PN-ABC-469
ISN 95637

# Competitive Positions Study

## Set 1: Principal Fruits, Vegetables, and Nuts

*Analytical Report No. 4*

**Regional Agribusiness Project**
**7250 Woodmont Avenue, Suite 200, Bethesda, Maryland 20814**

**DEVELOPMENT ALTERNATIVES, INC. ▪ Abt Associates Inc. ▪ Fintrac Inc. ▪ Technical Assessment Systems, Inc. ▪ DPRA Incorporated ▪ IMCC ▪ Land O'Lakes, Inc. ▪ Postharvest Institute for Perishables ▪ United Fresh Fruit and Vegetable Association ▪ GIC Agricultural Group**

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by

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May 1995

Prepared for the Regional Agribusiness Project, contract number AEP-0009-C-00-3057-00, with funding from the Asia and Near East Bureau of the U.S. Agency for International Development

# ACKNOWLEDGMENTS

Crop and commodity data sets from each country included in this study were collected by consultants in the respective countries. These consultants' contributions are greatly appreciated. Ashoka Gunawardena collected the data from Sri Lanka; Professor Sadanadan Nair was responsible for Indian data; A.B.M. Siddique, President of Kranti Associates, gathered the Bangladesh data; James Packard-Winkler of DAI uncovered the data for Thailand; co-author Bagie Sherchand, along with Binayak Shah and Murari Gautam, gathered the data for Nepal; and a group of researchers from the Policy Analysis Advocacy Project assisted DAI Manila's Joji Reyes in collecting data in the Philippines. Bagie Sherchand also played a major role in processing the data and developing the graphics contained in this report.

# PREFACE

This analytical report is a publication of the Asia Regional Agribusiness Project (RAP) financed by the U.S. Agency for International Development. RAP, a $5 million, four-year project, provides technical assistance to USAID Missions and their agribusiness projects and clients in South and Southeast Asia. RAP's objectives are to promote market transparency, marketing efficiency, and environmentally sustainable trade and cooperative venture development that raises employment and income levels in South and Southeast Asia. RAP's four technical areas of expertise are Market Information, Environmental and Food Safety Technical Assistance, Trade and Investment Development, and Economic Analysis.

This report is part of the second phase of a study contracted by the U.S. Agency for International Development-funded Agribusiness Systems Assistance (ASAP) Project in the Philippines, to determine the impact of the Uruguay Round of the General Agreement on Tariffs and Trade on global trade. The study, including the first-phase report, "The GATT-UR: Impact on Demand for Horticultural and Meat products in North America, Europe, and Asia," provided significant data to the Department of Agriculture of the Government of the Philippines to assist the Department in promoting ratification of the GATT-UR by the Senate of the Philippines. Largely as a result of this study and the work of the ASAP project, the Philippines ratified the treaty in December 1994, a few days after the United States also ratified the treaty. GATT-UR is having a major impact on trade around the world as other countries join the agreement.

The report cited above was a synthesis of three regional impact studies commissioned by ASAP in the Philippines. RAP consultants offered some guidelines and supervision to the work of the three authors, under the direction of ASAP management, and compiled the synthesis after comments and corrections were received from ASAP field staff. Copies of these two analytical reports and the three commissioned papers are available on request from the RAP office, 7250 Woodmont Avenue, Suite 200, Bethesda, Maryland, 20814, USA (Fax: 301-907-2655). A small fee will be charged to cover the costs of reproduction and mailing of each paper.

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# BACKGROUND

Trade in agricultural commodities is likely to increase significantly because of the recent passage of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT-UR), as up to 117 countries individually ratify the treaty. Not only will the demand for imports increase because of the reduction of prices when tariff rates fall (and as quotas are transformed into tariffs, then subjected to the same reductions), but there will also be a surge in demand resulting from the concurrent rise in worldwide incomes. As consumer prices fall a consumer surplus will occur, translating into an increase in income of $200-$300 billion per year by the year 2000, which in turn will lead to increased demand for food and fiber products. Moreover, the reduction of protectionist measures in the developed countries, especially the European Union, will cause a shift in production patterns out of Europe and into third world countries. The comparative advantage enjoyed by European countries based on support prices, production subsidies, and export incentives will be lost to some extent, thereby reducing European country competitiveness in neighboring markets. All of these changes will create opportunities for expanding exports from the developing countries.

