exports. Value added was expressed in 1978 lempiras and current US dollars. The Central Bank estimates of value added for 1989 were adjusted to account for the additional production from contraband, not accounted for by the Central Bank. For the projections, it was assumed that prices of inputs and output would stay constant in dollar terms at the 1989 price levels.

Value added in 1978 lempiras was estimated according to the Central Bank 1989 relation of value added to production levels. Value added in US dollars for 1989 was estimated by adjusting the locally sold beef by a conversion factor of 3, and the exported volume by a conversion factor of 2. The ratio of value added to volume of production for 1989 was used to project value added for the following years, according to the projected levels of production. Results are presented on Exhibit 6.12.

Export volume for 1990 were estimated by assuming no change in local consumption of beef. Exports include officially reported exports plus contraband of live animals. For the subsequent years, export volume was estimated as the difference between production and local consumption. Local consumption was assumed to grow at a rate of 2 percent per year. Export prices were assumed to remain at 1990 levels of $2.26 per Kilogram (Exhibit 6.12).

6.3.2 Pork

Pork production has been increasing at 2.8 percent per year, equal to the population growth rate (Exhibit 6.2). Due to the lower growth rate in relation to milk and beef, pork's share in value of production in the livestock sector has dropped from 9.8 percent in 1984 to 8.1 percent in 1989. Due to its low share in total value added, no major effort was made to project its growth. It is reasonable to assume that it will continue to grow at the same rate as that experienced during the last few years - 2.8 percent per annum. Pork is a locally consumed commodity, thus, the value added estimate for 1989 can be converted to dollar using a factor of 3.5. Estimates are presented on Exhibit 6.13.

Exhibit 6.12 Production, Value Added, and Export Estimates for Beef, 1989 to 1998

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Production (Million Lbs.)										
Low	228.00	234.87	234.98	246.18	272.63	291.71	309.18	315.69	317.19	318.59
Medium	228.00	234.87	236.45	257.33	277.41	296.20	319.23	339.34	341.36	345.48
High	228.00	234.87	252.36	273.91	312.33	332.70	358.15	366.14	378.59	394.63
Value Added (1978 Million Lps.)										
Low	107.20	110.43	110.48	115.74	128.18	137.15	145.37	148.43	149.13	149.79
Medium	107.20	110.43	111.17	120.98	130.43	139.26	150.09	159.55	160.49	162.43
High	107.20	110.43	118.65	128.78	146.84	156.42	168.39	172.14	178.00	185.54
Value Added (Million US$)										
Low	75.99	78.28	78.31	82.04	90.86	97.22	103.04	105.21	105.71	106.18
Medium	75.99	78.28	78.80	85.76	92.45	98.71	106.39	113.09	113.77	115.14
High	75.99	78.28	84.10	91.29	104.09	110.88	119.36	122.02	126.17	131.52
Local Consumption (Million Lbs.)										
Low	162.25	162.25	165.495	168.805	172.181	175.625	179.137	182.72	186.374	190.102
Medium	162.25	162.25	165.495	168.805	172.181	175.625	179.137	182.72	186.374	190.102
High	162.25	162.25	165.495	168.805	172.181	175.625	179.137	182.72	186.374	190.102
Export Volume (Million Kilograms)										
Low	29.825	32.941	31.517	35.097	45.561	52.654	58.989	60.316	59.336	58.280
Medium	29.825	32.941	32.183	40.153	47.732	54.692	63.544	71.044	70.301	70.479
High	29.825	32.941	39.399	47.674	63.571	71.247	81.198	83.196	87.190	92.774
Export Price (US$/Kg.)										
Low	2.20	2.23	2.23	2.23	2.23	2.23	2.23	2.23	2.23	2.23
Medium	2.20	2.23	2.23	2.23	2.23	2.27	2.23	2.23	2.23	2.23
High	2.20	2.23	2.23	2.23	2.23	2.23	2.23	2.23	2.23	2.23
Export Value (Million Dollars)										
Low	65.62	73.46	70.28	78.27	101.60	117.42	131.54	134.51	132.32	129.97
Medium	65.62	73.46	71.77	89.54	106.44	121.96	141.70	158.43	156.77	157.17
High	65.62	73.46	87.86	106.31	141.76	158.88	181.07	185.53	194.43	206.89
PERCENT CHANGE										
Production (Million Lbs.)										
Low		3.01%	0.05%	4.77%	10.74%	7.00%	5.99%	2.11%	0.47%	0.44%
Medium		3.01%	0.67%	8.83%	7.80%	6.77%	7.77%	6.30%	0.59%	1.21%
High		3.01%	7.44%	8.54%	14.03%	6.52%	7.65%	2.23%	3.40%	4.24%
Value Added (1978 Million Lps.)										
Low		3.01%	0.05%	4.77%	10.74%	7.00%	5.99%	2.11%	0.47%	0.44%
Medium		3.01%	0.67%	8.83%	7.80%	6.77%	7.77%	6.30%	0.59%	1.21%
High		3.01%	7.44%	8.54%	14.03%	6.52%	7.65%	2.23%	3.40%	4.24%
Value Added (Million US$)										
Low		3.01%	0.05%	4.77%	10.74%	7.00%	5.99%	2.11%	0.47%	0.44%
Medium		3.01%	0.67%	8.83%	7.80%	6.77%	7.77%	6.30%	0.59%	1.21%
High		3.01%	7.44%	8.54%	14.03%	6.52%	7.65%	2.23%	3.40%	4.24%
Local Consumption (Million Lbs.)										
Low		0.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Medium		0.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
High		0.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Export Volume (Million Kilograms)										
Low		10.45%	-4.32%	11.36%	29.81%	15.57%	12.03%	2.25%	-1.63%	-1.78%
Medium		10.45%	-2.30%	24.77%	18.87%	14.58%	16.19%	11.80%	-1.05%	0.25%
High		10.45%	19.61%	21.00%	33.34%	12.07%	13.97%	2.46%	4.80%	6.40%
Export Price (US$/Kg.)										
Low		1.36%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Medium		1.36%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
High		1.36%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Export Value (Million Dollars)										
Low		11.95%	-4.32%	11.36%	29.81%	15.57%	12.03%	2.25%	-1.63%	-1.78%
Medium		11.95%	-2.30%	24.77%	18.87%	14.58%	16.19%	11.80%	-1.05%	0.25%
High		11.95%	19.61%	21.00%	33.34%	12.07%	13.97%	2.46%	4.80%	6.40%

Source: Exhibit 6.1, 6.7, and estimates.

HONDURAS - POLICY REFORMS - LIVESTOCK

Exhibit 6.13 Production and Value Added for Pork, Mutton and Lamb, 1989 to 1998.

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Production (Ths. Lbs.)										
Pork	23,449	24,106	24,781	25,474	26,188	26,921	27,675	28,450	29,246	30,065
Mutton and Lamb	849	873	897	922	948	975	1,002	1,030	1,059	1,089
Value Added (1978 Million Lps.)										
Pork	16.19	16.65	17.11	17.59	18.09	18.59	19.11	19.65	20.20	20.76
Mutton and Lamb	0.54	0.56	0.57	0.59	0.60	0.62	0.64	0.66	0.67	0.69
Value Added (Million US$)										
Pork	4.63	4.76	4.89	5.03	5.17	5.31	5.46	5.61	5.77	5.93
Mutton and Lamb	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.19	0.19	0.20
PERCENT CHANGE										
Production (Ths. Lbs.)										
Pork		2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%
Mutton and Lamb		2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%
Value Added (1978 Million Lps.)										
Pork		2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%
Mutton and Lamb		2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%
Value Added (Million US$)										
Pork		2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%
Mutton and Lamb		2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%	2.80%

Source: Exhibit 6.1 ane estimates.

6.3.3 Mutton and Lamb

These meats are the least significant contributors to the livestock sector's value added. Like pork, production levels have been increasing at 2.8 percent per annum, equal to the population growth rate. The same argument used for pork is applicable in projecting production and value added to the economy. Estimates are presented on Exhibit 6.13.

6.3.4 Total Livestock

To determine the total contribution of livestock to value added, the results of the three scenarios estimated for each commodity were added. Exports value represent projections for beef, the only livestock product exported. Results are presented on Exhibits 6.14 and 6.15.

HONDURAS - POLICY REFORMS - LIVESTOCK

Exhibit 6.14 Value Added and Value of Exports for Livestock, 1989 to 1998.

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
LOW GROWTH SCENARIO										
Value Added (1978 Million Lps.)										
Milk	168.72	165.98	164.11	162.82	162.48	163.07	164.60	166.15	167.71	169.29
Beef	107.20	110.43	110.48	115.74	128.18	137.15	145.37	148.43	149.13	149.79
Pork	16.19	16.55	17.11	17.59	18.09	18.59	19.11	19.65	20.20	20.76
Mutton and Lamb	0.54	0.56	0.57	0.59	0.60	0.62	0.64	0.66	0.67	0.69
TOTAL	**293**	**294**	**292**	**297**	**309**	**319**	**330**	**335**	**338**	**341**
MEDIUM GROWTH SCENARIO										
Value Added (1978 Million Lps.)										
Milk	168.72	165.98	164.92	165.78	168.55	173.32	179.22	186.36	194.86	203.75
Beef	107.20	110.43	111.17	120.98	130.43	139.26	150.09	159.55	160.49	162.43
Pork	16.19	16.65	17.11	17.59	18.09	18.59	19.11	19.65	20.20	20.76
Mutton and Lamb	0.54	0.56	0.57	0.59	0.60	0.62	0.64	0.66	0.67	0.69
TOTAL	**293**	**294**	**294**	**305**	**318**	**332**	**349**	**366**	**376**	**388**
HIGH GROWTH SCENARIO										
Value Added (1978 Million Lps.)										
Milk	168.72	165.98	166.56	170.36	177.53	188.39	203.46	223.53	244.63	266.67
Beef	107.20	110.43	118.65	128.78	146.84	156.42	168.39	172.14	178.00	185.54
Pork	16.19	16.65	17.11	17.59	18.09	18.59	19.11	19.65	20.20	20.76
Mutton and Lamb	0.54	0.56	0.57	0.59	0.60	0.62	0.64	0.66	0.67	0.69
TOTAL	**293**	**294**	**303**	**317**	**343**	**364**	**392**	**416**	**444**	**474**
LOW GROWTH SCENARIO										
Value Added (Million Dollars)										
Milk	78.90	77.62	76.75	76.14	75.98	76.26	76.98	77.70	78.43	79.17
Beef	75.99	78.28	78.31	82.04	90.86	97.22	103.04	105.21	105.71	106.18
Pork	4.63	4.76	4.89	5.03	5.17	5.31	5.46	5.61	5.77	5.93
Mutton and Lamb	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.19	0.19	0.20
TOTAL	**160**	**161**	**160**	**163**	**172**	**179**	**186**	**189**	**190**	**191**
MEDIUM GROWTH SCENARIO										
Value Added (Million Dollars)										
Milk	78.90	77.62	77.13	77.53	78.82	81.05	83.81	87.15	91.13	95.29
Beef	75.99	78.28	78.80	85.76	92.45	98.71	106.39	113.09	113.77	115.14
Pork	4.63	4.76	4.89	5.03	5.17	5.31	5.46	5.61	5.77	5.93
Mutton and Lamb	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.19	0.19	0.20
TOTAL	**160**	**161**	**161**	**168**	**177**	**185**	**196**	**206**	**211**	**217**
HIGH GROWTH SCENARIO										
Value Added (Million Dollars)										
Milk	78.90	77.62	77.89	79.67	83.03	88.10	95.15	104.54	114.40	124.71
Beef	75.99	78.28	84.10	91.29	104.09	110.88	119.36	122.02	126.17	131.52
Pork	4.63	4.76	4.89	5.03	5.17	5.31	5.46	5.61	5.77	5.93
Mutton and Lamb	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.19	0.19	0.20
TOTAL	**160**	**161**	**167**	**176**	**192**	**204**	**220**	**232**	**247**	**262**
EXPORT VALUE										
Beef (Million Dollars)										
Low	65.62	73.46	70.28	78.27	101.60	117.42	131.54	134.51	132.32	129.97
Medium	65.62	73.46	71.77	89.54	106.44	121.96	141.70	158.43	156.77	157.17
High	65.62	73.46	87.86	106.31	141.76	158.88	181.07	185.53	194.43	206.89

Source: Exhibits 6.8, 6.12 and 6.13.

HONDURAS - POLICY REFORMS - LIVESTOCK

Exhibit 6.15 Percent Change in Value Added and Value of Exports for Livestock, 1990 to 1998.

Description	Year								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
LOW GROWTH SCENARIO									
Value Added (1978 Million Lps.)									
Milk	-1.6%	-1.1%	-0.8%	-0.2%	0.4%	0.9%	0.9%	0.9%	0.9%
Beef	3.0%	0.0%	4.8%	10.7%	7.0%	6.0%	2.1%	0.5%	0.4%
Pork	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Mutton and Lamb	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
TOTAL	0.3%	-0.5%	1.5%	4.2%	3.3%	3.2%	1.6%	0.8%	0.8%
MEDIUM GROWTH SCENARIO									
Value Added (1978 Million Lps.)									
Milk	-1.6%	-0.6%	0.5%	1.7%	2.8%	3.4%	4.0%	4.6%	4.6%
Beef	3.0%	0.7%	8.8%	7.8%	6.8%	7.8%	6.3%	0.6%	1.2%
Pork	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Mutton and Lamb	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
TOTAL	0.3%	0.1%	3.8%	4.2%	4.4%	5.2%	4.9%	2.7%	3.0%
HIGH GROWTH SCENARIO									
Value Added (1978 Million Lps.)									
Milk	-1.6%	0.3%	2.3%	4.2%	6.1%	8.0%	9.9%	9.4%	9.0%
Beef	3.0%	7.4%	8.5%	14.0%	6.5%	7.7%	2.2%	3.4%	4.2%
Pork	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Mutton and Lamb	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
TOTAL	0.3%	3.2%	4.8%	8.1%	6.1%	7.6%	6.2%	6.6%	6.8%
LOW GROWTH SCENARIO									
Value Added (Million Dollars)									
Milk	-1.6%	-1.1%	-0.8%	-0.2%	0.4%	0.9%	0.9%	0.9%	0.9%
Beef	3.0%	0.0%	4.8%	10.7%	7.0%	6.0%	2.1%	0.5%	0.4%
Pork	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Mutton and Lamb	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
TOTAL	0.7%	-0.4%	2.0%	5.4%	3.9%	3.7%	1.6%	0.7%	0.7%
MEDIUM GROWTH SCENARIO									
Value Added (Million Dollars)									
Milk	-1.6%	-0.6%	0.5%	1.7%	2.8%	3.4%	4.0%	4.6%	4.6%
Beef	3.0%	0.7%	8.8%	7.8%	6.8%	7.8%	6.3%	0.6%	1.2%
Pork	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Mutton and Lamb	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
TOTAL	0.7%	0.1%	4.7%	4.8%	4.9%	5.7%	5.2%	2.3%	2.7%
HIGH GROWTH SCENARIO									
Value Added (Million Dollars)									
Milk	-1.6%	0.3%	2.3%	4.2%	6.1%	8.0%	9.9%	9.4%	9.0%
Beef	3.0%	7.4%	8.5%	14.0%	6.5%	7.7%	2.2%	3.4%	4.2%
Pork	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Mutton and Lamb	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
TOTAL	0.7%	3.9%	5.5%	9.3%	6.2%	7.7%	5.5%	6.1%	6.4%
EXPORT VALUE									
Beef (Million Dollars)									
Low	12.0%	-4.3%	11.8%	29.3%	15.6%	12.0%	2.3%	-1.6%	-1.8%
Medium	12.0%	-2.3%	24.8%	18.9%	14.6%	16.2%	11.8%	-1.0%	0.3%
High	12.0%	19.6%	21.0%	33.3%	12.1%	14.0%	2.5%	4.8%	6.4%

Source: Exhibit 6.14.

7. IMPACT ON NONTRADITIONAL AGRICULTURAL EXPORTS

Nontraditional agricultural exports are comprised of all the agricultural commodities excluding banana, coffee, sugar, wood, meat, cotton, and tobacco. These exclusions are considered traditional exports in Honduras.

With the objective of diversifying the economy, the GOH and other international organizations have been implementing projects and programs to develop nontraditional export activities. FEPROEXAH, later called FPX, was created for this purpose.

Some of the proposed policy reforms will contribute to an expansion of this sector. The relevant policy reforms are the following:

- Foreign exchange regime;
- Permit land rental;
- Permit titling of parcels above 2 Has.;
- Issue "dominio pleno" titles to legitimate land owners; and
- Remove interest rate ceilings.

There are many nontraditional agricultural products. However, shrimp stands out as the one with the highest growth potential for the next few years; thus, it was treated separately. African oil palms are grown mostly for local consumption, but have also been exported for several years. The oil produced from this crop also has potential for expanded exports, and the Central Bank maintain separate statistics to estimate value added; thus, it was also treated separately. Another crop in this category is plantains, also treated separately. There are estimates of value added for lobster and fisheries, and they were also treated in separate category. The other products were analyzed as a group.

7.1 Shrimp

Shrimp production and exports have been important activities in Honduras. However, it wasn't until 1985 that production from the sea has been complemented with shrimp farming. The Central Bank estimates that for 1989 about 24 percent of the value added from shrimp came from cultivated production. The development of shrimp farming is what provides the potential for growth of the sector. Fishing levels are already at their sustainable levels.

Exhibit 7.1 presents the evolution of shrimp production, as well as the volume of exports, prices, and values. Even though these statistics are from official sources, they must be interpreted cautiously. Export volumes have been estimated using several information sources. Reported exports are adjusted with import figures from the U.S. Likewise, reported export prices are not trusted, and the Central Bank adjusts them with international prices converted to Honduras FOB prices. Furthermore, there are conversion errors. Shrimp production is reported as whole shrimp. The Central Bank assumes that all shrimp production is reported as whole shrimp. However, shrimp farmers indicated that they report production in tails. It is estimated that a shrimp head is 38% of a shrimp total weight. Thus, production figures are probably a lot higher in whole shrimp.

HONDURAS - POLICY REFORMS - SHRIMP

Exhibit 7.1 Shrimp Production, Export and Prices, 1980 to 1989.

Year	Production Whole	Tail Export From Farms	Tail Export From Sea	Tail Export From Total	Price Prod. Whole L./Kg.	Price Consume Whole L./Kg.	Price Export Tail $/Kg.	Value Production Whole L.1,000	Value Export Tail $1,000
	-----(1,000 Kgs.)----								
1980	2,434		2,422	2,422	11.84	13.27	6.03	28,815	14,605
1981	3,105		2,907	2,907	10.89	14.88	5.73	33,819	16,661
1982	2,948		2,749	2,749	9.85	15.48	5.56	29,051	15,274
1983	3,345		3,133	3,133	11.40	15.15	6.38	38,129	19,993
1984	2,515		2,296	2,296	11.27	18.63	10.55	28,330	24,222
1985	2,157		1,931	1,931	13.27	21.85	10.55	28,625	20,375
1986	2,289	800	1,257	2,057	14.97	20.94	12.52	34,262	25,753
1987	3,205	1,400	1,750	3,150	15.34	21.47	11.00	49,172	34,656
1988	4,404	2,225	1,877	4,102	16.38	23.04	11.85	72,138	48,696
1989	4,535	1,641	2,583	4,224	16.40	24.32	11.76	74,385	49,680

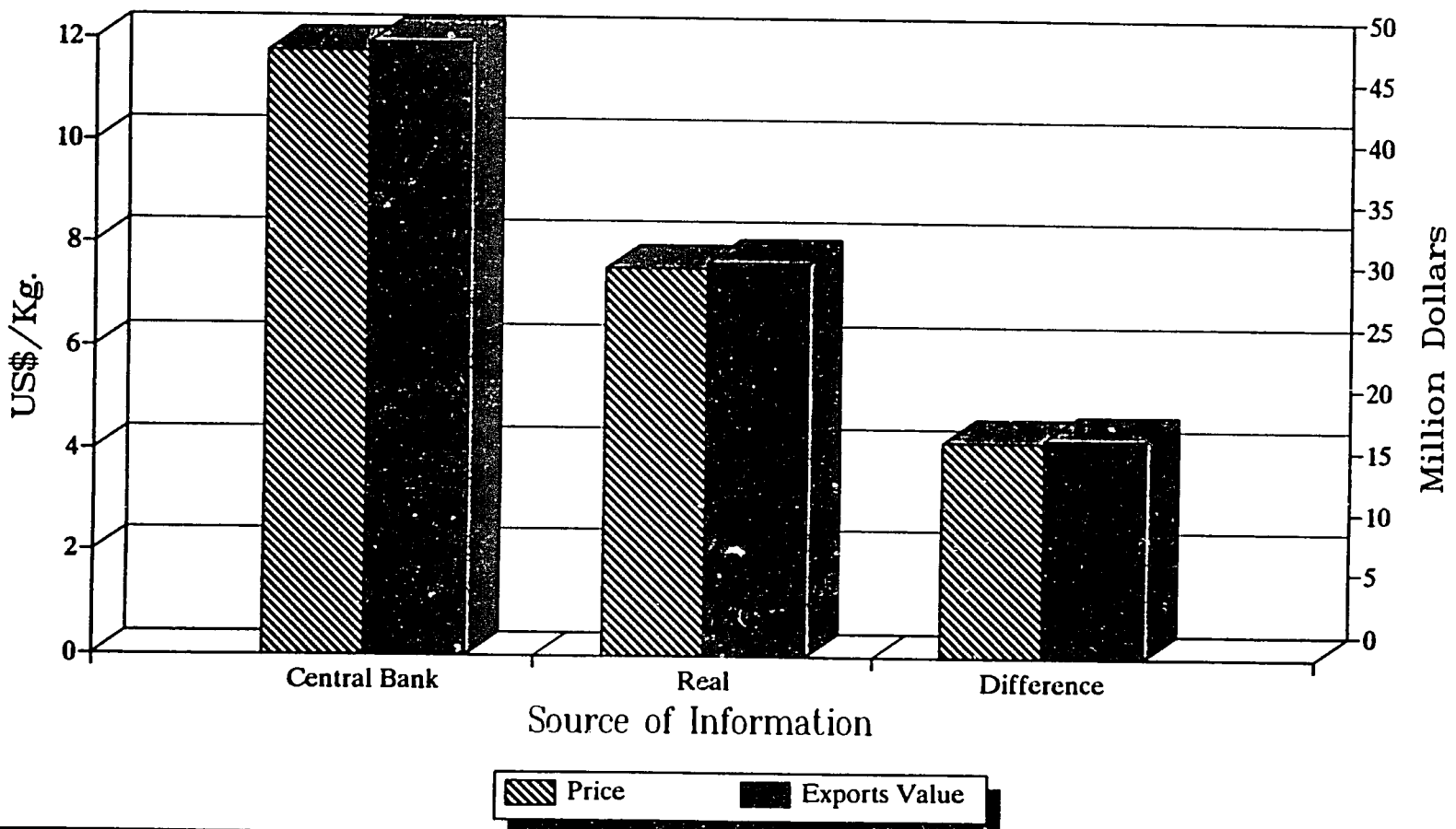
Note: 1989 figures are preliminary.
Source: Glenda Guzman, Department of Economic Studies, Central Bank of Honduras. Interview of December 13, 1990.

Exhibit 7.2 Value Added Estimates for Shrimp, Lobster and Other Fisheries, 1989.

Description	Gross Value Million Lps.	Per-cent	Value Added 1978 Consta Million Lps.	Value Added Current Million Lps.	Conversion Factor Lps./$	Value Added Million $	Adjusted Value 1/ Added Million $
TECHNIFIED FISHERIES							
Shrimp	74.39	54.6%	29.45	48.35	2.00	24.18	6.477
Lobster	60.14	44.1%	23.81	39.09	2.00	19.54	
Other (1)	1.75	1.3%	0.69	1.14	3.50	0.32	
Sub-Total	136.27	100.0%	53.94	88.58	2.01	44.04	
NON-TECHNIFIED FISHERIES (2)			7.39	12.14	3.50	3.47	
SUB-TOTAL OTHER (1) + (2)			8.08	13.27	3.50	3.79	
TOTAL				100.71	2.12	47.51	

Note: 1/ Adjusted value added accounts for the overvaluation of shrimp exports by $4.19 (11.75 - 7.56 = $4.19 per kilogram).
Source: Glenda Guzman, Economic Studies Department, Central Bank of Honduras Interview of December 13, 1990.
Dollar conversion factors and estimates were made by the author.

EXHIBIT 7.3 SHRIMP EXPORT PRICE AND VALUE, CENTRAL BANK AND REAL, 1989



7.1.1 Value Added

For 1989 the value added from shrimp is estimated at 48.4 million lempiras, equivalent to 24.2 million dollars (Exhibit 7.2). This is an estimate derived from the total of L.101 million estimated by the Central Bank for fisheries and the proportion shrimp represents. The Central Bank estimated a total of L.88 million of value added in technified fisheries for 1989. To estimate the value added from shrimp, total value added was multiplied by the proportion of gross value represented by shrimp. This resulted in L.48 million. This number was divided by 2 to convert it to dollars because most of the production is exported. This estimate of $24.2 million was further adjusted to $6.5 million to account for overvaluation of Central Bank estimates due to prices.

Central Bank overvaluation of value added and value of exports are due to two reasons:

1. Estimates of export values are made from estimated export volumes and estimated FOB prices. Export volume are estimated from local reports and US import statistics. Local reports understate export volumes due to contraband. Estimated FOB prices are higher than the true export prices due to the fact that the reference price used by the Central Bank is for a larger shrimp than the average shrimp exported from Honduras. The difference in prices is very significant. Central Bank estimates take US prices and convert them to Honduras FOB prices after deducting freight and insurance. Export value figures are used to estimate value added.

2. The cost structure used by the Central Bank to estimate the value added is based on the costs of catching shrimp from the sea and not from farming. The base study for this production budget was done in 1982. Shrimp farming uses more costly intermediate inputs than the other method.

The price source used by the Central Bank is the International Monetary Fund's International Financial Statistics. This source provides prices for shrimp 26/30, and Honduras exports 36/40, 41/50, and 51/60. For 1989 the price for shrimp 26/30 was $5.09 per lb. CIF.[1] This is equivalent to $11.75 per kilogram FOB Honduras. However, shrimp exported from Honduras had an average price of $7.56 per Kg. This is a difference of $4.19 per kg. Value added and value of exports were overestimated by this amount. However, the Central Bank has not been doing this on purpose. They thought that the IMF statistics were for an average shrimp. IMF documents do not indicate the type of shrimp reported in the same page that the statistics appear. It provides a description at the end of the document.

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[1] Fondo Monetario Internacional, "Estadísticas Financieras Internacionales." Vol. XLIII, Número 9. Washington, D.C.: FMI, Septiembre 1990. p. S84.

The Central Bank is beginning to study the structure of the shrimp industry to introduce changes in value added estimates in 1991. FPX is providing information to the Central Bank on how to estimate the right prices for shrimp.

A study prepared by Roberto Chamorro and Azael Torres was used to estimate value added and generation of foreign exchange parameters.[1] Exhibit 7.4 presents the budgets utilized to arrive at an average value added per pound and per kilogram. Export volumes were taken from FPX's projections for the high scenario. Fifty percent of the projected growth was taken as the medium scenario, and 25 percent as the low scenario. Exhibit 7.4 cost structure was utilized to make projections of value added from shrimp. Exhibit 7.5 presents the estimates for value added in dollars, assuming a FOB export price of $7.56 per kilogram, and no change in production costs.

The only growth expected is from shrimp farming. Shrimp fishing was assumed constant. Value added for the 1989 production level was assumed constant. Only growth figures were estimated with the new budget structure. Value added growth rates vary from 32 to 65 percent per year from 1991 to 1995 for the high growth scenario. For the medium growth scenario, annual growth vary from 27 to 32 percent, and for the low growth scenario from 16 to 20 percent per year (Exhibits 7.5 and 7.6).

Value added estimates in 1978 lempiras assumed the same structure used by the Central Bank, at 1978 prices. 1978 is the base year used by the Central Bank. This variable is a better indicator of output growth, where values only contribute to index total sector growth. For the high growth scenario, annual growth vary from 32 percent in 1991 to 27 percent in 1995. For the medium growth scenario, it varies from 16 percent in 1991 to 20 percent in 1995. For the low growth scenario, the variation is from 8 percent in 1991 to 13 percent in 1995.

7.1.2 Value of Exports

To estimate value of exports a constant export FOB price of $7.56 per kilogram was assumed. This resulted in total value of exports of $40 million in 1990, increasing to $148 million in 1998 for the high growth scenario. For the medium growth scenario, value of exports increases to $94 million in 1998, and for the low growth scenario, value of exports reaches $67 million by 1998 (Exhibit 7.5).

Growth figures range from 32 to 26 percent for the high growth scenario. For the medium growth scenario, they vary from 16 to 19 percent per year from 1991 to 1995. For the low growth scenario, the growth is more modest, varying from 8 to 13 percent.

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[1] Roberto Chamorro and Azael Torres, Plan de Desarrollo de Producto, Camarón Cultivado en Honduras, 1990/1991." San Pedro Sula, Honduras: FPX, Junio de 1990.

HONDURAS - POLICY REFORMS - SHRIMP

Exhibit 7.4 Value Added Estimates For One Kilogram of Shrimp Tail, Shell-on from Three Farm Sizes, 1990.

Description	Model I 100 Hectares ---$/Lb.----	Model II 200 Hectares ---$/Lb.----	Model III 500 Hectares ---$/Lb.----	Average $/Lb.	Average $/Kg.
Export Value	3.86	3.86	3.86	3.86	8.51
COSTS					
Direct Costs					
Labor	0.10	0.13	0.06	0.10	0.21
Seed	0.29	0.27	0.33	0.30	0.65
Feed	0.85	0.75	0.75	0.78	1.73
Fertilizer	0.06	0.06	0.08	0.07	0.15
Fuel	0.29	0.25	0.27	0.27	0.60
Other	0.06	0.06	0.07	0.06	0.14
Sub-total direct costs	1.65	1.52	1.56	1.58	3.48
Indierct Costs and Manangement	0.19	0.10	0.09	0.13	0.28
Depreciation	0.13	0.12	0.08	0.11	0.24
POST-HARVEST					
Packing	0.23	0.23	0.23	0.23	0.51
5 lbs. boxes	0.17	0.17	0.17	0.17	0.37
Sub-total post-harvest	0.40	0.40	0.40	0.40	0.88
TRANSPORTATION					
Sea	0.11	0.11	0.11	0.11	0.24
Air	0.17	0.17	0.17	0.17	0.37
Sub-total transportation	0.28	0.28	0.28	0.28	0.62
Broker's fee	0.15	0.15	0.15	0.15	0.33
TOTAL COSTS	2.80	2.57	2.56	2.64	5.83
Gross Margin	1.06	1.29	1.30	1.22	2.68
Intermediate Goods	2.16	2.01	2.01	2.06	4.54
Value Added	1.70	1.85	1.85	1.80	3.97
Use of Foreign Exchange	1.02	0.97	0.99	0.99	2.19
Net Generation of F.X.	2.84	2.89	2.87	2.87	6.32

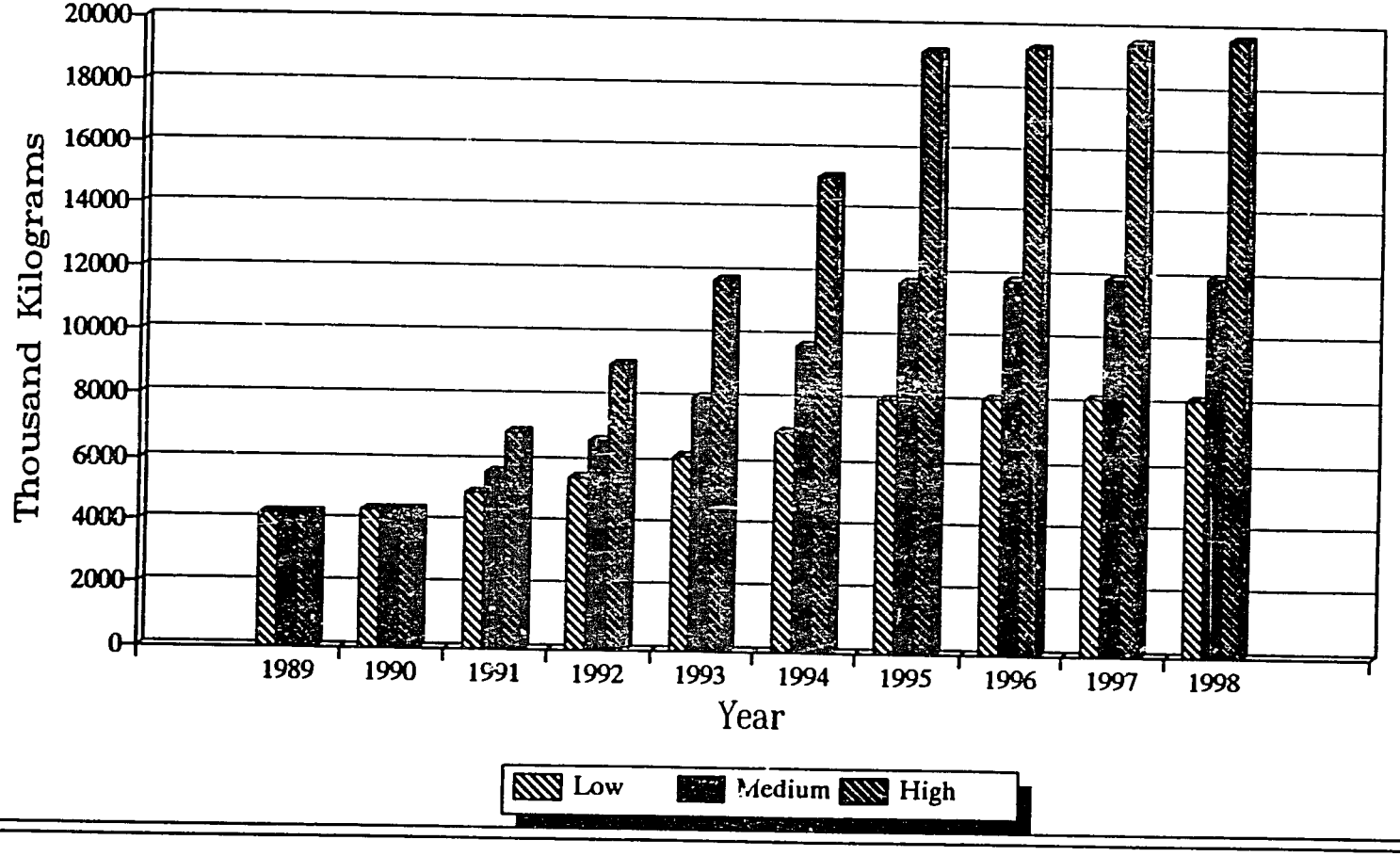
Source: Roberto Chamorro and Azael Torres, "Plan de Desarrollo de Producto - Camaron Cultivado en Honduras, 1990/1991." San Pedro Sula, Honduras: FPX, Junio de 1990. pp. 32, 40, and 48.

Exhibit 7.5 Shrimp Value Added Estimates, 1989 to 1998.

