

PN-ABH-663
69851

AGENCY FOR INTERNATIONAL DEVELOPMENT PPC/CDIE/DI REPORT PROCESSING FORM

ENTER INFORMATION ONLY IF NOT INCLUDED ON COVER OR TITLE PAGE OF DOCUMENT

1. Project/Subproject Number 936-4084	2. Contract/Grant Number DAN-4084-Z-00-834-00	3. Publication Date April 1990
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4. Document Title/Translated Title

The Role of Agricultural Trade in the Economic Development of Malaysia, Thailand, and Indonesia.

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6. Contributing Organization(s)

ANE/TR/ARD

7. Pagination 45 pp.	8. Report Number No. 300	9. Sponsoring A.I.D. Office ANE/TR/ARD
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10. Abstract (optional - 250 word limit)

Malaysia, Thailand, and Indonesia have each had successful experience with export oriented development strategies. Conditions in Malaysia have consistently favored exports while those in Thailand and Indonesia have varied one time but have generally been favorable in the 1980s. The success that these 3 countries have had in achieving high rates of growth in agricultural exports is based on a number of policies that have re-enforced each other in both economic and political terms. The purpose of the paper is to identify lessons learned from successful trade promotion and trade policy reform in these three countries.

This is part of a three part series on trade activities in the Asia/ Near East Region.

11. Subject Keywords (optional)

1. Agricultural trade	4. Thailand
2. Trade Policy	5. Indonesia
3. Malaysia	6. Trade promotion

12. Supplementary Notes

13. Submitting Official Dr. Chris Brown AID/S&T/ARD	14. Telephone Number 875-4015	15. Today's Date JAN 30, 1991
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16. DOCID	17. Document Disposition DOCRD [] INV [] DUPLICATE []
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AGRICULTURAL POLICY ANALYSIS PROJECT, PHASE II

Under contract to the Agency for International Development, Bureau for Science and Technology, Office of Agriculture
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THE ROLE OF AGRICULTURAL TRADE IN THE ECONOMIC DEVELOPMENT OF MALAYSIA, THAILAND, AND INDONESIA

April 6, 1990

Collaborative Research Report No. 300

**Prepared for Abt Associates, Inc.
Under USAID Contract No. DAN-4084-Z-00-834-00**

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PREFACE

Many countries in the Asia Near East (ANE) region have become more competitive in world markets for a wide variety of agricultural products. As the agency for International Development (A.I.D.) Bureaus responsible for this region seek to develop a strategy aimed at increasing income and employment in individual countries, increased attention to the role of agricultural trade has been identified as a critical priority. This paper is one of three products of a study directed at defining priority areas for A.I.D. support to agricultural trade and trade policy in the countries in the region. The study has four objectives:

First, to examine changing trade patterns within the region and between the region and other parts of the world. Additionally, to identify and examine factors that have contributed to these changes and are likely to contribute to future trade opportunities;

Second, to identify lessons learned from successful trade promotion and trade policy reform programs in three case study countries, Malaysia, Thailand and Indonesia;

Third, to examine U.S. commodity and industry interests in trade development in the region, legislative restrictions on foreign assistance designed to respond to U.S. commodity interests, and implications for A.I.D. trade development activities; and

Finally, to develop an agenda for further analysis that will contribute to the ability of the ANE Bureau, Office of Technical Resources (TR) to support country and regional programs and projects directed at expanding agricultural trade.

Abt Associates and its subcontractors, Abel, Daft and Earley and the Food Research Institute of Stanford University are performing the initial work under the first three objectives of the study through a buy-in to the Agricultural Policy Analysis Project II.

The three papers produced under this buy-in include:

- Tim Josling and Dina Umali. Agricultural Trade Issues in Asia and the Near East: Country and Regional Trade Patterns.
- Martin E. Abel and Thomas C. Earley. The Role of Agricultural Trade in the Economic Development of Malaysia, Thailand and Indonesia.
- Mark D. Newman and Christine M. Erbacher. Trade Associations and Foreign Aid: U.S. Commodity and Industry Interests and A.I.D. Trade Development Activities.

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EXECUTIVE SUMMARY

Malaysia, Thailand, and Indonesia have each had successful experience with export oriented development strategies. Conditions in Malaysia have consistently favored exports while those in Thailand and Indonesia have varied one time but have generally been favorable in the 1980's.

The success that these three countries have had in achieving high rates of growth in agricultural exports is based on a number of policies that have re-enforced each other in both economic and political terms. These policies were crafted in ways that assured their political acceptability and enabled them to be adopted and sustained over time. Furthermore, all the policy elements of a successful export oriented strategy are important and no single policy would have yielded the trade and economic growth results achieved by each of these countries.

Critical to the success of Malaysia, Thailand, and Indonesia in achieving high rates of growth in agricultural exports and in economic performance have been favorable macroeconomic, trade, and exchange rate policies. It is clear from the experience of these three countries that total economic growth and export performance was best when economic policies eschewed import substitution, which tends to penalize the agricultural sector, and promoted a relatively open economy with flexible exchange rates that allowed market forces and comparative advantage to operate and to favor the agricultural sector. Taken together, favorable aspects of these economic policies included prudent fiscal and monetary policies, relatively low levels of tariffs or quantitative restrictions on imports and particularly for those imports required by the agricultural sector, modest taxation of exports with a substantial part of the revenues generated used to finance development, and flexible exchange rates that enabled each country's exports to remain competitive in world markets.

A second policy pursued by each country was one to achieve an acceptable degree of food security in basic foodstuffs, namely rice. Promotion of rice production has been targeted by commodity-specific policies, e.g., price supports and fertilizer subsidies for rice in Malaysia and Indonesia. In this way, pursuing food security did not seriously distort other parts of agriculture and permitted competitive production of other commodities to evolve, particularly those in which each country could be competitive in world markets. The package of policies followed emphasized both food security and exports of food and commercial crops and did not promote one at the expense of the other. Success on providing basic foodstuffs at "reasonable" prices undoubtedly helped create a political climate that was favorable to the adoption of export oriented policies for the rest of agriculture.

A third set of policies involved government investments in basic infrastructure and institutions to support growth in agricultural output. Bringing new land into cultivation was one element of these policies. Expansion in agricultural area was facilitated by government investments in transportation and social infrastructure and providing new farms with the credit, technical assistance, and marketing and processing facilities needed to make new settlements viable economic communities. In the case of food crops, extending and improving the quality of irrigation has been important in expanding production. All three countries have emphasized the role of agricultural research in improving productivity and output. In the case of commercial crops, there has been close cooperation between public and private research institutions as well as among the countries themselves that have helped make these countries among the lowest cost producers in the world (e.g., palm oil, rubber, and cocoa in the case of Malaysia and Indonesia). Finally, institutions have been developed to help promote the export of key commodities with government and the private sector cooperating in these activities. This has been especially important, for example, in the promotion of palm oil exports from Malaysia

where there has been a strong focus on providing technical assistance to help importing countries use palm oil and in getting importers to reduce trade barriers.

Another aspect of policies in Malaysia, Thailand, and Indonesia centers on the recognition that world commodity prices are quite volatile in terms of both short-term and longer-term cycle price movements. In varying degrees, each of these countries has tried to temper the impact of fluctuations in world prices on prices received by farmers recognizing that extreme price movements do not necessarily contribute to efficient resource use and can retard production growth because of the large economic risks they generate. Moderation in world price fluctuations have been achieved through a variety of means including adjusting export tax levels in relation to world market prices, domestic price supports, and stock management whereby stocks are accumulated during periods of low prices and released when prices are high. These interventions have helped protect farmers against world price extremes while still allowing prices to dictate investments, resource use, and production in the longer run.

Allowing resource use and production to be driven by market prices and competitive conditions has enabled each of these countries to evolve new export commodities in line with their comparative advantage. Each country has been able to capitalize on existing competitive strengths. Malaysia and Indonesia had developed efficient system of rubber production based on outstanding research and management techniques. It was relatively easy for them to transfer this experience to other tree crop products such as palm oil and cocoa when favorable export opportunities developed. Similarly, Thailand has been able to extend its agriculture into the production and exports of livestock products, particularly poultry, using its own efficient base of feed production. And, both Thailand and Indonesia have been able to capitalize on growing world trade in fish and seafood.

Finally, as a result of the factor discussed above, all three countries have been able to diversify their agricultural exports. This has had several advantages. The production and employment base in agriculture has been increased and broadened. Also, a more diversified export base has helped stabilize export earnings since there is less dependence on the vicissitudes of world market prices for any one commodity. Achieving rapid growth in exports and a higher degree of stability in export earnings has generated a stronger base for total economic growth.

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**THE ROLE OF AGRICULTURAL TRADE
IN THE ECONOMIC DEVELOPMENT
OF MALAYSIA, THAILAND, AND INDONESIA**

I. INTRODUCTION

Malaysia, Thailand, and Indonesia each have had a long history in trade going back to the 19th century with a strong focus on exports of primary products. Colonial powers fostered the exports of primary products in Malaysia and Indonesia. In the case of Thailand, early rice trade was dominated by the Chinese who received preferential treatment from the monarchy. As a result of this history, these three countries have been familiar with the benefits of trade as well as the economic risks involved with being tied into world markets.