However, an increase in incomes and demand in the developed countries does not mean that market demand will automatically become elastic, and that all existing barriers to trade will vanish. To recapture the protectionism lost to the treaty commitments, individual firms, exporters and importers, and producers and users of raw materials and semiprocessed goods will try to circumvent the agreements or find ways to protect their market from foreign competition. They will do this by strict adherence to elements of the agreement that will still stifle imports, such as adoption of overly strict sanitary and phyto-sanitary measures, rigorous food quality criteria, or exaggerated food safety regulations, or by use of inappropriate inspection systems. In Europe and the United States, the effect of subsidy reductions could lead to continuing the Value Added Taxes (in Europe) on goods with significant import figures, or to expanding the use of marketing orders (in the United States). One way or the other, attempts will be made to prohibit the onslaught of the import of goods deemed somewhat inferior to domestically grown products and for which foreign exchange will be required, with a consequent loss in the balance of trade.

To counter these tactics, exporters from the developing countries will have to astutely judge where their opportunities lie and establish close contacts with trading and distribution agents in each final destination market. Anything less than this will lead to unsatisfactory results. The purpose of this paper is to help producers, exporters, and other users of this information to identify these opportunities, which we term market windows.

To assist the producers, traders, and policy makers in the Asian countries receiving assistance from the U.S. Agency for International Development's Regional Agribusiness Project (RAP), this study has been undertaken to compare the production, processing, and marketing costs for a large number of high-valued agricultural commodities, and to analyze these costs in light of the wholesale prices currently found in the end-user consumer markets of Europe, North America, Asia, and the Middle East. The countries assisted by the RAP project are India, Bangladesh, Nepal, Sri Lanka, the Philippines, and Indonesia.[1]

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[1]Data were not yet collected for Indonesia at the time this paper was prepared, so Indonesia was excluded from the study.

The study has been divided into four parts or sets. This report comprises the first set, which covers a select number of fresh fruit, vegetables, and nuts that are most common to the region, namely mango, okra, banana, onion, cashew, and garlic. For some products, data were not available for all five countries.

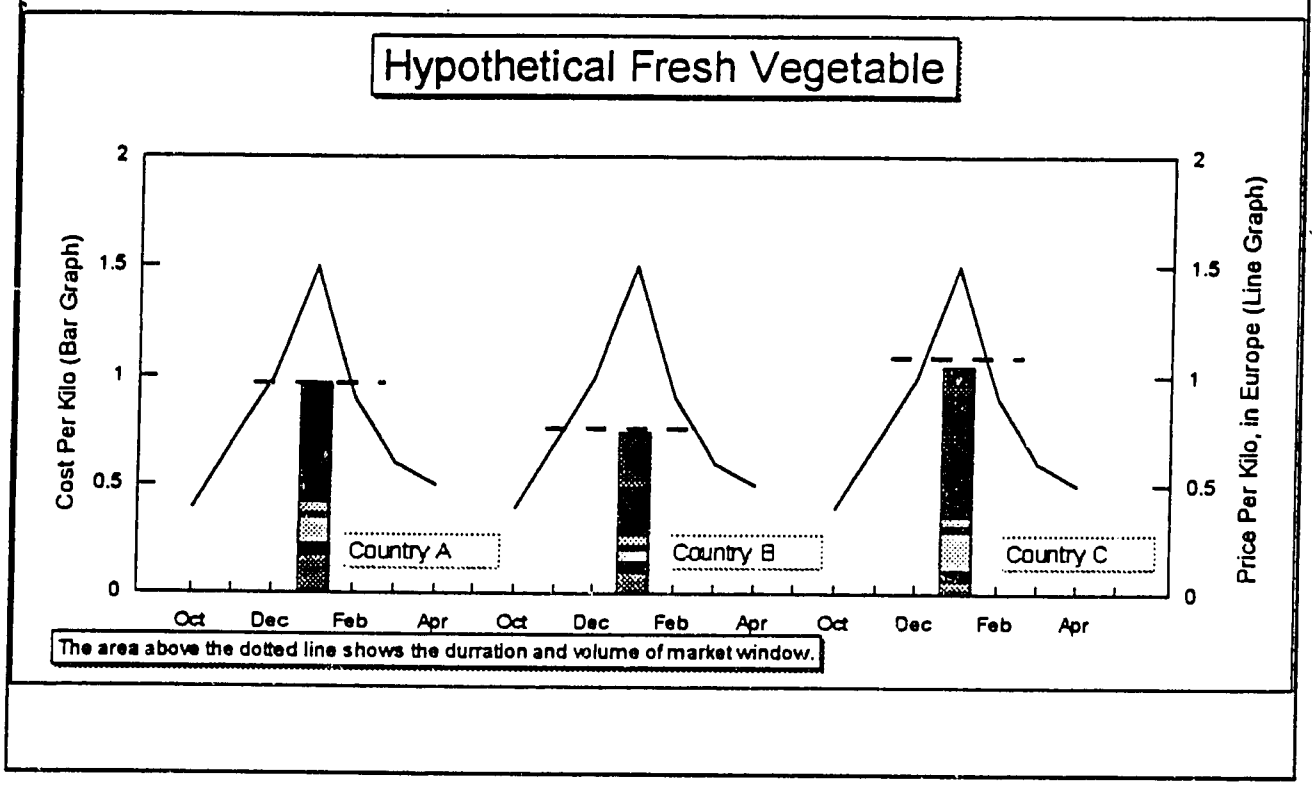
The second set of products, which will be discussed in a second report — Set 2 — includes pineapple (fresh and processed), tomato paste, asparagus (fresh and processed), okra (processed), papaya, baby corn, ginger, broccoli and cauliflower, white potato, pepper, and several Bangladeshi exotic vegetables. The Set 3 report will cover cut flowers: roses, chrysanthemums, orchids, heliconia, and anthurium. The fourth set of products, and the fourth report, will be on meat and fish products: poultry, pork, beef, and shrimp.