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
EXPORTABLE PRODUCTION (Ths. Kgs.)										
From Fishing	2,583	2,583	2,583	2,583	2,583	2,583	2,583	2,583	2,583	2,583
From Farming										
Low Projection	1,641	1,768	2,407	2,947	3,617	4,456	5,468	5,510	5,552	5,594
Medium Projection	1,641	1,768	3,047	4,126	5,466	7,145	9,169	9,251	9,335	9,420
High Projection	1,641	1,768	4,325	6,483	9,163	12,521	16,569	16,735	16,902	17,071
Total Production										
Low	4,224	4,351	4,990	5,530	6,200	7,039	8,051	8,093	8,134	8,177
Medium	4,224	4,351	5,629	6,708	8,048	9,727	11,751	11,834	11,918	12,002
High	4,224	4,351	6,908	9,066	11,746	15,104	19,152	19,318	19,485	19,654
Value Added (Million 1978 Lempiras)										
Low	29.45	30.33	34.79	38.55	43.22	49.07	56.13	56.42	56.71	57.00
Medium	29.45	30.33	39.24	46.77	56.11	67.81	81.92	82.50	83.08	83.67
High	29.45	30.33	48.16	63.20	81.88	105.29	133.51	134.67	135.83	137.01
Value Added (Million US$)										
Low	6.48	6.98	9.52	11.66	14.32	17.65	21.67	21.83	22.09	22.16
Medium	6.48	6.98	12.06	16.34	21.65	28.32	36.35	36.68	37.01	37.35
High	6.48	6.98	17.13	25.69	36.33	49.65	65.72	66.37	67.04	67.71
Export Price FOB($/Kg.)	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56	7.56
Export Value (Million $)										
Low	31.94	32.90	37.74	41.81	46.88	53.23	60.88	61.20	61.51	61.83
Medium	31.94	32.90	42.57	50.73	60.86	73.56	88.86	89.49	90.12	90.76
High	31.94	32.90	52.24	68.55	88.82	114.21	144.82	146.08	147.34	148.62
Net Generation F.X. ($/Kg.)		6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32	6.32
Net Generation F.X. (Million $)										
Low		27.50	31.54	34.95	39.19	44.49	50.89	51.15	51.42	51.68
Medium		27.50	35.58	42.40	50.87	61.48	74.28	74.80	75.33	75.86
High		27.50	43.66	57.30	74.24	95.47	121.05	122.10	123.16	124.23
PERCENT CHANGE										
EXPORTABLE PRODUCTION (Ths. Kgs.)										
From Fishing		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
From Farming										
Low Projection		7.7%	36.2%	22.4%	22.7%	23.2%	22.7%	0.8%	0.8%	0.8%
Medium Projection		7.7%	72.3%	35.4%	32.5%	30.7%	28.3%	0.9%	0.9%	0.9%
High Projection		7.7%	144.6%	49.9%	41.3%	36.6%	32.3%	1.0%	1.0%	1.0%
Total Production										
Low		3.0%	14.7%	10.8%	12.1%	13.5%	14.4%	0.5%	0.5%	0.5%
Medium		3.0%	29.4%	19.2%	20.0%	20.9%	20.8%	0.7%	0.7%	0.7%
High		3.0%	58.8%	31.2%	29.6%	28.6%	26.8%	0.9%	0.9%	0.9%
Value Added (Million 1978 Lempiras)										
Low		3.0%	14.7%	10.8%	12.1%	13.5%	14.4%	0.5%	0.5%	0.5%
Medium		3.0%	29.4%	19.2%	20.0%	20.9%	20.8%	0.7%	0.7%	0.7%
High		3.0%	58.8%	31.2%	29.6%	28.6%	26.8%	0.9%	0.9%	0.9%
Value Added (Million US$)										
Low		7.8%	36.3%	22.5%	22.8%	23.3%	22.8%	0.8%	0.8%	0.8%
Medium		7.8%	72.7%	35.5%	32.5%	30.8%	28.4%	0.9%	0.9%	0.9%
High		7.8%	145.3%	50.0%	41.4%	36.7%	32.4%	1.0%	1.0%	1.0%
Export Price FOB($/Kg.)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Export Value (Million $)										
Low		3.0%	14.7%	10.8%	12.1%	13.5%	14.4%	0.5%	0.5%	0.5%
Medium		3.0%	29.4%	19.2%	20.0%	20.9%	20.8%	0.7%	0.7%	0.7%
High		3.0%	58.8%	31.2%	29.6%	28.6%	26.8%	0.9%	0.9%	0.9%
Net Generation F.X. ($/Kg.)			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Net Generation F.X. (Million $)										
Low			14.7%	10.8%	12.1%	13.5%	14.4%	0.5%	0.5%	0.5%
Medium			29.4%	19.2%	20.0%	20.9%	20.8%	0.7%	0.7%	0.7%
High			58.8%	31.2%	29.6%	28.6%	26.8%	0.9%	0.9%	0.9%

Source: FPX projection for the high scenario. Other data from Exhibits 7.1 to 7.4.

EXHIBIT 7.6 SHRIMP, EXPORT VOLUME
HONDURAS, 1989 TO 1998



7.1.3 Net Generation of Foreign Exchange

Net generation of foreign exchange is a better economic indicator than value added and export value for shrimp. Value added only accounts for the contribution of shrimp to the economy at the farm or boat level. The Central Bank assigns value added from shrimp processing to industry and not agriculture. Value of exports as an indicator does not deduct the use of foreign exchange to generate the exports; thus, it could be a misleading indicator. Net generation of foreign exchange is the value of exports minus the use of foreign exchange. For a product like shrimp that is mostly exported, net generation of foreign exchange is a better indicator of its total contribution to the economy.

Net generation of foreign exchange was estimated at $33 million in 1990, growing to $124 million by 1998 for the high growth scenario. For the medium growth scenario, it increases to $78 million by 1998, and to $56 million for the low growth scenario (Exhibit 7.4). These growths mean 32 to 26 percent per year from 1991 to 1995 for the high growth scenario. For the medium growth scenario, it varies from 16 to 20 percent per year; and for the low growth scenario, from 8 to 13 percent per year (Exhibit 7.5).

7.2 African Oil Palm

The african oil palm is a plantation crop harvested to extract edible oils. Its initial production was to satisfy local consumption, with exports starting in 1984. Both area and production have expanded continuously since 1980. Area and production estimates presented on Exhibit 7.7 are from the Central Bank. Unfortunately, this data source is not very reliable. There have been only two surveys in this past decade. These were the 1984 agricultural survey,[1] that reported 1983 area and production, and the 1989 agricultural survey,[2] that reported 1988 area and production. The data from these surveys were included on Exhibit 7.7. Additional information was obtained for 1990 from reports presented by the oil processing companies to the Ministry of Economy as a justification to revise prices and educate the Ministry on the industry.

Even though there is not a complete series of data, the two surveys indicated that production almost doubled from 1983 to 1988. Production increased from 4.5 million quintals in 1983 to 8.1 million quintals in 1988. This increase in production was due mainly to a gain in yields. Yields increase from 181 qq/Mz. in 1983 to 291 qq/Mz. in 1988. Area harvested grew slightly from 25.2 thousand manzanas to 27.8 thousand manzanas from 1983 to 1988. According to the industry, area harvested reached 31,235 manzanas in 1990.

The volume of exports increased with production until 1987, but prices have declined, contributing to a reduction in export values. Palm oil is high in saturated fats that are transformed into cholesterol by the human body. This has made it a less desirable oil in the international market, bringing down

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[1] DGEC, "Encuesta Agrícola Nacional 1984." Comayaguela, Honduras: Ministerio de Economía, Enero 1986.

[2] DGEC, "Encuesta Agrícola Nacional de Propósitos Múltiples E.A.N. - 1989. Comayaguela, Honduras: Secretaría de Planificación, Coordinación y Presupuesto, Octubre 1990.

HONDURAS - POLICY REFORMS - OIL PALM

Exhibit 7.7 Area Harvested, Production, Value Added and Exports of Oil Palm, 1980 to 1990

Description	Year										
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Area Harvested (Manzanas)	25,410	28,907	29,123	25,190	29,344	31,896	33,017	29,002	27,790	33,983	31,235
Fruit Production (Ths. QQ)	1,889	2,375	3,511	4,562	5,725	6,871	7,172	6,471	8,089	6,590	8,047
Yield (QQ/Mz.)	74.34	82.16	120.56	181.10	195.10	215.42	217.22	223.12	291.08	193.92	257.62
Oil Production (Ths. Kgs.)	17,137	21,546	31,851	41,386	51,936	62,333	65,063	58,704	73,382	59,784	73,000
Local Consumption (Ths. Kgs.)	17,137	21,546	31,851	41,386	35,323	42,460	36,678	30,895	54,784	50,629	73,000
Export Volume (Ths. Kgs.)	0	0	0	0	16,613	19,873	28,385	27,809	18,598	9,155	0
Export Prices FOB ($/Kg.)					0.68	0.48	0.25	0.34	0.88	0.96	
Export Value (Ths. $)	0	0	0	0	11,250	9,460	7,235	9,364	16,277	8,803	0
VALUE ADDED											
Current Million Lps.	8	11	15	18	27	29	27	24	22	23	
Lps./Mz.	314.84	380.53	515.06	714.57	920.12	909.20	817.76	827.53	791.65	676.81	
1978 Constant Million Lps.	8	9	12	15	23	27	23	19	17	18	
1978 Lps./Mz.	314.84	311.34	412.05	595.47	783.81	846.50	696.61	655.13	611.73	529.68	
PERCENT CHANGE											
Area Harvested (Manzanas)		13.76%	0.75%	-13.50%	16.49%	8.70%	3.51%	-12.16%	-4.18%	22.28%	-8.08%
Fruit Production (Ths. QQ)		25.73%	47.83%	29.93%	25.49%	20.02%	4.38%	-9.77%	25.00%	-18.53%	22.11%
Yield (QQ/Mz.)		10.52%	46.74%	50.22%	7.73%	10.41%	0.84%	2.72%	30.46%	-33.38%	32.85%
Oil Production (Ths. Kgs.)		25.73%	47.83%	29.93%	25.49%	20.02%	4.38%	-9.77%	25.00%	-18.53%	22.11%
Local Consumption (Ths. Kgs.)		25.73%	47.83%	29.93%	-14.65%	20.20%	-13.62%	-15.77%	77.32%	-7.58%	44.19%
Export Volume (Ths. Kgs.)						19.62%	42.83%	-2.03%	-33.12%	-50.78%	
Export Prices FOB ($/Kg.)						-29.71%	-46.45%	32.11%	159.92%	9.87%	
Export Value (Ths. $)						-15.91%	-23.52%	29.43%	73.83%	-45.92%	
VALUE ADDED											
Current Million Lps.		37.50%	36.36%	20.00%	50.00%	7.41%	-6.90%	-11.11%	-8.33%	4.55%	
Lps./Mz.		20.87%	35.35%	38.74%	28.77%	-1.19%	-10.06%	1.19%	-4.34%	-14.51%	
1978 Constant Million Lps.		12.50%	33.33%	25.00%	53.33%	17.39%	-14.81%	-17.39%	-10.53%	5.88%	
1978 Lps./Mz.		-1.11%	32.34%	44.52%	31.63%	8.00%	-17.71%	-5.96%	-6.62%	-13.41%	

Source: Central Bank of Honduras, Department of Economic Studies, except for 1983 and 1988 area and production. 1983 data was from DGEC, "Encuesta Agricola Nacional 1984." Tegucigalpa, Honduras: Ministerio de Economia, Enero 1986. p.36. 1988 data was from DGEC, "Encuesta Agricola Nacional de Propositos Multiples E.A.N. - 1989." Tomo I. Tegucigalpa, Honduras: Secretaria de Planificacion, Coordinacion y Prespuesto, Mayo 1990. p.67.
Oil production was estimated using a conversion factor of 5 to 1.
Local consumption was estimated by difference, except for 1990.
1990 data are from the Secretary of Economy.

its price. Export volume started a decline in 1988, disappearing in 1990 due to a very high growth in domestic consumption, and a reduction in import of other oils. Domestic consumption of palm oil jumped from 50 thousand metric tons in 1989 to 73 thousand M.T. in 1990.

Shortening is still one of the few products that have price controls, and oil exports are regulated by the Ministry of Economy. Exporters are required to apply for approval to export edible oils in any form, and it is only granted when the supply is enough to satisfy local demand. At the moment the demand is higher than supply; exports are not authorized. African oil palm production will be stimulated with the removal of price control and liberalization of its marketing. There is no justifiable reason to maintain these controls.

Oil palm requires large investments in the initial stages, and produces for about 25 years at economically feasible rates. The initial investment for the planted areas has already been made; thus, most of the cost now is to harvest. The 1989 agricultural survey showed an area newly planted of 11,560 manzanas. Palm oil trees take about three years to start production, which increases gradually until the sixth year, when it stabilizes. There are indication of intentions to plant an additional 14,300 manzanas during the next few years. The area planted plus this intended expansion were used as the basis for projecting production from 1991 to 1998.

The low growth scenario assumed a 3 percent increase in area harvested per year. At this rate a total of 37.2 thousand manzanas will be harvested in 1996, the maximum sustainable area to be harvested if total area planted is 39.3 thousand manzanas. No additional area was assumed under this scenario. For the medium growth scenario, area harvested will increase at a rate of 6.5 percent per year. At this rate, the level of 37.7 thousand manzanas harvested will be reached in 1993, and continue growing due to area expansion. For the high growth scenario, an increase of 8 percent in area harvested per year was assumed. The projections were based on major producers projections (Exhibits 7.8 and 7.9).

Yields were assumed constant in the low growth scenario, and increasing at rates of 1 and 1.25 percent per year until 1995 for the medium and high growth scenarios, respectively. The combined effect of area and yield growth rates resulted in 3 percent for the low growth scenario, 6.5 and 7.5 percent for the medium growth scenario, and 8 to 9.3 percent for the high growth scenarios.

Palm oil production was estimated at an extraction rate of 5 to one ratio. This relationship was used to estimate oil production from the projected fruit production. Oil consumption growth was assumed equal to industry projections of 5 percent. The difference was for exports. Export price was assumed to remain the same as the export price for 1989.

HONDURAS - POLICY REFORMS - NON-TRADITIONAL EXPORT PRODUCTS

Exhibit 7.8 Palm Oil Value Added and Export Estimates, 1989 to 1998

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
AREA HARVESTED (MANZANAS)										
Low	28,902	31,235	32,173	33,138	34,132	35,156	36,210	37,297	38,416	38,608
Medium	28,902	31,235	33,266	35,428	37,731	40,183	42,795	45,577	48,540	51,695
High	28,902	31,235	33,734	36,433	39,348	42,496	45,895	49,567	53,532	57,815
YIELD (QUINTALS/MANZANA)										
Low	228.02	257.62	257.62	257.62	257.62	257.62	257.62	257.62	257.62	257.62
Medium	228.02	257.62	260.20	262.80	265.43	268.08	270.76	270.76	270.76	270.76
High	228.02	257.62	260.84	264.10	267.40	270.74	273.45	273.45	273.45	273.45
FRUIT PRODUCTION (THOUSAND QUINTALS)										
Low	6,590	8,047	8,288	8,537	8,793	9,057	9,329	9,608	9,897	9,946
Medium	6,590	8,047	8,656	9,310	10,015	10,772	11,587	12,340	13,143	13,997
High	6,590	8,047	8,799	9,622	10,522	11,505	12,550	13,554	14,638	15,810
OIL PRODUCTION (THOUSAND KGS.)										
Low	59,784	73,000	75,190	77,446	79,769	82,162	84,627	87,166	89,781	90,230
Medium	59,784	73,000	78,522	84,463	90,852	97,725	105,118	111,951	119,228	126,977
High	59,784	73,000	79,826	87,289	95,451	104,375	113,853	122,961	132,798	*143,422
OIL CONSUMPTION (THOUSAND KGS.)										
Low	50,629	73,000	76,650	80,483	84,507	88,732	93,169	97,827	102,718	107,854
Medium	50,629	73,000	76,650	80,483	84,507	88,732	93,169	97,827	102,718	107,854
High	50,629	73,000	76,650	80,483	84,507	88,732	93,169	97,827	102,718	107,854
OIL EXPORTS (THOUSAND KGS.)										
Low	9,155	0	0	0	0	0	0	0	0	0
Medium	9,155	0	1,872	3,980	6,346	8,993	11,950	14,124	16,509	19,123
High	9,155	0	3,176	6,807	10,944	15,643	20,684	25,134	30,079	35,567
VALUE ADDED (1978 MILLION LEMPIRAS)										
Low	18.00	21.98	22.64	23.32	24.02	24.74	25.48	26.24	27.03	27.17
Medium	18.00	21.98	23.64	25.43	27.35	29.42	31.65	33.71	35.90	38.23
High	18.00	21.98	24.03	26.28	28.74	31.43	34.28	37.02	39.98	43.18
VALUE ADDED (MILLION DOLLARS)										
Low	6.57	8.02	8.26	8.51	8.77	9.03	9.30	9.58	9.87	9.92
Medium	6.57	8.02	8.63	9.28	9.99	10.74	11.55	12.31	13.11	13.96
High	6.57	8.02	8.77	9.59	10.49	11.47	12.51	13.52	14.60	15.76
EXPORT PRICE										
Dollar/Kg.	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
EXPORT VALUE (MILLION DOLLARS)										
Low	9	0	0	0	0	0	0	0	0	0
Medium	9	0	2	4	6	9	11	14	16	18
High	9	0	3	7	11	15	20	24	29	34

Source: Exhibit 7.7 and estimates.

HONDURAS - POLICY REFORMS - NON-TRADITIONAL EXPORT PRODUCTS

Exhibit 7.9 Percent Change in Palm Oil Value Added and Export Estimates, 1990-98.

Description	Year								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
AREA HARVESTED (MANZANAS)									
Low	8.08%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	0.50%
Medium	8.08%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%
High	8.08%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
YIELD (QUINTALS/MANZANA)									
Low	12.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Medium	12.98%	1.00%	1.00%	1.00%	1.00%	1.00%	0.00%	0.00%	0.00%
High	12.98%	1.25%	1.25%	1.25%	1.25%	1.00%	0.00%	0.00%	0.00%
FRUIT PRODUCTION (THOUSAND QUINTALS)									
Low	22.11%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	0.50%
Medium	22.11%	7.57%	7.56%	7.57%	7.57%	7.56%	6.50%	6.50%	6.50%
High	22.11%	9.35%	9.35%	9.35%	9.35%	9.08%	8.00%	8.00%	8.00%
OIL PRODUCTION (THOUSAND KGS.)									
Low	22.11%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	0.50%
Medium	22.11%	7.57%	7.56%	7.57%	7.57%	7.56%	6.50%	6.50%	6.50%
High	22.11%	9.35%	9.35%	9.35%	9.35%	9.08%	8.00%	8.00%	8.00%
OIL CONSUMPTION (THOUSAND KGS.)									
Low	44.19%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Medium	44.19%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
High	44.19%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
OIL EXPORTS (THOUSAND KGS.)									
Low									
Medium			112.56	59.43%	41.72%	32.87%	18.20%	16.89%	15.83%
High			114.35	60.78%	42.94%	32.22%	21.51%	19.68%	18.24%
VALUE ADDED (1978 MILLION LEMPIRAS)									
Low	22.11%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	0.50%
Medium	22.11%	7.57%	7.56%	7.57%	7.57%	7.56%	6.50%	6.50%	6.50%
High	22.11%	9.35%	9.35%	9.35%	9.35%	9.08%	8.00%	8.00%	8.00%
VALUE ADDED (MILLION DOLLARS)									
Low	22.11%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	0.50%
Medium	22.11%	7.57%	7.56%	7.57%	7.57%	7.56%	6.50%	6.50%	6.50%
High	22.11%	9.35%	9.35%	9.35%	9.35%	9.08%	8.00%	8.00%	8.00%
EXPORT PRICE									
Dollar/Kg.	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
EXPORT VALUE (THOUSAND DOLLARS)									
Low									
Medium			112.56	59.43%	41.72%	32.87%	18.20%	16.89%	15.83%
High			114.35	60.78%	42.94%	32.22%	21.51%	19.68%	18.24%

Source: Exhibit 7.8.

Value added estimates for 1989 were adjusted to reflect production differences between the estimates of the Central Bank and the agricultural survey. Projections were made using the same ratio of value added to production as in 1989. Value added in dollars was estimated by dividing value added in 1989 by 3. Projection estimates and percent changes are presented on Exhibits 7.8 and 7.9.

7.3 Plantains

Plantains are produced for domestic consumption and exports. The Central Bank reports area planted, production and exports. However, quality of this data is highly questionable, except for export volumes. The estimates from the agricultural multiple purpose surveys have very large variances; thus, they are not published.

According to the Central Bank's information, production has been steadily increasing. This growth has been due to both area expansion and yield improvements. Export volume have also increased until 1987, but started to drop since then, due to an increase in domestic consumption (Exhibit 7.10).

A liberalized foreign exchange regime will have a positive impact on investments in plantain production. Devaluation will allow producers to receive a higher price for their product, increasing returns, which will stimulate investments.

Projections assumed increases in area harvested and productivity gains, for the medium and high growth scenarios. The low growth scenario assumed the present level of area harvested and yields. The low growth scenario assumed a one percent increase in area harvested and a one percent gain per year in yields. The high growth scenario assumed an increase of 2 percent per year in area harvested, and 1.25 percent per year in yields (Exhibits 7.11 and 7.12).

Domestic consumption growth rate was assumed to stay at 2.8 percent, Honduras' population growth rate. Exports were estimated by the difference, and export price assume to stay at 1989 levels. The 1989 value added per quintal was used to project value added for future years. Value added in dollars was estimated by dividing 1989 value added by 3.5 (Exhibits 7.10 and 7.11).

7.4 Lobster and Fisheries Other Than Shrimp

Lobster is the second most important fisheries export after shrimp. However, it has limited potential for growth. Lobsters are probably being caught at rates above their sustainable level. It was presented as a separate product due to the availability of data. In the process of estimating value added for shrimp, it was possible to estimate value added for lobster, and other fisheries (Exhibit 7.2). Other fisheries of less importance were also included on Exhibit 7.2.

HONDURAS - POLICY REFORMS - PLANTAIN

Exhibit 7.10 Area Harvested, Production, Value Added and Exports of Plantain, 1980 to 1989

Description	Year									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Area Harvested (Manzanas)	10,476	10,439	10,630	10,639	10,829	11,628	12,753	13,793	14,882	15,105
Fruit Production (Ths. QQ)	2,436	2,474	2,557	2,605	2,708	2,951	3,240	3,475	3,524	3,800
Yield (QQ/Mz.)	232.53	237.00	240.55	244.85	250.07	253.78	254.06	251.94	236.80	251.57
Local Consumption (Ths. Kgs.)	96,285	98,215	100,189	102,230	104,300	106,479	108,887	110,606	118,762	139,608
Export Volume (Ths. Kgs.)	14,210	14,004	15,795	15,931	18,533	27,376	38,077	47,018	41,084	32,757
Export Prices FOB ($/Kg.)	0.17	0.16	0.14	0.08	0.04	0.07	0.07	0.08	0.11	0.10
Export Value (Ths. $)	2,472	2,219	2,220	1,329	750	2,012	2,846	3,606	4,632	3,346
VALUE ADDED										
Current Million Lps.	16	18	19	22	22	23	25	20	28	22
Lps./Mz.	1,527	1,724	1,787	2,068	2,032	1,978	1,960	1,450	1,881	1,456
1978 Constant Million Lps.	13	14	14	15	16	16	17	14	14	15
1978 Lps./Mz.	1,241	1,341	1,317	1,410	1,478	1,376	1,333	1,015	941	993
PERCENT CHANGE										
Area Harvested (Manzanas)		-0.4%	1.8%	0.1%	1.8%	7.4%	9.7%	8.2%	7.9%	1.5%
Fruit Production (Ths. QQ)		1.6%	3.4%	1.9%	4.0%	9.0%	9.8%	7.3%	1.4%	7.8%
Yield (QQ/Mz.)		1.9%	1.5%	1.8%	2.1%	1.5%	0.1%	-0.8%	-6.0%	6.2%
Local Consumption (Ths. Kgs.)		2.0%	2.0%	2.0%	2.0%	2.1%	2.3%	1.6%	7.4%	17.6%
Export Volume (Ths. Kgs.)		-1.4%	12.8%	0.9%	16.3%	47.7%	39.1%	23.5%	-12.6%	-20.3%
Export Prices FOB ($/Kg.)		-8.9%	-11.3%	-40.6%	-51.5%	81.6%	1.7%	2.6%	47.0%	-9.4%
Export Value (Ths. $)		-10.2%	0.0%	-40.1%	-43.6%	168.3%	41.5%	26.7%	28.4%	-27.8%
VALUE ADDED										
Current Million Lps.		12.5%	5.6%	15.8%	0.0%	4.5%	8.7%	-20.0%	40.0%	-21.4%
Lps./Mz.		12.9%	3.7%	15.7%	-1.8%	-2.6%	-0.9%	-26.0%	29.8%	-22.6%
1978 Constant Million Lps.		7.7%	0.0%	7.1%	6.7%	0.0%	6.3%	-17.6%	0.0%	7.1%
1978 Lps./Mz.		8.1%	-1.8%	7.1%	4.8%	-6.9%	-3.1%	-23.9%	-7.3%	5.6%

Source: Central Bank of Honduras, Department of Economic Studies, as reported in UPSA, "Compendio Estadistico Agropecuario - 1990." Tegucigalpa, Honduras: Secreataria de Recursos Naturales, 1990. pp. 13-14, and 45.
Local consumption was estimated by difference.

HONDURAS - POLICY REFORMS - PLANTAIN

Exhibit 7.11 Plantain Value Added and Export Estimates, 1989 to 1998

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
AREA HARVESTED (MANZANAS)										
Low	15,105	19,637	19,637	19,637	19,637	19,637	19,637	19,637	19,637	19,637
Medium	15,105	19,637	19,833	20,031	20,232	20,434	20,638	20,845	21,053	21,264
High	15,105	19,637	20,029	20,430	20,838	21,255	21,680	22,114	22,556	23,007
YIELD (QUINTALS/MANZANA)										
Low	251.57	264.15	264.15	264.15	264.15	264.15	264.15	264.15	264.15	264.15
Medium	251.57	264.15	266.79	269.46	272.15	274.88	277.63	277.63	277.63	277.63
High	251.57	264.15	267.45	270.80	274.18	277.61	280.38	280.38	280.38	280.38
FRUIT PRODUCTION (THOUSAND QUINTALS)										
Low	3,800	5,187	5,187	5,187	5,187	5,187	5,187	5,187	5,187	5,187
Medium	3,800	5,187	5,291	5,398	5,506	5,617	5,730	5,787	5,845	5,903
High	3,800	5,187	5,357	5,532	5,713	5,901	6,079	6,200	6,324	6,451
CONSUMPTION (MILLION KGS.)										
Low	140	144	148	152	156	160	165	169	174	179
Medium	140	144	148	152	156	160	165	169	174	179
High	140	144	148	152	156	160	165	169	174	179
EXPORTS (THOUSAND KGS.)										
Low	32,757	91,761	87,743	83,612	79,365	74,999	70,512	65,898	61,155	56,280
Medium	32,757	91,761	92,472	93,165	93,839	94,494	95,127	93,112	90,995	88,770
High	32,757	91,761	95,448	99,275	103,246	107,368	110,964	111,865	112,747	113,609
VALUE ADDED (1978 MILLION LEMPIRAS)										
Low	15.00	20.48	20.48	20.48	20.48	20.48	20.48	20.48	20.48	20.48
Medium	15.00	20.48	20.89	21.31	21.73	22.17	22.62	22.84	23.07	23.30
High	15.00	20.48	21.15	21.84	22.55	23.29	24.00	24.48	24.96	25.46
VALUE ADDED (MILLION DOLLARS)										
Low	6.29	8.58	8.58	8.58	8.58	8.58	8.58	8.58	8.58	8.58
Medium	6.29	8.58	8.75	8.93	9.11	9.29	9.48	9.57	9.67	9.76
High	6.29	8.58	8.86	9.15	9.45	9.76	10.06	10.26	10.46	10.67
EXPORT PRICE										
Dollar/Kg.	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
EXPORT VALUE (MILLION DOLLARS)										
Low	3.35	9.37	8.96	8.54	8.11	7.66	7.20	6.73	6.25	5.75
Medium	3.35	9.37	9.45	9.52	9.59	9.65	9.72	9.51	9.30	9.07
High	3.35	9.37	9.75	10.14	10.55	10.97	11.34	11.43	11.52	11.61

Source: Exhibit 7.8 and estimates.

HONDURAS - POLICY REFORMS - PLANTAIN

Exhibit 7.12 Percent Change in Plantain Value Added and Export Estimates, 1990 to 1998

Description	Year								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
AREA HARVESTED (MANZANAS)									
Low	30.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	30.0	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
High	30.0	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
YIELD (QUINTALS/MANZANA)									
Low	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	5.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%	0.0%	0.0%
High	5.0%	1.2%	1.2%	1.2%	1.3%	1.0%	0.0%	0.0%	0.0%
FRUIT PRODUCTION (THOUSAND QUINTALS)									
Low	36.5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	36.5	2.0%	2.0%	2.0%	2.0%	2.0%	1.0%	1.0%	1.0%
High	36.5	3.3%	3.3%	3.3%	3.3%	3.0%	2.0%	2.0%	2.0%
CONSUMPTION (THOUSAND KGS.)									
Low	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Medium	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
High	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
EXPORTS (THOUSAND KGS.)									
Low		-4.4%	-4.7%	-5.1%					
Medium		0.8%	0.7%	0.7%	0.7%	0.7%	-2.1%	-2.3%	-2.4%
High		4.0%	4.0%	4.0%	4.0%	3.3%	0.8%	0.8%	0.8%
VALUE ADDED (1978 MILLION LEMPIRAS)									
Low	36.5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	36.5	2.0%	2.0%	2.0%	2.0%	2.0%	1.0%	1.0%	1.0%
High	36.5	3.3%	3.3%	3.3%	3.3%	3.0%	2.0%	2.0%	2.0%
VALUE ADDED (MILLION DOLLARS)									
Low	36.5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	36.5	2.0%	2.0%	2.0%	2.0%	2.0%	1.0%	1.0%	1.0%
High	36.5	3.3%	3.3%	3.3%	3.3%	3.0%	2.0%	2.0%	2.0%
EXPORT PRICE									
Dollar/Kg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
EXPORT VALUE (THOUSAND DOLLARS)									
Low									
Medium			0.7%	0.7%	0.7%	0.7%	-2.1%	-2.3%	-2.4%
High			4.0%	4.0%	4.0%	3.3%	0.8%	0.8%	0.8%

Source: Exhibit 7.11.

It was assumed that the level of lobster production and exports would remain the same as 1990, estimated at the same level as 1988. Projections are presented on Exhibit 7.13.

7.5 Other Nontraditional Export Products and Other Crops Not Included in Other Sections

This grouping includes all the nontraditional agricultural exports not included in the previous sections. Exhibits 7.14 and 7.15 present volume, price and export values for nontraditional exports. Projections presented on Exhibit 7.15 were base on volume projections made by FPX. Prices were assumed to remain the same. Percent changes are presented on exhibit 7.16.

The Central Bank does not provide value added information for each of these crops, due to their minor importance. It groups all these crops in a category called "Other Products." This category includes both nontraditional minor crops and other domestically consumed minor crops, such as cashew, avocado, papaya, onion horticultural products, potatoes and spices. Exhibit 7.17 presents value added as reported by the Central Bank from 1980 to 1989, in current lempiras and 1978 constant lempiras.

1990 value added of "Other Crops" was estimated by applying a growth rate of four percent over the 1989 value added. From 1991 on, the growth rate in export value from Exhibit 7.16 were used. Value added in dollars for 1989 was estimating dividing value added by 2.5. Value added projections are presented on Exhibit 7.19.

HONDURAS - POLICY REFORMS - NON-TRADITIONAL EXPORT PRODUCTS

Exhibit 7.13 Lobster and Other Fisheries Value Added and Export Estimates, 1989 to 1998

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
LOBSTER										
Production (Ths. Kgs.)	1,852	1,723	1,723	1,723	1,723	1,723	1,723	1,723	1,723	1,723
Value Added (Million 1978 Lps.)	23.81	22.15	22.15	22.15	22.15	22.15	22.15	22.15	22.15	22.15
Value Added (Million Dollars)	19.54	18.18	18.18	18.18	18.18	18.18	18.18	18.18	18.18	18.18
Export Prices FOB ($/Kg.)	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
Export Value (Million Dollars)	29.63	27.57	27.57	27.57	27.57	27.57	27.57	27.57	27.57	27.57
OTHER FISHERIES										
Value Added (Million 1978 Lps.)	8.08	8.08	8.08	8.08	8.08	8.08	8.08	8.08	8.08	8.08
Value Added (Million Dollars)	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79
PERCENT CHANGE										
LOBSTER										
Production (Ths. Kgs.)		-6.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Value Added (Million 1978 Lps.)		-6.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Value Added (Million Dollars)		-6.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Export Prices FOB ($/Kg.)		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Export Value (Million Dollars)		-6.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
OTHER FISHERIES										
Value Added (Million 1978 Lps.)		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Value Added (Million Dollars)		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Note: Other Fisheries does not include shrimp.

Source: Exhibit 7.2 and estimates.

05-Mar-91 Date

HONDURAS - POLICY REFORMS - NON-TRADITIONAL EXPORT PRODUCTS

Exhibit 7.14 Export of Non-Traditional Products, 1980 to 1989.

Description	Unit	Year									
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
VOLUME	(Ths. Units)										
Shrimp	Kgs.	2,422	2,907	2,749	3,133	2,296	1,931	2,057	3,150	4,102	4,224
Lobster	Kgs.	851	738	851	1,133	1,648	1,542	1,399	1,350	2,005	1,852
Shrimp+Lobster	Kgs.	3,273	3,645	3,600	4,266	3,944	3,473	3,456	4,500	6,107	6,076
Pineapple	Kgs.	26,425	26,827	33,143	32,917	34,201	30,844	29,044	36,986	32,819	34,096
Palm Oil	Kgs.	0	0	0	0	16,613	19,873	28,385	27,809	18,598	9,155
Melon	Kgs.	2,095	1,627	2,025	3,371	3,599	5,283	12,003	23,376		
Fruits in Conserve	Kgs.	13,503	12,392	15,241	8,412	10,804	10,778	11,436	7,903		
Cocoa	Kgs.	477	467	941	982	1,545	1,529	1,941	2,241		
Grapefruit	Kgs.	10,574	11,207	8,660	10,598	10,777	9,975	15,573	12,986		
Plantains	Kgs.	14,210	14,004	15,795	15,931	18,533	27,376	38,077	47,018	41,084	32,757
Cigars	Kgs.	272	408	434	600	528	423	504	277		
Pro. Seed & Material	Kgs.	2,007	1,936	2,574	2,149	1,689	2,508	2,501	5,116		
Molasses	Kgs.	31,651	36,668	60,880	41,004	45,664	40,745	34,442	23,628		
Fruit Extracts	Kgs.	0	0	1,462	956	1,512	2,358	2,276	999		
Sesame Seeds	Kgs.	3,558	2,158	716	461	1,006	1,424	1,305	883		
Corn Starch	Kgs.	3,543	2,876	2,844	2,511	2,307	1,107	868	531		
Citrus	Kgs.	9,840	3,711	5,933	5,267	4,328	2,877	4,043	6,100		
Coconut	Kgs.	2,765	3,737	2,245	2,076	2,059	1,543	1,882	1,078		
Starches	Kgs.	1,686	2,752	1,364	2,526	2,343	1,362	236	346		•
Elaborated Tobacco	Kgs.	119	262	184	241	134	58	19	14		
Palm Nuts	Kgs.	573	400	962	3,022	1,886	1,658	1,214	378		
Honey	Kgs.	1,065	977	1,191	694	831	646	858	106		
Cut Flowers & Foliage	Kgs.	53	22	1	1	0	0	0	14		
PRICE											
Shrimp	$/Kgs.	6.03	5.73	5.56	6.38	10.55	10.55	12.52	11	11.85	11.76
Lobster	$/Kgs.	10.36	12.98	14.91	14.12	15.51	13.34	14.02	17.60	16.65	16.00
Shrimp and Lobster	$/Kgs.	7.16	7.20	7.77	8.43	12.62	11.79	13.13	12.98	13.43	13.05
Pineapple	$/Kgs.	0.29	0.26	0.26	0.37	0.41	0.37	0.35	0.35	0.38	0.28
Palm Oil	$/Kgs.					0.68	0.48	0.25	0.34	0.44	0.48
Melon	$/Kgs.	0.38	0.28	0.35	0.42	0.36	0.35	0.29	0.29		
Fruits in Conserve	$/Kgs.	0.33	0.44	0.31	0.46	0.47	0.54	0.54	0.55		
Cocoa	$/Kgs.	1.99	1.71	1.91	1.88	2.01	2.06	1.44	1.65		
Grapefruit	$/Kgs.	0.31	0.30	0.30	0.34	0.29	0.26	0.28	0.28		
Plantains	$/Kgs.	0.17	0.16	0.14	0.08	0.04	0.07	0.07	0.08	0.06	0.05
Cigars	$/Kgs.	12.54	13.48	13.20	10.41	12.30	10.60	9.72	8.89		
Pro. Seed & Material	$/Kgs.	0.70	0.83	1.09	0.98	1.36	0.90	0.76	0.45		
Molasses	$/Kgs.	0.09	0.10	0.05	0.06	0.07	0.06	0.07	0.07		
Fruit Extracts	$/Kgs.			0.55	0.73	0.96	1.00	0.92	1.05		
Sesame Seeds	$/Kgs.	0.74	0.58	0.84	1.08	0.89	0.98	0.65	0.68		
Corn Starch	$/Kgs.	0.48	0.66	0.79	0.96	1.11	1.13	0.81	0.85		
Citrus	$/Kgs.	0.13	0.15	0.13	0.06	0.05	0.04	0.04	0.04		
Coconut	$/Kgs.	0.25	0.24	0.24	0.26	0.27	0.28	0.21	0.21		
Starches	$/Kgs.	0.42	0.49	0.59	0.51	0.55	0.55	0.64	0.58		
Elaborated Tobacco	$/Kgs.	5.88	6.87	6.52	9.96	8.21	7.76	10.53	10.71		
Palm Nuts	$/Kgs.	0.26	0.25	0.21	0.22	0.34	0.27	0.21	0.13		
Honey	$/Kgs.	0.75	0.67	0.80	0.86	0.60	0.46	0.35	0.47		
Cut Flowers & Foliage	$/Kgs.	1.31	0.55	0.50	1.00				2.89		

Exhibit 7.14 Export of Non-Traditional Products, 1980 to 1989, Continued...