This paper reviews the experience of these three countries with respect to the role of agricultural trade in fostering agricultural and economic development, and focuses on the lessons that can be drawn from their experience for other developing countries. Primary emphasis is given to developments in the 1980's, but earlier experience is also reviewed where a longer history is necessary to understand more recent developments.

It is common to characterize development strategies based on trade as export-led growth. While exports certainly play a major role in these strategies, they are typically conditioned by macroeconomic, political, and social factors that also affect overall development strategies. As a consequence, exports are usually not the whole story. Intersectoral, regional, and ethnic considerations are also important in fashioning both economic development and trade strategies as is concern over food security. The experience of these three countries provides useful insights into how successful trade strategies can be developed and implemented while also paying attention to complex economic and social needs.

The countries examined also illustrate the importance of developing infrastructure and institutions necessary to successfully promote both development and trade. For trade and particularly exports to be an important source of economic growth, countries that follow trade based strategies must be internationally competitive and be able to deal with the vicissitudes of world markets.

Economic growth flows from exports, especially if it is accompanied by productivity growth that is faster than that occurring in other competing countries. In this way, growth can be realized even when real world prices are declining. Countries also need to have the ability to deal with fluctuations in world prices and to sustain an export-oriented strategy even in periods when world prices are cyclically low. Being competitive helps, but it is also necessary to have mechanisms to cushion the impact of low prices and returns sufficiently to keep producers from aborting the production of export crops, to keep necessary infrastructure in place, and to enable producers to shift resources among commodities and products to take advantage of emerging demands in world markets.

The paper is organized into sections dealing with each country. The salient experiences of these nations and the lessons to be learned from them are briefly summarized.

II. MALAYSIA

Introduction

Unlike many developing countries, Malaysia rejected development policies that favored industrial development through import substitution and discriminated against the agricultural sector by maintaining low prices for food crops and heavily taxing agricultural exports. Instead, Malaysia has followed an export oriented development strategy coupled with one that assured domestic production of basic food, namely rice. This policy approach enabled it to deal with complex ethnic and political problems, achieve political stability, and realize a high rate of export-led economic growth.

Since independence from Britain in 1957, the basic elements of policy that have been followed and periodically modified to adapt to changing conditions are as follows:

- Maintained the producer price of rice, the staple food, at a relatively stable level that guaranteed the politically powerful rice producing sector stable real purchasing power, achieved political stability, and met food security objectives.
- Assisted the export-oriented rubber, palm oil, and cocoa sectors to improve productivity through research and new plantings.
- Used export taxes to finance the public investments made to support production of export crops and to provide a surplus to finance other public sector investments.
- Maintained an open economy with fairly low and uniform tariffs on imports of consumer goods and low or no tariffs on imports used by the exporting sectors.
- Used increases in oil revenue during the late 1970's to directly subsidize the production of rice and to reduce tax rates on export crops.

Land and People

Malaysia's agricultural development has been shaped to a significant degree by its land and people.

The amount of high quality land (alluvial soils) available for crop production represents only about 15 percent of the land area of Peninsular Malaysia. Most crops are grown on this land and tree crops that are grown on these soils are among the most productive in the country. There are about 2.8 million hectares of peat and muck soils, mostly in Sarawak. These are unsuited for tree crop production and require heavy fertilization for crop production. Pineapples and a few other crops are grown on these soils. The rest of the soils in Malaysia are laterites which are not well suited for crop production but are good for tree crop production when properly fertilized.

Malaysia has been able to expand area in crop production, especially tree crops, by clearing jungle and settling new areas. In this sense, it has not been a land-short country and has been able to absorb a considerable amount of rural population growth in the agricultural sector.

Nearly 85 percent of the population lives in Peninsular Malaysia where the ethnic mix is about 54 percent Malay, 35 percent Chinese, 10 percent Indian, and about 1 percent others (Eurasians, Europeans, etc.). There is much more ethnic diversity in Sabah and Sarawak. The Chinese are the largest urban ethnic group. The rural population, on the other hand, is dominated by Malays who are mostly rice farmers and small-holder producers of tree crops. Indians form a majority of the estate agricultural labor force and are also important in the urban economy. The rural Chinese are mainly engaged in smallholder production with few engaged in rice farming.

The ethnic mix of the country has resulted in a social contract that has influenced agricultural policies. The Chinese and Indians dominate commerce and industry while the Malays dominate agriculture (particularly rice policy) and have majority control in the political process. Agricultural policies have favored rural development with a strong emphasis on building infrastructure and institutions designed to increase productivity of

Malay farmers, and on developing virgin lands for both rice and commercial crop production. Rice prices have been kept fairly stable and artificially high, with urban consumers going along with this policy in return for benefits they have received from non-agricultural policies.

Emphasis on Productivity

Under British rule, Malaysia had a strong export orientation with rubber and tin being major exports. This experience conditioned the country to deal with volatile world markets in primary products. It was recognized early on that improving productivity was important to remain highly competitive in world markets. The country developed a first-rate system of rubber research. It was able to transfer this experience to other tree crops such as oil palm and more recently cocoa as opportunities developed to expand production and exports of these crops. This research bias also carried over into food crops, and Malaysia was able to capitalize quickly on new rice varieties and to increase rice yields.

There has also been a strong orientation toward the development of physical and institutional infrastructure to improve productivity and competitiveness in world markets. These developments have facilitated a shift in the agricultural output mix in response to world market conditions, i.e., away from rubber toward oil palm and cocoa production. For example, in terms of volume, rubber's share of total exports fell from 38.0 percent in 1965 to 16.4 percent in 1980 while palm oil's share increased from 3.0 to 9.0 percent in this same period.

This combination of emphasizing improvements in agricultural productivity and bringing new land into production has resulted in rapid rates of agricultural growth. While agriculture's share of GNP has declined -- from 31.1 percent in 1961 to 16.3 percent in 1983 and a somewhat lower level currently -- the sector will continue to be an important part of the total economy for some years. Real growth in agricultural output has been generally high. It was a modest 2.7 percent a year in the 1960-69 period because of a rubber replanting program and a high proportion of immature trees. In the 1970-79 period, real growth in output averaged 5.1 percent a year as a result of more productive rubber trees, expansion in oil palm area, and significant increases in rice yields due to varietal improvement and expanded irrigation. Output continued to grow at a respectable 4.0

percent average annual rate in the 1979-83 period, led mainly by growth in oil palm production, and the agricultural sector has continued to perform well since 1983.

Government Interventions

The Government of Malaysia's interventions in the economy have been relatively small compared to other developing countries and there has been a strong reliance on the private sector. Furthermore, interventions have been stable and predictable, thereby creating a favorable environment for economic growth.

Imports of consumer goods have been subject to ad valorem tariffs with most tariff rates having been low at about 5 percent. Most imported food items are not subject to tariffs, and imports of machinery and intermediate capital goods are duty free. Letters of credit for imports have been readily available from banks.

On the industrial front, government subsidies have been mainly in the form of tax credits. Special emphasis has been given to the establishment of export-oriented industries. There have been no output subsidies for industry, although modest tariff levels have been employed to protect new (infant) industries. Since 1975, the government has tried to promote Malay participation in industry by requiring equity participation by Malays and encouraging employment of Malay workers. These measures have acted as a mild impediment to both local and foreign investment.

In general there is little credit rationing. But the government has directed commercial banks to make funds available for agricultural development and for increasing food production, with preferential interest rates for small farms, particularly Malay farmers. In the industrial area, banks and other financial institutions have been encouraged to give preference to Malay borrowers. Funds can be readily transferred into or out of the country with the central bank using a minimum of controls.

In the foreign exchange area Malaysia has allowed its currency to float relative to a group of currencies made up of those of Malaysia's major trading partners. The currency policy has helped to promote commodity exports. Malaysia has experienced only a few

periods of current account deficit, running a surplus most of the time. Neither the deficits nor surpluses have been extremely large which accounts for the relative stability on Malaysia's currency as shown in the following table.

<u>Malaysia's Exchange Rate</u>	
\$ M/\$U.S	
1980	2.22
1981	2.24
1982	2.32
1983	2.34
1984	2.42
1985	2.43
1986	2.60
1987	2.49
1988	2.72
1989	2.70

Source: IMF Statistics

There has also been minimal intervention in labor markets with no minimum wages, wage indexing, or unemployment insurance. Public sector employees do not receive special treatment and their salaries are generally below those in the private sector for comparable jobs.

The government has been directly involved in the economy through public enterprises and participation in joint ventures with foreign firms. Malay government employees are usually assigned to these ventures to gain managerial experience. While public enterprises and joint ventures are normally in the industrial and resource sectors, agriculture is also involved through the estate sector. Public enterprises have generally not performed well and many have been closed or sold.

Agricultural Policies

Trade and price policy interventions in agriculture have been relatively small by any standard. It is useful to distinguish between rice policy and those for export crops because of the different policy objectives for the two groups.