## HOW TO DETERMINE MARKET WINDOWS OF OPPORTUNITY

Market windows of opportunity occur when the wholesale prices for any specific commodity rise above the costs incurred to place that product in the indicated market. Different levels of effort are required and different costs incurred to deliver a given commodity to the consumer, depending on the specific source of the commodity. Some countries have a competitive advantage over others in producing and marketing particular commodities. This report compares the costs of production — including land and labor, material inputs, processing, marketing, and international transportation, all derived on a per-kilogram and dollar basis for easy comparison — for six crops grown in the RAP countries and marketed outside of their borders. The analysis shows how to derive the particular competitive position of each country and each commodity with respect to other RAP countries and their closest rival, Thailand. Indications of relative competitiveness are identified for each commodity and country for several markets in Europe, North America, Asia, and the Middle East.

Figure 1 shows graphically how this analysis is carried out. Per kilogram costs are presented for a hypothetical crop, such as potatoes, for three different countries. The total costs are shown as vertical columns. The costs include production costs, marketing costs, and various taxes and subsidies. To complete the analysis, the per-kilogram transportation costs from the producing country to the selected market country are added. For a fresh product such as potatoes that can survive a week or so in transport without refrigeration, sea freight would be adequate. Sea freight costs from Asia to Europe are approximately $.40 per kilo, which was added to the vertical columns. Superimposed on top of the cost columns are estimated prices in a specified market. The area between the vertical column and the price envelope for the first country shows a small margin of roughly $.10 per kilogram for just a short, one-month period. However, for the second country in the chart, a substantially larger envelope of opportunity is shown of about $.30 and two months. The third country shows no window of opportunity when the international transportation costs are added; total costs reach $1.50 per kilogram. It becomes obvious, then, that the larger the margin or window, the greater the comparative advantage. This same analysis has been carried out for the six commodities and six countries in this study in the sections that follow.