Description	Unit	Year									
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
VALUE											
Shrimp	Ths. Dollars	14,605	16,657	15,284	19,989	24,223	20,372	25,754	34,650	48,609	49,674
Lobster	Ths. Dollars	8,819	9,578	12,692	15,995	25,557	20,575	19,613	23,761	33,391	29,626
Shrimp+Lobster	Ths. Dollars	23,424	26,236	27,977	35,984	49,780	40,948	45,367	58,411	82,000	79,300
Pineapple	Ths. Dollars	7,776	7,104	8,777	12,227	14,137	11,482	10,309	13,129	12,632	9,409
Palm Oil	Ths. Dollars	0	0	0	0	11,250	9,460	7,235	9,364	8,139	4,401
Melon	Ths. Dollars	800	450	700	1,400	1,300	1,850	3,450	6,700		
Fruits in Conserve	Ths. Dollars	4,434	5,402	4,717	3,907	5,049	5,799	6,214	4,410		
Cocoa	Ths. Dollars	950	800	1,800	1,850	3,100	3,150	2,800	3,700		
Grapefruit	Ths. Dollars	3,229	3,384	2,614	3,592	3,159	2,621	4,375	3,648		
Plantains	Ths. Dollars	2,472	2,219	2,220	1,329	750	2,012	2,846	3,606	2,316	1,673
Cigars	Ths. Dollars	3,411	5,499	5,728	6,249	6,497	4,485	4,901	2,463		
Prop. Seed & Material	Ths. Dollars	1,400	1,600	2,800	2,100	2,300	2,250	1,900	2,300		
Molasses	Ths. Dollars	2,750	3,800	2,750	2,550	3,100	2,250	2,450	1,650		
Fruit Extracts	Ths. Dollars	0	0	800	700	1,450	2,350	2,100	1,050		
Sesame Seeds	Ths. Dollars	2,650	1,250	600	500	900	1,400	850	600		
Corn Starch	Ths. Dollars	1,700	1,900	2,250	2,400	2,550	1,250	700	450		
Citrus	Ths. Dollars	1,302	553	750	307	210	127	182	228		
Coconut	Ths. Dollars	683	901	542	541	564	438	391	225		
Starches	Ths. Dollars	700	1,350	800	1,300	1,300	750	150	200		
Elaborated Tobacco	Ths. Dollars	700	1,800	1,200	2,400	1,100	450	200	150		
Palm Nuts	Ths. Dollars	150	100	200	650	650	450	250	50		
Honey	Ths. Dollars	800	650	950	600	500	300	300	50		
Cut Flowers & Foliage	Ths. Dollars	70	12	1	1	0	0	0	41		
TOTAL	Ths. Dollars	59,399	65,009	68,172	80,584	109,644	93,820	96,967	112,423	105,087	94,783

Source: Department of Economic Studies, Central Bank.

HONDURAS - POLICY REFORMS - NON-TRADITIONAL EXPORTS

Exhibit 7.15 Percent Change of Export of Non-Traditional Products, 1981 to 1989.

Description	Unit	Year								
		1981	1982	1983	1984	1985	1986	1987	1988	1989
VOLUME	(Ths. Units)									
Shrimp	Kgs.	20.0%	-5.4%	14.0%	-26.7%	-15.9%	6.5%	53.1%	30.2%	3.0%
Lobster	Kgs.	-13.3%	15.3%	33.1%	45.5%	-6.4%	-9.3%	-3.5%	48.5%	-7.6%
Shrimp+Lobster	Kgs.	11.4%	-1.2%	18.5%	-7.5%	-11.9%	-0.5%	30.2%	35.7%	-0.5%
Pineapple	Kgs.	1.5%	23.5%	-0.7%	3.9%	-9.8%	-5.8%	27.3%	-11.3%	3.9%
Palm Oil	Kgs.					19.6%	42.8%	-2.0%	-33.1%	-50.8%
Melon	Kgs.	-22.3%	24.5%	66.5%	6.8%	46.8%	127.2%	94.8%		
Fruits in Conserve	Kgs.	-8.8%	23.0%	-44.8%	28.4%	-0.2%	6.1%	-30.9%		
Cocoa	Kgs.	-2.1%	101.5%	4.4%	57.3%	-1.0%	26.9%	15.5%		
Grapefruit	Kgs.	6.0%	-22.7%	22.4%	1.7%	-7.4%	56.1%	-16.6%		
Plantains	Kgs.	-1.4%	12.8%	0.9%	16.3%	47.7%	39.1%	23.5%	-12.6%	-20.3%
Cigars	Kgs.	50.0%	6.4%	38.2%	-12.0%	-19.9%	19.1%	-45.0%		
Pro. Seed & Material	Kgs.	-3.5%	33.0%	-16.5%	-21.4%	48.5%	-0.5%	104.6%		
Molasses	Kgs.	15.9%	66.0%	-32.6%	11.4%	-10.8%	-15.5%	-31.4%		
Fruit Extracts	Kgs.			-34.6%	58.2%	56.0%	-3.5%	-56.1%		
Sesame Seeds	Kgs.	-39.3%	-66.8%	-35.6%	118.2%	41.6%	-8.4%	-32.3%		
Corn Starch	Kgs.	-18.8%	-1.1%	-11.7%	-8.1%	-52.0%	-21.6%	-38.8%		
Citrus	Kgs.	-62.3%	59.9%	-11.2%	-17.8%	-33.5%	40.5%	50.9%		
Coconut	Kgs.	35.2%	-39.9%	-7.5%	-0.8%	-25.1%	22.0%	-42.7%		
Starches	Kgs.	63.2%	-50.4%	85.2%	-7.2%	-41.9%	-82.7%	46.6%		
Elaborated Tobacco	Kgs.	120.2%	-29.8%	31.0%	-44.4%	-56.7%	-67.2%	-26.3%		
Palm Nuts	Kgs.	-30.2%	140.5%	214.1%	-37.6%	-12.1%	-26.8%	-68.9%		
Honey	Kgs.	-8.3%	21.9%	-41.7%	19.7%	-22.3%	32.8%	-87.6%		
Cut Flowers & Foliage	Kgs.	-58.5%	-95.5%	0.0%	-100.0%					
PRICE										
Shrimp	$/Kgs.	-5.0%	-3.0%	14.7%	65.4%	0.0%	18.7%	-12.1%	7.7%	-0.8%
Lobster	$/Kgs.	25.2%	14.9%	-5.3%	9.8%	-14.0%	5.1%	25.5%	-5.4%	-3.9%
Shrimp and Lobster	$/Kgs.	0.6%	8.0%	8.5%	49.6%	-6.6%	11.3%	-1.1%	3.4%	-2.8%
Pineapple	$/Kgs.	-10.0%	0.0%	40.3%	11.3%	-9.9%	-4.7%	0.0%	8.4%	-28.3%
Palm Oil	$/Kgs.					-29.7%	-46.5%	32.1%	30.0%	9.9%
Melon	$/Kgs.	-27.6%	25.0%	20.1%	-13.0%	-3.1%	-17.9%	-0.5%		
Fruits in Conserve	$/Kgs.	33.5%	-29.0%	50.1%	0.6%	15.1%	1.0%	2.7%		
Cocoa	$/Kgs.	-14.0%	11.7%	-1.5%	6.5%	2.7%	-30.0%	14.5%		
Grapefruit	$/Kgs.	-1.1%	-0.0%	12.3%	-13.5%	-10.4%	6.9%	-0.0%		
Plantains	$/Kgs.	-8.9%	-11.3%	-40.7%	-51.5%	81.6%	1.7%	2.6%	-26.5%	-9.4%
Cigars	$/Kgs.	7.5%	-2.1%	-21.1%	18.2%	-13.8%	-8.3%	-8.6%		
Pro. Seed & Material	$/Kgs.	18.5%	31.6%	-10.2%	39.4%	-34.1%	-15.3%	-40.8%		
Molasses	$/Kgs.	19.3%	-56.4%	37.7%	9.2%	-18.7%	28.8%	-1.8%		
Fruit Extracts	$/Kgs.			33.8%	31.0%	3.9%	-7.4%	13.9%		
Sesame Seeds	$/Kgs.	-22.2%	44.7%	29.4%	-17.5%	9.9%	-33.7%	4.3%		
Corn Starch	$/Kgs.	37.7%	19.8%	20.8%	15.6%	2.2%	-28.6%	5.1%		
Citrus	$/Kgs.	12.6%	-15.2%	-53.9%	-16.8%	-8.8%	1.7%	-16.9%		
Coconut	$/Kgs.	-2.4%	0.1%	7.9%	5.0%	3.6%	-26.7%	0.5%		
Starches	$/Kgs.	18.2%	19.6%	-12.3%	7.8%	-0.8%	15.4%	-9.1%		
Elaborated Tobacco	$/Kgs.	16.8%	-5.1%	52.7%	-17.6%	-5.5%	35.7%	1.8%		
Palm Nuts	$/Kgs.	-4.5%	-16.8%	3.5%	60.2%	-21.2%	-24.1%	-35.8%		
Honey	$/Kgs.	-11.4%	19.9%	8.4%	-30.4%	-22.8%	-24.7%	34.9%		
Cut Flowers & Foliage	$/Kgs.	-58.4%	-8.3%	100.0%	-100.0%					

Exhibit 7.15 Continued...

Description	Unit	Year								
		1981	1982	1983	1984	1985	1986	1987	1988	1989
VALUE										
Shrimp	Ths. Dollars	14.1%	-8.2%	30.8%	21.2%	-15.9%	26.4%	34.5%	40.3%	2.2%
Lobster	Ths. Dollars	8.6%	32.5%	26.0%	59.8%	-19.5%	-4.7%	21.2%	40.5%	-11.3%
Shrimp+Lobster	Ths. Dollars	12.0%	6.6%	28.6%	38.3%	-17.7%	10.8%	28.8%	40.4%	-3.3%
Pineapple	Ths. Dollars	-8.6%	23.6%	39.3%	15.6%	-18.8%	-10.2%	27.4%	-3.8%	-25.5%
Palm Oil	Ths. Dollars					-15.9%	-23.5%	29.4%	-13.1%	-45.9%
Melon	Ths. Dollars	-43.8%	55.6%	100.0	-7.1%	42.3%	86.5%	94.2%		
Fruits in Conserve	Ths. Dollars	21.8%	-12.7%	-17.2%	29.2%	14.9%	7.1%	-29.0%		
Cocoa	Ths. Dollars	-15.8%	125.0	2.8%	67.6%	1.6%	-11.1%	32.1%		
Grapefruit	Ths. Dollars	4.8%	-22.8%	37.4%	-12.1%	-17.0%	66.9%	-16.6%		
Plantains	Ths. Dollars	-10.2%	0.0%	-40.1%	-43.5%	168.2	41.5%	26.7%	-35.8%	-27.8%
Cigars	Ths. Dollars	61.2%	4.2%	9.1%	4.0%	-31.0%	9.3%	-49.7%		
Prop. Seed & Material	Ths. Dollars	14.3%	75.0%	-25.0%	9.5%	-2.2%	-15.6%	21.1%		
Molasses	Ths. Dollars	38.2%	-27.6%	-7.3%	21.6%	-27.4%	8.9%	-32.7%		
Fruit Extracts	Ths. Dollars			-12.5%	107.1%	62.1%	-10.6%	-50.0%		
Sesame Seeds	Ths. Dollars	-52.8%	-52.0%	-16.7%	80.0%	55.6%	-39.3%	-29.4%		
Corn Starch	Ths. Dollars	11.8%	18.4%	6.7%	6.3%	-51.0%	-44.0%	-35.7%		
Citrus	Ths. Dollars	-57.5%	35.5%	-59.1%	-31.6%	-39.4%	42.9%	25.3%		
Coconut	Ths. Dollars	31.9%	-39.8%	-0.2%	4.2%	-22.4%	-10.6%	-42.5%		
Starches	Ths. Dollars	92.9%	-40.7%	62.5%	0.0%	-42.3%	-80.0%	33.3%		
Elaborated Tobacco	Ths. Dollars	157.1	-33.3%	100.0	-54.2%	-59.1%	-55.6%	-25.0%		
Palm Nuts	Ths. Dollars	-33.3%	100.0	225.0	0.0%	-30.8%	-44.4%	-80.0%		
Honey	Ths. Dollars	-18.8%	46.2%	-36.8%	-16.7%	-40.0%	0.0%	-83.3%		
Cut Flowers & Foliage	Ths. Dollars	-82.7%	-95.8%	100.0	-100.0%					
TOTAL	Ths. Dollars	9.4%	4.9%	18.2%	36.1%	-14.4%	3.4%	15.9%	-6.5%	-9.8%

Source: Exhibit 7.14.

Exhibit 7.16 Projected Volume, Price, and Value of Other Non-Traditional Exports, 1989, and Estimates to 1998.

Commodity	Unit of Measurement	Year									
		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
VOLUME											
Melon	Ths. 40 lbs. boxes		2,027	2,577	3,180	3,835	4,542	5,302	6,189	7,224	8,433
Fruits in Conserve	Ths. Kgs.	7,903	7,903	7,903	7,903	7,903	7,903	7,903	7,903	7,903	7,903
Pineapple	Ths. 40 lbs. boxes	1,879	4,059	4,234	4,422	4,614	4,810	6,008	6,609	7,270	7,997
Mango	Ths. 10 lbs. boxes	3	4	134	258	410	590	800	1,085	1,471	1,994
Cacao	Metric Tons		2	3	4	5	5	7	10	14	19
Grapefruit	Ths. Kgs.	12,986	12,986	12,986	12,986	12,986	12,986	12,986	12,986	12,986	12,986
Cigars	Ths. Kgs.	277	277	277	277	277	277	277	277	277	277
Prop. Seed & Mater.	Ths. Kgs.	5,116	5,116	5,116	5,116	5,116	5,116	5,116	5,116	5,116	5,116
Molasses	Ths. Kgs.	23,628	23,628	23,628	23,628	23,628	23,628	23,628	23,628	23,628	23,628
Fruit Extracts	Ths. Kgs.	999	999	999	999	999	999	999	999	999	999
Sesame Seeds	Ths. Kgs.	883	883	883	883	883	883	883	883	883	883
Corn Starch	Ths. Kgs.	531	531	531	531	531	531	531	531	531	531
Citrus	Ths. Kgs.	6,100	6,100	6,100	6,100	6,100	6,100	6,100	6,100	6,100	6,100
Coconut	Ths. Kgs.	1,078	1,078	1,078	1,078	1,078	1,078	1,078	1,078	1,078	1,078
Starches	Ths. Kgs.	346	346	346	346	346	346	346	346	346	346
Elaborated Tobacco	Ths. Kgs.	14	14	14	14	14	14	14	14	14	14
Palm Nuts	Ths. Kgs.	378	378	378	378	378	378	378	378	378	378
Ferns	Ths. 25 Bunch boxes		56	81	108	136	165	196	233	277	329
Ornamental Plants	Million plants		140	197	255	312	370	427	493	570	658
Cucumber	Ths. 50 lbs. boxes		276	356	445	543	650	765	900	1,060	1,247
Squash	Ths. 55 lbs. boxes		104	154	207	265	328	395	476	573	690
Palmito	Ths. Kilograms			127	253	380	507	634	793	991	1,240
Onion	Metric Tons		2	3	5	7	8	10	13	16	20
Yucca	Ths. 50 lbs. boxes			28	56	84	112	140	175	219	273
Asparagus	Ths. 12 lbs. boxes			8	17	25	33	42	53	68	87
Snow Pea	Ths. 10 lbs. boxes			90	180	270	360	450	563	703	879
Okra	Ths. 20 lbs. boxes		45	63	82	102	122	144	170	201	237

Exhibit 7.16. Continued....

Commodity	Unit of Measurement	Year									
		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
PRICES											
Melon	$/40 lbs. box		4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Fruits in Conserve	$/Kg.	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Pineapple	$/40 lbs. box	5.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01
Mango	$/40 lbs. box	1.35	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Cacao	$/Metric Tons		1,434	1,434	1,434	1,434	1,434	1,434	1,434	1,434	1,434
Grapefruit	$/Kg.	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
Cigars	$/Kg.	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89
Prop. Seed & Mater.	$/Kg.	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Molasses	$/Kg.	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Fruit Extracts	$/Kg.	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
Sesame Seeds	$/Kg.	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Corn Starch	$/Kg.	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Citrus	$/Kg.	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Coconut	$/Kg.	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Starches	$/Kg.	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Elaborated Tobacco	$/Kg.	10.71	10.71	10.71	10.71	10.71	10.71	10.71	10.71	10.71	10.71
Palm Nuts	$/Kg.	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Ferns	$/25 Bunch box		25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82	25.82
Ornamental Plants	$/Million plants		10.70	10.70	10.70	10.70	10.70	10.70	10.70	10.70	10.70
Cucumber	$/50 lbs. box		3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Squash	$/55 lbs. boxes		2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85	2.85
Palmito	$/Kilograms			2.29	2.29	2.29	2.29	2.29	2.29	2.29	2.29
Onion	$/Metric Tons		200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00
Yucca	$/50 lbs. box			3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Asparagus	$/12 lbs. boxes			6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25
Snow Pea	$/10 lbs. boxes			3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30
Okra	$20 lbs. boxes		3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98	3.98

Exhibit 7.16. Continued....

Commodity	Unit of Measurement	Year									
		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
VALUE											
Melon	Ths. Dollars		9,122	11,597	14,310	17,258	20,439	23,859	27,851	32,510	37,949
Fruits in Conserve	Ths. Dollars	4,584	4,584	4,584	4,584	4,584	4,584	4,584	4,584	4,584	4,584
Pineapple	Ths. Dollars	9,415	16,277	16,978	17,732	18,502	19,288	24,092	26,501	29,151	32,067
Mango	Ths. Dollars	4	18	603	1,161	1,845	2,655	3,600	4,881	6,618	8,974
Cacao	Ths. Dollars		2,868	4,302	5,736	7,170	7,170	10,038	14,053	19,674	27,544
Grapefruit	Ths. Dollars	3,636	3,636	3,636	3,636	3,636	3,636	3,636	3,636	3,636	3,636
Cigars	Ths. Dollars	2,463	2,463	2,463	2,463	2,463	2,463	2,463	2,463	2,463	2,463
Prop. Seed & Mater.	Ths. Dollars	2,302	2,302	2,302	2,302	2,302	2,302	2,302	2,302	2,302	2,302
Molasses	Ths. Dollars	1,654	1,654	1,654	1,654	1,654	1,654	1,654	1,654	1,654	1,654
Fruit Extracts	Ths. Dollars	1,049	1,049	1,049	1,049	1,049	1,049	1,049	1,049	1,049	1,049
Sesame Seeds	Ths. Dollars	600	600	600	600	600	600	600	600	600	600
Corn Starch	Ths. Dollars	451	451	451	451	451	451	451	451	451	451
Citrus	Ths. Dollars	244	244	244	244	244	244	244	244	244	244
Coconut	Ths. Dollars	226	226	226	226	226	226	226	226	226	226
Starches	Ths. Dollars	201	201	201	201	201	201	201	201	201	201
Elaborated Tobacco	Ths. Dollars	150	150	150	150	150	150	150	150	150	150
Palm Nuts	Ths. Dollars	49	49	49	49	49	49	49	49	49	49
Ferns	Ths. Dollars		1,446	2,091	2,789	3,512	4,260	5,061	6,012	7,141	8,483
Ornamental Plants	Ths. Dollars		1,498	2,112	2,726	3,341	3,955	4,569	5,278	6,098	7,045
Cucumber	Ths. Dollars		828	1,068	1,335	1,629	1,950	2,295	2,701	3,179	3,741
Squash	Ths. Dollars		296	439	590	755	935	1,126	1,355	1,633	1,966
Palmito	Ths. Dollars			291	579	870	1,161	1,452	1,816	2,270	2,839
Onion	Ths. Dollars		400	600	1,000	1,400	1,600	2,000	2,500	3,125	3,906
Yucca	Ths. Dollars			84	168	252	336	420	525	656	820
Asparagus	Ths. Dollars			50	106	156	206	263	334	425	541
Snow Pea	Ths. Dollars			297	594	891	1,188	1,485	1,856	2,320	2,900
Okra	Ths. Dollars		179	251	326	406	486	573	676	798	942
TOTAL											
High Growth Scenario		27,028	50,541	58,372	66,762	75,596	83,238	98,441	113,950	133,210	157,328
Medium Growth Scenario		27,028	50,541	54,457	58,652	63,068	66,890	74,491	82,245	91,876	103,935
Low Growth Scenario		27,028	50,541	52,499	54,596	56,805	58,715	62,516	66,393	71,208	77,238

Source: FPX volume projections.

Exhibit 7.17 Percent Change of Volume, and Value of Other Non-Traditional Exports, 1990 to 1998.

Commodity	Unit of Measurement	Year								
		1990	1991	1992	1993	1994	1995	1996	1997	1998
VOLUME										
Melon	Ths. 40 lbs. boxes		27.1%	23.4%	20.6%	18.4%	16.7%	16.7%	16.7%	16.7%
Fruits in Conserve	Ths. Kgs.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pineapple	Ths. 40 lbs. boxes	116.0%	4.3%	4.4%	4.3%	4.2%	24.9%	10.0%	10.0%	10.0%
Mango	Ths. 10 lbs. boxes	27.9%	3250.0	92.5%	58.9%	43.9%	35.6%	35.6%	35.6%	35.6%
Cacao	Metric Tons		50.0%	33.3%	25.0%	0.0%	40.0%	40.0%	40.0%	40.0%
Grapefruit	Ths. Kgs.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cigars	Ths. Kgs.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Prop. Seed & Mater.	Ths. Kgs.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Molasses	Ths. Kgs.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fruit Extracts	Ths. Kgs.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sesame Seeds	Ths. Kgs.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Corn Starch	Ths. Kgs.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Citrus	Ths. Kgs.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Coconut	Ths. Kgs.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Starches	Ths. Kgs.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Elaborated Tobacco	Ths. Kgs.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Palm Nuts	Ths. Kgs.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ferns	Ths. 25 Bunch boxes		44.6%	33.3%	25.9%	21.3%	18.8%	18.8%	18.8%	18.8%
Ornamental Plants	Million plants		41.0%	29.1%	22.5%	18.4%	15.5%	15.5%	15.5%	15.5%
Cucumber	Ths. 50 lbs. boxes		29.0%	25.0%	22.0%	19.7%	17.7%	17.7%	17.7%	17.7%
Squash	Ths. 55 lbs. boxes		48.1%	34.4%	28.0%	23.8%	20.4%	20.4%	20.4%	20.4%
Palmito	Ths. Kilograms			99.2%	50.2%	33.4%	25.0%	25.1%	25.1%	25.1%
Onion	Metric Tons		50.0%	66.7%	40.0%	14.3%	25.0%	25.0%	25.0%	25.0%
Yucca	Ths. 50 lbs. boxes			100.0%	50.0%	33.3%	25.0%	25.0%	25.0%	25.0%
Asparagus	Ths. 12 lbs. boxes			112.5%	47.1%	32.0%	27.3%	27.3%	27.3%	27.3%
Snow Pea	Ths. 10 lbs. boxes			100.0%	50.0%	33.3%	25.0%	25.0%	25.0%	25.0%
Okra	Ths. 20 lbs. boxes		40.0%	30.2%	24.4%	19.6%	18.0%	18.0%	18.0%	18.0%

Exhibit 7.17. Continued....

Commodity	Unit of Measurement	Year								
		1990	1991	1992	1993	1994	1995	1996	1997	1998
PRICES										
Melon	$/40 lbs. box		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fruits in Conserve	$/Kg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pineapple	$/40 lbs. box	-20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mango	$/40 lbs. box	233.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cacao	$/Metric Tons		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grapefruit	$/Kg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cigars	$/Kg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Prop. Seed & Mater.	$/Kg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Molasses	$/Kg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fruit Extracts	$/Kg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sesame Seeds	$/Kg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Corn Starch	$/Kg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Citrus	$/Kg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Coconut	$/Kg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Starches	$/Kg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Elaborated Tobacco	$/Kg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Palm Nuts	$/Kg.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ferns	$/25 Bunch box		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ornamental Plants	$/Million plants		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cucumber	$/50 lbs. box		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Squash	$/55 lbs. boxes		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Palmito	$/Kilograms			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Onion	$/Metric Tons		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yucca	$/50 lbs. box			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Asparagus	$/12 lbs. boxes			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Snow Pea	$/10 lbs. boxes			0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Okra	$20 lbs. boxes		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Exhibit 7.17. Continued....

Commodity	Unit of Measurement	Year								
		1990	1991	1992	1993	1994	1995	1996	1997	1998
VALUE										
Melon	Ths. Dollars		27.1%	23.4%	20.6%	18.4%	16.7%	16.7%	16.7%	16.7%
Fruits in Conserve	Ths. Dollars	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pineapple	Ths. Dollars	72.9%	4.3%	4.4%	4.3%	4.2%	24.9%	10.0%	10.0%	10.0%
Mango	Ths. Dollars	326.2%	3250.0%	92.5%	58.9%	43.9%	35.6%	35.6%	35.6%	35.6%
Cacao	Ths. Dollars		50.0%	33.3%	25.0%	0.0%	40.0%	40.0%	40.0%	40.0%
Grapefruit	Ths. Dollars	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cigars	Ths. Dollars	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Prop. Seed & Mater.	Ths. Dollars	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Molasses	Ths. Dollars	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Fruit Extracts	Ths. Dollars	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sesame Seeds	Ths. Dollars	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Corn Starch	Ths. Dollars	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Citrus	Ths. Dollars	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Coconut	Ths. Dollars	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Starches	Ths. Dollars	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Elaborated Tobacco	Ths. Dollars	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Palm Nuts	Ths. Dollars	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ferns	Ths. Dollars		44.6%	33.3%	25.9%	21.3%	18.8%	18.8%	18.8%	18.8%
Ornamental Plants	Ths. Dollars		41.0%	29.1%	22.5%	18.4%	15.5%	15.5%	15.5%	15.5%
Cucumber	Ths. Dollars		29.0%	25.0%	22.0%	19.7%	17.7%	17.7%	17.7%	17.7%
Squash	Ths. Dollars		48.1%	34.4%	28.0%	23.8%	20.4%	20.4%	20.4%	20.4%
Palmito	Ths. Dollars			99.2%	50.2%	33.4%	25.0%	25.1%	25.0%	25.1%
Onion	Ths. Dollars		50.0%	66.7%	40.0%	14.3%	25.0%	25.0%	25.0%	25.0%
Yucca	Ths. Dollars			100.0%	50.0%	33.3%	25.0%	25.0%	25.0%	25.0%
Asparagus	Ths. Dollars			112.5%	47.1%	32.0%	27.3%	27.3%	27.3%	27.3%
Snow Pea	Ths. Dollars			100.0%	50.0%	33.3%	25.0%	25.0%	25.0%	25.0%
Okra	Ths. Dollars		40.0%	30.2%	24.4%	19.6%	18.0%	18.0%	18.0%	18.0%
TOTAL										
HIGH GROWTH SCENARIO		87.0%	15.5%	14.4%	13.2%	10.1%	18.3%	15.8%	16.9%	18.1%
MEDIUM GROWTH SCENARIO		87.0%	7.7%	7.7%	7.5%	6.1%	11.4%	10.4%	11.7%	13.1%
LOW GROWTH SCENARIO		87.0%	3.9%	4.0%	4.0%	3.4%	6.5%	6.2%	7.3%	8.5%

Source: Exhibit 7.16.

HONDURAS - POLICY REFORMS

Exhibit 7.18 Value Added, Other Crops, 1980 to 1989.

Description	Year									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
VALUE										
Current Million Lps.	72	81	82	92	97	92	90	117	116	117
1978 Million Lps.	61	66	66	70	72	70	70	77	77	87
PERCENT CHANGE										
Current Million Lps.		12.5%	1.2%	12.2	5.4%	-5.2%	-2.2%	30.0	-0.9%	0.9%
1978 Million Lps.		8.2%	0.0%	6.1%	2.9%	-2.8%	0.0%	10.0	0.0%	13.0

Source: Central Bank of Honduras, as reported in UPSA, "Compendio Estadistico Agropecuario 1990." Tegucigalpa, Honduras: Secretaria de Recursos Naturales, 1990. p. 45.

Exhibit 7.19 Projection of Value Added for Other Crops, 1989 to 1990.

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
HIGH GROWTH SCENARIO										
1978 Million Lps.	87	60	69	79	90	99	117	135	158	187
Million Dollars	33	23	27	30	35	38	45	52	61	72
MEDIUM GROWTH SCENARIO										
1978 Million Lps.	87	60	65	70	75	79	88	98	109	123
Million Dollars	33	23	25	27	29	31	34	38	42	47
LOW GROWTH SCENARIO										
1978 Million Lps.	87	60	62	65	67	70	74	79	85	92
Million Dollars	33	23	24	25	26	27	29	30	32	35
PERCENT CHANGE										
HIGH GROWTH SCENARIO										
1978 Million Lps.		-31.0%	15.5	14.4	13.2	10.1	18.3	15.8	16.9	18.1
Million Dollars		-31.0%	15.5	14.4	13.2	10.1	18.3	15.8	16.9	18.1
MEDIUM GROWTH SCENARIO										
1978 Million Lps.		-31.0%	7.7%	7.7%	7.5%	6.1%	11.4	10.4	11.7	13.1
Million Dollars		-31.0%	7.7%	7.7%	7.5%	6.1%	11.4	10.4	11.7	13.1
LOW GROWTH SCENARIO										
1978 Million Lps.		-31.0%	3.9%	4.0%	4.0%	3.4%	6.5%	6.2%	7.3%	8.5%
Million Dollars		-31.0%	3.9%	4.0%	4.0%	3.4%	6.5%	6.2%	7.3%	8.5%

Source: Based on growth rates on Exhibit 7.18.

8. IMPACT ON THE POULTRY SECTOR

8.1 Overview

Poultry production includes chickens, other birds, and eggs. Chickens and eggs are produced on both commercial and non-commercial farms. These two products represent most of the poultry production, while other birds contribute very little. There are four major commercial chicken producers in Honduras: PRONORSA, CADECA, PRASA, and CORTIJO.

As in livestock, poultry production has been grossly underestimated by the Central Bank. The Central Bank uses several sources of data to estimate production. These include reports from commercial producers, consumption surveys, and other estimates. However, a comparison of their statistics with other sources indicate significant differences. These sources are the Department of Norms and Controls of the Ministry of Natural Resources (MNR), and the agricultural survey of 1989.

The Department of Norms and Controls of the MNR supervises and approves the slaughter of chickens on commercial farms. This department reports a total of 64.6 million lbs. of chicken approved for human consumption in the major commercial farms in 1989. This number is considerably higher that the Central Bank's estimate of 40 million lbs. for 1989 (Exhibit 8.1). Thus, the Central Bank's figures are even lower than the production from commercial farmers.

Besides the commercial farm production, production from non-commercial farms is also important. Honduras' population is still 60 percent rural, and most people in the rural areas have a few chickens in their back yards. Production from this source is very significant. The agricultural survey of 1989 reports a total production from non-commercial farms of 3.8 million lbs. of chicken for June 1988 and 3.7 million lbs. for December 1988. An average of these two figures results in 3.77 million lbs. per month.[1] This monthly figure times 12 yields an annual production of 45.3 million lbs. for 1988. Assuming an annual growth of 2.8 percent, the production for 1989 results in 46.5 million lbs. Adding this number to the 64.6 million lbs. reported by the commercial farms results in 111.1 million lbs. of chicken produced in 1989.

The Central Bank estimated the production of eggs in 621 million units for 1989 (Exhibit 8.1). However, they did not have information available of how much came from commercial farms. Francisco Cepeda of UPSA estimates a total of 104 farms in production. He does not have precise estimates of production at the moment, but it is close to 500 million eggs a year. The agricultural survey of 1989 reports a production from non-commercial farms of 63.4 million eggs in June 1988 and 59.9 million for December 1988, for the

[1] Dirección General de Estadística y Censos, "Encuesta Agrícola Nacional de Propósitos Múltiples, E.A.N. - 1989, Tomo II." Tegucigalpa, Honduras: SECPLAN, Agosto, 1990. p.20.

Exhibit 8.1 Production, Prices and Value of Production For Chicken, Other Birds, and Eggs, 1978 to 1989.