Rice

The primary objectives of rice policy have been to ensure food security and provide a stable minimum income to Malay rice farmers. Malaysia has not tried to be totally self-sufficient in rice but has sought to produce a major part of its needs. The degree of rice self-sufficiency has declined over time. The emphasis of rice policy has shifted over time from increasing production to improving the standard of living for Malay rice farmers. The basic rice policy interventions have included a guaranteed minimum producer price, subsidized fertilizer, and development of irrigation facilities.

As discussed earlier, Malaysia decided to keep rice prices above world levels as part of its social contract to balance interests among ethnic groups. This can be seen from data on rice developed by Jenkins and Lai for the late 1970's and early 1980's.

Malaysia Rice Prices

	<u>Border Price</u> <u>At Farm Level</u>	<u>Support</u> <u>Price</u>	<u>Ratio of Support</u> <u>To Border Price</u>
	-----M\$/mt-----		
1975-79 Avg.	372	477	1.28
1980-83 Avg.	397	656	1.65

Malaysia has employed a combination of direct subsidies on fertilizer prices and credit subsidies for fertilizer purchases. The specifics of these policies have changed over time but subsidy levels have been substantial. There have been problems with this approach, including inefficient use of fertilizer in rice production and the sale of fertilizer by rice farmers to the producers of export crops.

Malaysia has invested heavily in irrigation and drainage, particularly after new high-yielding rice varieties became available which benefit from regular and controlled supplies of water. In recent years, expenditures on irrigation and drainage declined as the amount of land suitable for improvement decreased. The share of expenditures going to irrigation and drainage during successive 5-year planning periods has been as follows:

<u>Plan Period</u>	<u>Share of Plan Expenditures</u> (percent)
1956-60	17
1961-65	26
1966-70	21
1971-75	16
1976-80	12
1981-85	18
1986-90	3

Export Crops

The basic policy approach for major export crops such as rubber, palm oil, and more recently cocoa has been to let these sectors rely on world market prices. However, export taxes have been favored over income taxes as a way to raise revenue from these crops. The collection of export taxes is easy and they can be adjusted over time to smooth out the fluctuations in prices received by producers relative to variation in world market prices.

There are basically two types of export tax. One is a general tax which raises revenues that are used for general government spending and to finance specific activities of the export crop sector such as land development, replanting of trees, providing infrastructure, etc. The other is a small tax on exports that is used to finance research on export commodities. This research is carried out jointly by the private sector and the government. Export revenues are also used to finance organizations whose missions are to develop export markets for Malaysian commodities.

The level of export taxation has not been high when one considers that a part of these taxes are spent on programs that directly benefit the crops being taxed. Jenkins and Lai have calculated both the direct and indirect effects of pricing and tax policies measured in terms of the effective rate of protection. For the 1980-83 period, these rates averaged -.21 for estate rubber production, -.22 for smallholder rubber production, and -.06 for palm oil production. Furthermore, a combination of the use of ad valorem export taxes and periodic adjustments in tax rates have tended to cushion the impact of fluctuations in world prices on domestic prices. Tax collections have been high when world prices were also high and low when world prices were low.

As mentioned earlier, Malaysia has among the world's best tree crop research institutions and their research has had a marked effect on productivity and efficiency. For example, research on palm oil has contributed to Malaysia being the second lowest cost producer next to Indonesia. In recent years, variable costs of producing crude palm oil have been about 8.5 cents per pound. World prices are never likely to be low enough to prevent palm fruit from being harvested, although they may be low enough at times to discourage fertilizer use.

Impact of Policies on Exports

The following table summarizes in quantitative terms Malaysia's experience with production and exports of the major export products.

Production and exports of petroleum and natural gas grew rapidly in the 1975-88 period, at annual rates of 14 and 15 percent, respectively. In the 1983-88 period, output and exports of liquified natural gas increased by 28 and 35 percent a year.

The rubber sector grew by only about one percent a year in the 1975-88 period, reflecting slow growth in world demand. Malaysia's strategy has been to improve productivity and maintain or improve market share in a slowly growing market. Tin production and exports have declined, reflecting a contracting world market.

Both palm oil and cocoa have experienced rapid growth in production and exports and will likely continue to grow in the future. Palm oil production and exports both increased at an average annual rate of 11 percent in the 1975-88 period and Malaysia is the world's largest producer and exporter. In the case of cocoa, Malaysia has gone from an insignificant producer to being the third or fourth largest with production and exports expanding at annual rates of 21 and 23 percent, respectively, in the 1975-88 period.

Malaysia: Production and Export of Major Commodities

	<u>1975</u>	<u>1985</u>	<u>1988</u>	<u>Annual Percent Change 1975-88</u>
<u>Petroleum</u>				
Production (1,000 b.p.d.)	98	446	540	14.0
Exports (1,000 mt)	3,240	16,701	19,987	15.0
<u>Liquefied Natural Gas (LNG)</u>				
Production (1,000 mt)	-	4,600	6,200	28.1*
Exports (1,000 mt)	-	4,389	6,100	35.2*
<u>Rubber</u>				
Production (1,000 mt)	1,478	1,469	1,612	0.7
Exports (1,000 mt)	1,460	1,497	1,665	1.0
<u>Saw Logs</u>				
Production (1,000 cu. meters)	19,164	30,957	33,600	4.4
Exports (1,000 cu. meters)	8,477	19,630	21,000	7.2
<u>Tin</u>				
Production (1,000 mt)	64	37	32	-5.2
Exports (1,000 mt)	80	57	52	-3.3
<u>Palm Oil</u>				
Production (1,000 mt)	1,258	4,133	5,000	11.2
Exports (1,000 mt)	1,161	3,215	4,490	11.0
<u>Cocoa Beans</u>				
Production (1,000 mt)	17	163	204	21.1
Exports (1,000 mt)	12	82	180	23.2

*Based on 1983-88 period.

Source: Economic Report 1988/89, Ministry of Finance, Malaysia.

Agricultural Imports

Along with its emphasis on agricultural exports, Malaysia has relied on imports of basic foods for which it does not have a comparative advantage. The evolution of agricultural imports in the 1978-1987 period is shown in the following table. In general, this pattern of imports is consistent with a rapidly growing economy in which food consumption patterns increasingly favor livestock products and wheat consumption over rice as incomes rise.

There has been a marked increase in imports of dairy products, particularly dry milk products. One also observes fairly rapid growth in feedstuffs (maize, soybeans, and soybean meal) required to support a growing meat industry. For example, maize imports increased by 142 percent in the 1978-87 period and soybean meal (including that in imported soybeans) by over 30 percent. Wheat and flour imports increased steadily, but rice imports were erratic depending on domestic production levels. As is typical in much of Asia, rising incomes have resulted in a substitution of wheat for rice in diets as incomes have risen. Imports of pulses and sugar have also increased to meet growing demands for these commodities.

Malaysia: Imports of Major Agricultural Commodities

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
	-----1,000 metric tons-----									
Dry milk	3.4	2.6	73.5	75.5	62.5	77.3	80.1	72.9	73.5	83.3
Wheat and flour	528.7	476.9	487.6	503.4	543.1	592.0	592.5	606.9	579.5	617.8
Rice	408.6	239.1	167.6	316.7	403.0	358.3	436.5	428.0	191.2	198.0
Maize	538.4	639.5	430.7	476.8	683.3	777.5	863.9	1,181.6	1,203.7	1,302.1
Pulses	36.7	36.3	46.9	42.9	38.7	42.2	72.8	44.0	48.7	52.0
Sugar, raw	364.0	417.6	481.4	448.9	420.5	543.0	560.9	592.6	645.8	638.6
Soybean meal	126.4	142.0	127.9	37.1	80.7	127.8	173.0	148.5	179.6	171.8
Soybeans	27.5	27.0	90.1	190.0	178.6	174.2	174.4	203.5	255.4	28.0
Cotton	32.8	31.4	29.0	29.9	28.5	24.4	29.6	24.3	28.3	33.4

Source: FAO Trade Yearbooks, various issues.

Lessons from Malaysia's Experience

Malaysia has demonstrated that it is possible to achieve rapid and sustained economic growth based on a relatively open economy and one that has emphasized an export oriented agricultural development strategy. There are a number of lessons to be learned from Malaysia's experience that are relevant to other developing countries.

One lesson is that food security and domestic political considerations do not have to be in conflict with an export oriented agricultural development strategy. That turns out to be the case when government uses direct subsidies and public investments to achieve food security rather than resorting to distorted fiscal, monetary, and trade policies which tend to stifle export growth when used to promote import substitution. Subsidizing rice production through high price supports, fertilizer subsidies, and investments in irrigation drainage, and research have been necessary for political and social reasons. These policies have resulted

in an inefficient allocation of resources, but these inefficiencies were necessary to achieve a social contract that resulted in political stability and allowed the rest of the economy to operate in a basically unfettered manner.

Another important aspect of the Malaysian experience is that an export development strategy can result in stable and sustained economic growth despite world price volatility for primary commodities if certain requirements are met.