Description	Year										p/	e/
	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
PRODUCTION												
Chicken (Million Lbs.)	29.34	30.15	31.00	31.88	32.79	33.74	34.72	35.74	36.77	37.84	38.94	40.07
Other birds (Million Lbs.)	1.06	1.09	1.12	1.15	1.19	1.22	1.26	1.29	1.33	1.37	1.41	1.45
Eggs (Million Units)	451	468	455	507	503	514	538	553	569	585	604	621
PRODUCER PRICES												
Chicken (Lps./QQ)	109	114	120	129	133	140	144	143	138	142	146	168
Other birds (Lps./QQ)	216	227	238	255	264	277	285	284	273	282	290	334
Eggs (Lps./360 eggs box)	37.08	37.08	46.08	41.04	45.36	48.24	41.76	41.40	41.40	41.40	41.76	47.88
VALUE OF PRODUCTION (Million Lempiras)												
Chicken	31.98	34.37	37.26	41.06	43.71	47.23	49.96	51.18	50.60	53.73	56.97	67.43
Other birds	2.29	2.48	2.67	2.94	3.13	3.38	3.58	3.67	3.63	3.86	4.09	4.84
Eggs	46.40	48.25	58.25	57.83	63.34	68.94	62.41	63.62	65.47	67.27	70.06	82.59
Total	81	85	98	102	110	120	116	118	120	125	131	155
VALUE OF PRODUCTION (PERCENT DISTRIBUTION)												
Chicken	39.6%	40.4%	38.0%	40.3%	39.7%	39.5%	43.1%	43.2%	42.3%	43.0%	43.4%	43.5%
Other Birds	2.8%	2.9%	2.7%	2.9%	2.8%	2.8%	3.1%	3.1%	3.0%	3.1%	3.1%	3.1%
Eggs	57.5%	56.7%	59.3%	56.8%	57.5%	57.7%	53.8%	53.7%	54.7%	53.9%	53.4%	53.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
VALUE ADDED (Million Lempiras)												
Chicken			14.80	16.53	19.04	21.73	21.97	23.33	23.67	25.82	27.37	27.87
Other Birds			1.06	1.18	1.37	1.56	1.58	1.68	1.70	1.86	1.96	2.00
Eggs			23.14	23.28	27.59	31.71	27.45	29.00	30.63	32.32	33.66	34.13
Total			39.00	41.00	48.00	55.00	51.00	54.00	56.00	60.00	63.00	64.00
VALUE ADDED (1978 Million Lempiras)												
Chicken			12.52	14.52	15.47	16.99	18.10	16.85	18.18	19.36	19.99	20.46
Other Birds			0.90	1.04	1.11	1.22	1.30	1.21	1.31	1.39	1.43	1.47
Eggs			19.58	20.44	22.42	24.80	22.61	20.94	23.32	24.24	24.58	25.07
Total			33.00	36.00	39.00	43.00	42.00	39.00	43.00	45.00	46.00	47.00
PERCENT CHANGE												
PRODUCTION												
Chicken (Million Lbs.)		2.7%	2.7%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Other birds (Million Lbs.)		2.7%	2.7%	2.8%	2.8%	2.8%	2.9%	2.9%	2.8%	2.8%	2.8%	2.8%
Eggs (Million Units)		3.8%	-2.9%	10.3%	-0.9%	2.3%	4.4%	2.7%	2.8%	2.7%	3.1%	2.7%
PRODUCER PRICES												
Chicken (Lps./QQ)		4.4%	5.2%	6.7%	3.4%	4.8%	2.7%	-0.5%	-4.1%	3.1%	2.9%	13.1%
Other birds (Lps./QQ)		4.8%	4.6%	6.7%	3.4%	4.7%	2.8%	-0.4%	-4.0%	3.2%	2.8%	13.2%
Eggs (Lps./360 eggs box)		0.0%	19.5%	-12.3%	9.5%	6.0%	-15.5%	-0.9%	0.0%	0.0%	0.9%	12.8%
VALUE OF PRODUCTION (Million Lempiras)												
Chicken		7.0%	7.8%	9.3%	6.1%	7.5%	5.5%	2.4%	-1.1%	5.8%	5.7%	15.5%
Other birds		7.5%	7.2%	9.3%	6.1%	7.3%	5.6%	2.5%	-1.1%	5.9%	5.5%	15.6%
Eggs		3.8%	17.2%	-0.7%	8.7%	8.1%	-10.5%	1.9%	2.8%	2.7%	4.0%	15.2%
Total		5.2%	13.3%	3.6%	7.6%	7.8%	-3.1%	2.1%	1.0%	4.1%	4.8%	15.3%
Value Added (Million Lempiras)												
Chicken				10.5%	13.2%	12.4%	1.1%	5.8%	1.5%	8.3%	5.7%	1.8%
Other birds				10.5%	13.2%	12.3%	1.2%	5.9%	1.5%	8.4%	5.5%	1.8%
Eggs				0.6%	15.6%	13.0%	-15.5%	5.3%	5.3%	5.2%	4.0%	1.4%
Total				4.9%	14.6%	12.7%	-7.8%	5.6%	3.6%	6.7%	4.8%	1.6%
Value Added (1978 Million Lempiras)												
Chicken				13.7%	6.2%	8.9%	6.1%	-7.4%	7.3%	6.1%	3.1%	2.3%
Other birds				13.7%	6.2%	8.8%	6.3%	-7.3%	7.3%	6.3%	2.9%	2.4%
Eggs				4.2%	8.8%	9.6%	-9.7%	-7.9%	10.9%	3.0%	1.4%	1.9%
Total				8.3%	7.7%	9.3%	-2.4%	-7.7%	9.3%	4.4%	2.2%	2.1%

p/ preliminary. e/ estimate.

Source: Lic. Manuel Rodriguez, Economic Studies Department, Central Bank of Honduras.

traditional sector (non-commercial farms).[1] An average results in 61.66 million eggs per month, equivalent to 739.94 million eggs a year. Assuming an annual growth rate of 2.8 percent, production from this group was estimated in 760.66 million eggs for 1989. This figure added to 500 million from commercial farms yields a total production of 1,260.66 million eggs for 1989.

Production level, prices, and value added for poultry are presented on Exhibit 8.1 from 1978 to 1989, according to the Central Bank's estimates. Proportions of value of production were used to estimate value added for each of the three components.

There are no official reports of chicken or egg exports from Honduras. However, it is possible that non-reported sales of chickens and eggs are made to Nicaragua due to this country's growing demand for food. This might explain the high growth in chicken production during 1990, as discussed later in this chapter.

Poultry is a high growth product in Honduras. As beef prices go up due to international demand and price liberalization, poultry becomes the natural substitute.

8.2 Proposed Policy Reforms That Affect the Poultry Sector

The proposed policy reforms that affect the poultry sector are the following:

- The foreign exchange regime;
- Removal of price controls; and
- Removal of interest rate ceiling.

Even though poultry products are not exported from Honduras, the foreign exchange regime affects poultry production through the cost of inputs, and the price of beef, a close substitute. Commercial poultry are fed only with concentrates. These concentrates use grains that are tradable, and other imported inputs. A liberalized foreign exchange regime allows these inputs to reach prices more in line with the cost of foreign exchange. A weak lempira will contribute to increase the price of inputs, increasing production costs. However, it will also increase the availability of inputs.

Chicken is a substitute for beef. With a liberalized foreign exchange regime, beef exports will increase. This measure, in addition to a liberalization of local beef prices, contributes to increase beef prices. As beef prices rise, people switch from beef consumption to chicken. As the demand for chicken rises, so does its price in an environment of no price controls. Chicken prices were legally liberalized on September 21, 1990 through Agreement No. 532-90 of the Ministry of Economy and Commerce. However, there is an informal agreement to raise prices gradually. Higher chicken and egg prices will stimulate more investments in commercial and non-commercial poultry production,

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[1] Ibid.

increasing total output. Chickens are commonly seen by small farmers as a savings account used to solve unexpected problems. Better prices will induce these farmers to increase the number of chickens to increase meat and egg production.

Removal of interest rate ceilings will mobilize savings and stimulate the repatriation of foreign exchange to Honduras. Availability of more funds will provide more credit for chicken farmers. Credit availability will facilitate the needed expansion to satisfy the growing demand.

8.3 Analysis of the Impacts of the Proposed Policy Reforms

Demand for chickens and eggs will increase as the price of beef increases. It is possible that Honduras is also supplying a growing demand in Nicaragua. Commercial chicken production increased between 25 and 50 percent during 1990, depending on the data source. According to Central Bank's information, production of chicken was 50 million lbs. from January to October of 1990. Assuming a production of 10 million lbs. for November and December, total production for 1990 is estimated at 60 million lbs. This is 50 percent higher than the 4C million lbs. reported in 1989. If the statistics of the Department of Norms and Controls of the Ministry of Natural Resources are used, production in 1990 is estimated in 81.1 million lbs. This compares to 64.6 million lbs. in 1989, equivalent to a 25.5 percent increase.

As discussed in the overview section, production reported by the Central Bank was adjusted to reflect total production in 1989. These adjustments resulted in 111.1 million lbs. of chicken, and 1,382 million eggs. Chicken production for 1990 was estimated by adding the production of 81.1 million lbs. reported by the department of Norms and Controls of the Ministry of Natural Resources, and production from the non-commercial farmers. Production from non-commercial farmers was estimated by applying a growth factor of 2.8 percent to the production estimate of 1989. Egg production and meat production from other birds for 1990 were estimated by assuming a growth rate of 2.8 percent (Exhibits 8.2 and 8.3).

Production projections for 1991 to 1998 were estimated assuming three alternatives. The low growth scenario assumed a growth of 2.8 percent per year, equal to the population growth rate. The medium growth scenario assumed a faster growth of 4 percent per year. For the high growth scenario, a higher level of consumption was assumed, allowing a growth of 6 percent per year.

Value added estimates were based on past relationships of production to value added, and the projected production levels. For dollar value added estimates, an adjustment was made, dividing 1989 value added by 3. Estimates for the three scenarios are presented on Exhibits 8.2 and 8.3.

HONDURAS - POLICY REFORMS - POULTRY

Exhibit 8.2 Projections of Production and Value Added, Chickens, Other Birds, and Eggs, 1989 to 1998.

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
CHICKENS										
PRODUCTION (MILLION LBS.)										
Low	111.10	128.87	132.48	136.19	140.01	143.93	147.96	152.10	156.36	160.73
Medium	111.10	128.87	134.03	139.39	144.97	150.76	156.79	163.07	169.59	176.37
High	111.10	128.87	136.61	144.80	153.49	162.70	172.46	182.81	193.78	205.41
VALUE ADDED (1978 MILLION LEMPIRAS)										
Low	56.75	65.82	67.67	69.56	71.51	73.51	75.57	77.69	79.86	82.10
Medium	56.75	65.82	68.46	71.20	74.04	77.00	80.08	83.29	86.62	90.08
High	56.75	65.82	69.77	73.96	78.40	83.10	88.09	93.37	98.97	104.91
VALUE ADDED (MILLION DOLLARS)										
Low	25.76	29.88	30.71	31.57	32.46	33.37	34.30	35.26	36.25	37.26
Medium	25.76	29.88	31.07	32.32	33.61	34.95	36.35	37.80	39.32	40.89
High	25.76	29.88	31.67	33.57	35.58	37.72	39.98	42.38	44.92	47.62
EGGS										
PRODUCTION (MILLION UNITS)										
Low	1,261	1,296	1,332	1,370	1,408	1,447	1,488	1,530	1,572	1,616
Medium	1,261	1,296	1,348	1,402	1,458	1,516	1,577	1,640	1,705	1,774
High	1,261	1,296	1,374	1,456	1,544	1,636	1,734	1,838	1,949	2,066
VALUE ADDED (1978 MILLION LEMPIRAS)										
Low	50.88	52.31	53.77	55.28	56.83	58.42	60.05	61.74	63.46	65.24
Medium	50.88	52.31	54.40	56.58	58.84	61.19	63.64	66.19	68.84	71.59
High	50.88	52.31	55.45	58.77	62.30	66.04	70.00	74.20	78.65	83.37
VALUE ADDED (MILLION DOLLARS)										
Low	23.10	23.74	24.41	25.09	25.79	26.52	27.26	28.02	28.81	29.61
Medium	23.10	23.74	24.69	25.68	26.71	27.78	28.89	30.04	31.24	32.49
High	23.10	23.74	25.17	26.68	28.28	29.98	31.77	33.68	35.70	37.84
OTHER BIRDS										
PRODUCTION (MILLION LBS.)										
Low	1.45	1.49	1.53	1.58	1.62	1.66	1.71	1.76	1.81	1.86
Medium	1.45	1.49	1.55	1.61	1.68	1.74	1.81	1.89	1.96	2.04
High	1.45	1.49	1.58	1.67	1.78	1.88	1.99	2.11	2.24	2.38
VALUE ADDED (1978 MILLION LEMPIRAS)										
Low	1.47	1.51	1.55	1.60	1.64	1.69	1.73	1.78	1.83	1.88
Medium	1.47	1.51	1.57	1.63	1.70	1.77	1.84	1.91	1.99	2.07
High	1.47	1.51	1.60	1.70	1.80	1.91	2.02	2.14	2.27	2.41
VALUE ADDED (MILLION DOLLARS)										
Low	0.67	0.69	0.71	0.72	0.75	0.77	0.79	0.81	0.83	0.86
Medium	0.67	0.69	0.71	0.74	0.77	0.80	0.83	0.87	0.90	0.94
High	0.67	0.69	0.73	0.77	0.82	0.87	0.92	0.97	1.03	1.09
TOTAL										
VALUE ADDED (1978 MILLION LEMPIRAS)										
Low	59.67	68.83	70.75	72.73	74.77	76.86	79.02	81.23	83.50	85.84
Medium	59.67	68.83	71.58	74.44	77.42	80.52	83.76	87.09	90.57	94.19
High	59.67	68.83	72.96	77.33	81.97	86.89	92.10	97.63	103.49	109.70
VALUE ADDED (MILLION DOLLARS)										
Low	27.89	32.07	32.97	33.90	34.84	35.82	36.82	37.85	38.91	40.00
Medium	27.89	32.07	33.36	34.69	36.08	37.52	39.02	40.58	42.21	43.90
High	27.89	32.07	34.00	36.04	38.20	40.49	42.92	45.50	48.23	51.12

Source: Exhibit 6.1, and estimates.

HONDURAS - POLICY REFORMS - POULTRY

Exhibit 8.3 Percent Change in Production and Value Added, Chickens, Other Birds, and Eggs, 1990 to 1998.

Description	Year								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
CHICKENS									
PRODUCTION									
Low	16.0%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Medium	16.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
High	16.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
VALUE ADDED (1978 MILLION LEMPIRAS)									
Low	16.0%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Medium	16.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
High	16.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
VALUE ADDED (MILLION DOLLARS)									
Low	16.0%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Medium	16.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
High	16.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
EGGS									
PRODUCTION									
Low	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Medium	2.8%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
High	2.8%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
VALUE ADDED (1978 MILLION LEMPIRAS)									
Low	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Medium	2.8%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
High	2.8%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
VALUE ADDED (MILLION DOLLARS)									
Low	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Medium	2.8%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
High	2.8%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
OTHER BIRDS									
PRODUCTION									
Low	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Medium	2.8%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
High	2.8%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
VALUE ADDED (1978 MILLION LEMPIRAS)									
Low	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Medium	2.8%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
High	2.8%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
VALUE ADDED (MILLION DOLLARS)									
Low	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Medium	2.8%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
High	2.8%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
TOTAL									
VALUE ADDED (1978 MILLION LEMPIRAS)									
Low	15.4%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Medium	15.4%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
High	15.4%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
VALUE ADDED (MILLION DOLLARS)									
Low	15.0%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Medium	15.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
High	15.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%

Source: Exhibit 8.2.

9. IMPACT ON SUGAR CANE, TOBACCO, COTTON AND FORESTRY

Sugar cane, tobacco, cotton and forestry are traditional export products that will decline in production or will grow at very low rate. Forestry production is at its sustainable level or slightly above. Thus, forestry production cannot grow without deteriorating Honduras' natural resources. The other crops have different constraints that slow their growth or contribute to their reduction.

9.1 Sugar Cane

Sugar cane has been a traditional export crop, whose exports are gradually declining to satisfy an increasing domestic demand. Production increased until 1986, and has been dropping gradually since then. Sugar production reached 5.1 million quintals in 1986. In 1988 it was down to 3.8 million quintals, lower than the 3.9 million quintals reached in 1980 (Exhibit 9.1).

The quality and divergence of sugar sector statistics are no exception for the other agricultural products. There are significant differences between statistics reported by the Central Bank and other sources. Due to its concentration, the multiple purpose surveys of the DGEC do not provide accurate statistics; thus, the need to use other sources. Exhibit 9.1 has the statistics that are believed to represent reality from analyzing alternative information sources.

Sugar cane is harvested in about 39 thousand manzanas, that has ranged between 36.5 and 45.1 thousand in the past decade. The eight mills harvest about 40 percent of the area, and independent farmers the rest.

The international sugar market is divided in two: the U.S. market and the free market. The U.S. market operates under quotas to protect its own sugar producers, resulting its prices higher than the world market. Honduras is one of the quota sugar suppliers to the United States. Due to its declining production, Honduras has only exported sugar to the U.S. during the last two years.

The domestic sugar market is controlled. The GOH sets the selling price and margins at all levels of the marketing channels. The sugar mills are grouped in a common enterprise in charge of selling and distributing all the domestically consumed sugar. Some mills produce only sugar for local consumption, while others produce for both markets. There is, however, a compensation mechanism to distribute proportionally sugar proceeds from both markets, according to production levels.

Prices for the domestic and international markets are different. Due to the political influence of sugar mills, sugar was the only agricultural product whose domestic prices was above the international price until 1989. Consumers were subsidizing producers. As international prices improved, and the lempira lost its value, this relationship changed, and local prices were below

23-Feb-91 Date

HONDURAS - POLICY REFORMS - SUGAR CANE

Exhibit 9.1 Area, Production, and Value Added From Sugar Cane, 1980 to 1989.

Description	Year									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Mill Harvested Area (Mzs.)	15,568	16,972	16,192	16,683	16,207	15,880	15,510	15,207	13,926	
Farmers Harvested Area (Mzs.)	23,481	25,895	28,324	28,460	27,734	28,508	26,762	24,003	22,600	
Harvested Area (Mzs.)	39,049	42,867	44,516	45,143	43,941	44,388	42,272	39,210	36,526	39,102
Cane Production (Ths. S.T.)	2,211	2,438	2,570	2,453	2,543	2,476	2,430	2,083	1,900	2,034
Yield (S.T./Mz.)	56.62	56.87	57.73	54.34	57.87	55.78	57.48	53.12	52.02	52.02
Sugar Production (Ths. QQ)	3,970	4,307	4,743	4,657	4,884	5,071	5,121	4,280	3,431	3,838
Yield (Lbs./S.T.)	179.56	176.66	184.55	189.85	192.06	204.81	210.74	205.47	180.58	188.69
VALUE ADDED										
Current Million Lps.	50	64	60	65	65	62	58	64	62	69
Current Lps./Mz.	1,280	1,493	1,348	1,440	1,479	1,397	1,372	1,632	1,697	1,765
1978 Million Lps.	38	38	40	41	40	39	39	35	33	35
1978 Lps./Mz.	973	886	899	908	910	879	923	893	903	895
EXPORTS										
Volume (Ths. QQ)	1,796	1,831	1,929	2,341	1,976	2,630	1,392	2,107	588	458
Price ($/qq.)	16.34	25.42	11.20	11.90	12.98	8.16	8.98	8.83	22.18	22.18
Value (Million Dollars)	29.35	46.55	21.60	27.85	25.65	21.45	12.50	18.60	13.04	10.15
Production-Exports (Ths. QQ.)	2,174	2,476	2,814	2,316	2,908	2,441	3,729	2,173	2,843	3,380
PERCENT CHANGE										
Harvested Area (Mzs.)		9.8%	3.8%	1.4%	-2.7%	1.0%	-4.8%	-7.2%	-6.8%	7.1%
Cane Production (Ths. S.T.)		10.3%	5.4%	-4.6%	3.7%	-2.6%	-1.9%	-14.3%	-8.8%	7.1%
Yield (S.T./Mz.)		0.4%	1.5%	-5.9%	6.5%	-3.6%	3.1%	-7.6%	-2.1%	0.0%
Sugar Production (Ths. QQ)		8.5%	10.1%	-1.8%	4.9%	3.8%	1.0%	-16.4%	-19.8%	11.9%
Yield (Lbs./S.T.)		-1.6%	4.5%	2.9%	1.2%	6.6%	2.9%	-2.5%	-12.1%	4.5%
VALUE ADDED										
Current Million Lps.		28.0%	-6.3%	8.3%	0.0%	-4.6%	-6.5%	10.3%	-3.1%	11.3%
Current Lps./Mz.		16.6%	-9.7%	6.8%	2.7%	-5.6%	-1.8%	19.0%	4.0%	4.0%
1978 Million Lps.		0.0%	5.3%	2.5%	-2.4%	-2.5%	0.0%	-10.3%	-5.7%	6.1%
1978 Lps./Mz.		-8.9%	1.4%	1.1%	0.2%	-3.5%	5.0%	-3.2%	1.2%	-0.9%
EXPORTS										
Volume (Ths. QQ)		1.9%	5.3%	21.4%	-15.6%	33.1%	-47.1%	51.4%	-72.1%	-22.2%
Price ($/qq.)		55.6%	-55.9%	6.2%	9.1%	-37.2%	10.1%	-1.7%	151.3%	0.0%
Value (Million Dollars)		58.6%	-53.6%	28.9%	-7.9%	-16.4%	-41.7%	48.8%	-29.9%	-22.2%
Production-Exports (Ths. QQ.)		13.9%	13.7%	-17.7%	25.5%	-16.1%	52.8%	-41.7%	30.8%	18.9%

Source: Area and Production - several sources as reported by Ruben D. Nunez, Jorge Borjas Magdalena Garcia, "Estudio Sobre la Industria Azucarera de Honduras." Draft of Octuber 1989. Cuadro No. 2.1.

Value Added - Central Bank of Honduras as reported by UPSA, "Compendio Estadistico Agropecuario 1990." Tegucigalpa, Honduras: Secretaria de Recursos Naturales, 1990. p. 45.

international prices. The GOH recently approved an increase in sugar prices this January. However, this was a great opportunity to liberalize the market.

Honduran consumers have witnessed sugar shortages on many occasions, due to the seasonality of sugar production, which produced between late December to about May. Sugar need to be stored to provide a supply during the rest of the year. Illegal smuggling to neighboring countries has exacerbated the problem in some occasions.

Value added in constant 1978 lempiras has gone down from a high of L.40 million in 1984 to L.33 million in 1988 and L.35 million in 1989. Value added per manzana was about L.1,765 per manzana in current lempiras, and L.895 in 1978 lempiras during 1989.

Sugar has a specific export tax in addition to the 12 percent export tax paid by all traditional exports. The specific export tax is Decree No. 873 of December 1979. The export tax ranges from 5 to 50 percent depending on the export price. Exports require authorization from the Ministry of Economy, which makes sure the domestic market is adequately supplied.

Sugar cane prices paid by the mills to producers are negotiated every year. The natural monopsony power exercised by the mills has usually resulted in lower shares to farmers of total proceeds. Prices received by the farmers have been lower than their original expectations, when they made their initial investments. These market distortions have contributed to a shift towards other crops, affecting overall economic efficiency.

The policy reforms that will affect sugar cane production are the following:

- Liberalization of the foreign exchange regime;
- Removal of price controls;
- Removal of international trade controls;
- Elimination of export taxes;
- Allowance of land rental;
- Issuance of "dominio pleno" titles to legitimate land owners; and
- Removal of interest rates.

Sugar is a tradable product. Liberalizing the foreign exchange regime, and both the international and domestic sugar markets, as well as eliminating export taxes will allow a more efficient allocation of resources in the economy. Sugar mills will receive a market determined price, stimulating higher production. If for reasons explained below Honduras does not increase its production, with a free international market, the country will be able to take full advantage of its preferential sugar quota in the U.S., and import cheaper sugar for local consumption.

A liberalized international sugar market will also provide a better quality sugar for domestic consumers. Honduras only produces sulphated sugar, and no refined sugar. The key element that Honduras needs to take advantage of is the preferential U.S. sugar quota.

These policy changes, while they could maximize income from sugar sales, and consumer welfare, they will not be enough to stimulate increased production. If sugar mills continue the same kind of behavior with independent producers, sugar cane production is bound to go down. Independent sugar cane growers account for 60 percent of total area harvested. If they do not get a fair share of the price increase, they will shift the use of their land to other products if possible.

There are several factors that keep sugar cane growers from shifting to other activities. One of them is the lack of knowledge of other crops. However, the most important factor is the facilities provided by most of the mills. Mills provide cash advances to pay labor, rent equipment to prepare land, and provide fertilizers and other inputs, imported directly in large quantities. Sugar mills take advantage of their political connections, and like the banana companies use part of the generated foreign exchange to import needed inputs.

Once the foreign exchange regime becomes more transparent, and interest rate ceilings are removed, some of these facilities that tie sugar cane growers to this crop will become less important, and they will be tempted to move to other activities, unless the system to establish cane prices is changed.

Many sugar producing countries have laws that establish the relationship between sugar and cane prices. This is not government intervention, rather a way to correct a market failure due to the existence of a natural monopsony. Sugar cane is very bulky; thus, the farmer is limited to sell to only one mill; otherwise transportation costs consume its benefits. By establishing a law, the government has no intervention. The law simply provides a reference around which to negotiate contracts. Both, the farmer and the mill can appeal to the court if either one violates the law. Without a law, the monopsonist power of the mill prevails over the farmer.

It was estimated that area harvested will continue to decrease at a rate of 1 percent per year under the low growth scenario, stay the same under the medium growth scenario, and increase at a rate of 1 percent per year under the high growth scenario (Exhibits 9.2 and 9.3). Sugar cane, and sugar yields would not grow, increase by 1 percent and 1.5 percent under the low, medium, and high growth scenarios. This results in a 1 percent reduction in sugar production under the low growth scenario, 2 percent increase per year under the medium growth scenario, and 3.9 percent increase per year under the high growth scenario.

Domestic consumption was assumed to increase at a rate of 2.72 percent per year. With this growth in consumption, export volume would decrease, except for the high growth scenario. There would be no further export from 1993 on, under the low growth scenario. Export prices were assumed to remain the same.

Value added estimates for 1989 were assumed equal to the Central Bank estimates. Value added in dollars were estimated dividing value added in lempiras by 2.7 because a part of the sugar production is exported. The same proportion of value added per unit of cane production was used to project value added for the future years.

06-Mar-91 Date

HONDURAS - POLICY REFORMS - SUGAR CANE

Exhibit 9.2 Projection of Area, Production, and Value Added from Sugar Cane, 1989 to 1998.

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
HARVESTED AREA (MZS.)										
Low	39,102	40,471	40,066	39,665	39,269	38,876	38,487	38,102	37,721	37,344
Medium	39,102	40,471	40,471	40,471	40,471	40,471	40,471	40,471	40,471	40,471
High	39,102	40,471	40,875	41,284	41,697	42,114	42,535	42,960	43,390	43,824
YIELD (S.T./MZ.)										
Low	52.02	52.54	52.54	52.54	52.54	52.54	52.54	52.54	52.54	52.54
Medium	52.02	52.54	53.06	53.59	54.13	54.67	55.22	55.77	56.33	56.89
High	52.02	52.54	53.33	54.13	54.94	55.76	56.60	57.45	58.31	59.18
CANE PRODUCTION (THS. S.T.)										
Low	2,034	2,126	2,105	2,084	2,063	2,042	2,022	2,002	1,982	1,962
Medium	2,034	2,126	2,148	2,169	2,191	2,213	2,235	2,257	2,280	2,302
High	2,034	2,126	2,180	2,235	2,291	2,348	2,407	2,468	2,530	2,594
SUGAR YIELD (Lbs./S.T)										
Low	188.69	189.64	189.64	189.64	189.64	189.64	189.64	189.64	189.64	189.64
Medium	188.69	189.64	191.53	193.45	195.38	197.34	199.31	201.30	203.32	205.35
High	188.69	189.64	192.48	195.37	198.30	201.27	204.29	207.36	210.47	213.62
SUGAR PRODUCTION (THS.QQ)										
Low	3,838	4,032	3,992	3,952	3,912	3,873	3,834	3,796	3,758	3,721
Medium	3,838	4,032	4,113	4,196	4,280	4,366	4,454	4,543	4,635	4,728
High	3,838	4,032	4,196	4,366	4,542	4,727	4,918	5,117	5,325	5,541
DOMESTIC CONSUMPTION (THS. QQ)										
Low	3,380	3,468	3,565	3,665	3,768	3,873	3,982	4,093	4,208	4,326
Medium	3,380	3,468	3,565	3,665	3,768	3,873	3,982	4,093	4,208	4,326
High	3,380	3,468	3,565	3,665	3,768	3,873	3,982	4,093	4,208	4,326
EXPORTS VOLUME (THS. QQ)										
Low	458	564	426	287						
Medium	458	564	548	531	512	493	472	450	427	402
High	458	564	630	700	775	853	936	1,024	1,117	1,215
EXPORT PRICE ($/QQ)										
Low	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18
Medium	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18
High	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18	22.18
EXPORT VALUE (MILLION DOLLARS)										
Low	10.15	12.51	9.46	6.36						
Medium	10.15	12.51	12.15	11.77	11.36	10.93	10.47	9.99	9.47	8.92
High	10.15	12.51	13.98	15.53	17.18	18.92	20.77	22.72	24.77	26.95
VALUE ADDED (1978 MILLION LPS.)										
Low	35	37	36	36	36	35	35	34	34	34
Medium	35	37	37	37	38	38	38	39	39	40
High	35	37	38	38	39	40	41	42	44	45
VALUE ADDED (MILLION DOLLARS)										
Low	26	27	26	26	26	26	25	25	25	25
Medium	26	27	27	27	28	28	28	28	29	29
High	26	27	27	28	29	30	30	31	32	33

Source: Exhibit 9.1 and estimates.

HONDURAS - POLICY REFORMS - SUGAR CANE

Exhibit 9.3 Percent Change in Projected Area, Production, and Value Added From Sugar Cane, 1990 to 1998.

Description	Year								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
HARVESTED AREA (MZS.)									
Low	3.4%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
Medium	3.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	3.4%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
YIELD (S.T./MZ.)									
Low	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
High	1.0%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
CANE PRODUCTION (THS. S.T.)									
Low	4.3%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
Medium	4.3%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
High	4.3%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
SUGAR YIELD (Lbs./S.T)									
Low	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.5%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
High	0.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
SUGAR PRODUCTION (THS.QQ)									
Low	4.8%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
Medium	4.8%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
High	4.8%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%
DOMESTIC CONSUMPTION (THS. QQ)									
Low	2.5%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%
Medium	2.5%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%
High	2.5%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%
EXPORTS VOLUME (THS. QQ)									
Low	18.8%	-32.2%	-48.7%						
Medium	18.8%	-2.9%	-3.2%	-3.6%	-3.9%	-4.4%	-4.9%	-5.5%	-6.1%
High	18.8%	10.5%	10.0%	9.6%	9.2%	8.9%	8.6%	8.3%	8.1%
EXPORT PRICE ($/QQ)									
Low	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
EXPORT VALUE (MILLION DOLLARS)									
Low	18.8%	-32.2%	-48.7%						
Medium	18.8%	-2.9%	-3.2%	-3.6%	-3.9%	-4.4%	-4.9%	-5.5%	-6.1%
High	18.8%	10.5%	10.0%	9.6%	9.2%	8.9%	8.6%	8.3%	8.1%
VALUE ADDED (1978 MILLION LPS.)									
Low	4.3%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
Medium	4.3%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
High	4.3%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
VALUE ADDED (MILLION DOLLARS)									
Low	4.3%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
Medium	4.3%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
High	4.3%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%

Source: Exhibit 9.2.

9.2 Tobacco

Tobacco production decreased from 1980 to 1987, and started to recuperate since then, but it is still below the 1980 levels. This holds true if the statistics supplied by the Central Bank are true (Exhibit 9.4). DGEC's multiple purpose agricultural surveys of 1984 and 1989 show significant difference in area harvested and production to the information reported by the Central Bank. Area harvested from the agricultural surveys are about half the area reported by the Central Bank, showing much higher yields because the production difference are not as large.

Tobacco exports declined until 1988; but, they started to pick up in 1989. These export figure refer to unprocessed tobacco. Processed tobacco, either elaborated or cigars were presented on Chapter 7. It is desirable that a larger proportion of tobacco be exported processed due to a greater value added to the economy.

Tobacco production contribute about L.16 million in value added, and L.11 million of 1978 lempiras. It is a high value crop; thus, its contribution to value added per manzana is very high. It contributes between L.1,500 to L.3,000 of value added per manzana, depending on the source of the data.

The proposed policy reforms that will affect tobacco production are the following:

- Liberalization of the foreign exchange regime;
- Removal of export tax;
- Allowance of land rental;
- Issuance of "dominio pleno" titles to legitimate land owners; and
- Removal of interest rate ceilings.

Tobacco is an export crop that will benefit from a liberalized foreign exchange regime and removal of export tax. This will allow farmers to receive a higher price for their product. However, tobacco production requires certain expertise, and if this expertise has been lost, there will not be a significant response to investments due to higher prices. Land tenure policy reforms will have some impact on this crop, making more land available. Credit liberalization will have the same effect. However, the same argument of knowledge applies to these policy reforms.

Area harvested is assumed to go down at a rate of 1 percent per year in the low growth scenario, and increase at rates of 2 and 3 percent per year for the medium and high growth scenarios. Yields are expected to stay the same for the low growth scenario, and grow 1 and 1.5 percent per year for the medium and high growth scenarios. This results in production growth rates of 1, 2.9 and 4.3 percent per year for the low, medium and high growth scenarios, respectively (Exhibits 9.5 and 9.6).

HONDURAS - POLICY REFORMS - TOBACCO

Exhibit 9.4 Area, Production, and Value Added From Tobacco, 1980 to 1989.

Description	Year 1980	1981	1982	1983	1984	1985	1986	1987	1988	1989 p/
Harvested Area (Mzs.)	12,092	12,025	10,661	6,279	10,348	10,057	9,044	8,941	4,920	10,463
Production (Ths. QQ)	161	160	142	139	119	116	104	94	120	138
Yield (QQ/Mz.)	13.31	13.31	13.32	22.15	11.50	11.53	11.50	10.51	24.46	13.19
VALUE ADDED										
Current Million Lps.	21.00	21.00	22.00	24.00	26.00	27.00	16.00	14.00	15.00	16.00
Current Lps./Mz.	1,737	1,746	2,064	3,822	2,513	2,685	1,769	1,566	3,049	1,529
1978 Million Lps.	16.00	16.00	16.00	16.00	16.00	12.00	11.00	9.00	10.00	11.00
1978 Lps./Mz.	1,323	1,331	1,501	2,548	1,546	1,193	1,216	1,007	2,033	1,051
EXPORTS										
Volume (Ths. Kgs.)	4,566	4,488	3,170	3,125	2,506	2,319	1,498	1,260	1,124	1,800
Price ($/Kg.)	3.00	2.97	3.40	3.46	3.33	3.73	3.55	3.30	3.83	3.83
Value (Million Dollars)	13.69	13.33	10.77	10.80	8.34	8.66	5.31	4.16	3.80	6.90
PERCENT CHANGE										
Harvested Area (Mzs.)		-0.6%	-11.3%	-41.1%	64.8%	-2.8%	-10.1%	-1.1%	-45.0%	112.7%
Production (Ths. QQ)		-0.6%	-11.3%	-2.1%	-14.4%	-2.5%	-10.3%	-9.6%	28.0%	14.7%
Yield (QQ/Mz.)		-0.1%	0.1%	66.3%	-48.1%	0.3%	-0.3%	-8.6%	132.7	-46.1%
VALUE ADDED										
Current Million Lps.		0.0%	4.8%	9.1%	8.3%	3.8%	-40.7%	-12.5%	7.1%	6.7%
Current Lps./Mz.		0.6%	18.2%	85.2%	-34.3%	6.9%	-34.1%	-11.5%	94.7%	-49.8%
1978 Million Lps.		0.0%	0.0%	0.0%	0.0%	-25.0%	-8.3%	-18.2%	11.1%	10.0%
1978 Lps./Mz.		0.6%	12.8%	69.8%	-39.3%	-22.8%	1.9%	-17.2%	101.9	-48.3%
EXPORTS										
Volume (Ths. Kgs.)		-1.7%	-29.4%	-1.4%	-19.8%	-7.5%	-35.4%	-15.9%	-10.8%	60.1%
Price ($/Kg.)		-0.9%	14.4%	1.7%	-3.7%	12.1%	-5.0%	-6.9%	16.1%	0.0%
Value (Million Dollars)		-2.6%	-19.2%	0.3%	-22.7%	3.7%	-38.6%	-21.7%	-8.7%	81.6%

Source: Central Bank of Honduras as reported by UPSA, "Compendio Estadistico Agropecuario 1990." Tegucigalpa, Honduras: Secretaria de Recursos Naturales, 1990. pp. 13, 14 and 45. Except for 1983 and 1988. Data for area and production for these two years were taken from the DGEC Multiple Purpose Surveys of 1984 and 1989.

HONDURAS - POLICY REFORMS - TOBACCO

Exhibit 9.5 Projection of Area, Production, and Value Added from Tobacco, 1989 to 1998.

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
HARVESTED AREA (MZS.)										
Low	4,969	5,367	5,420	5,475	5,529	5,585	5,640	5,697	5,754	5,811
Medium	4,969	5,367	5,474	5,584	5,695	5,809	5,925	6,044	6,165	6,288
High	4,969	5,367	5,528	5,694	5,864	6,040	6,222	6,408	6,600	6,798
YIELD (QQ/MZ.)										
Low	24.46	26.42	26.42	26.42	26.42	26.42	26.42	26.42	26.42	26.42
Medium	24.46	26.42	26.68	26.95	27.22	27.49	27.77	28.05	28.33	28.61
High	24.46	26.42	26.82	27.22	27.63	28.04	28.46	28.89	29.32	29.76
PRODUCTION (THS. QQ)										
Low	122	142	143	145	146	148	149	151	152	154
Medium	122	142	146	150	155	160	165	170	175	180
High	122	142	148	155	162	169	177	185	194	202
EXPORTS VOLUME (THS. KGS.)										
Low	1,800	2,520	2,545	2,571	2,596	2,622	2,649	2,675	2,702	2,729
Medium	1,800	2,520	2,596	2,675	2,755	2,838	2,924	3,013	3,103	3,197
High	1,800	2,520	2,635	2,754	2,879	3,010	3,147	3,290	3,440	3,596
EXPORT PRICE ($/Kg.)										
Low	3.83	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
Medium	3.83	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
High	3.83	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
EXPORT VALUE (MILLION DOLLARS)										
Low	6.90	9.45	9.54	9.64	9.74	9.83	9.93	10.03	10.13	10.23
Medium	6.90	9.45	9.74	10.03	10.33	10.64	10.97	11.30	11.64	11.99
High	6.90	9.45	9.88	10.33	10.80	11.29	11.80	12.34	12.90	13.49
VALUE ADDED (1978 MILLION LPS.)										
Low	11	13	13	13	13	13	13	14	14	14
Medium	11	13	13	14	14	14	15	15	16	16
High	11	13	13	14	15	15	16	17	18	18
VALUE ADDED (MILLION DOLLARS)										
Low	6	7	8	8	8	8	8	8	8	8
Medium	6	7	8	8	8	8	9	9	9	9
High	6	7	8	8	9	9	9	10	10	11

Source: Exhibit 9.4 and estimates.

HONDURAS - POLICY REFORMS - TOBACCO

Exhibit 9.6 Percent Change in Projected Area, Production, and Value Added from Tobacco, 1990 to 1998.

Description	Year								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
HARVESTED AREA (MZS.)									
Low	7.41%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%
Medium	7.41%	1.96%	1.96%	1.96%	1.96%	1.96%	1.96%	1.96%	1.96%
High	7.41%	2.91%	2.91%	2.91%	2.91%	2.91%	2.91%	2.91%	2.91%
YIELD (QQ/MZ.)									
Low	7.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Medium	7.41%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%
High	7.41%	1.48%	1.48%	1.48%	1.48%	1.48%	1.48%	1.48%	1.48%
PRODUCTION (THS. QQ)									
Low	14.27	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%
Medium	14.27	2.93%	2.93%	2.93%	2.93%	2.93%	2.93%	2.93%	2.93%
High	14.27	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%
EXPORTS VOLUME (THS. KGS.)									
Low	28.57	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%
Medium	28.57	2.93%	2.93%	2.93%	2.93%	2.93%	2.93%	2.93%	2.93%
High	28.57	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%
EXPORT PRICE ($/Kg.)									
Low	-2.22	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Medium	-2.22	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
High	-2.22	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
EXPORT VALUE (MILLION DOLLARS)									
Low	26.98	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%
Medium	26.98	2.93%	2.93%	2.93%	2.93%	2.93%	2.93%	2.93%	2.93%
High	26.98	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%
VALUE ADDED (1978 MILLION LPS.)									
Low	14.27	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%
Medium	14.27	2.93%	2.93%	2.93%	2.93%	2.93%	2.93%	2.93%	2.93%
High	14.27	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%
VALUE ADDED (MILLION DOLLARS)									
Low	14.27	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%	0.99%
Medium	14.27	2.93%	2.93%	2.93%	2.93%	2.93%	2.93%	2.93%	2.93%
High	14.27	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%

Source: Exhibit 9.5.

Export volumes will grow at the same rates of production, which assumes domestic consumption, and use in more processed exports to maintain the same proportions. Value added reported for 1989 were assumed correct, and the estimate in dollars was done dividing value added by 2.7. Projected value added were estimates assuming the same proportion of value added to production as in 1989 (Exhibits 9.5 and 9.6).

9.3 Cotton

Cotton has been losing importance in sector output over the past decade. Area harvested has dropped from 12 thousand manzanas in 1980 to three thousand in 1989, and production is only one fourth of what used to be (Exhibit 9.7).

Cotton is considered a traditional export crop, even though it is less important than many nontraditional export products. Because it is a traditional export crop, it pays the 12 percent export tax established by Decree 18-90. This crop needs a more detailed analysis to determine the possibility of recuperating the previous production levels.

The proposed measures might help the cotton industry, but perhaps its level of decapitalization is such that recuperation is impossible. Due to the lack of knowledge about the industry, it was estimated that production and export levels would stay at 1989 levels. Value added in dollars was estimating dividing value added in lempiras by 2.5 (Exhibit 9.8).

9.4 Forestry

Wood production has been a very important industry in Honduras. Forestry is an important contributor to value added and a generator of foreign exchange. Export volume has decreased throughout the years, but due to an increase in prices, export values have not declined in the same proportion (Exhibit 9.9).

Value added in 1978 lempiras has been increasing, except for 1989. This increase in value added indicates an increase in production for domestic uses. However, these figures must be used with caution. Forests in Honduras provide a significant amount of energy consumed due to the lack of electricity in many rural areas. Firewood is also used for drying coffee and tobacco, and other industrial processes. The contribution of forest products is probably underestimated by the Central Bank.

Experts who work for the forestry project financed by A.I.D. indicate there is an over-exploitation of the forest resources and policy reforms are needed to slow down production. The proposed policy reforms will make wood exports more profitable, providing an incentive to increase tree harvesting. Contrary to other products, however, this is an area where no expansion is needed from an environmental point of view.

HONDURAS - POLICY REFORMS - COTTON

Exhibit 9.7 Area, Production, and Value Added From Cotton, 1980 to 1989.

Description	Year									
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989 p/
Harvested Area (Mzs.)	12,254	11,473	6,276	6,468	10,915	10,383	5,913	5,725	5,990	2,920
Production (Ths. QQ)	467	410	180	283	395	321	197	177	145	102
Yield (QQ/Mz.)	38.11	35.74	28.68	43.75	36.19	30.92	33.32	30.92	24.15	34.93
VALUE ADDED										
Current Million Lps.	19.00	11.00	4.00	12.00	13.00	7.00	7.00	3.00	4.00	2.00
Current Lps./Mz.	1,551	959	637	1,855	1,191	674	1,184	524	668	685
1978 Million Lps.	17.00	15.00	6.00	11.00	13.00	11.00	7.00	3.00	4.00	2.00
1978 Lps./Mz.	1,387	1,307	956	1,701	1,191	1,059	1,184	524	668	685
EXPORTS										
Volume (Ths. Kgs.)	8,796	7,784	5,644	2,939	4,579	5,034	4,728	1,877	508	756
Price ($/Kg.)	1.53	1.60	1.15	1.43	1.68	1.35	0.98	1.15	1.26	1.26
Value (Million Dollars)	13.45	12.45	6.50	4.20	7.70	6.80	4.65	2.15	0.80	0.95
PERCENT CHANGE										
Harvested Area (Mzs.)		-6.4%	-45.3	3.1%	68.8%	-4.9%	-43.1	-3.2%	4.6%	-51.3
Production (Ths. QQ)		-12.2%	-56.1	57.2%	39.6%	-18.7%	-38.6	-10.2	-18.3	-29.5
Yield (QQ/Mz.)		-6.2%	-19.7	52.6%	-17.3%	-14.6%	7.8%	-7.2%	-21.9	44.7%
VALUE ADDED										
Current Million Lps.		-42.1%	-63.6	200.0	8.3%	-46.2%	0.0%	-57.1	33.3%	-50.0
Current Lps./Mz.		-38.2%	-33.5	191.1	-35.8%	-43.4%	75.6%	-55.7	27.4%	2.6%
1978 Million Lps.		-11.8%	-60.0	83.3%	18.2%	-15.4%	-36.4	-57.1	33.3%	-50.0
1978 Lps./Mz.		-5.8%	-26.9	77.9%	-30.0%	-11.0%	11.7%	-55.7	27.4%	2.6%
EXPORTS										
Volume (Ths. Kgs.)		-11.5%	-27.5	-47.9	55.8%	9.9%	-6.1%	-60.3	-72.9	48.8%
Price ($/Kg.)		4.6%	-28.0	24.1%	17.7%	-19.7%	-27.2	16.5%	10.2%	0.0%
Value (Million Dollars)		-7.4%	-47.8	-35.4	83.3%	-11.7%	-31.6	-53.8	-62.7	19.0%

Source: Central Bank of Honduras as reported by UPSA, "Compendio Estadistico Agropecuario 1990." Tegucigalpa, Honduras: Secretaria de Recursos Naturales, 1990. pp. 13,14 and 45. Except for 1988. Data for area and production for this year was taken for the DGEC, Multiple Purpose Surveys of 1989.

HONDURAS - POLICY REFORMS - COTTON

Exhibit 9.8 Projection of Area, Production, and Value Added from Cotton, 1989 to 1998.

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
HARVESTED AREA (MZS.)										
Low	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920
Medium	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920
High	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920
YIELD (QQ/MZ.)										
Low	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93
Medium	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93
High	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93	34.93
PRODUCTION (THS. QQ)										
Low	102	102	102	102	102	102	102	102	102	102
Medium	102	102	102	102	102	102	102	102	102	102
High	102	102	102	102	102	102	102	102	102	102
EXPORTS VOLUME (THS. KGS.)										
Low	756	756	756	756	756	756	756	756	756	756
Medium	756	756	756	756	756	756	756	756	756	756
High	756	756	756	756	756	756	756	756	756	756
EXPORT PRICE ($/Kg.)										
Low	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26
Medium	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26
High	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26
EXPORT VALUE (MILLION DOLLARS)										
Low	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Medium	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
High	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
VALUE ADDED (1978 MILLION LPS.)										
Low	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Medium	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
High	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
VALUE ADDED (MILLION DOLLARS)										
Low	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Medium	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
High	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80

Source: Exhibit 9.7 and estimates.

HONDURAS - POLICY REFORMS - FORESTRY

Exhibit 9.9 Area, Production, and Value Added From Forestry, 1980 to 1989.

Description	Year									p/
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
VALUE ADDED										
Current Million Lps.	151.00	173.00	174.00	176.00	166.00	170.00	173.00	192.00	198.00	189.00
1978 Million Lps.	122.00	123.00	118.00	117.00	116.00	118.00	119.00	124.00	125.00	114.00
EXPORTS										
Volume (Ths. M3)	269	292	301	262	231	213	219	227	180	144
Price ($/M3)	134.51	147.78	148.42	154.16	150.97	160.02	147.44	152.97	176.74	176.74
Value (Million Dollars)	36.18	43.15	44.68	40.39	34.88	34.09	32.29	34.73	29.80	25.45
PERCENT CHANGE										
VALUE ADDED										
Current Million Lps.		14.6%	0.6%	1.1%	-5.7%	2.4%	1.8%	11.0%	3.1%	-4.5%
1978 Million Lps.		0.8%	-4.1%	-0.8%	-0.9%	1.7%	0.8%	4.2%	0.8%	-8.8%
EXPORTS										
Volume (Ths. Kgs.)		8.6%	3.1%	-13.0%	-11.8%	-7.8%	2.8%	3.7%	-20.7%	-20.0%
Price ($/Kg.)		9.9%	0.4%	3.9%	-2.1%	6.0%	-7.9%	3.8%	15.5%	0.0%
Value (Million Dollars)		19.3%	3.5%	-9.6%	-13.7%	-2.3%	-5.3%	7.5%	-14.2%	-14.6%

Source: Central Bank of Honduras as reported by UPSA, "Compendio Estadistico Agropecuario 1990." Tegucigalpa, Honduras: Secretaria de Recursos Naturales, 1990. p. 45.

It was assumed that export volumes will decrease at a 2 percent rate per year for the low growth scenario, 1 percent per year for the medium growth scenario, and no change for the high growth scenario. Export prices were assumed equal. Value added was assumed to change at the same rate of exports. Value added in dollars were estimated dividing value added in lempiras by 2.7 (Exhibit 9.10).

HONDURAS - POLICY REFORMS - FORESTRY

Exhibit 9.10 Projection of Area, Production, and Value Added from Forestry, 1989 to 1998.

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
EXPORTS VOLUME (THS. M3)										
Low	144	86	84	83	81	79	78	76	75	73
Medium	144	86	85	84	83	83	82	81	80	79
High	144	86	86	86	86	86	86	86	86	86
EXPORT PRICE ($/M3)										
Low	176.74	192.08	192.08	192.08	192.08	192.08	192.08	192.08	192.08	192.08
Medium	176.74	192.08	192.08	192.08	192.08	192.08	192.08	192.08	192.08	192.08
High	176.74	192.08	192.08	192.08	192.08	192.08	192.08	192.08	192.08	192.08
EXPORT VALUE (MILLION DOLLARS)										
Low	25.45	16.50	16.17	15.85	15.53	15.22	14.91	14.62	14.32	14.04
Medium	25.45	16.50	16.34	16.17	16.01	15.85	15.69	15.53	15.38	15.23
High	25.45	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50	16.50
VALUE ADDED (1978 MILLION LPS.)										
Low	114.00	104.00	101.92	99.88	97.88	95.93	94.01	92.13	90.29	88.48
Medium	114.00	104.00	102.96	101.93	100.91	99.90	98.90	97.91	96.93	95.97
High	114.00	104.00	104.00	104.00	104.00	104.00	104.00	104.00	104.00	104.00
VALUE ADDED (MILLION DOLLARS)										
Low	70.00	41.76	40.92	40.11	39.30	38.52	37.75	36.99	36.25	35.53
Medium	70.00	41.76	41.34	40.93	40.52	40.11	39.71	39.32	38.92	38.53
High	70.00	41.76	41.76	41.76	41.76	41.76	41.76	41.76	41.76	41.76
PERCENT CHANGE										
EXPORTS VOLUME (THS. M3)										
Low		-40.3%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%
Medium		-40.3%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
High		-40.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
EXPORT PRICE ($/M3)										
Low		8.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium		8.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High		8.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
EXPORT VALUE (MILLION DOLLARS)										
Low		-35.2%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%
Medium		-35.2%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
High		-35.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VALUE ADDED (1978 MILLION LPS.)										
Low		-8.8%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%
Medium		-8.8%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
High		-8.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VALUE ADDED (MILLION DOLLARS)										
Low		-40.3%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%
Medium		-40.3%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
High		-40.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: Exhibit 9.9. and estimates.

10. AGGREGATE RESULTS

Chapters 3 through 9 analyzed the impacts of the proposed policy reforms on each major agricultural product or group of products. This chapter presents the results of those projections in aggregate. The two economic indicators analyzed were value added and export value. Value added was projected in 1978 constant lempiras and dollars. Three alternative growth scenarios were projected: low, medium, and high. The medium growth scenario is considered the most likely.

10.1 Value Added

Exhibits 10.1 though 10.3 present the aggregate projections of value added in 1978 constant lempiras for each alternative scenario. Exhibit 10.4 graphs total agricultural value added. 1989 value added in 1978 constant lempiras does not coincide with Central Bank's estimates due to adjustments made. Adjustments were made to account for production differences between Central Bank's estimates and other more reliable statistics. The adjusted products were bananas, corn, sorghum, beans, rice, livestock, poultry, and shrimp.

Agricultural GDP in 1978 constant lempiras is expected to drop in 1991 for the low growth scenario, mainly due to an 11 percent drop in coffee, and reductions in forestry and sugar cane. Growth rates will vary between 2 and 4.5 from 1992 on. For the medium growth scenario, growth rates will be higher, ranging from 1.2 to 7.5 percent over the years analyzed. For the high growth scenario, growth rates are expected to vary between 7.2 and 11.4 percent.

These growth rates are high, but they are achievable if the proposed policy reforms are adopted by the GOH. Especially important is the liberalization of the foreign exchange regime. Agricultural products are tradable, and most of the modern agricultural inputs are imported. Producers need to receive good prices for their products, and modern agricultural inputs are needed to increase productivity. This does not mean that the other policy reforms are not important. All of them were considered in conducting the analysis. In fact, there are certain policies that especially affect the level of investments in agriculture. Export and price controls are detrimental to the expansion in the production of certain products. Such is the case of edible oils, beans, chickens, eggs, sugar, and certain products that cannot be exported without processing. Export controls combined with price controls maintain artificially low prices to the producers.

Export controls of raw products, while they stimulate higher value added to the economy, contribute to a lower price received by the producer, with a subsequent transfer of rent to the processor. Such is the case of sesame seeds, live animals, and hides.

The land tenure policies are also of utmost importance to the expansion of many crops. The policy reforms in this area will stimulate investments in bananas, basic grains, and other crops that are being affected by

HONDURAS - POLICY REFORMS - AGGREGATE

Exhibit 10.1 Value Added in 1978 Lempiras, All Agricultural Products, 1989 to 1998.

Low Growth Scenario

(1978 Million Lempiras)

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Coffee	330	379	335	345	379	392	406	421	435	451
Banana	220	211	230	250	250	250	250	250	250	250
BASIC GRAINS										
Corn	64	70	71	73	74	76	77	79	81	82
Sorghum	13	17	18	19	19	20	21	22	23	24
Beans	17	20	20	21	21	22	22	22	23	23
Rice	12	10	11	11	11	12	12	12	12	13
SUB-TOTAL	106	118	121	123	126	129	132	136	139	142
Oil Palm	18	22	23	23	24	25	25	26	27	27
Plantain	15	20	20	20	20	20	20	20	20	20
Sugar Cane	35	37	36	36	36	35	35	34	34	34
Tobacco	11	13	13	13	13	13	13	14	14	14
Cotton	2	2	2	2	2	2	2	2	2	2
Other Crops	87	60	62	65	67	70	74	79	85	92
TOTAL CROPS	824	861	843	878	918	937	959	981	1,006	1,032
Livestock	293	294	292	297	309	319	330	335	338	341
Poultry	60	69	71	73	75	77	79	81	84	86
Shrimp	29	30	35	39	43	49	56	56	57	57
Lobster	24	22	22	22	22	22	22	22	22	22
Other Fisheries	8	8	8	8	8	8	8	8	8	8
Forestry	114	104	102	100	98	96	94	92	90	88
GRAND TOTAL	1,238	1,284	1,271	1,316	1,375	1,412	1,454	1,484	1,514	1,545
PERCENT CHANGE										
Coffee		14.8%	-11.5%	3.0%	9.7%	3.5%	3.5%	3.5%	3.5%	3.5%
Banana		-4.3%	9.1%	8.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BASIC GRAINS										
Corn		10.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Sorghum		36.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Beans		14.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Rice		-10.3%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
TOTAL BASIC GRAINS		11.6%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
Palm Oil		22.1%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	0.5%
Plantain		36.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sugar Cane		4.5%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
Tobacco		16.6%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Cotton		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Crops		-31.0%	3.9%	4.0%	4.0%	3.4%	6.5%	6.2%	7.3%	8.5%
TOTAL ALL CROPS		4.6%	-2.2%	4.2%	4.5%	2.1%	2.3%	2.4%	2.5%	2.6%
Livestock		0.3%	-0.5%	1.5%	4.2%	3.3%	3.2%	1.6%	0.8%	0.8%
Poultry		15.4%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Shrimp		3.0%	14.7%	10.8%	12.1%	13.5%	14.4%	0.5%	0.5%	0.5%
Lobster		-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Fisheries		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Forestry		-8.8%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%
GRAND TOTAL		3.8%	-1.1%	3.6%	4.5%	2.7%	2.9%	2.1%	2.0%	2.1%

Source: Exhibits 3.7, 4.7, 5.9, 5.18, 5.22, 6.14, 7.5, 7.8, 7.11, 7.13, 7.19, 8.2, 9.2, 9.5, 9.8, and 9.10.

HONDURAS - POLICY REFORMS - AGGREGATE

Exhibit 10.2 Value Added in 1978 Lempiras, All Agricultural Products, 1989 to 1998.

Medium Growth Scenario

(1978 Million Lempiras)

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Coffee	330	379	350	363	381	399	436	505	573	621
Banana	220	211	230	252	261	278	296	308	310	310
BASIC GRAIN										
Corn	64	70	73	76	79	82	85	89	92	96
Sorghum	13	17	19	20	22	24	26	28	30	32
Beans	17	20	21	22	22	23	24	25	26	27
Rice	12	10	11	12	12	13	13	14	15	15
SUB-TOTAL	106	118	124	129	135	142	149	156	163	171
Oil Palm	18	22	24	25	27	29	32	34	36	38
Plantain	15	20	21	21	22	22	23	23	23	23
Sugar Cane	35	37	37	37	38	38	38	39	39	40
Tobacco	11	13	13	14	14	14	15	15	16	16
Cotton	2	2	2	2	2	2	2	2	2	2
Other Crops	87	60	65	70	75	79	88	98	109	123
TOTAL CROPS	824	861	865	913	955	1,004	1,079	1,179	1,271	1,345
Livestock	293	294	294	305	318	332	349	366	376	388
Poultry	60	69	72	74	77	81	84	87	91	94
Shrimp	29	30	39	47	56	68	82	82	83	84
Lobster	24	22	22	22	22	22	22	22	22	22
Other Fisheries	8	8	8	8	8	8	8	8	8	8
Forestry	114	104	103	102	101	100	99	98	97	96
GRAND TOTAL	1,238	1,284	1,300	1,370	1,437	1,514	1,624	1,745	1,851	1,941
PERCENT CHANGE										
Coffee		14.8%	-7.7%	3.7%	5.0%	4.7%	9.4%	15.9%	13.3%	8.4%
Banana		-4.3%	9.1%	9.5%	3.8%	6.3%	6.5%	3.9%	0.8%	0.0%
BASIC GRAIN										
Corn		10.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Sorghum		36.0%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%
Beans		14.3%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Rice		-10.3%	6.6%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
TOTAL BASIC GRAINS		11.6%	4.9%	4.7%	4.7%	4.8%	4.8%	4.8%	4.8%	4.8%
Oil Palm		22.1%	7.6%	7.6%	7.6%	7.6%	7.6%	6.5%	6.5%	6.5%
Plantain		36.5%	2.0%	2.0%	2.0%	2.0%	2.0%	1.0%	1.0%	1.0%
Sugar Cane		4.5%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Tobacco		16.6%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Cotton		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Crops		-31.0%	7.7%	7.7%	7.5%	6.1%	11.4%	10.4%	11.7%	13.1%
TOTAL ALL CROPS		4.6%	0.4%	5.6%	4.6%	5.1%	7.4%	9.3%	7.8%	5.8%
Livestock		0.3%	0.1%	3.8%	4.2%	4.4%	5.2%	4.9%	2.7%	3.0%
Poultry		15.4%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Shrimp		3.0%	29.4%	19.2%	20.0%	20.9%	20.8%	0.7%	0.7%	0.7%
Lobster		-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Fisheries		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Forestry		-8.8%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
GRAND TOTAL		3.8%	1.2%	5.4%	4.9%	5.4%	7.2%	7.5%	6.1%	4.8%

Source: Exhibits 3.7, 4.7, 5.9, 5.18, 5.22, 6.14, 7.5, 7.8, 7.11, 7.13, 7.19, 8.2, 9.2, 9.5, 9.8, and 9.10.

HONDURAS - POLICY REFORMS - AGGREGATE

Exhibit 10.3 Value Added in 1978 Lempiras, All Agricultural Products, 1989 to 1998.

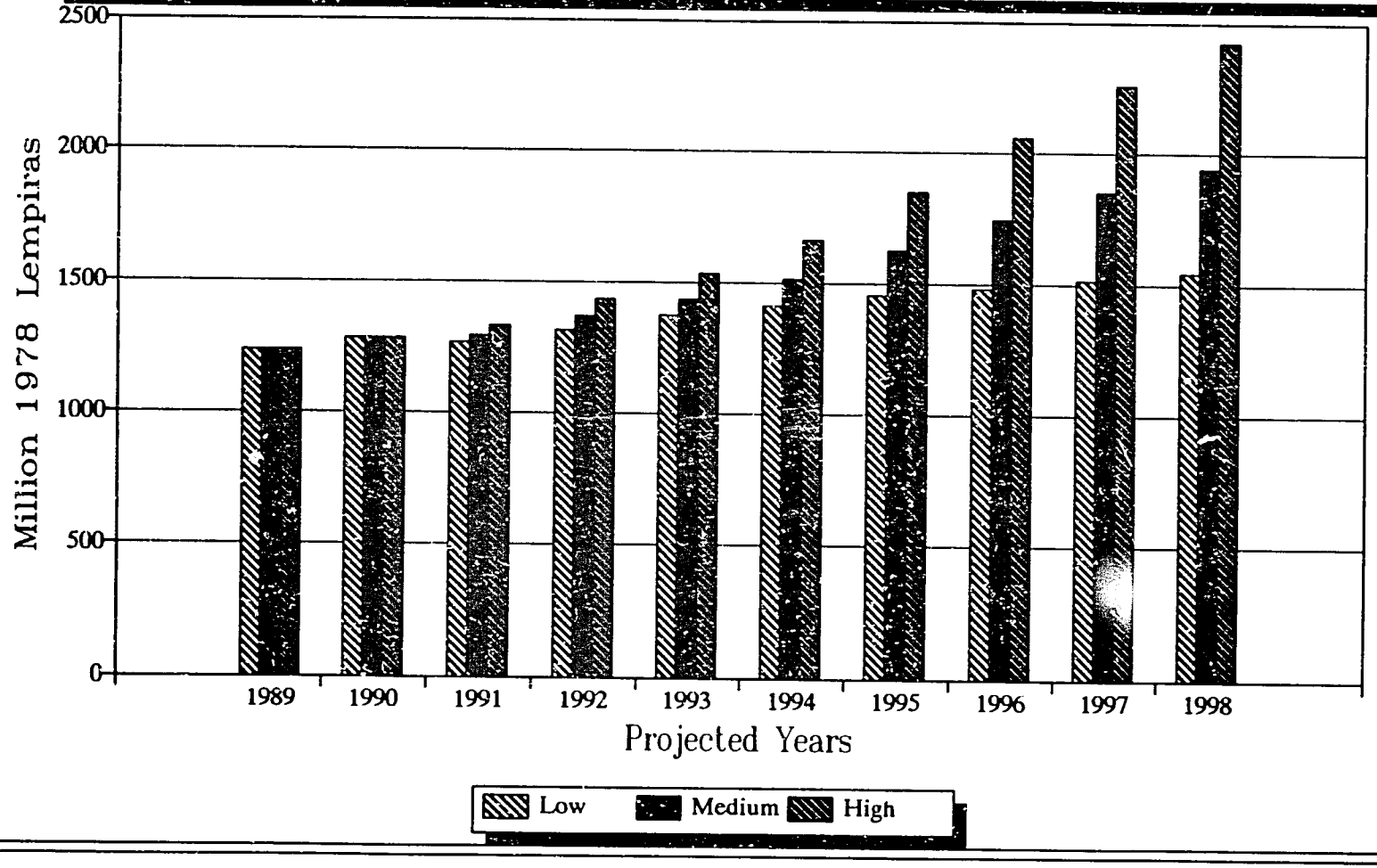
High Growth Scenario

(1978 Million Lempiras)

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Coffee	330	379	357	372	383	405	465	590	710	791
Banana	220	211	230	255	274	302	332	351	355	355
BASIC GRAIN										
Corn	64	70	74	79	84	89	94	100	106	112
Sorghum	13	17	19	22	25	28	31	35	39	44
Beans	17	20	21	22	24	25	27	28	30	32
Rice	12	10	12	13	14	15	16	17	18	19
SUB-TOTAL	106	118	127	136	146	156	168	180	193	208
Oil Palm	18	22	24	26	29	31	34	37	40	43
Plantain	15	20	21	22	23	23	24	24	25	25
Sugar Cane	35	37	38	38	39	40	41	42	44	45
Tobacco	11	13	13	14	15	15	16	17	18	18
Cotton	2	2	2	2	2	2	2	2	2	2
Other Crops	87	60	69	79	90	99	117	135	158	187
TOTAL CROPS	824	861	882	945	999	1,074	1,200	1,379	1,545	1,675
Livestock	293	294	303	317	343	364	392	416	444	474
Poultry	60	69	73	77	82	87	92	98	103	110
Shrimp	29	30	48	63	82	105	134	135	136	137
Lobster	24	22	22	22	22	22	22	22	22	22
Other Fisheries	8	8	8	8	8	8	8	8	8	8
Forestry	114	104	104	104	104	104	104	104	104	104
GRAND TOTAL	1,238	1,284	1,336	1,433	1,536	1,661	1,847	2,058	2,258	2,425
PERCENT CHANGE										
Coffee		14.8%	-5.8%	4.1%	2.9%	5.8%	15.0%	26.7%	20.3%	11.5%
Banana		-4.3%	9.1%	10.9%	7.3%	10.3%	10.0%	5.8%	1.1%	-0.0%
BASIC GRAIN										
Corn		10.0%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%
Sorghum		36.0%	12.4%	12.4%	12.4%	12.4%	12.4%	12.4%	12.4%	12.4%
Beans		14.3%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%
Rice		-10.3%	14.8%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%
TOTAL BASIC GRAINS		11.6%	7.8%	7.1%	7.2%	7.2%	7.3%	7.3%	7.4%	7.5%
Oil Palm		22.1%	9.4%	9.4%	9.4%	9.3%	9.1%	8.0%	8.0%	8.0%
Plantain		36.5%	3.3%	3.3%	3.3%	3.3%	3.0%	2.0%	2.0%	2.0%
Sugar Cane		4.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Tobacco		16.6%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Cotton		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Crops		-31.0%	15.5%	14.4%	13.2%	10.1%	18.3%	15.8%	16.9%	18.1%
TOTAL ALL CROPS		4.6%	2.3%	7.2%	5.8%	7.5%	11.7%	15.0%	12.0%	[illegible]
Livestock		0.3%	3.2%	4.8%	8.1%	6.1%	7.6%	6.2%	6.6%	6.8%
Poultry		15.4%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Shrimp		3.0%	58.8%	31.2%	29.6%	28.6%	26.8%	0.9%	0.9%	0.9%
Lobster		-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Fisheries		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Forestry		-8.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
GRAND TOTAL		3.8%	4.0%	7.3%	7.2%	8.1%	11.2%	11.4%	9.7%	7.4%

Source: Exhibits 3.7, 4.7, 5.9, 5.18, 5.22, 6.14, 7.5, 7.8, 7.11, 7.13, 7.19, 8.2, 9.2, 9.5, 9.8, and 9.10.

EXHIBIT 10.4 AGRICULTURAL VALUE ADDED
1978 LEMPIRAS, HONDURAS, 1989-1998



the present policy regime.

While markets need to be liberalized in these products, there are other commodities that would benefit from corrections of market imperfections. Such is the case of sugar cane and bananas.[1] A sugar cane producer can only sell to a mill that is at a reasonable distance. Sucrose in the sugar cane starts to decompose after the cane is harvested, and looses its sugar yields. Sugar cane is bulky, which makes its transportation very expensive; thus, an independent sugar cane producer does not have many choices to sell his cane. He is situated in a market with a natural monopsony. Contracts are normally negotiated between the mill and the farmers, but in Honduras, farmers have been at a disadvantage in relation to the sugar mills. This is the main explanation for the reduction in sugar cane area.

In bananas, there are two major companies that have a large share of the international bananas market. They act also with a high degree of monopsony power, due to mutual agreements, or oligopsonistic behavior towards independent producers. In this situation markets break down. Producers are not receiving as high a price as they would in a free market situation. Consequently, Honduras does not plant as much bananas as it economically should.

There is a need for policies that will increase competition in these imperfect markets. Alternative policy reforms must be studied to address this issue, and find a market oriented solution.

Even though policy reforms are essential for a healthy agricultural sector, they are not sufficient to achieve these production levels. Except for bananas, shrimp and other new non-traditional export crops produced by large farmers with high levels of technology, Honduras' farmers simply do not know how to increase productivity. Coffee and livestock, in addition to bananas, are the major drivers of agricultural output. However, productivity levels in these two activities are very low. Both of these activities have many small farmers who need technical assistance to improve their production methods. Without adequate programs in these two areas, the projected growth rates will simply not happen.

Agricultural GDP in constant prices is a way of measuring agricultural production in aggregate. It is very difficult to add pounds of coffee with liters of milk. Thus, by adding value added of each individual product, while maintaining the prices of a given year, total value added provides some kind of index of agricultural output. This index could be deceiving sometimes, because it does not account for the relative shifts in prices, mainly if important components of the output are export products. In the case of Honduras, the base year is 1978. This base is probably very old and needs to be changed. Coffee and bananas present a good example of this point. Coffee value added in 1978 lempiras is much higher than value added from bananas in 1989. However, both crops have the same value added in current lempiras. If the base year is changed from 1978 to a more recent year, the entire relationship would

[1] Market imperfections occur when the market participants are so few, or so powerful, that they can influence the market prices, above or below an equilibrium price if the situation were such that no one could influence a market determined price.

change, and observed growth rates would be different due to the shift in weights of different products.

A second exercise consisted in estimating value added in dollars. This indicator better represents agricultural outputs under the present situation. Value added expressed in dollars is also a way of neutralizing the effect of changing values for the lempira. Future analysts must be extremely carefully in examining value added after 1990. The exchange rate of the lempira fluctuated back and forth during 1990, and it is likely to continue to do so in the future.

Value added in dollars was estimated by converting value added during 1989 at different rates, depending on the proportion the commodity was exported. For example, bananas and coffee value added were converted dividing by 2. These commodities are mostly exported. The Central Bank estimated their income for value added purposes, multiplying export value in dollars by 2; thus, the reverse operation would be to divide value added in lempiras by the same factor. However, for a non-exported product like corn, the Central Bank estimates value added from the income reported in lempiras. If this income is estimated in dollars, it would be equivalent to dividing the value by what the market determined rate would have been in 1989. It was estimated that 3.5 to one was such a rate for 1989 on the average.

Once 1989 value added in dollars was estimated for each commodity, projections were made assuming constant or varying prices, depending on the knowledge about each product at the moment. The aggregate result of these exercises are presented on Exhibits 10.5 to 10.7 for the three alternative growth scenario. For the low growth scenario (Exhibit 10.5), 1991 will experience no growth. It will then grow between 1.6 and 4.4 percent for the following years.

For the medium growth scenario, total growth of agricultural GDP will grow two percent during 1991, and will fluctuate between 4.3 and 6.4 percent for the remaining years (Exhibit 10.6). For the high growth scenario, 1991 will grow 4.6 percent, and the rest of the years will experience growth rates between 6.7 and 10.8 percent per year (Exhibit 10.7). Exhibit 10.8 graphs projected agricultural value added in dollars for the three scenarios.

10.2 Export Value

Export value was another indicator selected due to the importance of agriculture in the total of Honduras' exports. Agriculture generates most of the foreign exchange needed to foster growth and development in other sectors of the economy, that depend on imported inputs more that the agricultural sector. While agricultural value added has been underestimated in the past, export value has been over-estimated. This is mainly due to estimation procedures for bananas, shrimp, sugar, and beef. The Central Bank estimated export value for these commodities multiplying export volume times international prices. The difference in the international price of bananas and the price reported by the banana companies is very large. For the case of shrimp, the Central Bank was simply using the wrong size of shrimp.

HONDURAS - POLICY REFORMS - AGGREGATE

Exhibit 10.5 Value Added in Dollars, All Agricultural Products, 1989 to 1998.

Low Growth Scenario.