- Exchange rates need to be sufficiently flexible to maintain competitiveness in world markets.
- It is important to increase productivity so a country achieves the status of and remains a low-cost producer.
- The export base is diversified so that earnings are not dependent on only one or two commodities.
- Fluctuations in world prices are tempered by policies to some extent so that producers do not necessarily experience the extremes in world price movements.
- Market price signals are allowed to shift resources among commodities and these shifts are supported by government policies through providing needed financing to producers, physical infrastructure, and research.
- Labor markets are allowed to work so that employment opportunities are demand driven rather than determined by government directives or interventions.

Malaysia has done very well in meeting these requirements and this has shown up in the evolution of the country's agriculture and its good performance. New land has been brought into production, particularly for tree crops, and has served as a base for rapid growth in production. Financing and infrastructure were provided to support the expansion in area.

Malaysia has long emphasized agricultural research. It was able to take advantage of new rice technology. It has about the best tree crop research institutions in the world. This research capability enabled Malaysia to maintain a high level of productivity and to shift into new and emerging crops as market opportunities developed. It was possible, for example, to transfer research capabilities developed for rubber first to oil palms and then to cocoa.

Malaysia has also been willing to tax its agricultural sector through a system of export taxes. These taxes provided a means to capture part of the economic surplus generated in agriculture to finance general economic development as well as to promote production of export crops. In addition, the taxes have been implemented in ways that dampened world price fluctuations in the domestic market. Finally, taxation of the export sector has been modest so that ample incentives remained to sustain growth when such opportunities have existed.

Finally, Malaysia has encouraged the private sector and competition within it. Private initiative in combination with market oriented policies has resulted in generally efficient resource use and innovation in the export sector. But beyond this, the Government of Malaysia has evolved a partnership with the private sector that has enabled each to reinforce the other. Government policies have facilitated efficient production and have helped develop export markets for its products. For example, the government and the palm oil industry worked together closely in developing new markets for Malaysian palm oil. These activities have covered technical and economic considerations as well as the political considerations that have been involved in getting other countries to reduce barriers to palm oil imports and use.

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III. THAILAND

Introduction

Thailand is a country that has succeeded in expanding and diversifying its agricultural exports despite widespread government policy interventions. It can be argued that the agricultural sector and the economy as a whole would have performed better had there been less government intervention. However, with a few exceptions, government interventions did decline in the 1980's and this trend has had a generally salutary effect on agricultural exports. Also, Thailand expanded production of new crops and poultry which have become major export items as did fish and seafood, and these exports have not been subject to significant government interference.

Macroeconomic policies have played an important role in explaining Thailand's export performance. These policies did not always evolve in ways that were conducive to exports, but the experience of Thailand once again shows that they are important.

Thailand's agricultural development and trade history can be divided roughly into three stages, although they have overlapped in time. The first stage was one of extending agricultural production by bringing new land into production. That phase essentially ended by the 1980's as little new land was readily available for crop production. The second stage involved diversification of production into new, low value crops. The third stage, which is not independent of the second, involved diversification of production and exports into new and higher value products.

Land Resources

Thailand's total land area is 51.3 million hectares of which about 38 percent is in agriculture. Agricultural area can be divided into four regions. The northern region accounts for about one-third of total area and is characterized by mountain ranges and numerous valleys. Four major rivers, which merge to form the Chao Phraya River, originate in this area. This region was once a main source of timber but the expansion of agricultural area has substantially reduced timber supplies. The northern valleys of the region produce

rice, soybeans, tobacco, fruits, and vegetables and the southern valleys grow mainly rice, corn, and soybeans.

The northeast region, which also accounts for about one-third of the country's area, is characterized by below-average rainfall and generally poor soils. The major crops produced there are cassava, corn, sorghum, and glutinous rice.

The central region, which accounts for about one-fifth of the total area, lies in the Chao Phraya River delta and is the major agricultural area in the country. Monsoon rains, abundant irrigation, and good soils make this region very suited for rice production. Fruits, livestock, and fish are other important products of the area and the upland fringes of the region produce sugarcane, corn, and cassava.

The southern region is a strip of land bordering Burma and Malaysia. Its soils and equatorial climate make it suitable for tree crops -- rubber, oil palm, and coconut, and fish is also important to the region's economy.

Expansion of agricultural area has enabled Thailand to absorb a growing population. The population growth rate has declined from about 3.0 percent in the 1960's to about 2.0 percent in the 1980's.

Land use in Thailand since 1950 is shown in the following table. Between 1950 and 1982 area in forests fell by more than one-half while crop area more than doubled. But land use patterns began to stabilize in the 1980's and there is now little new land that can be easily brought into agricultural production.

Land Utilization in Thailand

	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>1982</u>
	-----million hectares-----				
Forests	31.71	28.19	23.27	16.55	15.68
Agriculture	8.27	10.00	15.04	19.04	19.77
Rice	5.40	6.20	9.37	11.77	11.72
Field Crops	0.73	1.11	2.25	4.12	4.69
Tree crops	0.77	0.93	1.46	1.78	1.90
Other	1.37	1.76	1.96	1.37	1.46
Unclassified	<u>11.33</u>	<u>13.13</u>	<u>13.00</u>	<u>15.72</u>	<u>15.86</u>
Total	51.31	51.31	51.31	51.31	51.31

Source: Ammar Siamwalla and Suthad Setboonsarng, Trade, Exchange Rate, and Agricultural Pricing Policies, World Bank Comparative Studies, World Bank, 1989.

The opening of new land was accompanied by and in some cases even led by the development of transportation infrastructure. The northeast, for example, benefited greatly from road networks constructed in the 1960's that were motivated as much by military as by developmental concerns. As a consequence, Thailand has a relatively good transportation system that helps make its agriculture competitive in world markets.

Macroeconomic Setting

Macroeconomic policies have had an important influence on Thailand's agriculture. Sometimes they have had an unfavorable influence, but more recently they have been generally beneficial for agricultural development and trade.

Industrial Policies

For many years Thailand followed an import substitution policy for industrial development. It used tariffs to protect manufactured products and favored industries by exempting them from tariffs on imported machinery and granting them tax holidays. This policy approach dominated the 1960's and a good part of the 1970's, and were implicitly biased against agriculture.

But beginning in the mid-1970's and accelerating in the 1980's, Thailand began to evolve a more export oriented industrial policy. While import tariffs remained in place, procedures to obtain rebates for domestic taxes and duties on imported components of export goods were greatly simplified.

Monetary and Exchange Rate Policies

The shift in industrial policies toward a stronger export orientation was re-enforced by exchange rate policies in the 1980's.

Prior to the mid-1970's, the Bank of Thailand pursued conservative monetary policies that enabled it to maintain a stable exchange rate between the baht and the dollar for a long period (1955-88). This conservatism gave way to a more liberal attitude toward monetary policy in the mid-1970's. The more liberal policy, combined with easy fiscal policy and the oil shocks and international currency fluctuations of the late 1970's, resulted in a sharp increase in the current account deficit in the late 1970's and early 1980's. In 1982, the Government of Thailand began to shift toward more prudent monetary and fiscal policies, and the current account deficit and real exchange rate have declined as a result. These developments have been favorable for exports.

Economic Growth

Despite gyrations in macroeconomic policy, Thailand has been able to maintain fairly high economic growth rates as shown in the following table. While growth in the industrial and service sectors outpaced agriculture, the latter still performed well by world standards.

Real Annual Average Economic Growth in Thailand

	<u>GDP</u>	<u>Agriculture</u>	<u>Industry</u>	<u>Services</u>
	-----percent-----			
1951-58	3.9	1.9	5.4	5.6
1958-73	7.2	5.4	9.0	7.8
1973-84	6.4	3.9	8.2	6.9
1984-88	6.9	3.7	7.6	7.8

Source: Ammar Siamwalla and Suthad Setboonsarng, Trade, Exchange Rate, and Agricultural Pricing Policies in Thailand, World Bank Cooperative Studies, World Bank, 1989, and Quarterly Bulletin, Bank of Thailand, various issues.

This pattern of economic growth resulted in a decline in agriculture's share of GDP and increases in the shares of industry and services. Agriculture's share declined from nearly 40 percent in 1960 to about 17 percent in the late 1980's. It is interesting to note that agriculture's strong performance in the late 1980's prevented its share of GDP from declining.

Thailand: Shares of Major Sectors in GDP

<u>Year</u>	<u>Agriculture</u>	<u>Industry</u>	<u>Services</u>
	-----percent-----		
1960	39.8	18.6	41.7
1965	34.8	22.7	42.5
1970	28.3	25.3	46.4
1975	31.5	24.8	43.7
1980	25.4	28.5	46.1
1985	16.8	34.0	49.2
1988	16.9	32.4	48.0

Source: Ammar Siamwalla and Suthad Setboonsarng, Trade, Exchange Rate, and Agricultural Pricing Policies in Thailand, World Bank Comparative Studies, World Bank, 1989 and Quarterly Bulletin, Bank of Thailand, March 189.