(Million Dollars)

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Coffee	178	204	181	186	204	212	219	227	235	243
Banana	218	208	228	247	247	247	247	247	247	247
BASIC GRAIN										
Corn	26	29	29	30	30	31	32	32	33	33
Sorghum	5	6	7	7	7	8	8	8	8	9
Beans	7	8	8	9	9	9	9	9	9	10
Rice	5	4	4	4	5	5	5	5	5	5
SUB-TOTAL	43	47	49	50	51	52	53	55	56	57
Oil Palm	7	8	8	9	9	9	9	10	10	10
Plantain	6	9	9	9	9	9	9	9	9	9
Sugar Cane	26	27	26	26	26	26	25	25	25	25
Tobacco	6	7	8	8	8	8	8	8	8	8
Cotton	1	1	1	1	1	1	1	1	1	1
Other Crops	33	23	24	25	26	27	29	30	32	35
TOTAL CROPS	518	535	532	559	580	589	600	611	622	634
Livestock	160	161	160	163	172	179	186	189	190	191
Poultry	28	32	33	34	35	36	37	38	39	40
Shrimp	6	7	10	12	14	18	22	22	22	22
Lobster	20	18	18	18	18	18	18	18	18	18
Other Fisheries	4	4	4	4	4	4	4	4	4	4
Forestry	70	42	41	40	39	39	38	37	36	36
GRAND TOTAL	735	757	757	790	823	844	866	881	895	910
PERCENT CHANGE										
Coffee		14.8%	-11.5%	3.0%	9.7%	3.5%	3.5%	3.5%	3.5%	3.5%
Banana		-4.3%	9.1%	8.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BASIC GRAIN										
Corn		10.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Sorghum		36.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Beans		14.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Rice		-10.3%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
TOTAL BASIC GRAINS		11.4%	2.3%	2.3%	2.3%	2.3%	2.3%	2.4%	2.4%	2.4%
Oil Palm		22.1%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	0.5%
Plantain		36.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sugar Cane		4.5%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
Tobacco		16.6%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Cotton		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Crops		-31.0%	3.9%	4.0%	4.0%	3.4%	6.5%	6.2%	7.3%	8.5%
TOTAL ALL CROPS		3.4%	-0.5%	5.1%	3.6%	1.6%	1.8%	1.8%	1.9%	2.0%
Livestock		0.7%	-0.4%	2.0%	5.4%	3.9%	3.7%	1.6%	0.7%	0.7%
Poultry		15.0%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Shrimp		7.8%	36.3%	22.5%	22.8%	23.3%	22.8%	0.8%	0.8%	0.8%
Lobster		-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Fisheries		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Forestry		-40.3%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%
GRAND TOTAL		3.0%	0.0%	4.4%	4.1%	2.5%	2.6%	1.7%	1.6%	1.7%

Source: Exhibits 3.7, 4.7, 5.9, 5.18, 5.22, 6.14, 7.5, 7.8, 7.11, 7.13, 7.19, 8.2, 9.2, 9.5, 9.8, and 9.10.

HONDURAS - POLICY REFORMS - AGGREGATE

Exhibit 10.6 Value Added in Dollars, All Agricultural Products, 1989 to 1998.

Medium Growth Scenario. (Million Dollars)

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Coffee	178	204	189	196	207	217	235	264	311	341
Banana	218	208	228	247	251	261	272	283	286	286
BASIC GRAIN										
Corn	26	29	30	31	32	33	35	36	38	39
Sorghum	5	6	7	8	8	9	10	10	11	12
Beans	7	8	9	9	9	10	10	10	11	11
Rice	5	4	5	5	5	5	5	6	6	6
SUB-TOTAL	43	47	50	52	54	57	60	63	66	69
Oil Palm	7	8	9	9	10	11	12	12	13	14
Plantain	6	9	9	9	9	9	9	10	10	10
Sugar Cane	26	27	27	27	28	28	28	28	29	29
Tobacco	6	7	8	8	8	8	9	9	9	9
Cotton	1	1	1	1	1	1	1	1	1	1
Other Crops	33	23	25	27	29	31	34	38	42	47
TOTAL CROPS	518	535	544	576	596	622	660	707	766	806
Livestock	160	161	161	168	177	185	196	206	211	217
Poultry	28	32	33	35	36	38	39	41	42	44
Shrimp	6	7	12	16	22	28	36	37	37	37
Lobster	20	18	18	18	18	18	18	18	18	18
Other Fisheries	4	4	4	4	4	4	4	4	4	4
Forestry	70	42	41	41	41	40	40	39	39	39
GRAND TOTAL	735	757	772	817	853	895	953	1,012	1,078	1,126
PERCENT CHANGE										
Coffee		14.8%	-7.7%	3.7%	5.7%	4.9%	8.4%	12.1%	18.0%	9.6%
Banana		-4.3%	9.1%	8.6%	1.4%	4.0%	4.4%	4.1%	0.8%	0.2%
BASIC GRAIN										
Corn		10.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Sorghum		36.0%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%
Beans		14.3%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Rice		-10.3%	6.6%	4.5%	4.6%	4.6%	4.5%	4.6%	4.5%	4.5%
TOTAL BASIC GRAINS		11.4%	4.8%	4.7%	4.7%	4.7%	4.7%	4.7%	4.8%	4.8%
Oil Palm		22.1%	7.6%	7.6%	7.6%	7.6%	7.6%	6.5%	6.5%	6.5%
Plantain		36.5%	2.0%	2.0%	2.0%	2.0%	2.0%	1.0%	1.0%	1.0%
Sugar Cane		4.5%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Tobacco		16.6%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Cotton		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Crops		-31.0%	7.7%	7.7%	7.5%	6.1%	11.4%	10.4%	11.7%	13.1%
TOTAL ALL CROPS		3.4%	1.6%	5.9%	3.6%	4.4%	6.0%	7.2%	8.3%	5.3%
Livestock		0.7%	0.1%	4.7%	4.8%	4.9%	5.7%	5.2%	2.3%	2.7%
Poultry		15.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Shrimp		7.8%	72.7%	35.5%	32.5%	30.8%	28.4%	0.9%	0.9%	0.9%
Lobster		-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Fisheries		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Forestry		-40.3%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
GRAND TOTAL		3.0%	2.0%	5.8%	4.3%	5.0%	6.4%	6.2%	6.4%	4.5%

Source: Exhibits 3.7, 4.7, 5.9, 5.18, 5.22, 6.14, 7.5, 7.8, 7.11, 7.13, 7.19, 8.2, 9.2, 9.5, 9.8, and 9.10.

HONDURAS - POLICY REFORMS - AGGREGATE

Exhibit 10.7 Value Added in Dollars, All Agricultural Products, 1989 to 1998.

High Growth Scenario.

(Million Dollars)

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Coffee	178	204	193	201	209	222	252	301	387	439
Banana	218	208	228	247	256	275	296	317	322	324
BASIC GRAIN										
Corn	26	29	30	32	34	36	38	41	43	46
Sorghum	5	6	7	8	9	10	12	13	15	16
Beans	7	8	9	9	10	10	11	12	12	13
Rice	5	4	5	5	6	6	6	7	7	8
SUB-TOTAL	43	47	51	55	59	63	67	72	78	83
Oil Palm	7	8	9	10	10	11	13	14	15	16
Plantain	6	9	9	9	9	10	10	10	10	11
Sugar Cane	26	27	27	28	29	30	30	31	32	33
Tobacco	6	7	8	8	9	9	9	10	10	11
Cotton	1	1	1	1	1	1	1	1	1	1
Other Crops	33	23	27	30	35	38	45	52	61	72
TOTAL CROPS	518	535	552	589	617	659	723	807	915	988
Livestock	160	161	167	176	192	204	220	232	247	262
Poultry	28	32	34	36	38	40	43	45	48	51
Shrimp	6	7	17	26	36	50	66	66	67	68
Lobster	20	18	18	18	18	18	18	18	18	18
Other Fisheries	4	4	4	4	4	4	4	4	4	4
Forestry	70	42	42	42	42	42	42	42	42	42
GRAND TOTAL	725	757	792	849	906	975	1,074	1,173	1,299	1,391
PERCENT CHANGE										
Coffee		14.8%	-5.8%	4.1%	4.4%	6.3%	13.1%	19.5%	28.9%	13.2%
Banana		-4.3%	9.1%	8.8%	3.6%	7.3%	7.7%	6.9%	1.6%	0.7%
BASIC GRAIN										
Corn		10.0%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%
Sorghum		36.0%	12.4%	12.4%	12.4%	12.4%	12.4%	12.4%	12.4%	12.4%
Beans		14.3%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%
Rice		-10.3%	14.8%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%	7.1%
TOTAL BASIC GRAINS		11.4%	7.7%	7.1%	7.1%	7.2%	7.2%	7.3%	7.3%	7.4%
Oil Palm		22.1%	9.4%	9.4%	9.4%	9.3%	9.1%	8.0%	8.0%	8.0%
Plantain		36.5%	3.3%	3.3%	3.3%	3.3%	3.0%	2.0%	2.0%	2.0%
Sugar Cane		4.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Tobacco		16.6%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Cotton		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Crops		-31.0%	15.5%	14.4%	13.2%	10.1%	18.3%	15.8%	16.9%	18.1%
TOTAL ALL CROPS		3.4%	3.1%	6.8%	4.7%	6.8%	9.8%	11.6%	13.5%	8.0%
Livestock		0.7%	3.9%	5.5%	9.3%	6.2%	7.7%	5.5%	6.1%	6.4%
Poultry		15.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Shrimp		7.8%	145.3%	50.0%	41.4%	36.7%	32.4%	1.0%	1.0%	1.0%
Lobster		-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Fisheries		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Forestry		-40.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
GRAND TOTAL		3.0%	4.6%	7.2%	6.7%	7.7%	10.1%	9.2%	10.8%	7.1%

Source: Exhibits 3.7, 4.7, 5.9, 5.18, 5.22, 6.14, 7.5, 7.8, 7.11, 7.13, 7.19, 8.2, 9.2, 9.5, 9.8, and 9.10.

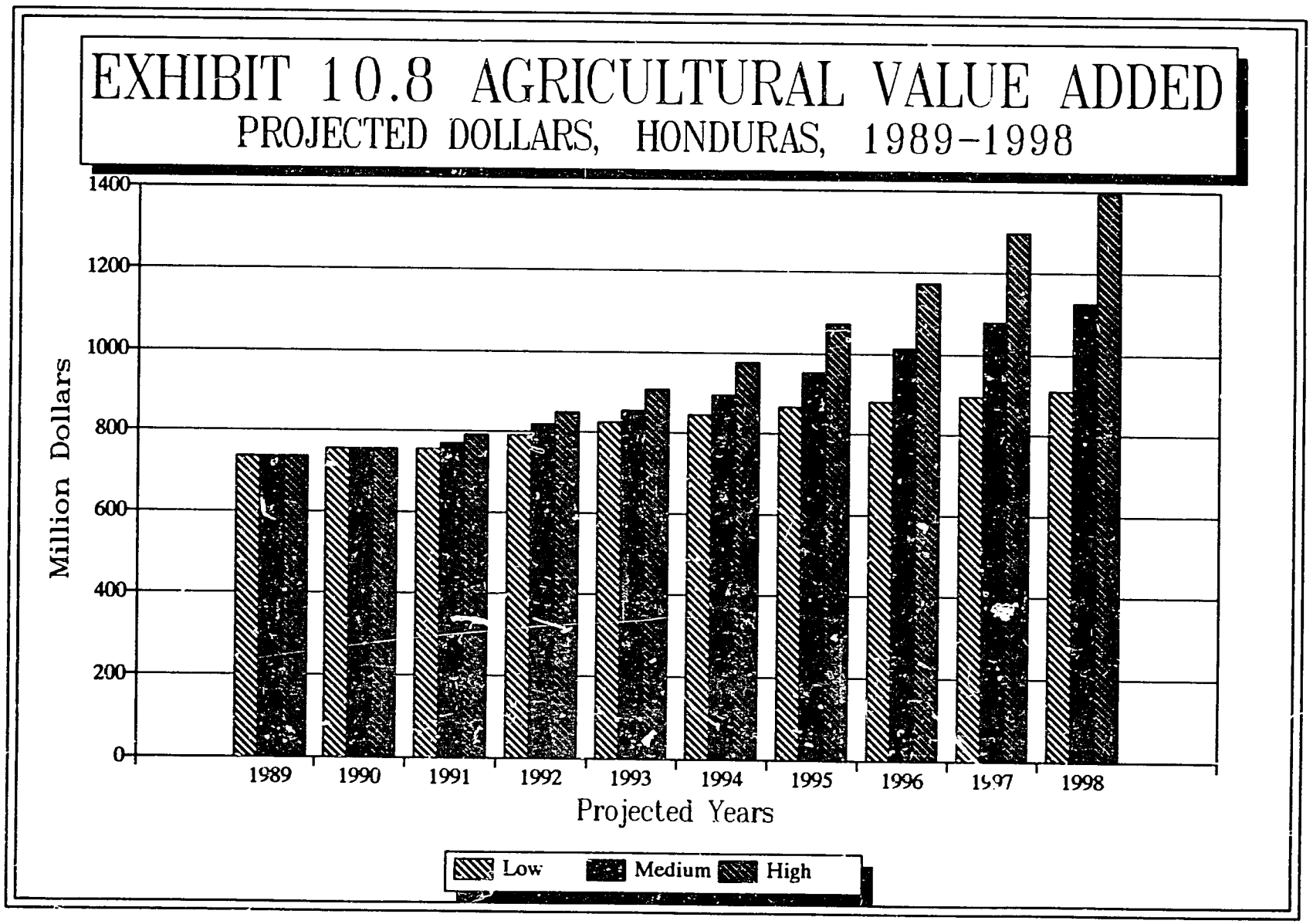


EXHIBIT 10.8 AGRICULTURAL VALUE ADDED
PROJECTED DOLLARS, HONDURAS, 1989-1998
Million Dollars
1400
1200
1000
800
600
400
200
0
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
Projected Years
Low
Medium
High

Projections were made assuming reported prices, and not international prices. This means, that export value will be considerably larger if the banana companies report the market price in their exports. Aggregate results of the projections made are presented on Exhibits 10.9 through 10.11, for each of the three growth scenarios. Exhibit 10.12 graphs the total result of the three alternatives.

Bananas and coffee will continue to be the main source of foreign exchange. While other traditional exports are expected to decline or increase slightly, beef exports will recuperate the position it once had. As the foreign exchange regime is liberalized, export taxes eliminated, and milk prices increase, beef production will grow, and there will be less incentives for smuggling live animals into neighboring countries. This will contribute to a substantial increase in reported beef exports. Non-traditional exports are expected to double, mainly from shrimp, palm oil, and other crops.

For the low growth scenario, value of agricultural exports are expected to grow at rates between 1.1 and 7.8 percent (Exhibit 10.9). For the medium growth scenario, these growth rates will vary between 4.4 and 10.7 percent (Exhibit 10.10), and for the high growth scenario, the rates will be between 7.3 and 17.8 percent (Exhibit 10.11). Exhibit 10.12 graphs these projections.

10.3 Concluding Comments

When measuring the impact of policy reforms, it is important to have good statistics that reflect the reality of the country. Honduras has 60 percent of its population living in rural areas. Many of these areas lack basic services, such as electricity and running water. Many of the farmers are small and consume a considerable amount of their production, mainly in the case of basic grains, livestock and poultry. Due to a lack of continuity in scientifically sound data gathering efforts, the available statistics do not reflect total production, post harvest losses, and home consumption, except for basic grains during several years, and coffee in the last three years. Besides the existence of relatively good statistics for these crops, the Central Bank uses them with caution, and adjusts the figures to fit their trends and analysis.

There are significant differences between published data among government institutions. The reasons for these differences are several. These include differences in data source, differences between crop years and calendar year, and differences in units of measurement and conversion factors.

The last agricultural census was conducted in 1974. However, there were no follow-up surveys, and no one knows the magnitude of the under-count. DGEC conducted multi-purpose agricultural surveys using area frame samples in 1984 and in 1989. This effort needs to be continued. DGEC has also been conducting annual forecasts of basic grains. The sample frame of these multiple purpose surveys are good for products distributed in large areas and produced by many producer, like corn. However, their precision is very low for concentrated products, produced by a small number of producers, like melons. There is a need to develop more specific samples for these crops to get better estimators of their production, area, and cost structure. IHCAFE started annual surveys since

HONDURAS - POLICY REFORMS - AGGREGATE

Exhibit 10.9 Projection of Export Values by Major Agricultural Products, 1989, 1998.

Low Growth Scenario

(Million Dollars)

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
TRADITIONAL PRODUCTS										
Banana	211	194	212	230	230	230	230	230	230	230
Coffee	194	170	159	170	182	207	238	252	261	270
Wood	25	17	16	16	16	15	15	15	14	14
Beef	66	73	70	78	102	117	132	135	132	130
Sugar	10	13	9	6	0	0	0	0	0	0
Tobacco	7	9	10	10	10	10	10	10	10	10
Cotton	1	1	1	1	1	1	1	1	1	1
SUB-TOTAL	514	477	477	511	540	580	625	641	648	655
NON-TRADITIONAL PRODUCTS										
Shrimp	32	33	38	42	47	53	61	61	62	62
Lobster	30	28	28	28	28	28	28	28	28	28
Palm Oil	9	0	0	0	0	0	0	0	0	0
Plantain	3	9	9	9	8	8	7	7	6	6
Other	27	51	52	55	57	59	63	66	71	77
SUB-TOTAL	101	120	127	133	139	147	158	162	167	172
TOTAL	615	597	604	643	679	727	783	803	814	827
PERCENT CHANGE										
TRADITIONAL PRODUCTS										
Banana		-8.2%	9.1%	8.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Coffee		-12.1%	-6.4%	6.9%	7.1%	13.4%	15.3%	5.6%	3.5%	3.5%
Wood		-35.2%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%
Beef		12.0%	-4.3%	11.4%	29.8%	15.6%	12.0%	2.3%	-1.6%	-1.8%
Sugar		23.2%	-24.4%	-32.8%						
Tobacco		37.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Cotton		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SUB-TOTAL		-7.2%	0.1%	7.0%	5.6%	7.4%	7.9%	2.6%	1.0%	1.0%
NON-TRADITIONAL PRODUCTS										
Shrimp		3.0%	14.7%	10.8%	12.1%	13.5%	14.4%	0.5%	0.5%	0.5%
Lobster		-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Palm Oil										
Plantain		180.1	-4.4%	-4.7%	-5.1%	-5.5%	-6.0%	-6.5%		
Other		87.0%	3.9%	4.0%	4.0%	3.4%	6.5%	6.2%	7.3%	8.5%
SUB-TOTAL		19.5%	5.3%	4.5%	5.2%	5.6%	7.5%	2.4%	2.9%	3.5%
TOTAL		-2.8%	1.1%	6.5%	5.5%	7.0%	7.8%	2.5%	1.4%	1.5%

Source: Exhibits 3.7, 4.7, 6.14, 7.5, 7.8, 7.11, 7.13, 7.16, 9.2, 9.5, 9.8, and 9.10.

HONDURAS - POLICY REFORMS - AGGREGATE

Exhibit 10.10 Projection of Export Values by Major Agricultural Products, 1989, 1998.

Medium Growth Scenario

(Million Dollars)

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
TRADITIONAL PRODUCTS										
Banana	211	194	214	236	248	266	286	300	306	309
Coffee	194	170	168	181	185	212	258	306	346	376
Wood	25	17	16	16	16	16	16	16	15	15
Beef	66	73	72	90	106	122	142	158	157	157
Sugar	10	13	12	12	11	11	10	10	9	9
Tobacco	7	9	10	10	10	11	11	11	12	12
Cotton	1	1	1	1	1	1	1	1	1	1
SUB-TOTAL	514	477	492	545	578	638	724	802	846	878
NON-TRADITIONAL PRODUCTS										
Shrimp	32	33	43	51	61	74	89	89	90	91
Lobster	30	28	28	28	28	28	28	28	28	28
Palm Oil	9	0	2	4	6	9	11	14	16	18
Plantain	3	9	9	10	10	10	10	10	9	9
Other	27	51	54	59	63	67	74	82	92	104
SUB-TOTAL	101	120	136	150	167	186	212	222	235	250
TOTAL	615	597	628	696	745	825	936	1,024	1,081	1,128
	PERCENT CHANGE									
TRADITIONAL PRODUCTS										
Banana		-8.2%	10.2%	10.5%	4.8%	7.4%	7.6%	5.0%	1.8%	1.0%
Coffee		-12.1%	-1.4%	7.6%	2.5%	14.7%	21.8%	18.3%	13.3%	8.4%
Wood		-35.2%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
Beef		12.0%	-2.3%	24.8%	18.9%	14.6%	16.2%	11.8%	-1.0%	0.3%
Sugar		23.2%	-2.8%	-3.1%	-3.4%	-3.8%	-4.2%	-4.7%	-5.2%	-5.8%
Tobacco		37.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Cotton		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SUB-TOTAL		-7.2%	3.3%	10.7%	6.0%	10.5%	13.4%	10.7%	5.5%	3.8%
NON-TRADITIONAL PRODUCTS										
Shrimp		3.0%	29.4%	19.2%	20.0%	20.9%	20.8%	0.7%	0.7%	0.7%
Lobster		-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Palm Oil				112.6	59.4%	41.7%	32.9%	18.2%	16.9%	15.8%
Plantain		180.1	0.8%	0.7%	0.7%	0.7%	0.7%	-2.1%	-2.3%	-2.4%
Other		87.0%	7.7%	7.7%	7.5%	6.1%	11.4%	10.4%	11.7%	13.1%
SUB-TOTAL		19.5%	12.8%	10.6%	11.2%	11.4%	13.9%	4.8%	5.5%	6.4%
TOTAL		-2.8%	5.2%	10.7%	7.1%	10.7%	13.5%	9.4%	5.5%	4.4%

Source: Exhibits 3.7, 4.7, 5.14, 7.5, 7.8, 7.11, 7.13, 7.16, 9.2, 9.5, 9.8, and 9.10.

HONDURAS - POLICY REFORMS - AGGREGATE

Exhibit 10.11 Projection of Export Values by Major Agricultural Products, 1989, 1998.

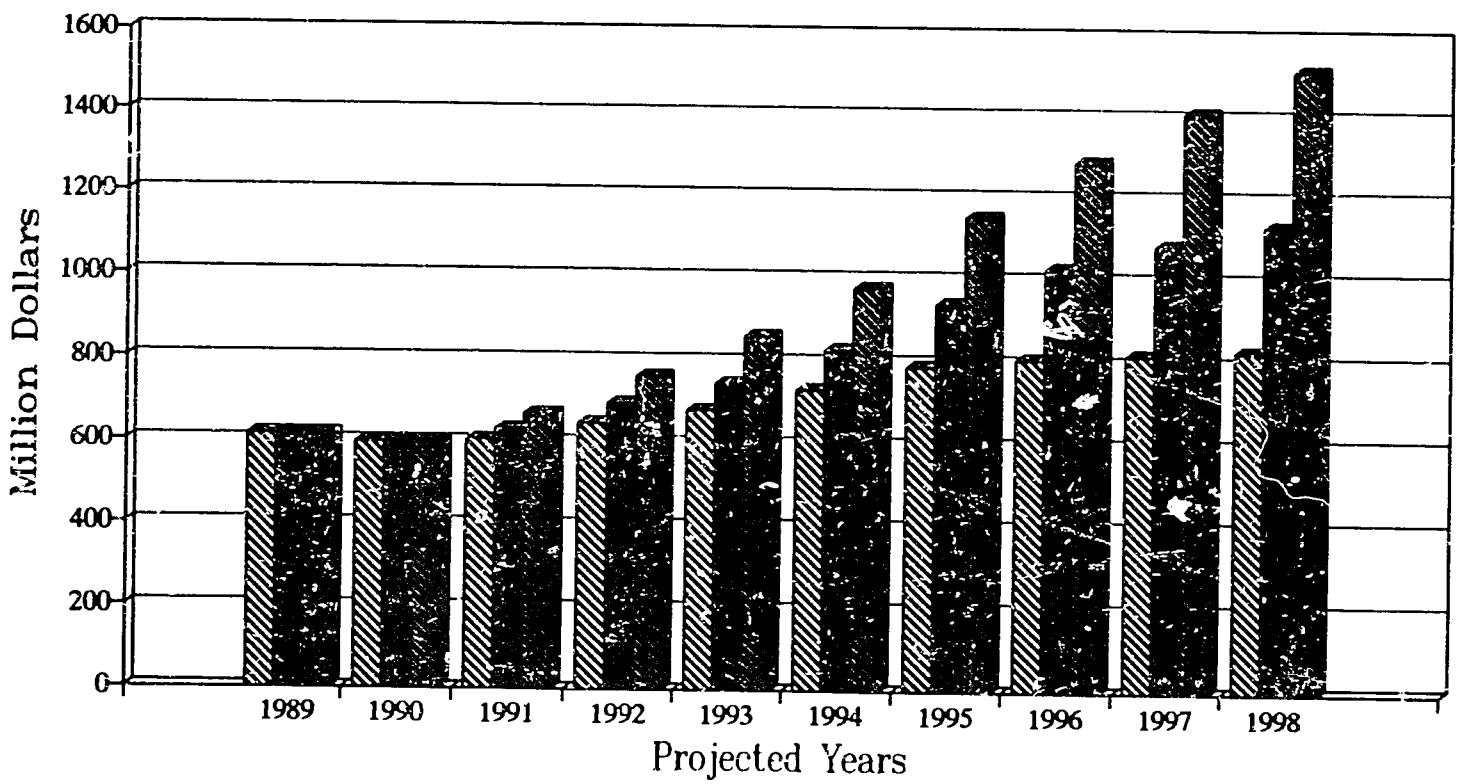
High Growth Scenario

(Million Dollars)

Description	Year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
TRADITIONAL PRODUCTS										
Banana	211	194	216	244	267	300	337	364	375	383
Coffee	194	170	173	187	188	218	279	360	434	483
Wood	25	17	17	17	17	17	17	17	17	17
Beef	66	73	88	106	142	159	181	186	194	207
Sugar	10	13	14	16	17	19	21	23	25	27
Tobacco	7	9	10	10	11	11	12	12	13	13
Cotton	1	1	1	1	1	1	1	1	1	1
SUB-TOTAL	514	477	518	581	642	724	847	962	1,058	1,131
NON-TRADITIONAL PRODUCTS										
Shrimp	32	33	52	69	89	114	145	146	147	149
Lobster	30	28	28	28	28	28	28	28	28	28
Palm Oil	9	0	3	7	11	15	20	24	29	34
Plantain	3	9	10	10	11	11	11	11	12	12
Other	27	51	58	67	76	83	98	114	133	157
SUB-TOTAL	101	120	151	180	213	251	302	323	349	379
TOTAL	615	597	669	760	855	975	1,149	1,285	1,407	1,510
PERCENT CHANGE										
TRADITIONAL PRODUCTS										
Banana		-8.2%	11.3%	13.1%	9.4%	12.5%	12.2%	7.9%	3.2%	2.0%
Coffee		-12.1%	1.7%	8.0%	0.4%	15.9%	28.1%	29.3%	20.3%	11.5%
Wood		-35.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Beef		12.0%	19.6%	21.0%	33.3%	12.1%	14.0%	2.5%	4.8%	6.4%
Sugar		23.2%	11.8%	11.1%	10.6%	10.1%	9.7%	9.4%	9.1%	8.8%
Tobacco		37.0%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Cotton		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SUB-TOTAL		-7.2%	8.6%	12.1%	10.6%	12.9%	16.9%	13.6%	10.0%	6.8%
NON-TRADITIONAL PRODUCTS										
Shrimp		3.0%	58.8%	31.2%	29.6%	28.6%	26.8%	0.9%	0.9%	0.9%
Lobster		-7.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Palm Oil				114.4	60.8%	42.9%	32.2%	21.5%	19.7%	18.2%
Plantain		180.1	4.0%	4.0%	4.0%	4.0%	3.3%	0.8%	0.8%	0.8%
Other		87.0%	15.5%	14.4%	13.2%	10.1%	18.3%	15.8%	16.9%	18.1%
SUB-TOTAL		19.5%	25.4%	18.9%	18.6%	17.8%	20.3%	7.0%	7.9%	8.8%
TOTAL		-2.8%	12.0%	13.6%	12.5%	14.1%	17.8%	11.9%	9.5%	7.3%

Source: Exhibits 3.7, 4.7, 6.14, 7.5, 7.8, 7.11, 7.13, 7.16, 9.2, 9.5, 9.8, and 9.10.

EXHIBIT 10.12 AGRICULTURAL EXPORTS
HONDURAS, 1989 TO 1998



1988, and it has been able to design a sample frame that provides results with very low variances. The Central Bank uses its own estimation procedures through interviews to major agro-industries, and consumption surveys to estimate their data needs. However, they recognize the need to review their methodologies. The Ministry of Natural Resources also generates data from several sources, but sometimes they lack quality control. One example is the statistics of the number of animals slaughtered, which is done by the Department of Norms and Controls of the "Dirección General de Ganadería". The Ministry of Economy also generates statistics. They collect price statistics in different markets, and keep record of bananas production, palm oil, animals slaughtered, sugar, and other products. Unfortunately, communication among institutions is not very good, causing duplication of efforts, and contradiction of information. This creates a nightmare for analysts who try to interpret what is going on and analyze policy impacts.

Crop production statistics are registered for crop years, which differ by crop. For the Ministry of Natural Resources a crop year runs from April to May, and for coffee from October to September. The Central Bank and other government institutions use a calendar year in their publications. Each one uses a different criteria to transform crop year data to calendar year. There is a need to adopt unified criteria in the conversion of crop year statistics to calendar year.

Official publications, referring to the same data source, differ from the original data due to conversion factors used in transforming the original numbers. Several units of measurement are used in Honduras. For most crops, the usual land unit of measurement is the manzana (1 Hectare = 1.43 manzana). However, in bananas the common unit of measurement is the acre. DGEC publishes the results of its surveys in manzanas and the Central Bank also uses manzanas, but the Agricultural Division of the Ministry of Planning uses Hectares in all its reports, and requires all the institutions to report data in Hectares to them.

Agricultural output is measured in a wide variety of units, and conversion factors are commonly different for each user. Coffee is harvested in cherry. At this stage it is measured by volume ("latas" with different sizes, depending on the region). Later it is transformed to wet parchment, then to dry parchment, and last to green coffee ("oro"). Dry parchment coffee may have different degrees of humidity, with different dry weights. Coffee yields differ at the beginning of the harvest and at the end. Its density also varies with altitude and variety. Rice is another product with different yield factors from paddy to white rice. Milk is measured in bottles (0.75 liters) by the farmer, and liters in the official statistics. However, different farmers use different kinds of bottles. As products are converted from one stage to the next, different conversion factors are used by different users. There is a need to unify the conversion factors.

One further complication of official statistics is the changes made to achieve some international objective. It is common knowledge that most coffee producing countries inflated their coffee production to obtain higher export quotas from ICO member countries. Honduras was not an exception. Some officials in some countries have even modified the true figure to look good politically.

There is no evidence however that this has been the case in Honduras.

Except for shrimp, it is safe to say that the contribution of agriculture to total GDP is higher than statistically reported, due mainly to under-counting by the Central Bank. Population, on the other hand has been over-estimated, and many publications use growth rates above 3 percent per year. The recent 1988 population census indicated an annual population growth rate of 2.8 percent. Thus, it is safe to conclude that Honduras is not as poor as international statistics have been stating.

There is a need to dedicate resources in a continuous and systematic way to generate good statistics on the agricultural sector. There is a need for coordination among the government agencies to agree on conversion factors and use the most reliable information sources.

One variable of concern in economic development is employment. Rural employment is a subject in need of extensive studying in Honduras. While there is a legitimate concern about unemployment levels, seasonal shortages are observed in certain regions of the country. There was a need to import temporary labor from Nicaragua to harvest coffee in El Paraiso during the most recent coffee harvest. Other farmers have complained about severe labor shortages in other regions of the country. Seasonal labor shortages might impose an additional constraint on the expansion of some crop activities, mainly if other sectors of the economy expand. For example, if the country supports a strong program of industrial free port zones, rural labor shortages will increase. People usually prefer factory employment, where they have other benefits and permanent work, over farm work, that is out in the sun, seasonal, and depends on weather condition. Bad weather means no work and no pay.

Value added and export value are but two important economic indicators, there is a need to measure other indicators that reflect the impact of the proposed policy reforms on the farm sector and the rest of the population. Some of these could include:

- Value added to the economy from agricultural products, including the multiplier effect;
- Employment generation;
- Farm family income;
- Purchasing power of agricultural GDP;and
- Rural per capita average daily calorie consumption.

There is a need to establish a monitoring system to track the economy on a quarterly basis. The Central Bank has started a project on this direction. They need assistance in implementing it as soon as possible. Even though, most of the proposed policy reforms propose a liberalization of the market forces, an economy needs to be managed like a business. Even in large economies like the U.S., macroeconomic policies are tuned to provide stability and growth. Policy makers as well as the entire business community eagerly wait for the quarterly economic indicators to adjust the policies. A small economy like Honduras suffers from many market imperfections, and policy measures become more critical in more areas.

To effectively manage the economy, the right information system needs to be placed in operation. A good information system must be consistent, accurate and timely. Thus, to fulfill these criteria, there might be a need to use both direct and indirect indicators, also known as proxies.[1]

The agricultural sector in Honduras has been very diffused. The new planning law provided some leadership for the Ministry of Natural Resources through the CODA and the UPSA. However, it will be difficult to unify the agricultural policies, unless the MNR and the UPSA are strengthened to respond to the growing demand for policy analysis. The Ministry of Economy has had a predominant role in the most important agricultural products in the country. The Ministry of Economy presides IHCAFE, it initiated the new proposed banana law, it houses the Sugar Commission, and it issues export permits for controlled commodities. There is a need for the Ministry of Natural Resources to develop a leadership in the entire agricultural sector. One way of developing this leadership is by having a good, strengthened, capable UPSA and an operating CODA.

10.4 Recommendations

The following recommendations resulted from the analysis:

1. Pursue the Proposed Policy Reforms. The GOH and all donors should be very persistent on the adoption and enforcement of the proposed policy reforms to achieve a sustained growth in the agricultural sector. Controls must be removed in the foreign exchange regime, prices, interest rates, and exports (both export taxes and quantity restrictions). Land tenure policy reforms are also essential to achieve the projected growth.

2. Promote Transparency on All Products. Apply the laws and regulations equally to all products and producers. Communicate the rules of the game clearly even if there is a special situation that needs a special legislation or system. One such example would be the price band mechanism for grains, designed to isolate local producers from subsidies received by producers in industrialized nations.

3. Support Research and Extension Activities. A.I.D. is developing a project to aid technological transfer in non-traditional agricultural export crops. While it is important to diversify export earnings, there is still much to be gained from traditional agricultural activities. The two major areas that need assistance are coffee and livestock. Productivity gains in these two activities will have a higher impact on value added and foreign exchange generation than non-traditional export crops. The medium and high growth scenario have assumed interventions in these activities. If they do not happen, the low growth scenario will be most likely to happen.

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[1] For a good treatment of economic indicators refer to Krishna Kumar, "Indicators for Measuring Changes in Income, Food Availability and Consumption, and The Natural Resource Base." A.I.D. Program Design and Evaluation Methodology No. 12. Washington, D.C.: USAID, Bureau for Program and Policy Coordination, September 1989.

4. Support the Establishment of a Unified Agricultural Statistics System. Provide assistance to UPSA, DGEC, the Central Bank, and other institutions to develop an agricultural statistical system uniform, that satisfies the needs of all the users. This means supporting a yearly multiple purpose agricultural survey, and yearly surveys for special crops and activities, such as non-traditional export crops, and commercial chicken and eggs production.

5. Assist the Central Bank in Revising its National Accounts System. The Department of Economic Studies recognizes the need to change the 1978 base year. It also has the need to develop better statistics on production from all the sector, as well as national income.

6. Study Some Crops in More Detail. There are some crops that were important in the past and perhaps could be recuperated under the new policy environment. These crops are tobacco and cotton. They should be studied in more detail, and other products such as vegetables and poultry need to be monitored.

7. Establish a Monitoring System of Policy Reform Impacts. A monitoring system with selected economic indicators need to be established to adequately manage the economy. The Central Bank has started a project to provide quarterly estimates of economic indicators. This effort should be aided to accelerate its implementation.

ANNEX A

TABLES FOR THE COFFEE SECTOR IMPACT ANALYSIS

06-Mar-91 Date

HONDURAS - POLICY REFORMS - COFFEE

Table 1. Unit Prices (1990)

Input	Unit	Unit Prices	
		Price	(Lempiras)
Exchange Rate	Lempiras/US$	5.50	
Fertilizer formula	$/qq	12.73	70.00
Urea	$/qq	10.73	59.00
Plants	$/Plant	0.07	0.40
Insecticide	$/Liter	9.45	52.00
Copper chlorine oxide	$/Kg.	1.82	10.00
Adherent	$/Liter	2.73	15.00
Shade trees	$/Tree	0.05	0.25
Pump	$/Unit	69.09	380.00
Unskilled labor	$/Man-days	1.27	7.00
Dig Holes	$/Hole	0.01	0.08
Harvest	$/qq oro	10.00	55.00
"Beneficiado " in farm	$/qq oro	1.59	8. /5
Soil sampling and analysis	$/Unit	12.73	70.00
Transportation	$/qq oro	0.80	4.40
Processing (Average)	$/Man-days	2.73	15.00
Processing cost	$/qq oro	10.00	55.00
Input transportation	$/qq	0.27	1.50
Holes per Man-day	Holes/Man-day	200.00	
Harvest per Man-Day	qq/Man-day	0.20	

Source: IHCAFE and personal interviews.

Table 2. Requirement of Inputs per Year, Coffee - Total Renovation

Description	Unit	Year 1	2	3	4	5	6
PURCHASED INPUTS							
Fertilizer formula	QQ.	6	10	16	16	16	16
Urea	QQ.	2	4	6	6	6	6
Soil Sampling and analysis	Unit	1.00					
Plants	Plants	3,500	175				
Insecticide	Liters	1.00	1.00	1.00	1.00	1.00	1.00
Copper chlorine oxide	Lbs.	5.00	7.50	12.00	12.00	12.00	12.00
Adherent	Liters	1.00	1.00	1.00	1.00	1.00	1.00
Shade trees	Trees	75					
Pump	Unit	1					
LABOR							
Cutting old coffee trees	Man-days	19.00					
Land clearing	Man-days	18.00					
Cut sticks	Man-days	4.00					
Farm layout and stick	Man-days	10.00					
Dig holes	Man-days	17.50					
Soil Conservation measures	Man-days	14.00	3.00		1.50	1.50	1.50
Plant permanent shade	Man-days	1.50					
Carry coffee trees	Man-days	14.00					
Plant coffee trees	Man-days	26.00					
First fertilizer appl.	Man-days	5.00	5.00	10.00	10.00	10.00	10.00
Second fertilizer appl.	Man-days	6.00	6.00	6.00	6.00	6.00	6.00
Third fertilizer appl.	Man-days	6.00	6.00				
First weeding	Man-days	15.00	15.00	10.00	10.00	10.00	10.00
Second weeding	Man-days	16.00	16.00	10.00	10.00	10.00	10.00
Third weeding	Man-days	14.00	14.00	10.00	10.00	10.00	
Fourth weeding	Man-days	18.00	18.00				
First phytosanitary control	Man-days	3.00	3.00	3.00	3.00	3.00	3.00
Second phytosanitary control	Man-days	3.00	3.00	4.00	4.00	4.00	4.00
Third phytosanitary control	Man-days	3.00	3.00	4.00	4.00	4.00	
Fourth phytosanitary control	Man-days	2.00	2.00				
Handle harvest residues	Man-days			2.00	4.00	4.00	4.00
Roads repair	Man-days	1.00	2.00	2.00	3.00	3.00	3.00
Fence maintenance	Man-days	3.00	3.00				
Replanting and shade formation	Man-days				10.00		10.00
Pruning	Man-days				10.00		10.00
SUB-TOTAL - BEFORE HARVEST		219.00	99.00	61.00	85.50	65.50	71.50
HARVEST							
Production	qq oro		3.33	17.50	25.00	25.83	25.00
Labor Use	Man-days		16.67	87.50	125.00	129.17	125.00
TOTAL LABOR USE		219.00	115.67	148.50	210.50	194.67	196.50

Source: IHCAFE

HONDURAS - POLICY REFORM - COFFEE

Table 3. Requirement of Inputs per Year - Partial Renovation

		Year						
	Unit	1	2	3	4	5	6	7
Description								
PURCHASED INPUTS								
Fertilize formula	QQ.	2.00	7.00	10.00	10.00	10.00	10.00	10.00
Urea	QQ.	4.00	4.00	7.00	7.00	7.00	7.00	7.00
Plants	Plants	1,200		30	30	111		111.00
Insecticide	Liters	1	1	1	1	1	1	1
Copper chlorine oxide	Lbs.	5.00	7.50	12.00	12.00	12.00	12.00	12.00
Adherent	Liters	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LABOR								
Prune coffee trees	Man-day	4.00		4.00		8.00		6.00
Dig holes and appl. fert.	Man-day	6.00		0.15	0.15	0.56		0.56
Prune Shade	Man-day	15.00	10.00	10.00	10.00	10.00	10.00	10.00
Carry coffee trees	Man-day	6.00						
Replanting	Man-day	10.00		1.00	1.00	2.00		2.00
Fertilizer application	Man-day	4.00	7.50	6.00	6.00	6.00	6.00	6.00
Weed Control	Man-day	12.00	12.00	12.00	12.00	12.00	12.00	12.00
"Deshije"	Man-day	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Phytosanitary control 1	Man-day	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Phytosanitary control 2	Man-day	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Phytosanitary control 3	Man-day	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Fence maintenance	Man-day	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Soil Conservation	Man-day	8.00	3.00	0.00	1.50	1.50	1.50	1.50
SUB-TOTAL - BEFORE HARVEST		80.00	47.50	48.15	45.65	55.06	44.50	53.06
HARVEST								
Production	qq oro	6	8	12	18	28	30	25
Labor Use	Man-day	30	40	60	90	140	150	125
TOTAL LABOR USE		110	88	108	136	195	195	178

Source: IHCAFE.

HONDURAS - POLICY REFORMS - COFFEE

Table 4. Requirement of Inputs per Year - Improved Cultural Practices.

Description	Unit	Year 1	2	3	4	5	6	7
PURCHASED INPUTS								
Fertilizer formula	QQ.		5.00	5.00	7.00	8.00	8.00	8.00
Urea	QQ.	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Plants	Plants	111	111	111	111	111	111	111
Insecticide	Liters	1	1	1	1	1	1	1
Copper chlorine oxide	Lbs.	5.00	7.50	12.00	12.00	12.00	12.00	12.00
Adherent	Liters	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LABOR								
Prune coffee trees	Man-days	4.00		4.00		8.00		6.00
Dig holes and app. fert.	Man-days	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Prune shade trees	Man-days	15.00	10.00	6.00	10.00	6.00	10.00	6.00
Carry coffee trees	Man-days	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Replanting	Man-days	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fertilizer application	Man-days	2.50	4.00	4.00	5.00	5.00	5.00	5.00
Weed Control	Man-days	12.00	12.00	12.00	12.00	12.00	12.00	12.00
Phytosanitary control 1	Man-days	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Phytosanitary control 2	Man-days	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Phytosanitary control 3	Man-days	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Fence maintenance	Man-days	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Soil Conservation	Man-days	8.00	3.00		1.50	1.50	1.50	1.50
SUB-TOTAL - BEFORE HARVEST		58.06	45.56	42.56	45.06	49.06	45.06	47.06
HARVEST								
Production	qq oro	6.00	10.00	7.00	11.00	9.00	13.00	15.00
Labor Use	Man-days	30.00	50.00	35.00	55.00	45.00	65.00	75.00
TOTAL LABOR USE		88.06	95.56	77.56	100.06	94.06	110.06	122.06

Source: IHCAFE.

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HONDURAS - POLICY REFORMS - COFFEE

Table 5. Requirement of Inputs per Year - Total Renovation or Improved Cultural Practices - Without Reforms.

Description	Unit	Year 1	2	3	4	5	6
PURCHASED INPUTS							
Urea	QQ.	5.00	4.00	4.00	3.00	3.00	3.00
Copper chlorine oxide	Lbs.	5.00	4.00	4.00	4.00	4.00	4.00
LABOR							
Fertilizer Application	Man-days	2.50	2.00	2.00	1.50	1.50	1.50
Shade prunning	Man-days	2.00	2.00	2.00	2.00	2.00	2.00
Weed control	Man-days	7.00	7.00	7.00	7.00	7.00	7.00
Phytosanitary control	Man-days	3.00	3.00	3.00	3.00	3.00	3.00
Pruning	Man-days	5.00	5.00	5.00	5.00	5.00	5.00
SUB-TOTAL - BEFORE HARVEST		19.50	19.00	19.00	18.50	18.50	18.50
HARVEST							
Production	qq oro	6.00	5.00	5.00	4.00	4.00	4.00
Labor Use	Man-days	30.00	25.00	25.00	20.00	20.00	20.00
TOTAL LABOR USE	Man-days	49.50	44.00	44.00	38.50	38.50	38.50

Source: IHCAFE.

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HONDURAS - POLICY REFORMS - COFFEE

Table 6. Requirement of Inputs per Year - Partial Renovation - Without Reforms.

Description	Unit	Year 1	2	3	4	5	6
PURCHASED INPUTS							
Urea	QQ.	13	12	11	10	9	8
Copper chlorine oxide	Lbs.	5.00	4.00	4.00	4.00	4.00	4.00
LABOR							
Fertilizer Application	Man-days	2.50	2.00	2.00	1.50	1.50	1.50
Shade prunning	Man-days	1.00	1.00	1.00	1.00	1.00	1.00
Weed control	Man-days	8.00	8.00	8.00	8.00	8.00	8.00
Phytosanitary control	Man-days	3.00	3.00	3.00	3.00	3.00	3.00
Pruning	Man-days	6.00	6.00	6.00	6.00	6.00	6.00
SUB-TOTAL - BEFORE HARVEST		20.50	20.00	20.00	19.50	19.50	19.50
HARVEST							
Production	qq oro	9.00	6.00	8.00	6.00	6.00	5.00
Labor Use	Man-days	45.00	30.00	40.00	30.00	30.00	25.00
TOTAL LABOR USE	Man-days	65.50	50.00	60.00	49.50	49.50	44.50

Source: IHCAFE.

HONDURAS - POLICY REFORMS - COFFEE

Table 7. Investment Cost per Year - Total Renovation (US$)

Description	Year 1	2	3	4	5	6
PURCHASED INPUTS						
Fertilizer formula	76.36	127.27	203.64	203.64	203.64	203.64
Urea	21.45	42.91	64.36	64.36	64.36	64.36
Soil Sampling and analysis	12.73	0.00	0.00	0.00	0.00	0.00
Plants	254.55	12.73	0.00	0.00	0.00	0.00
Insecticide	9.45	9.45	9.45	9.45	9.45	9.45
Copper chlorine oxide	9.09	13.64	21.82	21.82	21.82	21.82
Adherent	2.73	2.73	2.73	2.73	2.73	2.73
Shade trees	3.41	0.00	0.00	0.00	0.00	0.00
Pump	69.09					
SUT-TOTAL INPUTS	458.86	208.73	302.00	302.00	302.00	302.00
Transportation of Inputs	2.18	3.82	6.00	6.00	6.00	6.00
LABOR						
Cutting old coffee trees	24.18	0.00	0.00	0.00	0.00	0.00
Land clearing	22.91	0.00	0.00	0.00	0.00	0.00
Cut sticks	5.09	0.00	0.00	0.00	0.00	0.00
Farm layout and stick	12.73	0.00	0.00	0.00	0.00	0.00
Dig holes	0.25	0.00	0.00	0.00	0.00	0.00
Soil Conservation measures	17.82	3.82	0.00	1.91	1.91	1.91
Plant permanent shade	1.91	0.00	0.00	0.00	0.00	0.00
Carry coffee trees	17.82	0.00	0.00	0.00	0.00	0.00
Plant coffee trees	33.09	0.00	0.00	0.00	0.00	0.00
First fertilizer appl.	6.36	6.36	12.73	12.73	12.73	12.73
Second fertilizer appl.	7.64	7.64	7.64	7.64	7.64	7.64
Third fertilizer appl.	7.64	7.64	0.00	0.00	0.00	0.00
First weeding	19.09	19.09	12.73	12.73	12.73	12.73
Second weeding	20.36	20.36	12.73	12.73	12.73	12.73
Third weeding	17.82	17.82	12.73	12.73	12.73	0.00
Fourth weeding	22.91	22.91	0.00	0.00	0.00	0.00
First phytosanitary control	3.82	3.82	3.82	3.82	3.82	3.82
Second phytosanitary control	3.82	3.82	5.09	5.09	5.09	5.09
Third phytosanitary control	3.82	3.82	5.09	5.09	5.09	0.00

Table 7. Investment Cost per Year - Total Renovation (US$) Page 2

Description	Year 1	2	3	4	5	6
Fourth phytosanitary control	2.55	2.55	0.00	0.00	0.00	0.00
Handle harvest residues	0.00	0.00	2.55	5.09	5.09	5.09
Roads repair	1.27	2.55	2.55	3.82	3.82	3.82
Fence maintenance	3.82	3.82	0.00	0.00	0.00	0.00
Replanting and shade format	0.00	0.00	0.00	12.73	0.00	12.73
Pruning	0.00	0.00	0.00	12.73	0.00	12.73
SUB-TOTAL - LABOR	256.71	126.00	77.64	108.82	83.36	91.00
SUB-TOTAL	717.75	338.55	385.64	416.82	391.36	399.00
Unexpected (5 %)	35.89	16.93	19.28	20.84	19.57	19.95
AGRICULTURE-PRE-HA	753.64	355.47	404.92	437.66	410.93	418.95
HARVEST						
Production (qq)		3.33	17.50	25.00	25.83	25.00
Harvest		33.33	175.00	250.00	258.33	250.00
Transportation		2.67	14.00	20.00	20.67	20.00
Sub-Total		36.00	189.00	270.00	279.00	270.00
Unexpected (5 %)		1.80	9.45	13.50	13.95	13.50
SUB-TOTAL HARVEST		37.80	198.45	283.50	292.95	283.50
TOTAL AGRICULTURE	753.64	393.27	603.37	721.16	703.88	702.45
Labor	256.71	159.33	252.64	358.82	341.70	341.00
Imported Components	275.75	126.00	182.40	182.40	182.40	182.40
Other	221.18	107.94	168.33	179.94	179.78	179.05
INDUSTRIAL AMD MARKETING COSTS						
Labor		16.67	87.50	125.00	129.17	125.00
Imported Component		3.33	17.50	25.00	25.83	25.00
Other		13.33	70.00	100.00	103.33	100.00
Sub-Total		33.33	175.00	250.00	258.33	250.00
TOTAL FINANCIAL COSTS						
Labor	256.71	176.00	340.14	483.82	470.86	466.00
Imported Components	275.75	129.33	199.90	207.40	208.23	207.40
Other	221.18	121.27	238.33	279.94	283.12	279.05
Sub-Total	753.64	426.61	778.37	971.16	962.22	952.45
Sub-Total (domestic)	477.89	297.27	578.47	763.76	753.98	745.05

Table 7. Investment Cost per Year - Total Renovation (US$) Page 3

Description	Year 1	2	3	4	5	6
ECONOMIC COSTS						
ADJUSTMENT FACTORS						
Labor	0.85	0.85	0.85	0.85	0.85	0.85
Foreign Exchange	1.05	1.05	1.05	1.05	1.05	1.05
ECONOMIC COSTS - BEFORE INDIRECT TAXES						
Labor	218	150	289	411	400	396
Imported Components	290	136	210	218	219	218
Others	221	121	238	280	283	279
Sub-Total	729	407	737	909	902	893
Indirect Taxes	15	8	15	18	18	18
TOTAL ECONOMIC COS	714	399	723	891	884	875
SUB-TOTAL (DOMESTIC)	425	263	513	673	665	657
LABOR USE (Man-Days)						
Agriculture	219	116	149	211	195	197
Industry	0	6	32	46	47	46
Total Man-Days	219	122	181	256	242	242
Intermediate Inputs (Fin.)	282.86	210.97	346.50	363.00	364.83	363.00

Source: Tables 1 and 2.

HONDURAS - POLICY REFORM - COFFEE

(US$)

Table 8. Investment Cost per Year - Partial Renovation

Description	Year 1	2	3	4	5	6	7
PURCHASED INPUTS							
Fertilizer formula	25.45	89.09	127.27	127.27	127.27	127.27	127.27
Urea	42.91	42.91	75.09	75.09	75.09	75.09	75.09
Plants	87.27	0.00	2.18	2.18	8.07	0.00	8.07
Insecticide	9.45	9.45	9.45	9.45	9.45	9.45	9.45
Copper chlorine oxide	9.09	13.64	21.82	21.82	21.82	21.82	21.82
Adherent	2.73	2.73	2.73	2.73	2.73	2.73	2.73
SUB-TOTAL INPUTS	176.91	157.82	238.55	238.55	244.44	236.36	244.44
Transportation of Inputs	1.64	3.00	4.64	4.64	4.64	4.64	4.64
LABOR							
Prune coffee trees	5.09	0.00	5.09	0.00	10.18	0.00	7.64
Dig holes and appl. fert.	7.64	0.00	0.19	0.19	0.71	0.00	0.71
Prune Shade	19.09	12.73	12.73	12.73	12.73	12.73	12.73
Carry coffee trees	7.64	0.00	0.00	0.00	0.00	0.00	0.00
Replanting	12.73	0.00	1.27	1.27	2.55	0.00	2.55
Fertilizer application	5.09	9.55	7.64	7.64	7.64	7.64	7.64
Weed Control	15.27	15.27	15.27	15.27	15.27	15.27	15.27
"Deshije"	1.27	1.27	1.27	1.27	1.27	1.27	1.27
Phytosanitary control 1	3.82	3.82	3.82	3.82	3.82	3.82	3.82
Phytosanitary control 2	5.09	5.09	5.09	5.09	5.09	5.09	5.09
Phytosanitary control 3	5.09	5.09	5.09	5.09	5.09	5.09	5.09
Fence maintenance	3.82	3.82	3.82	3.82	3.82	3.82	3.82
Soil Conservation	10.18	3.82	0.00	1.91	1.91	1.91	1.91
SUB-TOTAL - LABOR	101.82	60.45	61.28	58.10	70.07	56.64	67.52
SUB-TOTAL	280.36	221.27	304.46	301.28	319.14	297.64	316.60
Unexpected (5 %)	14.02	11.06	15.22	15.06	15.96	14.88	15.83
AGRICULTURE-PRE-HAR	294.38	232.34	319.69	316.35	335.10	312.52	332.43
HARVEST							
Production (qq)	6.00	8.00	12.00	18.00	28.00	30.00	25.00
Harvest	60.00	80.00	120.00	180.00	280.00	300.00	250.00
Transportation	4.80	6.40	9.60	14.40	22.40	24.00	20.00
Sub-Total	64.80	86.40	129.60	194.40	302.40	324.00	270.00
Unexpected (5 %)	3.24	4.32	6.48	9.72	15.12	16.20	13.50
SUB-TOTAL HARVEST	68.04	90.72	136.08	204.12	317.52	340.20	283.50

Table 8. Investment Cost per Year - Partial Renovation (US$) Page 2

Description	Year 1	2	3	4	5	6	7
TOTAL AGRICULTURE	362.42	323.06	455.77	520.47	652.62	652.72	615.93
Labor	161.82	140.45	181.28	238.10	350.07	356.64	317.52
Imported Components	106.47	95.29	144.05	144.05	147.59	142.75	147.59
Other	94.13	87.31	130.43	138.31	154.96	153.34	150.81
INDUSTRIAL AND MARKETING COSTS							
Labor	30.00	40.00	60.00	90.00	140.00	150.00	125.00
Imported Component	6.00	8.00	12.00	18.00	28.00	30.00	25.00
Other	24.00	32.00	48.00	72.00	112.00	120.00	100.00
Sub-Total	60.00	80.00	120.00	180.00	280.00	300.00	250.00
TOTAL FINANCIAL COSTS							
Labor	191.82	180.45	241.28	328.10	490.07	506.64	442.52
Imported Component	112.47	103.29	156.05	162.05	175.59	172.75	172.59
Other	118.13	119.31	178.43	210.31	266.96	273.34	250.81
Sub-Total	422.42	403.06	575.77	700.47	932.62	952.72	865.93
Sub-Total (domestic)	309.95	299.77	419.71	538.41	757.03	779.97	693.34
ECONOMIC COSTS							
ADJUSTMENT FACTORS							
Labor	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Foreign Exchange	1.05	1.05	1.05	1.05	1.05	1.05	1.05
ECONOMIC COSTS - BEFORE INDIRECT TAXES							
Labor	163	153	205	279	417	431	376
Imported Components	118	108	164	170	184	181	181
Others	118	119	178	210	267	273	251
Sub-Total	399	381	547	659	868	885	808
Indirect Taxes	8	8	11	13	17	18	16
TOTAL ECONOMIC COST	391	374	536	646	851	868	792
SUB-TOTAL (DOMESTIC)	273	265	373	476	666	686	611
LABOR USE (Man-Days)							
Agriculture	110	88	108	136	195	195	178
Industry	11	15	22	33	51	55	46
Total Man-Days	121	102	130	169	246	250	224
Intermediate Inputs (Agr.)	122.25	167.22	251.25	256.05	265.82	265.00	263.42
Intermediate Inputs (Fin.)	130.65	178.42	268.05	281.25	305.02	307.00	298.42

Source: Tables 1 and 3.

Table 9. Investment Cost per Year - Improved Cultural Practices

(US$)

Description	Year 1	2	3	4	5	6	7
TOTAL AGRICULTURE	222.64	324.31	294.88	370.88	367.19	407.21	432.56
Labor	133.89	157.98	124.16	167.34	152.43	187.34	209.89
Imported Components	43.57	84.75	89.66	105.04	112.73	112.73	112.73
Other	45.18	81.58	81.05	98.49	102.02	107.13	109.94
INDUSTRIAL AND MARKETING COSTS							
Labor	30.00	50.00	35.00	55.00	45.00	65.00	75.00
Imported Component	6.00	10.00	7.00	11.00	9.00	13.00	15.00
Other	24.00	40.00	28.00	44.00	36.00	52.00	60.00
Sub-Total	60.00	100.00	70.00	110.00	90.00	130.00	150.00
TOTAL FINANCIAL COSTS							
Labor	163.89	207.98	159.16	222.34	197.43	252.34	284.89
Imported Component	49.57	94.75	96.66	116.04	121.73	125.73	127.73
Other	69.18	121.58	109.05	142.49	138.02	159.13	169.94
Sub-Total	282.64	424.31	364.88	480.88	457.19	537.21	582.56
Sub-Total (domestic)	233.06	329.56	268.21	364.83	335.46	411.47	454.82
ECONOMIC COSTS							
ADJUSTMENT FACTORS							
Labor	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Foreign Exchange	1.05	1.05	1.05	1.05	1.05	1.05	1.05
ECONOMIC COSTS - BEFORE INDIRECT TAXES							
Labor	139	177	135	189	168	214	242
Imported Components	52	99	101	122	128	132	134
Others	69	122	109	142	138	159	170
Sub-Total	261	398	346	453	434	506	546
Indirect Taxes	5	8	7	9	9	10	11
TOTAL ECONOMIC COSTS	255	390	339	444	425	496	535
SUB-TOTAL (DOMESTIC)	203	290	237	322	297	364	401
LABOR USE (Man-Days)							
Agriculture	88	96	78	100	94	110	122
Industry	11	18	13	20	17	24	28
Total Man-Days	99	114	90	120	111	134	150
Intermediate Inputs (Agr.)	72.49	145.24	151.02	180.22	191.62	194.82	196.42
Intermediate Inputs (Fin.)	80.89	159.24	160.82	195.62	204.22	213.02	217.42

Source: Tables 1 and 4.

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(US$)

Table 9. Investment Cost per Year - Improved Cultural Practices.

Description	Year 1	2	3	4	5	6	7
PURCHASED INPUTS							
Fertilizer formula	0.00	63.64	63.64	89.09	101.82	101.82	101.82
Urea	42.91	42.91	42.91	42.91	42.91	42.91	42.91
Plants	8.07	8.07	8.07	8.07	8.07	8.07	8.07
Insecticide	9.45	9.45	9.45	9.45	9.45	9.45	9.45
Copper chlorine oxide	9.09	13.64	21.82	21.82	21.82	21.82	21.82
Adherent	2.73	2.73	2.73	2.73	2.73	2.73	2.73
SUB-TOTAL INPUTS	72.25	140.44	148.62	174.07	186.80	186.80	186.80
Transportation of Inputs	1.09	2.45	2.45	3.00	3.27	3.27	3.27
LABOR							
Prune coffee trees	5.09	0.00	5.09	0.00	10.18	0.00	7.64
Dig holes and app. fert.	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Prune shade trees	19.09	12.73	7.64	12.73	7.64	12.73	7.64
Carry coffee trees	1.27	1.27	1.27	1.27	1.27	1.27	1.27
Replanting	1.27	1.27	1.27	1.27	1.27	1.27	1.27
Fertilizer application	3.18	5.09	5.09	6.36	6.36	6.36	6.36
Weed Control	15.27	15.27	15.27	15.27	15.27	15.27	15.27
Phytosanitary control 1	3.82	3.82	3.82	3.82	3.82	3.82	3.82
Phytosanitary control 2	5.09	5.09	5.09	5.09	5.09	5.09	5.09
Phytosanitary control 3	5.09	5.09	5.09	5.09	5.09	5.09	5.09
Fence maintenance	3.82	3.82	3.82	3.82	3.82	3.82	3.82
Soil Conservation	10.18	3.82	0.00	1.91	1.91	1.91	1.91
SUB-TOTAL - LABOR	73.89	57.98	54.16	57.34	62.43	57.34	59.89
SUB-TOTAL	147.23	200.87	205.23	234.42	252.51	247.42	249.96
Unexpected (5 %)	7.36	10.04	10.26	11.72	12.63	12.37	12.50
AGRICULTURE-PRE-HAR	154.60	210.91	215.50	246.14	265.13	259.79	262.46
HARVEST							
Production (qq)	6.00	10.00	7.00	11.00	9.00	13.00	15.00
Harvest	60.00	100.00	70.00	110.00	90.00	130.00	150.00
Transportation	4.80	8.00	5.60	8.80	7.20	10.40	12.00
Sub-Total	64.80	108.00	75.60	118.80	97.20	140.40	162.00
Unexpected (5 %)	3.24	5.40	3.78	5.94	4.86	7.02	8.10
SUB-TOTAL HARVEST	68.04	113.40	79.38	124.74	102.06	147.42	170.10

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Table 10. Cost to the Farmer per Year - Total Renovation or Improved Cultural Practices - Without Reforms. (US$)

Description	Year 1	2	3	4	5	6
PURCHASED INPUTS						
Urea	53.64	42.91	42.91	32.18	32.18	32.18
Copper chlorine oxide	9.09	7.27	7.27	7.27	7.27	7.27
SUB-TOTAL INPUTS	62.73	50.18	50.18	39.45	39.45	39.45
Transportation of Inputs	1.36	1.09	1.09	0.82	0.82	0.82
LABOR						
Fertilizer Application	3.18	2.55	2.55	1.91	1.91	1.91
Shade prunning	2.55	2.55	2.55	2.55	2.55	2.55
Weed control	8.91	8.91	8.91	8.91	8.91	8.91
Phytosanitary control	3.82	3.82	3.82	3.82	3.82	3.82
Pruning	6.36	6.36	6.36	6.36	6.36	6.36
SUB-TOTAL - LABOR	24.82	24.18	24.18	23.55	23.55	23.55
SUB-TOTAL	88.91	75.45	75.45	63.82	63.82	63.82
Unexpected (5 %)	4.45	3.77	3.77	3.19	3.19	3.19
AGRICULTURE-PRE-HAR	93.35	79.23	79.23	67.01	67.01	67.01
HARVEST						
Production (qq)	6.00	5.00	5.00	4.00	4.00	4.00
Harvest	60.00	50.00	50.00	40.00	40.00	40.00
Transportation	4.80	4.00	4.00	3.20	3.20	3.20
Sub-Total	64.80	54.00	54.00	43.20	43.20	43.20
Unexpected (5 %)	3.24	2.70	2.70	2.16	2.16	2.16
SUB-TOTAL HARVEST	68.04	56.70	56.70	45.36	45.36	45.36
TOTAL AGRICULTURE	161.39	135.93	135.93	112.37	112.37	112.37
Labor	84.82	74.18	74.18	63.55	63.55	63.55
Imported Components	37.91	30.33	30.33	23.84	23.84	23.84
Other	38.67	31.42	31.42	24.99	24.99	24.99
INDUSTRIAL AND MARKETING COSTS						
Labor	30.00	25.00	25.00	20.00	20.00	20.00
Imported Component	6.00	5.00	5.00	4.00	4.00	4.00
Other	24.00	20.00	20.00	16.00	16.00	16.00
Sub-Total	60.00	50.00	50.00	40.00	40.00	40.00

Table 10. Cost to the Farmer per Year - Total Renovation or Improved Cultural Practices - Without Reforms. (US$)

Description	Year 1	2	3	4	5	6
TOTAL FINANCIAL COSTS						
Labor	114.82	99.18	99.18	83.55	83.55	83.55
Imported Component	43.91	35.33	35.33	27.84	27.84	27.84
Other	62.67	51.42	51.42	40.99	40.99	40.99
Sub-Total	221.39	185.93	185.93	152.37	152.37	152.37
Sub-Total (domestic)	177.49	150.60	150.60	124.53	124.53	124.53
ECONOMIC COSTS						
ADJUSTMENT FACTORS						
Labor	0.85	0.85	0.85	0.85	0.85	0.85
Foreign Exchange	1.05	1.05	1.05	1.05	1.05	1.05
ECONOMIC COSTS - BEFORE INDIRECT TAXES						
Labor	98	84	84	71	71	71
Imported Components	46	37	37	29	29	29
Others	63	51	51	41	41	41
Sub-Total	206	173	173	141	141	141
Indirect Taxes	4	3	3	3	3	3
TOTAL ECONOMIC COST	202	169	169	138	138	138
SUB-TOTAL (DOMESTIC)	156	132	132	109	109	109
LABOR USE (Man-Days)						
Agriculture	50	44	44	39	39	39
Industry	11	9	9	7	7	7
Total Man-Days	61	53	53	46	46	46
Intermediate Inputs (Agr.)	68.89	55.27	55.27	43.47	43.47	43.47
Intermediate Inputs (Fin.)	77.29	62.27	62.27	49.07	49.07	49.07

Source: Tables 1 and 5.

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Table 11. Cost to the Farmer per Year - Partial Renovation - Without Reforms. (US$)

Description	Year 1	2	3	4	5	6
PURCHASED INPUTS						
Urea	139.45	128.73	118.00	107.27	96.55	85.82
Copper chlorine oxide	9.09	7.27	7.27	7.27	7.27	7.27
SUB-TOTAL INPUTS	139.45	128.73	118.00	107.27	96.55	85.82
Transportation of Inputs	3.55	3.27	3.00	2.73	2.45	2.18
LABOR						
Fertilizer Application	3.18	2.55	2.55	1.91	1.91	1.91
Shade prunning	1.27	1.27	1.27	1.27	1.27	1.27
Weed control	10.18	10.18	10.18	10.18	10.18	10.18
Phytosanitary control	3.82	3.82	3.82	3.82	3.82	3.82
Pruning	7.64	7.64	7.64	7.64	7.64	7.64
SUB-TOTAL - LABOR	26.09	25.45	25.45	24.82	24.82	24.82
SUB-TOTAL	169.09	157.45	146.45	134.82	123.82	112.82
Unexpected (5 %)	8.45	7.87	7.32	6.74	6.19	5.64
AGRICULTURE-PRE-HAR	177.55	165.33	153.78	141.56	130.01	118.46
HARVEST						
Production (qq)	9.00	6.00	8.00	6.00	6.00	5.00
Harvest	0.13	0.09	0.12	0.09	0.09	0.07
Transportation	7.20	4.80	6.40	4.80	4.80	4.00
Sub-Total	7.33	4.89	6.52	4.89	4.89	4.07
Unexpected (5 %)	0.37	0.24	0.33	0.24	0.24	0.20
SUB-TOTAL HARVEST	7.70	5.13	6.84	5.13	5.13	4.28
TOTAL AGRICULTURE	185.24	170.46	160.62	146.69	135.14	122.74
Labor	26.22	25.54	25.57	24.91	24.91	24.89
Imported Components	84.38	77.89	71.40	64.91	58.42	51.93
Other	74.64	67.03	63.65	56.88	51.82	45.92
INDUSTRIAL AND MARKETING COSTS						
Labor	45.00	30.00	40.00	30.00	30.00	25.00
Imported Component	9.00	6.00	8.00	6.00	6.00	5.00
Other	36.00	24.00	32.00	24.00	24.00	20.00
Sub-Total	90.00	60.00	80.00	60.00	60.00	50.00

Table 11. Cost to the Farmer per Year - Partial Renovation - Without Reforms. (US$) Page 2

Description	Year 1	2	3	4	5	6
TOTAL FINANCIAL COSTS						
Labor	71.22	55.54	65.57	54.91	54.91	49.89
Imported Component	93.38	83.89	79.40	70.91	64.42	56.93
Other	110.64	91.03	95.65	80.88	75.82	65.92
Sub-Total	275.24	230.46	240.62	206.69	195.14	172.74
Sub-Total (domestic)	181.86	146.57	161.22	135.78	130.72	115.81
ECONOMIC COSTS						
ADJUSTMENT FACTORS						
Labor	0.85	0.85	0.85	0.85	0.85	0.85
Foreign Exchange	1.05	1.05	1.05	1.05	1.05	1.05
ECONOMIC COSTS - BEFORE INDIRECT TAXES						
Labor	61	47	56	47	47	42
Imported Components	98	88	83	74	68	60
Others	111	91	96	81	76	66
Sub-Total	269	226	235	202	190	168
Indirect Taxes	5	5	5	4	4	3
TOTAL ECONOMIC COST	264	222	230	198	186	165
SUB-TOTAL (DOMESTIC)	166	134	147	124	119	105
LABOR USE (Man-Days)						
Agriculture	66	50	60	50	50	45
Industry	17	11	15	11	11	9
Total Man-Days	82	61	75	61	61	54
Intermediate Inputs (Agr.)	150.20	136.80	127.40	114.80	103.80	92.00
Intermediate inputs (Fin.)	162.80	145.20	138.60	123.20	112.20	99.00

Source: Tables 1 and 6.

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Table 12. Assumed Coffee Prices (Constant 1990 US$)

Description	Unit	Coffee Year				
		1991/92	1992/93	1993/94	1994/95	1995/96
Price "C" NY	$/46 kgs.	97.00	95.00	101.73	109.81	109.81
Differential HCC	$/46 kgs.	12.00	12.00	11.00	10.00	8.00
Minimum FOB registration price	$/46 kgs.	85.00	83.00	90.73	99.81	101.81
Export Tax	$/46 kgs.					
IHCAFE contribution	$/46 kgs.	1.89	1.89	1.89	1.89	1.89
FOB price in C	$/46 kgs.	83.11	81.11	88.84	97.92	99.92
Processing and handling	$/46 kgs.	13.00	13.00	13.00	13.00	13.00
Farm Gate Price	$/46 kgs.	70.11	68.11	75.84	84.92	86.92

Source: Projected Price "C" N.Y. are based on several studies and conversations with economists at the World Bank who work with a world commodities model. It is assumed that with the ASAP, average coffee quality will increase, reducing the differential for quality. It is assumed that the export tax will be eliminated.

07-Mar-91DATE

HONDURAS - POLICY REFORMS - COFFEE

Table 13. Coffee Production Without Reforms, 191/92 to 2011/12.