Agriculture Policies

Rice dominated Thai agriculture for a long time. But over the years maize, cassava, and sugar became more important with the former two commodities emerging as major export crops. In the 1980's there was further diversification in production and exports and poultry, fruits and vegetables, and fish were the most rapidly growing export items.

Rice

We begin with rice because of its importance and the way it illustrates the evolution of agricultural policies in Thailand.

Throughout most of the post-WWII period, the government intervened in the rice economy in a major way. The most enduring form of intervention was the rice export tax regime, which contained various elements whose mix changed over time, but in simplified terms involved the following:

- Rice exports were licensed by the government even though private exporters made export sales. The government also engaged at times in direct sales to other developing countries.
- Exporters were also required to sell specified quantities of rice to the government at below market prices, with the quantity of such sales varying over time.
- The control over exports enabled the government to keep the domestic price of rice well below world market levels. It was able to capture a large part of this price difference which became a major source of government income, accounting at times for 25 percent of total government revenue.
- The export tax on rice was done away with in the early 1980's and domestic and world market prices have been in line since then.
- A producer price support program was in effect during the 1975-83 period, but there was never enough money to buy more than small quantities of rice and it was ineffective.

The impact of rice policy was to keep prices low in Thailand relative to the world market. For example, Siamwalla and Setboonsarng calculated that the export tax on rice as a percent of the border price averaged 42 percent in the 1960's and 38 percent in the 1970's. By the mid-1980's the tax rate had declined to a nominal level of only about 5 percent.

The results of these policies on Thailand's rice supply-demand balance are shown below. As the export tax on rice declined in the 1980's, rice area increased, there was a marginal improvement in yields, and production expanded. Exports averaged significantly higher in the 1980's than in the 1970's. During most of the 1980's, domestic consumption stabilized in the 8.3-8.5 mmt range partly due to higher domestic rice prices and partly as a result of higher incomes moving consumers away from rice to other foods.

Thailand: Rice Supply-Demand Balance, Milled Basis

<u>Crop Year</u>	<u>Area</u> mil. ha.	<u>Yield</u> mt/ha.	<u>Production</u>	<u>Exports</u> -----mmt-----	<u>Consumption</u>
1970	7.3	1.85	8.9	1.1	8.1
1971	6.8	1.98	9.0	1.6	7.7
1972	7.1	1.94	9.1	2.1	7.0
1973	6.8	1.83	8.2	0.9	7.8
1974	7.7	1.94	9.8	1.0	8.2
1975	7.5	1.78	8.8	0.9	7.4
1976	8.4	1.83	10.1	1.9	8.3
1977	8.2	1.84	9.9	2.9	7.6
1978	8.8	1.59	9.2	1.6	7.5
1979	8.9	1.96	11.5	2.7	8.1
1980	8.7	1.82	10.4	2.7	8.1
1981	9.2	1.89	11.5	3.0	8.0
1982	9.1	1.95	11.7	3.5	8.1
1983	8.9	1.89	11.1	3.7	8.1
1984	9.6	2.03	12.9	4.5	8.3
1985	9.6	2.07	13.1	4.0	8.5
1986	9.8	2.06	13.4	4.3	8.6
1987	9.7	1.95	12.5	4.4	8.3
1988	9.2	1.95	11.9	4.8	8.4

Source: World Grain Situation and Outlook: Reference Guide on Rice, FAS, USDA, October 1989.

Corn

Thailand's corn policies can be divided into two periods -- before and after 1981. Prior to 1981, Thailand directed its corn exports heavily to Japan and Taiwan. This was done through a system of quotas assigned to exporters. Corn prices were set using a formula that involved Chicago futures prices. But by 1981, 95 percent of Thailand's corn exports went to countries other than Japan and Taiwan and the export licensing system was abandoned.

The market for corn has been consistently open and domestic and world prices have been about equal. This was true even during the period when the export licensing system was in effect -- domestic prices were only slightly below the world price.

Area in corn increased throughout the 1960's and 1970's as did production. But a combination of low world prices in the latter half of the 1980's has slowed growth in corn

area and production. Thailand was able to increase its corn exports and satisfy slowly growing domestic use until the mid-1980's. In more recent years, however, corn exports have been declining as domestic use has surged in response to rapid increases in domestic meat and poultry production, and rapid growth in poultry exports (discussed later).

Thailand: Corn Supply-Demand Balance

<u>Crop Year</u>	<u>Area</u> mil. ha.	<u>Yield</u> mt/ha.	<u>Production</u>	<u>Exports</u> -----mmt-----	<u>Consumption</u>
1975/76	1.3	2.28	3.0	2.4	0.6
1976/77	1.4	1.96	2.8	2.1	0.7
1977/78	1.5	1.40	2.0	1.2	0.8
1978/79	1.5	2.03	3.0	2.1	1.0
1979/80	1.5	2.17	3.3	2.2	1.0
1980/81	1.6	1.90	3.0	2.1	0.9
1981/82	1.8	2.49	4.4	3.3	1.0
1982/83	1.8	1.86	3.4	2.1	1.2
1983/84	1.8	2.16	4.0	2.8	1.2
1984/85	2.0	2.23	4.4	3.2	1.3
1985/86	2.2	2.40	5.4	3.8	1.6
1986/87	2.0	2.05	4.3	2.6	1.7
1987/88	NA	NA	2.7	0.8	1.9
1988/89	NA	NA	4.2	1.4	2.8

Source: World Grain Reference Tables, FAS, USDA, and World Grain Situation and Outlook, FAS, USDA, various issues.

Cassava

In general, cassava trade is free of interventions. In 1981, Thailand along with Indonesia and Brazil entered into an agreement with the European Community (EC) to limit cassava exports to that market. Except for 1984 when allocations of EC quotas to exporters depended on sales to other countries, the EC quota has not distorted cassava prices and exports to non-EC markets have expanded. However, EC grain policy itself was instrumental in creating a strong EC demand for cassava in the first instance.

Sugar

The government has intervened in the sugar market in various ways over time to keep the domestic price above world levels. Since the early 1980's, Thailand has had a quota system that involves direct government intervention. A portion of the crop falls under an

A-quota which can be sold freely in the domestic market at a high price. A B-quota sets the amount of sugar required to cover long-term contracts. Some of this is exported by the government and some by the sugar mills. The rest of the crop or C-quota sugar can be freely exported at world market prices.

The impact of sugar policy is indicated by the different levels of raw sugar prices in the 1982-84 period. The average border or world price was Baht 4,691 a ton, the mill price was Baht 6,830 a ton, and the consumer price was Baht 10,863 a ton. Clearly, this policy represents a substantial tax on consumers and significant support to producers, but it was necessitated by low world prices and by Thailand's heavy dependence on the export market. Thai production costs are actually quite competitive, and with rising world prices in recent years, production and exports have expanded sharply.

Rubber

Thailand has levied an export tax on rubber since 1955. The tax has been progressive making rubber at times one of the most heavily taxed commodities. In the 1975-84 period, the tax as a proportion of border prices averaged about 20 percent. Rubber production and exports increased in the 1980's despite slow growth in world demand and the large tax on exports.

Soybeans

Thailand has had modest import duties on soybeans, soybean meal, and soybean oil. Since 1984 there has also been a form of quotas for soybean and meal that require a percent of purchases be made from domestic beans and meal. Siamwalla and Setboonsarng estimate that these interventions have increased the domestic price of meal by about 10 percent above the world price -- not a large difference.

The rapidly expanding livestock and poultry sector has created a strong demand for soybean meal and will probably work to keep government interventions at modest levels in the future.

Palm Oil

There is an import tax on palm oil which has increased over time, but it is still relatively small. Thailand has been able to increase palm oil production and imports have declined. The import tax provides only modest protection to domestic producers.

Fertilizers

Since 1973, fertilizer imports have been free of all restrictions except for an 8 percent duty on urea. Fertilizer use on major crops has been increasing but is still very low, reflecting the extensive nature of crop production in Thailand.

Agricultural Trade Performance

Thailand's agricultural trade performance is reviewed for the 1983-88 period for exports and the 1983-87 period for imports. This was a period when macroeconomic and exchange rate policies were favorable for trade, and government interventions through commodity policies either decreased or remained unchanged depending on the commodity. Furthermore, rapid growth in exports has occurred in new commodities for which there is little or no government intervention.

Exports

Thailand's export volumes for a number of agricultural commodities are shown below. Among the traditional commodities one observes the following:

- Rubber and rice exports increased.
- Corn and sorghum exports declined as rapid growth in domestic demand preempted exportable supplies.
- Cassava exports, which now far exceed corn exports, have continued to increase but somewhat erratically as a result of both fluctuations in production and in export demand.
- Sugar exports showed only a slight upward trend in the 1983-88 period, but have risen sharply since then.

By comparison, Thailand has had rapid growth in exports of a number of relatively new products.

- Chicken exports more than tripled in the 1983-88 period and Thailand is now one of the world's largest poultry exporters.
- Fish and seafood exports have also grown rapidly. Taken together the quantity of these export items increased by over 200 percent in the 1983-88 period.
- Canned pineapple has also experienced rapid growth and exports of fresh fruits and orchids have grown at respectable rates.

Overall, it appears that Thailand's policy shifts toward a more export oriented strategy and one that has allows market prices to work have been very favorable for agricultural export performance. Furthermore, Thailand has been able to diversify its export base through expansion in production and exports of chicken, fish and seafood, and pineapple, for example.

Thailand: Exports of Agricultural Products

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
	-----1,000 mt-----					
Rubber	555.1	591.9	680.0	760.9	885.9	937.7
Rice	3,476.5	4,615.8	4,062.2	4,523.6	4,443.3	5,089.4
Corn	2,658.7	3,144.6	2,782.0	4,013.2	1,649.2	1,214.5
Sorghum	228.3	219.2	316.9	267.3	146.0	22.7
Cassava	5,196.8	6,569.7	7,088.4	6,318.6	6,210.9	8,121.5
Sugar	1,536.9	1,242.0	1,724.4	1,960.6	2,025.8	1,855.2
Tobacco	35.6	35.9	32.9	33.1	27.1	31.3
Chicken	22.9	34.2	37.8	64.8	81.9	97.5
Prawns	20.2	19.4	24.0	28.1	33.9	49.8
Cuttlefish, fresh	39.3	42.8	46.3	58.9	61.6	58.9
Fresh fish	53.4	75.3	96.4	118.9	130.4	149.5
Canned fish	49.9	81.4	102.9	171.4	185.4	249.5
Canned crustaceans	19.6	29.0	29.5	34.3	41.9	56.5
Canned pineapple	135.6	186.3	192.8	226.0	259.8	341.4
Fresh fruits	51.1	45.7	57.3	52.4	44.6	54.2
Orchids	7.9	7.5	7.8	6.1	7.1	9.5

Source: Quarterly Bulletin, Bank of Thailand, 1989

Imports

In more recent years Thailand has had a relatively open import regime for agricultural products that it is not well suited to produce. As indicated in the table below, imports of dairy products, wheat and flour, tobacco, and cotton have been increasing as domestic demand for them has grown. The growth in cotton imports reflects textile exports as well as domestic textile demand. Soybean oil imports have declined as domestic oil needs have been met from domestically produced palm oil and imported soybeans. However, soybean meal imports have been increasing to meet the rapidly growing demand for animal feeds.

Thailand: Major Agricultural Imports

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
	-----1,000 mt-----				
Dry milk	46.6	46.7	44.7	53.1	61.0
Butter	4.7	4.7	4.7	5.7	7.6
Wheat and flour	222.9	169.0	169.8	186.0	245.1
Tobacco	4.6	6.9	8.7	9.3	8.8
Cotton	109.7	116.0	132.5	193.4	249.6
Soybean meal	191.5	296.2	155.0	205.9	239.6
Soybean oil	18.0	41.8	11.8	2.7	0.8
Fish and products(\$mil)	42.8	85.8	138.3	283.7	N.A.

Source: FAO Trade Yearbooks, various issues.

Lessons from Thailand's Experience

At the risk of being repetitive, macroeconomic and exchange rate policies do matter and this point is again illustrated by Thailand's experience. Thailand's economic performance and that of its agricultural sector were much better when these policies were favorable than when they were unfavorable. Good policies in these areas were particularly important in boosting agricultural exports.

Thailand also illustrates that the agricultural sector can generate a surplus to support total development if the size of the surplus which is captured by government is not too large and is offset by public investments that support agricultural output growth. Investments in transportation and marketing infrastructure as well as in agricultural research have been important offsets to the surplus which has been extracted from the agricultural sector.

As should be obvious, supporting inefficient agricultural production leads to poor resource allocation and retards economic growth.

The lack of significant government intervention for a number of commodities and decreased intervention in the rice sector combined with favorable macroeconomic and exchange rate policies have enabled the private sector to respond in a dynamic way to prices and market opportunities. As a consequence, Thailand's agriculture and its agricultural exports grew and became more diversified in the 1980's. Production growth has shifted from area expansion to yield intensification and the production and export of high-valued products. As a consequence, agriculture remains an important sector in terms of employment and share of GDP, and will remain an important engine for growth in the future as long as market forces allow Thailand to exploit its comparative advantages in the agricultural sector.

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IV. INDONESIA

Introduction

Indonesia is a group of islands along the equator. The major islands are Java, Madura, Sumatra, Sulawesi, Kalimantan, Bali, and Irian Jaya. Of a total land area of 1.92 million square kilometers, only 7.5 percent is arable and about 42 percent of the arable land is located on Java. There is substantial scope to develop new land outside of Java that would be suitable for cash crop cultivation.

The island chain covers over 3,000 miles in an east-west direction. Inter-island transportation infrastructure is not well developed and transportation costs are high. For many agricultural products, it is more efficient to export them to other countries than to ship them within Indonesia.

Indonesia has the fifth largest population in the world with over 170 million people and population is growing at over 2 percent a year. The population is very unevenly distributed with Java, Madura, and Bali accounting for 65 percent of the total but having only 7 percent of the country's total land area.

Agriculture, forestry, and fisheries account for the bulk of the employment, with over 50 percent of the labor force working in these sectors.

Agriculture produces a diverse mix of commodities for both domestic use and export. There has been a strong emphasis on food security, defined mainly in terms of rice, and on generating employment in the agricultural sector. In recent years, agricultural policy objectives have focused on:

- Achieving self-sufficiency in rice and other major food crops and improving diets.
- Increasing farm income and improving rural income distribution.

- Keeping food prices at reasonable and stable levels.
- Creating rural employment in agriculture and related industries.
- Increasing agricultural exports and reducing imports.
- Controlling government subsidies to both consumers and producers.

Macroeconomic and exchange rate policies have also been important in determining Indonesia's agricultural growth and trade performance in agricultural products. These policies together with those for the agricultural sector are examined with a specific focus on how they have affected agricultural trade.

Macroeconomic Setting

The Indonesian economy grew rapidly in the 1970's led by a boom in petroleum exports which accounted at times for as much as 70 percent of total export earnings and government revenues. All sectors of the economy grew at healthy rates, as shown in the following table. In the 1975-80 period GDP and the oil sector both grew at annual rates of 7.6 percent. The industrial and service sectors grew at even faster rates and agriculture registered a highly respectable 4.6 percent annual growth rate.

The collapse of oil prices in the first half of the 1980's dragged down growth rates in the whole economy. During the 1980-85 period the oil sector actually contracted by about one percent annually. Industrial growth slowed to only 0.5 percent a year, but growth in the service sector declined only modestly. While agricultural growth declined to 3.3 percent a year, this was still a good rate of performance. Overall, GDP grew at 3.6 percent annually, less than half the rate achieved in the previous five years.

Indonesia: Economic Growth, Annual Rates

	<u>GDP</u>	<u>Agriculture</u>	<u>Industry</u> ^{1/}	<u>Services</u>	<u>Oil</u>
	-----percent-----				
1975-80	7.6	4.6	8.7	8.7	7.6
1980-85	3.6	3.3	0.5	6.2	-1.1

^{1/} Includes mining.

Source: World Bank data.

Agriculture's share of GDP declined from nearly 32 percent in 1975 to 24 percent in 1980, but was unchanged in 1985 mainly because the manufacturing and oil sectors performed so poorly. Agriculture is the dominant part of the non-oil economy and provides the bulk of the employment.

Indonesia: Share in GDP

	<u>1975</u>	<u>1980</u>	<u>1985</u>
	-----percent-----		
Agriculture	31.7	24.0	23.6
Mining	19.6	23.0	16.2
Industry	8.9	13.0	13.5
Others	39.8	40.1	46.7

Industrial Policies

The manufacturing sector, which experienced rapid growth over the past 20 years, has been governed by import substitution policies. The protection given to industry has been substantial and as a result many parts of it are inefficient and uncompetitive in world markets.

Macroeconomic and Exchange Rate Policies

Until the 1960's, steady growth in the trade surplus based primarily on oil exports masked a rising deficit in non-oil trade. This oil largesse enabled the government to overlook a great many poor economic policies.

But when the oil bubble burst, Indonesia was forced into an austerity mode and had to reform a number of its policies. These reforms included:

- The currency was devalued in 1978 and a "managed" floating exchange rate system was adopted. While the value of the rupiah drifted downward, there were still needs for subsequent devaluations of 28 percent in 1983 and 31 percent in 1986.
- The tax system was revised in 1984.
- The banking sector was partially liberalized in 1983 and in 1988.
- Subsidies to many parts of the economy, including agriculture, have gradually been reduced.
- The customs service has been reformed and made more efficient which has helped facilitate trade growth.
- A number of policy reforms were adopted in 1981 directed at increasing foreign investment and promoting non-oil exports, including emphasis on increasing exports to centrally planned countries and the restoration of trade links with China.

As we shall see later, these policy changes appear to have borne fruit in recent years, especially in terms of export performance.