Medium Growth Scenario. 1,000 (QQ. ORO EQUIVALENT)

Yield				Number of Mzs. Renovated			Production of Manzanas Renovated or With ICP Year										
							1991	1992			1993			1994			
Pa	To	ICP	Year	Par.	Total	ICP	ICP	Par.	Tot.	ICP	Par.	Tot.	ICP	Par.	Tot.	ICP	TOTAL
9	6	6	1991/92			18,000	108										108
6	5	5	1992/93	2,000	6,000	20,000	90	18	36	120							264
8	5	5	1993/94	2,000	10,000	20,000	90	12	30	100	18	60	120				430
6	4	4	1994/95	2,000	12,000	20,000	72	16	30	100	12	50	100	18	72	120	590
6	4	4	1995/96				72	12	24	80	16	50	100	12	60	100	526
5	4	4	1996/97				72	12	24	80	12	40	80	16	60	100	496
5	4	4	1997/98				72	10	24	80	12	40	80	12	48	80	458
5	4	4	1998/99				72	10	24	80	10	40	80	12	48	80	456
5	4	4	1999/00				72	10	24	80	10	40	80	10	48	80	454
5	4	4	2000/01				72	10	24	80	10	40	80	10	48	80	454
5	4	4	2001/02				72	10	24	80	10	40	80	10	48	80	454
5	4	4	2002/03				72	10	24	80	10	40	80	10	48	80	454
5	4	4	2003/04				72	10	24	80	10	40	80	10	48	80	454
5	4	4	2004/05				72	10	24	80	10	40	80	10	48	80	454
5	4	4	2005/06				72	10	24	80	10	40	80	10	48	80	454
5	4	4	2006/07				72	10	24	80	10	40	80	10	48	80	454
			2007/08					10	24	80	10	40	80	10	48	80	382
			2008/09								10	40	80	10	48	80	268
			2009/10											10	48	80	138

Source: Tables 5 and 6.

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Table 14. Coffee Production Due Reforms, 1991/92 to 2011/12.
Medium Growth Scenario.

1,000 (QQ. ORO EQUIVALENT)

Yield				Number of Mzs. Renovated			Prod. of Mzs. Renov. or With Imp. Cult. Pract. in Year												
							1991	1992			1993			1994					
Pa	To	ICP	Year	Par.	Total	ICP	ICP	Par.	Tot.	ICP	Par.	Tot.	ICP	Par.	Tot.	ICP	TOTA	Without Project	Net
6		6	1991/92			18,000	108										108	108	0
8	3	8	1992/93	2,000	6,000	20,000	144	12		120							276	264	12
12	18	8	1993/94	2,000	10,000	20,000	144	16	20	160	12		120				472	430	42
18	25	9	1994/95	2,000	12,000	20,000	162	24	105	160	16	33	160	12		120	792	590	202
28	26	9	1995/96				162	36	150	180	24	175	160	16	40	160	1,103	526	577
30	25	10	1996/97				180	56	155	180	36	250	180	24	210	160	1,431	496	935
25	25	11	1997/98				198	60	150	200	56	258	180	36	300	180	1,618	458	1,160
25	25	11	1998/99				198	50	150	220	60	250	200	56	310	180	1,674	456	1,218
25	25	11	1999/00				198	50	150	220	50	250	220	60	300	200	1,698	454	1,244
25	25	11	2000/01				198	50	150	220	50	250	220	50	300	220	1,708	454	1,254
25	25	11	2001/02				198	50	150	220	50	250	220	50	300	220	1,708	454	1,254
25	25	11	2002/03				198	50	150	220	50	250	220	50	300	220	1,708	454	1,254
25	25	11	2003/04				198	50	150	220	50	250	220	50	300	220	1,708	454	1,254
25	25	11	2004/05				198	50	150	220	50	250	220	50	300	220	1,708	454	1,254
25	25	11	2005/06				198	50	150	220	50	250	220	50	300	220	1,708	454	1,254
25	25	11	2006/07				198	50	150	220	50	250	220	50	300	220	1,708	454	1,254
			2007/08					50	150	220	50	250	220	50	300	220	1,510	382	1,128
			2008/09								50	250	220	50	300	220	1,090	268	822
			2009/10											50	300	220	570	138	432

Source: Tabales 2, 3, 4 and 17.

Note: Each column reflects the production obtained from the manzanas renovated that year. For Example, column headed "1992 partial", the first number is 12. This is the product of 6 quintals per manzana (first column) times 2000 manzans (fifth column), divided by 1,000. The last column, headed "TOTAL") is a sum of all the production generated by the manzanas renovated in different years.

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Table 15. Intermediate Goods Used Without the Reforms, 1991/92 to 2009/10.
Medium Growth Scenario.

US$ per Mz.				Number of Mzs. Renovated			US$1,000 Used in Mzs. Reno. or With Imp. Cult. Pract. in Year										
							1991	1992			1993			1994			
Par	Tot	ICP	Year	Par.	Total	ICP	ICP	Par.	Tot.	ICP	Par.	Tot.	ICP	Par.	Tot.	ICP	TOTAL
150	69	69	1991/92			18,000	1,240										1,240
137	55	55	1992/93	2,000	6,000	20,000	995	300	413	1,378							3,086
127	55	55	1993/94	2,000	10,000	20,000	995	274	332	1,105	300	689	1,378				5,073
115	43	43	1994/95	2,000	12,000	20,000	783	255	332	1,105	274	553	1,105	300	827	1,378	6,911
104	43	43	1995/96				783	230	261	869	255	553	1,105	274	663	1,105	6,098
92	43	43	1996/97				783	208	261	869	230	435	869	255	663	1,105	5,678
92	43	43	1997/98				783	184	261	869	208	435	869	230	522	869	5,229
92	43	43	1998/99				783	184	261	869	184	435	869	208	522	869	5,184
92	43	43	1999/00				783	184	261	869	184	435	869	184	522	869	5,160
92	43	43	2000/01				783	184	261	869	184	435	869	184	522	869	5,160
92	43	43	2001/02				783	184	261	869	184	435	869	184	522	869	5,160
92	43	43	2002/03				783	184	261	869	184	435	869	184	522	869	5,160
92	43	43	2003/04				783	184	261	869	184	435	869	184	522	869	5,160
92	43	43	2004/05				783	184	261	869	184	435	869	184	522	869	5,160
92	43	43	2005/06				783	184	261	869	184	435	869	184	522	869	5,160
92	43	43	2006/07				783	184	261	869	184	435	869	184	522	869	5,160
			2007/08					184	261	869	184	435	869	184	522	869	4,378
			2008/09								184	435	869	184	522	869	3,063
			2009/10											184	522	869	1,575

Source: Tables 10, 11, and 13.

HONDURAS - POLICY REFORMS - COFFEE

Table 16. Additional Intermediate Goods Used Due to Reforms, 1991/92 to 2009/10.
Medium Growth Scenario.

US$ per Mz.				Number of M Renovated			US$1,000 Used in Mzs. Reno. or With Imp. Cult. Pract. in Year										1,000		
							1991	1992			1993			1994				Witho	
Par	Tot	ICP	Year	Par.	Total	ICP	ICP	Par.	Tot.	ICP	Par.	Tot.	ICP	Par.	Tot.	ICP	TOTA	Projec	Net
122	283	72	1991/92			18,000	1,305										1,305	1,240	65
167	206	145	1992/93	2,000	6,000	20,000	2,614	245		1,450							4,309	3,086	1,222
251	322	151	1993/94	2,000	10,000	20,000	2,718	334	1,238	2,905	245		1,450				8,890	5,073	3,817
256	328	180	1994/95	2,000	12,000	20,000	3,244	503	1,932	3,020	334	2,065	2,905	245		1,450	15,696	6,911	8,785
266	329	192	1995/96				3,449	512	1,968	3,604	503	3,220	3,020	334	2,476	2,905	21,992	6,098	15,894
265	328	195	1996/97				3,507	532	1,972	3,832	512	3,280	3,604	503	3,864	3,020	24,626	5,678	18,949
263	328	196	1997/98				3,536	530	1,968	3,896	532	3,287	3,832	512	3,936	3,604	25,633	5,229	20,404
263	328	196	1998/99				3,536	527	1,968	3,928	530	3,280	3,896	532	3,944	3,832	25,973	5,184	20,790
263	328	196	1999/00				3,536	527	1,968	3,928	527	3,280	3,928	530	3,936	3,896	26,057	5,160	20,896
263	328	196	2000/01				3,536	527	1,968	3,928	527	3,280	3,928	527	3,936	3,928	26,085	5,160	20,925
263	328	196	2001/02				3,536	527	1,968	3,928	527	3,280	3,928	527	3,936	3,928	26,085	5,160	20,925
263	328	196	2002/03				3,536	527	1,968	3,928	527	3,280	3,928	527	3,936	3,928	26,085	5,160	20,925
263	328	196	2003/04				3,536	527	1,968	3,928	527	3,280	3,928	527	3,936	3,928	26,085	5,160	20,925
263	328	196	2004/05				3,536	527	1,968	3,928	527	3,280	3,928	527	3,936	3,928	26,085	5,160	20,925
263	328	196	2005/06				3,536	527	1,968	3,928	527	3,280	3,928	527	3,936	3,928	26,085	5,160	20,925
263	328	196	2006/07				3,536	527	1,968	3,928	527	3,280	3,928	527	3,936	3,928	26,085	5,160	20,925
			2007/08					527	1,968	3,928	527	3,280	3,928	527	3,936	3,928	22,550	4,378	18,172
			2008/09								527	3,280	3,928	527	3,936	3,928	16,127	3,063	13,063
			2009/10											527	3,936	3,928	8,391	1,575	6,816

Source: Tables 7, 8, 9 and 15.

HONDURAS - POLICY REFORMS - COFFEE

Table 17. Net Value Added to the Economy Due To The Reforms. Medium Growth Scenario.

Year	Add. Prod. 1,000 qq	Farm Gate Price US$/qq	Farm Gate Value	Net Use Int. Good	Invest-ment	NET
			US$1,000			
1991/92	0	70	0	65		(65)
1992/93	12	68	817	1,222	2,825	2,420
1993/94	42	76	3,185	3,817	6,002	5,370
1994/95	202	85	17,183	8,785	7,806	16,204
1995/96	577	87	50,155	15,894	2,588	36,848
1996/97	935	102	95,192	18,949		76,244
1997/98	1,160	102	118,134	20,404		97,730
1998/99	1,218	102	124,005	20,790		103,215
1999/00	1,244	102	126,652	20,896		105,755
2000/01	1,254	102	127,670	20,925		106,744
2001/02	1,254	102	127,670	20,925		106,744
2002/03	1,254	102	127,670	20,925		106,744
2003/04	1,254	102	127,670	20,925		106,744
2004/05	1,254	102	127,670	20,925		106,744
2005/06	1,254	102	127,670	20,925		106,744
2006/07	1,254	102	127,670	20,925		106,744
2007/08	1,128	102	114,842	18,172		96,669
2008/09	822	102	83,688	13,063		70,625
2009/10	432	102	43,982	6,816		37,166

SUM	1,395,391
AVERAGE	73,442
NET PRESENT VALUE AT 15% DISCOUNT	309,938

Source: Tables 12, 18 and 16.

ANNEX B

TABLES FOR THE BANANA SECTOR IMPACT ANALYSIS

Table 1. Unit Prices, Bananas, 1990.

Description	Unit	Value in Lempiras	Value in US$
Conversion factor	Ls./US$		5.5
Hand pump	Unit	600	109
Tractor with hangers	Unit	48,000	8,727
Tractor - all purpose	Unit	114,000	20,727
Trailer	Unit	8,000	1,455
Work vehicle	Unit	60,000	10,909
Roads and bridges	Unit	80,000	14,545
Cable system	Unit	950,000	172,727
Drainage system	Unit	562,000	102,182
Irrigation system	Unit	710,000	129,091
Packing house	Unit	761,000	138,364
Warehouse	Unit	50,000	9,091
Office	Unit	20,000	3,636
Workers house	Unit	16,000	2,909
Seed	Unit	1.00	0.18
Fertilizer (Urea)	QQ	46.65	8.48
Fertilizer (KCL)	QQ	50.00	9.09
Herbicides	Liter	24.80	4.51
Fungicides	Liter	40.00	7.27
Plastic bags	Unit	0.126	0.023
Anchors	Unit	0.115	0.021
Plastic tape	Unit	0.010	0.002
Hand tools	Unit	15.00	2.73
Fuel, lubricant and repairs	Unit	96.00	17.45
Packing boxes	Unit	3.50	0.64
Unskilled labor	Man-day	7.00	1.27
Unskilled labor (Union member)	Man-day	16.00	2.91
Skilled labor	Man-day	34.00	6.18
Labor to cut fruit	Man-day	18.00	3.27
Labor to gather fruit	Man-day	18.00	3.27
Labor to carry fruit	Man-day	20.00	3.64
Electricity	Unit	1440	262
"racimos" per box (1 Year)			1.60
"racimos" per box (2 year)			1.50
"racimos" per box (3 year on)			1.40
Transportation of Inputs	US$/QQ	3.00	0.55
Export Tax	US$/Box	1.00	0.18
Management	US$/Ha.	600.00	109.09
Transportation Packing-Port	US$/Box	4.00	0.73

Source: Secretaria de Recursos Naturales, Unidad de Planificacion del Sector Agricola, Departamento de Informacion Agricola, "Boletin Anual - Precios de Insumos y Maquinaria Agricola 1990." Tegucigalpa, Honduras: SRN, 1990, and estimates.

Table 2. Inputs Requirement for One Hectare of Banana.

Description	Unit	Year 1	2	3	4	5	6	7	8
MACHINERY AND EQUIPMENT									
Hand pump	Unit	0.06							
Tractor with hangers	Unit	0.01							
Tractor - all purpose	Unit	0.01							
Trailer	Unit	0.01							
Work vehicle	Unit	0.01							
INFRASTRUCTURE									
Roads and bridges	Unit	0.01							
Cable system	Unit	0.01							
Drainage system	Unit	0.01							
Irrigation system	Unit	0.01							
CONSTRUCTION AND INSTALLATION									
Packing house	Unit	0.01							
Warehouse	Unit	0.01							
Office	Unit	0.01							
Workers house	Unit	0.03							
PLANTING									
Land Preparation	Man-days	34							
Seed	Unit	1,700							
Planting & replanting	Man-days	42							
Plantation Development	Man-days	370							
OPERATING EXPENSES									
INPUTS									
Urea	qq		15.00	15.00	15.00	15.00	15.00	15.00	15.00
KCL	qq		30.00	30.00	30.00	30.00	30.00	30.00	30.00
Herbicides	Galons		9.70	9.70	9.70	9.70	9.70	9.70	9.70
Fungicides	Galons		6.60	7.70	7.70	7.70	7.70	7.70	7.70
Plastic bags	Units	1,771	4,008	4,315	4,315	4,315	4,315	4,315	4,315
Anchors	Units	1,771	4,008	4,315	4,315	4,315	4,315	4,315	4,315
Plastic tapes	Units	1,771	4,008	4,315	4,315	4,315	4,315	4,315	4,315
Hand tools	Units	1.00	1	1	1	1	1	1	1
Fuel, lubricants and repairs	Units	1	1	1	1	1	1	1	1
Packing boxes	Units	1,107	2,672	3,082	3,082	3,082	3,082	3,082	3,082
Electricity	Units	1	1	1	1	1	1	1	1
LABOR									
Fertilizer application	Man-days		5.60	5.6	5.6	5.6	5.6	5.6	5.6
Herbicides application	Man-days		3.80	3.8	3.8	3.8	3.8	3.8	3.8
Fungicides application	Man-days		8.80	8.8	8.8	8.8	8.8	8.8	8.8
"Deshije y camaleo"	Man-days		10.21	10.21	10.21	10.21	10.21	10.21	10.21
Cut leaves	Man-days		9.07	9.07	9.07	9.07	9.07	9.07	9.07
Protect fruit	Man-days	7.21	13.43	13.43	13.43	13.43	13.43	13.43	13.43
Irrigation and equip. maint.	Man-days		24.43	28.5714	28.5714	28.5714	28.5714	28.5714	28.5714
Maint. road, bridges & cables	Man-days	5.93	7.71	8.57	8.57	8.57	8.57	8.57	8.57
Maintenance of drainage	Man-days	3.79	10.64	10.64	10.64	10.64	10.64	10.64	10.64
HARVEST									
Cut fruit	Man-days	6.29	11.71	11.71	11.71	11.71	11.71	11.71	11.71
Collect fruit	Man-days	6.29	11.71	11.71	11.71	11.71	11.71	11.71	11.71
Carry fruit	Man-days	7.93	14.64	14.64	14.64	14.64	14.64	14.64	14.64
PACKING									
Labor	Man-days	33.14	72.64	72.64	72.64	72.64	72.64	72.64	72.64
TOTAL LABOR USE	Man-days	1,254	2,876	3,291	3,291	3,291	3,291	3,291	3,291

Source: Banco Central de Honduras, UPCA, "Desglose de Costos de Inversiones e Ingresos de Algunos Cultivos." Tegucigalpa, Honduras: BANTRAL, Mayo 1987. pp. 4 and 5.

HONDURAS - POLICY REFORMS - BANANA

Table 3. Budget for One Hectare of Banana (1990 Dollars)

Description	Year 1	2	3	4	5	6	7	8
MACHINERY AND EQUIPMENT								
Hand pump	6.55							
Tractor with hangers	87.27							
Tractor - all purpose	207.27							
Trailer	14.55							
Work vehicle	109.09							
INFRASTRUCTURE								
Roads and bridges	145							
Cable system	1,727							
Drainage system	1,022							
Irrigation system	1,291							
CONSTRUCTION AND INSTALLATION								
Packing house	1,384							
Warehouse	90.91							
Office	36.36							
Workers house	87.27							
PLANTING								
Land Preparation	43.27							
Seed	309.09							
Planting & replanting	53.45							
Plantation Development	470.91							
Miscellaneous	531.38							
SUB-TOTAL INVESTMENT	7,616							
OPERATING EXPENSES								
INPUTS								
Urea		127.23	127.23	127.23	127.23	127.23	127.23	127.23
KCL		272.73	272.73	272.73	272.73	272.73	272.73	272.73
Herbicides		43.74	43.74	43.74	43.74	43.74	43.74	43.74
Fungicides		48.00	56.00	56.00	56.00	56.00	56.00	56.00
Plastic bags	40.58	91.82	98.85	98.85	98.85	98.85	98.85	98.85
Anchors	37.03	83.80	90.22	90.22	90.22	90.22	90.22	90.22
Plastic tapes	3.22	7.29	7.85	7.85	7.85	7.85	7.85	7.85
Hand tools	2.73	2.73	2.73	2.73	2.73	2.73	2.73	2.73
Fuel,lubricants and repairs	17.45	17.45	17.45	17.45	17.45	17.45	17.45	17.45
Packing boxes	704	1,700	1,961	1,961	1,961	1,961	1,961	1,961
Electricity	261.82	261.82	261.82	261.82	261.82	261.82	261.82	261.82
SUB-TOTAL INPUTS	1,067	2,657	2,940	2,940	2,940	2,940	2,940	2,940
Transportation of Inputs	0	24.55	24.55	24.55	24.55	24.55	24.55	24.55
LABOR								
Fertilizer application		16.29	16.29	16.29	16.29	16.29	16.29	16.29
Herbicides application		11.05	11.05	11.05	11.05	11.05	11.05	11.05
Fungicides application		25.60	25.60	25.60	25.60	25.60	25.60	25.60
"Deshije y camaleo"		29.70	29.70	29.70	29.70	29.70	29.70	29.70
Cut leaves		26.39	26.39	26.39	26.39	26.39	26.39	26.39
Protect fruit	20.97	39.07	39.07	39.07	39.07	39.07	39.07	39.07
Irrigation and equip. maint.		71.07	83.12	83.12	83.12	83.12	83.12	83.12
Maint. road, bridges & cables	17.25	22.44	24.94	24.94	24.94	24.94	24.94	24.94
Maintenance of drainage	11.01	30.96	30.96	30.96	30.96	30.96	30.96	30.96
SUB-TOTAL LABOR	49	273	287	287	287	287	287	287
SUT-TOTAL BEFORE HAR	1,117	2,954	3,252	3,252	3,252	3,252	3,252	3,252

Table 3. Budget for One Hectare of Bnanana (1990 Dollars) Page 2

Description	Year 1	2	3	4	5	6	7	8
HARVEST								
Cut fruit	18.29	34.08	34.08	34.08	34.08	34.08	34.08	34.08
Collect fruit	18.29	34.08	34.08	34.08	34.08	34.08	34.08	34.08
Carry fruit	23.06	42.60	42.60	42.60	42.60	42.60	42.60	42.60
SUB-TOTAL HARVEST	60	111	111	111	111	111	111	111
TOTAL AGRICULTURE - OP. EXP.	1,176	3,065	3,362	3,362	3,362	3,362	3,362	3,362
PACKING								
Labor	96.42	211.32	211.32	211.32	211.32	211.32	211.32	211.32
Management	109.09	109.09	109.09	109.09	109.09	109.09	109.09	109.09
Taxes	128.08	309.16	356.60	356.60	356.60	356.60	356.60	356.60
SUB-TOTAL MANAG. AND TAXES	237.17	418.25	465.69	465.69	465.69	465.69	465.69	465.69
SUB-TOTAL BEFORE MISCELANEOS	1,510	3,694	4,039	4,039	4,039	4,039	4,039	4,039
MISCELANEOS - OPERATING EXPENS	84.55	114.53	121.18	121.18	121.18	121.18	121.18	121.18
TRANSPORTATION PACKING-PORT	805	1,943	2,241	2,241	2,241	2,241	2,241	2,241
SUB-TOTAL OPERATING EXPENSES	2,399	5,752	6,402	6,402	6,402	6,402	6,402	6,402
TOTAL FINANCIAL COST	10,016	5,752	6,402	6,402	6,402	6,402	6,402	6,402
Labor	3,268	761	779	779	779	779	779	779
Imported Component	3,217	1,739	1,942	1,942	1,942	1,942	1,942	1,942
Taxes	403	372	425	425	425	425	425	425
Other	3,128	2,881	3,256	3,256	3,256	3,256	3,256	3,256
SUB-TOTAL FINANCIAL DOMESTIC	6,799	4,014	4,460	4,460	4,460	4,460	4,460	4,460
INTERMEDIATE INPUTS FINANCIAL	4,611	4,625	5,206	5,206	5,206	5,206	5,206	5,206
Imported	3,217	1,739	1,942	1,942	1,942	1,942	1,942	1,942
National	1,394	2,886	3,264	3,264	3,264	3,264	3,264	3,264
ECONOMIC COSTS								
ADJUSTMENT FACTORS								
Labor	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Foreign Exchange	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
ECONOMIC COSTS	7,813	5,011	5,607	5,607	5,607	5,607	5,607	5,607
Labor	1,307	304	312	312	312	312	312	312
Imported Components	3,378	1,826	2,039	2,039	2,039	2,039	2,039	2,039
Other	3,128	2,881	3,256	3,256	3,256	3,256	3,256	3,256
SUB-TOTAL ECNOMIC DOMESTIC	4,435	3,185	3,567	3,567	3,567	3,567	3,567	3,567
INTERMEDIATE INPUTS	4,771	4,712	5,303	5,303	5,303	5,303	5,303	5,303
Imported	3,378	1,826	2,039	2,039	2,039	2,039	2,039	2,039
National	1,394	2,886	3,264	3,264	3,264	3,264	3,264	3,264
TOTAL LABOR USE (MAN-DAYS)	1,652	2,903	3,319	3,319	3,319	3,319	3,319	3,319
Direct	1,254	2,876	3,291	3,291	3,291	3,291	3,291	3,291
Indirect	399	27	27	27	27	27	27	27

Source: Tables 1 and 2.

Table 4. Banana Production Due to New Plantings

MEDIUM GROWTH SCENARIO 1000 Boxes

Extect-ed Boxes	Year	Has. Plant-ed	Production of Hectares planted in Year				TOTAL
			1991	1992	1993	1994	
1,107	1991/92	400	443				443
2,672	1992/93	1,200	1,069	1,328			2,397
3,082	1993/94	1,200	1,233	3,206	1,328		5,768
3,082	1994/95	1,200	1,233	3,698	3,206	1,328	9,466
3,082	1995/96		1,233	3,698	3,698	3,206	11,836
3,082	1996/97		1,233	3,698	3,698	3,698	12,328
3,082	1997/98		1,233	3,698	3,698	3,698	12,328
3,082	1998/99		1,233	3,698	3,698	3,698	12,328
3,082	1999/00		1,233	3,698	3,698	3,698	12,328
3,082	2000/01		1,233	3,698	3,698	3,698	12,328
3,082	2001/02		1,233	3,698	3,698	3,698	12,328
3,082	2002/03		1,233	3,698	3,698	3,698	12,328
3,082	2003/04		1,233	3,698	3,698	3,698	12,328
3,082	2004/05		1,233	3,698	3,698	3,698	12,328
3,082	2005/06		1,233	3,698	3,698	3,698	12,328
3,082	2006/07		1,233	3,698	3,698	3,698	12,328
3,082	2007/08		1,233	3,698	3,698	3,698	12,328
3,082	2008/09		1,233	3,698	3,698	3,698	12,328
3,082	2009/10		1,233	3,698	3,698	3,698	12,328
3,082	2010/11		1,233	3,698	3,698	3,698	12,328
	2011/12			3,698	3,698	3,698	11,095
	2012/13				3,698	3,698	7,397
	2013/14					3,698	3,698

Source: Tabales 3, and estimates.

Table 5. Use of Intermediate Inputs in Banana Due to New Plantings.

MEDIUM GROWTH SCENARIO 1000 US$

US$ per Ha.	Year	Has. Plant-ed	Intermediate Inputs of Has. planted in Year				TOTAL
			1991	1992	1993	1994	
4,611	1991/92	400	1,844				1,844
4,625	1992/93	1,200	1,850	5,533			7,383
5,206	1993/94	1,200	2,082	5,550	5,533		13,165
5,206	1994/95	1,200	2,082	6,247	5,550	5,533	19,412
5,206	1995/96		2,082	6,247	6,247	5,550	20,126
5,206	1996/97		2,082	6,247	6,247	6,247	20,824
5,206	1997/98		2,082	6,247	6,247	6,247	20,824
5,206	1998/99		2,082	6,247	6,247	6,247	20,824
5,206	1999/00		2,082	6,247	6,247	6,247	20,824
5,206	2000/01		2,082	6,247	6,247	6,247	20,824
5,206	2001/02		2,082	6,247	6,247	6,247	20,824
5,206	2002/03		2,082	6,247	6,247	6,247	20,824
5,206	2003/04		2,082	6,247	6,247	6,247	20,824
5,206	2004/05		2,082	6,247	6,247	6,247	20,824
5,206	2005/06		2,082	6,247	6,247	6,247	20,824
5,206	2006/07		2,082	6,247	6,247	6,247	20,824
5,206	2007/08		2,082	6,247	6,247	6,247	20,824
5,206	2008/09		2,082	6,247	6,247	6,247	20,824
5,206	2009/10		2,082	6,247	6,247	6,247	20,824
5,206	2010/11		2,082	6,247	6,247	6,247	20,824
	2011/12			6,247	6,247	6,247	18,741
	2012/13				6,247	6,247	12,494
	2013/14					6,247	6,247

Source: Tabales 3 and 4.

Table 6. Value Added to the Economy from Planting Bananas.

MEDIUM GROWTH SCENARIO

Year	Production 1000 Boxes	Financial Price $/Box	Financial Revenue	Intermediate Inputs	Value Added
			-----US$1,000-----		
1991/92	443	4.59	2,032	1,844	188
1992/93	2,397	4.64	11,113	7,383	3,731
1993/94	5,768	4.68	27,005	13,165	13,841
1994/95	9,466	4.73	44,765	19,412	25,354
1995/96	11,836	4.78	56,533	20,126	36,407
1996/97	12,328	4.82	59,472	20,824	38,648
1997/98	12,328	4.87	60,067	20,824	39,243
1998/99	12,328	4.92	60,667	20,824	39,844
1999/00	12,328	4.97	61,274	20,824	40,451
2000/01	12,328	5.02	61,887	20,824	41,063
2001/02	12,328	5.07	62,506	20,824	41,682
2002/03	12,328	5.12	63,131	20,824	42,307
2003/04	12,328	5.17	63,762	20,824	42,938
2004/05	12,328	5.22	64,400	20,824	43,576
2005/06	12,328	5.28	65,044	20,824	44,220
2006/07	12,328	5.33	65,694	20,824	44,871
2007/08	12,328	5.38	66,351	20,824	45,527
2008/09	12,328	5.44	67,014	20,824	46,191
2009/10	12,328	5.49	67,685	20,824	46,861
2010/11	12,328	5.55	68,361	20,824	47,538
2011/12	11,095	5.60	62,141	18,741	43,399
2012/13	7,397	5.66	41,841	12,494	29,347
2013/14	3,698	5.71	21,130	6,247	14,883
SUM					812,111
AVERAGE					35,309
NET PRESENT VALUE AT 15 %					169,471

Source: Tables 4, and 5.

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HONDURAS - POLICY REFORMS - BANANA

Table 7. Banana Production Due to New Plantings
HIGH GROWTH SCENARIO 1000 Boxes

Extect-ed Boxes	Year	Has. Plant-ed	Production of Hectares planted in Year				TOTAL
			1991	1992	1993	1994	
1,107	1991/92	1,000	1,107				1,107
2,672	1992/93	2,000	2,672	2,214			4,886
3,082	1993/94	2,000	3,082	5,344	2,214		10,640
3,082	1994/95	2,000	3,082	6,164	5,344	2,214	16,804
3,082	1995/96		3,082	6,164	6,164	5,344	20,754
3,082	1996/97		3,082	6,164	6,164	6,164	21,574
3,082	1997/98		3,082	6,164	6,164	6,164	21,574
3,082	1998/99		3,082	6,164	6,164	6,164	21,574
3,082	1999/00		3,082	6,164	6,164	6,164	21,574
3,082	2000/01		3,082	6,164	6,164	6,164	21,574
3,082	2001/02		3,082	6,164	6,164	6,164	21,574
3,082	2002/03		3,082	6,164	6,164	6,164	21,574
3,082	2003/04		3,082	6,164	6,164	6,164	21,574
3,082	2004/05		3,082	6,164	6,164	6,164	21,574
3,082	2005/06		3,082	6,164	6,164	6,164	21,574
3,082	2006/07		3,082	6,164	6,164	6,164	21,574
3,082	2007/08		3,082	6,164	6,164	6,164	21,574
3,082	2008/09		3,082	6,164	6,164	6,164	21,574
3,082	2009/10		3,082	6,164	6,164	6,164	21,574
3,082	2010/11		3,082	6,164	6,164	6,164	21,574
	2011/12			6,164	6,164	6,164	18,492
	2012/13				6,164	6,164	12,328
	2013/14					6,164	6,164

Source: Tabales 3, and estimates.

HONDURAS - POLICY REFORMS - BANANA

Table 8. Use of Intermediate Inputs in Banana Due to New Plantings.

HIGH GROWTH SCENARIO 1000 US$

US$ per Ha.	Year	Has. Plant-ed	Intermediate Inputs of Has. planted in Year				TOTAL
			1991	1992	1993	1994	
4,611	1991/92	1,000	4,611				4,611
4,625	1992/93	2,000	4,625	9,221			13,846
5,206	1993/94	2,000	5,206	9,250	9,221		23,677
5,206	1994/95	2,000	5,206	10,412	9,250	9,221	34,088
5,206	1995/96		5,206	10,412	10,412	9,250	35,279
5,206	1996/97		5,206	10,412	10,412	10,412	36,441
5,206	1997/98		5,206	10,412	10,412	10,412	36,441
5,206	1998/99		5,206	10,412	10,412	10,412	36,441
5,206	1999/00		5,206	10,412	10,412	10,412	36,441
5,206	2000/01		5,206	10,412	10,412	10,412	36,441
5,206	2001/02		5,206	10,412	10,412	10,412	36,441
5,206	2002/03		5,206	10,412	10,412	10,412	36,441
5,206	2003/04		5,206	10,412	10,412	10,412	36,441
5,206	2004/05		5,206	10,412	10,412	10,412	36,441
5,206	2005/06		5,206	10,412	10,412	10,412	36,441
5,206	2006/07		5,206	10,412	10,412	10,412	36,441
5,206	2007/08		5,206	10,412	10,412	10,412	36,441
5,206	2008/09		5,206	10,412	10,412	10,412	36,441
5,206	2009/10		5,206	10,412	10,412	10,412	36,441
5,206	2010/11		5,206	10,412	10,412	10,412	36,441
	2011/12			10,412	10,412	10,412	31,235
	2012/13				10,412	10,412	20,824
	2013/14					10,412	10,412

Source: Tabales 3 and 4.

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HONDURAS - POLICY REFORMS - BANANA

Table 9. Value Added to the Economy from Planting Bananas.

HIGH GROWTH SCENARIO

Year	Production 1000 Boxes	Financial Price $/Box	Financial Revenue	Intermediate Inputs	Value Added
			-----US$1,000-----		
1991/92	1,107	4.68	5,181	4,611	570
1992/93	4,886	4.77	23,324	13,846	9,478
1993/94	10,640	4.87	51,807	23,677	28,130
1994/95	16,804	4.97	83,456	34,088	49,368
1995/96	20,754	5.07	105,135	35,279	69,856
1996/97	21,574	5.17	111,475	36,441	75,034
1997/98	21,574	5.27	113,704	36,441	77,263
1998/99	21,574	5.38	115,979	36,441	79,537
1999/00	21,574	5.48	118,298	36,441	81,857
2000/01	21,574	5.59	120,664	36,441	84,223
2001/02	21,574	5.70	123,077	36,441	86,636
2002/03	21,574	5.82	125,539	36,441	89,098
2003/04	21,574	5.94	128,050	36,441	91,609
2004/05	21,574	6.05	130,611	36,441	94,170
2005/06	21,574	6.18	133,223	36,441	96,782
2006/07	21,574	6.30	135,887	36,441	99,446
2007/08	21,574	6.42	138,605	36,441	102,164
2008/09	21,574	6.55	141,377	36,441	104,936
2009/10	21,574	6.68	144,205	36,441	107,764
2010/11	21,574	6.82	147,089	36,441	110,648
2011/12	18,492	6.95	128,598	31,235	97,362
2012/13	12,328	7.09	87,446	20,824	66,623
2013/14	6,164	7.24	44,598	10,412	34,186
SUM					1,736,740
AVERAGE					75,510
NET PRESENT VALUE AT 15 %					348,614

Source: Tables 4, and 5.

ANNEX C

LIST OF PERSONS INTERVIEWED

A.I.D.	Robert Wilson, Paul Davis, Guillermo Alvarado, Emil Falk, Roger Norton, Roberto Villeda, Ramiro Rodriguez Lanza, Delbert McClusky, George Garcelon, Lee Arbuckle, John Jordan, John Warren, Peter Hearn, Ramon Alvarez, Clarence Dunkerly, Marino Chanlatte.
CENTRAL BANK OF HONDURAS	Mario Andino Alvarez, Jorge Castellano, Orlando Izaguirre, Arquimides Turcios, Patricia Rivera de Rosales, Evelia Hernandez Urbina, Glenda Guzman, Violeta Zuniga, Manuel Rodriguez, Elizabeth de Castro, Regino Quezada, Mario Suazo.
FPX	Nelson Ortiz.
IHCAFE	Jaime Villatoro, Amparo Canales, Gilberto Franco, Margarita Figueroa.
LUPE PROJECT	Amilcar Bonilla.
MINISTRY OF ECONOMY AND COMMERCE	Julieta Franco, Mario M. Aguero Lacayo, Luis Andres Franco Artola, Billy Gonzalez, Wilberto Flores, Maria Auxiliadora Corrales.
MINISTRY OF FINANCE	Oscar Montes, Marco Mendoza.
MINISTRY OF PLANNING, COORDINATION AND BUDGET	Pompeyo Lopez.
MINISTRY OF NATURAL RESOURCES	Luis Zelaya, Roberto Guevara, Gilberto Galvez, Hernando Palma, Florencia de Salgado, Francisco Cepeda, Abrahan Arce, Manuel Wills, Marcio Lagos, Jose Maria Martinez, Ramon Valladares.
PRIVATE SECTOR	Roberto Rosales, Daniel Meza Palma, Ruben Pelbeg, Armando Erazo, Joseph Walter, John Walter, Ismalia Acosta.
US EMBASSY	Geoffrey R. Pyatt.