Agricultural Policies

Rice

Rice is the main food in Indonesia and price stability is a major policy objective. The government through BULOG, its commodity management or logistics office, has kept the price of rice within a range by supporting the farm price, building stocks when production was large, and importing when production was inadequate to meet domestic needs. Producer prices of rice have been kept at levels high enough so they, in conjunction with fertilizer subsidies, have provided sufficient incentives for rice production to expand.

The World Bank estimates that Indonesia has had a comparative advantage in rice production relative to imports. This was the case even before the 1986 currency devaluation. It has not, however, had a comparative advantage in rice exports. But considering Indonesia's growing rice needs, exports are not an important issue.

Corn

BULOG also supports the producer price of corn and, while there have not been ceiling prices, it has kept corn prices from rising too sharply by a combination of release of stocks and periodic imports. BULOG's direct intervention in the corn market has not been large and its procurement has never exceeded 3 percent of production. Storage is difficult because of the high moisture content of the crop.

Indonesia has had a comparative advantage in corn exports since devaluation. Exports however, are plagued by high costs of transportation and drying the crop so that it can be stored and shipped in good condition.

Soybeans

There has also been a support price for soybeans since 1980, but market prices have remained well above support levels. BULOG's main instrument for controlling prices has been control of imports which reached substantial levels in some years but never high enough to depress domestic prices.

Indonesia does not have an adequate soybean production technology because the crop is not well suited for tropical conditions. As a consequence, the country does not have a comparative advantage in soybean production for import substitution, and what is produced receives a significant subsidy through policies that directly or indirectly support domestic prices.

Wheat

Wheat supplies are all imported. BULOG has a monopoly on imports and handles all contracts for wheat milling, which is done by the private sector.

Sugar

All stages of the sugar industry are controlled by the government. About one quarter of the sugarcane is grown on land rented from the government and the rest is grown by smallholders. Sugar prices from producers to the retail level are highly regulated.

According to the World Bank, Indonesia does not have a comparative advantage in sugar production. Output is sustained by a combination of price supports and by compelling producers to grow a certain amount of sugarcane.

Input Subsidies

In addition to commodity price interventions, Indonesia has subsidized the price of inputs, particularly fertilizers, pesticides, irrigation water, and credit, and the cost of these subsidies has been substantial. The World Bank estimates that input subsidies increased from 25 percent of development expenditures for agriculture and irrigation in 1979/80 to 61 percent in 1986/87. However, subsidy levels for some of the major inputs have begun to decline in recent years. For example, the subsidy rate on urea declined from 52 percent in 1984/85 to 29 percent in 1986/87, although the subsidy rate on triple super phosphate remained unchanged at about 58 percent.

Commercial Crops

Unlike food crops, there is much less policy intervention in the commercial crop sector and these crops are more subject to world market prices. The government has encouraged the development of oil palm plantations in Sumatra, West Kalimantan, Sulawesi, and Irian Jaya, and the government owns many commercial crop estates.

An important element in expanding commercial crop production, particularly for palm oil, has been a policy to resettle people from the overcrowded island of Java to the outer islands. In addition to settling people as smallholders, the government also had a Nuclear Estate Scheme under which either government or private estates had associated with them a number of new smallholders. Each smallholder received three hectares of land consisting of 2 hectares of oil palms, 0.75 hectares of food crops, and 0.25 hectares allocated for a house and garden. The new settlers received credit assistance from the government. The estates have provided the processing and marketing facilities needed by the smallholders.

The settlement policy has helped foster a rapid expansion in oil palm area and palm oil production.

In addition, there are two government research organizations specializing in palm oil research, and these have been credited with helping make Indonesia the lowest cost palm oil producer. In recent years, the variable costs of producing crude palm oil have been about 7.5 cents/lb. With these low costs, world palm oil prices are never likely to be so low as to deter harvesting of oil palm fruit, although they may at times discourage fertilizer use.

Indonesian research on rubber, palm oil, and cocoa is closely coordinated with research efforts in Malaysia. This cooperation has helped to provide a strong tree crop research base.

In the past, Indonesia taxed exports of commercial crops, but the tax rate was relatively low. The tax revenues were used primarily to support research and planting programs for rubber, coconut oil, palm, and cocoa. According to the agricultural attache at the Indonesia Embassy in Washington, there are now no export taxes on commercial crop exports.

Impacts of Policies on Production

The impacts of the combination of macroeconomic, exchange rate, and various agricultural policies on agricultural production are shown below for the 1975-85 period. These policies continued to evolve since 1985 and the effects have been generally beneficial.

Food Crops

Rice: There has been a modest expansion in area and rapid growth in yields. As a consequence, rice production grew by average annual rates of 5.8 percent in the 1975-80 period and by 5.6 percent in the 1980-85 period. This rapid growth in output enabled Indonesia to go from being one of the largest importers to being essentially self-sufficient in rice.

Corn: Production expanded rapidly in the 1975-80 period based on good growth in both area and yields. While yields continued to increase in the 1980-85 period, a decline in area kept output growth at a very low rate.

Cassava: Production of this crop increased at a modest rate in the 1975-80 period and not at all in the 1980-85 period. It is an inferior food and domestic demand has not been growing. And unlike Thailand, Indonesia has not been able to capitalize on growing world demand for cassava as an animal feed.

Sweet potatoes: Production of this crop consistently declined in the 1975-85 period.

Peanuts: Production increased at an average annual rate of 4.3 percent in the 1975-80 period and by 1.0 percent in the 1980-85 period. Growth in output was due mainly to increases in yield.

Soybeans: Production has been increasing through a combination of expansion in area and growth in yields. This output growth was achieved, however, by keeping prices well above world levels through policy interventions, particularly in the 1980-85 period.

Indonesia: Food Crop Production

	<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>Annual Growth</u>	
				<u>1975-80</u>	<u>1980-85</u>
	-----percent-----				
<u>Rice (rough)</u>					
Area (1,000 ha.)	8,495	9,005	9,382	1.2	0.8
Yield (mt./ha.)	2.63	3.29	3.97	4.6	3.8
Production (1,000 mt)	22,339	29,651	39,025	5.8	5.6
<u>Corn</u>					
Area (1,000 ha.)	2,445	2,735	2,326	2.3	-3.2
Yield (mt/ha.)	1.19	1.46	1.76	4.2	3.8
Production (1,000 mt)	2,903	3,991	4,099	6.6	0.5
<u>Cassava</u>					
Area (1,000 ha.)	1,410	1,412	1,255	0.0	-2.3
Yield (mt/ha.)	8.90	9.80	11.0	2.0	2.3
Production (1,000 mt)	12,546	13,774	13,762	2.0	0.0
<u>Sweet Potatoes</u>					
Area (1,000 ha.)	311	276	211	-2.4	-5.2
Yield (mt/ha.)	7.80	7.50	8.90	-0.8	3.5
Production (1,000 mt)	2,433	2,079	1,876	-3.1	-2.0
<u>Peanuts</u>					
Area (1,000 ha.)	474	506	490	1.3	-0.6
Yield (mt/ha.)	0.80	0.93	1.01	3.1	1.7
Production (1,000 mt)	380	470	494	4.3	1.0
<u>Soybeans</u>					
Area (1,000 ha.)	752	732	835	-0.5	2.7
Yield (mt/ha.)	0.78	0.89	0.98	2.7	2.0
Production (1,000 mt)	590	653	818	2.1	4.6

Source: World Bank data.

Commercial Crops

Commercial crop production has performed quite well and most crops have expanded at rapid rates. With the exception of sugar cane, government interventions have been less for these crops than in the case of basic foods.

Rubber: Output growth slowed in the 1980's. Area continued to expand but yield growth declined.

Tea: Tea production increased at good rates in the 1975-85 period based on both increases in area and yield.

Coffee. Coffee output increased rapidly in the 1975-80 period, but at only a slow rate in the 1980-85 period.

Palm Oil: Indonesia is second only to Malaysia in palm oil production, and output increased by 11-12 percent a year in the 1975-85 period based mainly on expansion in area. Indonesia is a low cost producer and its palm oil is highly competitive in world markets.

Coconut: Production has increased at modest rates based mainly on expansion in area.

Cocoa: This is a relatively new commercial crop and output has grown rapidly. In many ways, Indonesia's favorable experience with this crop has been similar to that of Malaysia. While starting at a low level, cocoa production increased at average annual rates of about 20 and 33 percent, respectively, in the 1975-80 and 1980-85 periods. The rapid growth in output was based on increases in both area and yields.

Tobacco: Output declined in the 1975-80 period but increased nearly 7 percent a year in the 1980-85 period. The better performance in the latter period was probably due to more favorable macroeconomic and exchange rate policies.

Sugarcane: While area in sugarcane has increased, yields have declined and output in the 1980-85 period declined slightly. This pattern of growth reflects Indonesia's uncompetitiveness in sugarcane production and government interventions have not been sufficient to maintain growth in output.

Indonesia: Commercial Crop Production

	<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>Annual Growth</u>	
				<u>1975-80</u>	<u>1980-85</u>
	-----percent-----				
<u>Rubber</u>					
Area (1,000 ha.)	2,293	2,382	2,658	0.8	2.2
Yield (mt/ha.)	0.34	0.42	0.39	4.3	-1.5
Production (1,000 mt)	787	989	1,044	4.7	1.1
<u>Tea</u>					
Area (1,000 ha.)	94	113	119	3.8	1.0
Yield (mt/ha.)	0.73	0.94	1.08	5.2	2.8
Production (1,000 mt)	69	106	129	9.0	4.0
<u>Coffee</u>					
Area (1,000 ha.)	399	689	879	11.5	5.0
Yield (mt/ha.)	0.43	0.43	0.37	0.0	-3.0
Production (1,000 mt.)	171	299	325	11.8	1.7
<u>Palm Oil</u>					
Area (1,000 ha.)	171	295	469	11.5	9.7
Yield (mt/ha.)	2.41	2.45	2.59	0.3	1.1
Production (1,000 mt)	411	721	1,216	11.9	11.0
<u>Coconut</u>					
Area (1,000 ha.)	2,211	2,680	3,002	3.9	2.3
Yield (mt/ha.)	0.63	0.62	0.60	-0.3	-0.6
Production (1,000 mt)	1,391	1,666	1,791	3.7	1.5
<u>Cocoa</u>					
Area (1,000 ha.)	17	35	78	15.5	17.4
Yield (mt/ha.)	0.23	0.29	0.41	4.8	7.2
Production (1,000 mt)	4	10	41	20.1	32.6
<u>Tobacco</u>					
Area (1,000 ha.)	151	143	201	-1.1	7.0
Yield (mt/ha.)	0.62	0.60	0.59	-0.6	-0.3
Production (1,000 mt)	93	86	119	-1.5	6.7
<u>Sugarcane</u>					
Area (1,000 ha.)	268	316	385	3.4	4.0
Yield (mt/ha)	4.67	4.56	3.60	-0.5	-4.6
Production (1,000 mt)	1,251	1,442	1,389	2.9	-0.7

Trade Experience

Agricultural Exports

In general, data in the following table indicate that Indonesia's agricultural exports suffered from adverse macroeconomic and exchange rate policies in the late 1970's and early 1980's, but have rebounded since about 1982 as these policies became more favorable. For example, agriculture as a share of total exports declined from 26 percent in 1978 to about 12 percent in 1982. The share then recovered rapidly after 1982 and reached 31 percent in 1986. Part of the recovery, of course, was due to weakness in oil exports. But the quantity of exports also increased for most major agricultural export items.

The commodities that have experienced good export performance since 1982 include coffee, tea, palm oil, oilseed meals, forest products, fish, and rubber.

	<u>Indonesia: Agricultural Exports</u>									
	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
	1,000 mt									
Coffee	215.9	220.2	238.9	210.6	227.0	241.2	294.5	285.5	298.2	286.3
Tea	56.3	53.6	74.2	71.3	63.7	68.6	85.6	90.1	79.0	90.4
Pepper	37.8	25.2	29.7	34.1	36.3	45.1	33.8	26.2	29.6	30.0
Oilseed Meal	362.3	351.2	420.7	393.5	457.2	492.1	335.8	556.2	564.9	569.7
Palm Oil	412.2	351.3	434.3	196.4	259.7	406.9	246.9	651.9	683.9	698.7
Coconut Oil	-	20.7	40.6	3.5	-	8.1	35.2	192.1	5.5	11.4
Rice	-	-	10.0	-	-	-	-	258.7	133.3	3.3
Rubber	865.7	865.1	980.7	812.6	801.4	941.4	1,012.0	1,003.0	960.8	1,055.4
Forest Products (\$ mil.)	1,042.0	1,848.5	1,879.1	970.9	812.1	1,135.5	1,209.9	1,210.8	1,739.8	NA
Fish (\$mil.)	180.5	221.3	211.3	203.6	231.3	235.0	228.0	236.6	340.6	NA
Share of Total Exports (%)	26.4	28.3	22.1	12.1	11.8	16.2	17.9	21.1	31.1	NA

Source: FAO Trade Yearbooks, various issues.

Agricultural Imports

Agricultural product share of total imports declined from about 22 percent in 1978 to about 10 percent in 1982 and has remained at about this level since then. The major reason for this decline was the success in increasing rice production which resulted in Indonesia's rice imports declining from a peak of 2 million tons 1980 to negligible levels in the 1984-87 period.

Meanwhile, imports of cotton, wheat and flour have increased, particularly since 1982. Cotton imports have been buoyed by growth in demand for textiles and growth in wheat and flour imports represents a shift away from rice toward wheat-based products as incomes and urbanization have increased.

Soybean imports remained relatively stable in the 1980's. Indonesia does not have a rapidly growing feed sector so its demand for soybean meal has increased at modest rates and growth has been met by expanded domestic soybean production. Still, soybean imports are large relative to production. While the demand for vegetable oils has increased, this growth was met mostly from domestic palm oil production.

Indonesia: Agricultural Imports

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
	-----1,000 mt-----									
Cotton	90.8	150.5	117.0	98.5	112.6	115.6	125.4	128.6	171.4	211.5
Rice	1,841.6	1,922.0	2,001.7	538.3	309.6	116.9	41.4	3.4	2.8	5.5
Wheat and Flour	853.5	807.3	1,488.1	1,420.9	1,486.3	1,745.6	1,447.6	1,338.4	1,662.8	1,697.3
Soybeans	130.0	177.0	195.0	329.0	460.0	414.9	401.0	302.0	359.3	286.7
Dry Milk	5.2	47.0	22.7	26.4	51.2	45.0	42.4	42.7	39.0	38.1
Fish (\$mil.)	10.9	9.0	15.0	38.0	44.8	33.7	28.3	22.9	26.3	NA
Fruit Products (\$mil.)	146.0	139.2	145.8	170.0	208.8	252.0	230.0	188.6	217.6	NA
Share in Total Imports (%)	21.6	19.8	15.8	14.5	10.0	10.4	9.9	10.9	11.0	NA

Source: FAO Trade Yearbooks, various issues and Oilseed Annual, Oil World, various issues

Lessons From Indonesia's Experience.

Indonesia's experiences provide a number of key lessons with respect to the role of policies in influencing both agricultural development and trade.

As is the case for the other countries examined in this report, macroeconomic and exchange rate policies are important in determining overall economic performance and that of agricultural exports. Indonesia neglected these policies in the late 1970's and very early 1980's because it had ample revenues from oil exports. But when those revenues declined, the adverse effects of poor macroeconomic and exchange rate policies were unmasked and the government was forced to institute a variety of policy reforms. After a while, these policy changes paid off in terms of better performance of the total economy, the agricultural sector, and agricultural exports.

A second lesson, which is not unique to Indonesia, is that food security can be achieved while still following policies that promote agricultural exports, particularly commercial crops. For example, self-sufficiency in rice has been achieved in a relatively efficient manner.

Despite these successes, weaknesses still remain in policy areas that directly affect agricultural production. One is the continuation of large subsidies for fertilizer, pesticides, irrigation, and credit. These subsidies continue to represent an inefficient allocation of development resources. They could be reduced and compensated for by modest adjustments in product prices without experiencing losses in production.

Another weakness is the continuation of policies that promote inefficient production, most notably for sugarcane and soybeans. Eliminating the protection afforded these crops would allow resources to shift into the production of crops where Indonesia is more competitive either in terms of import substitution or export growth.

Finally, as indicated by the World Bank, Indonesia is underinvesting in a number of support areas for the agricultural sector. These include research, extension services, irrigation, and transportation infrastructure, particularly rural roads. Shifting government resources from input subsidies and the inefficient production of some crops to strengthening support services and infrastructure for agriculture would have a salutary impact on agricultural and overall economic performance.

Indonesia's agriculture represents two types of resource situation. The areas where most of the people live -- Java, Madura, and Bali -- are short of land, and agricultural development in these areas must occur through increases in yields and promoting production of high-value products. On the other hand, the other islands still have land that can be brought into production and that is well suited for commercial crops. These two types of resource situations call for somewhat different policy mixes. In the former areas research and extension activities designed to increase yields (e.g., the rice experience), improvement in irrigation, and developing transportation, marketing, and processing infrastructure will be important. In the latter type of areas, facilitating expansion in crop area and providing research to keep commercial crops competitive in world markets are probably of greatest importance. Since government intervention in the commercial crop sector is not great, the private sector will continue to provide much of the processing and marketing facilities needed for these crops.

Finally a trade-based development strategy benefits from diversification of production and exports so that a country is not heavily dependent on a few commodities for earning foreign exchange. Indonesia learned this lesson from the collapse of the world oil market in the first-half of the 1980's. The policy reforms that have evolved since the early 1980's have moved the Indonesian economy and its agriculture in the direction of being more competitive and more dependent on world market price signals to determine resource allocations. The commercial crop sector has responded to these policy changes in ways that have both increased and diversified the country's agricultural and export base. As a consequence, Indonesia's economic performance is today less dependent on the market vagaries of any one commodity that it was a decade ago.

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