FIGURE 1



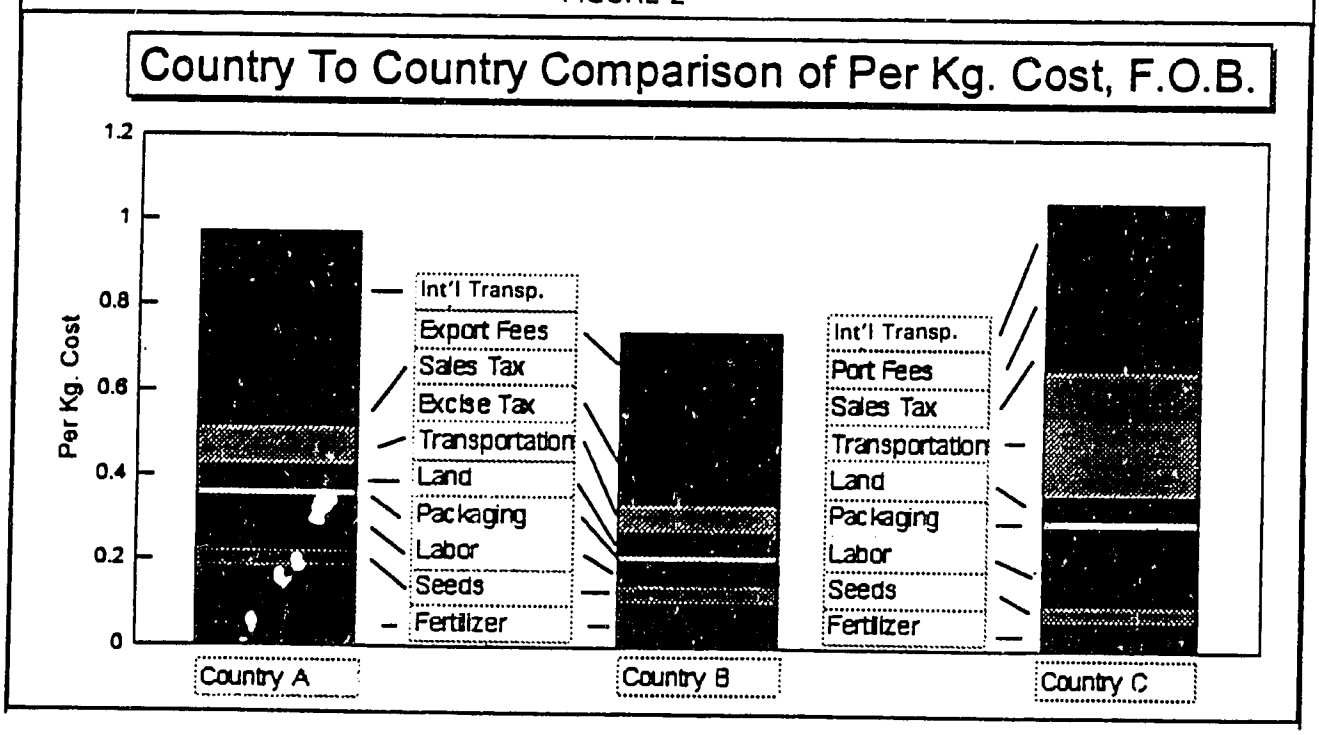

**Domestic Costs**

Data on within-country costs were collected by assigned researchers in each of the RAP countries (except Indonesia); Thailand was included for comparison. Costs of production were obtained from secondary sources and directly in some cases from selected farmers, especially in the Philippines. Production costs were broken down into the following categories:

- Labor costs for all activities such as land preparation, seeding, fertilizing, applying pesticides, weeding, and harvesting;
- Input costs, such as seeds or planting material, fertilizers, insecticides, pesticides, and herbicides; and
- Harvesting costs such as packaging.

In addition to production costs, costs were gathered on marketing expenses, processing and transportation costs, costs for the use of land, exporting costs, and any taxes or fees levied on the product. Adding these cost together, on a per-kilogram basis, allowed for the determination of the costs incurred to place the product in the major exporting port, or, in other words, the F.O.B.-equivalent value. These domestic costs are graphically portrayed by product, in Annex A. Figure 2 provides a theoretical cost comparison of a product for three countries.

FIGURE 2




Within-country costs for the six products covered by this part of the report for the RAP countries are presented in Table 1.

**Cost by Product: Mango**

TABLE 1

PRODUCTION AND MARKETING COSTS: MANGO
(Per-Kilogram Costs in US$)

| Cost Item | Bangladesh | India | Nepal | Sri Lanka | Philippines | Thailand |
|---|---|---|---|---|---|---|
| Exporting | .06 | .04 | .10 | .06 | .06 | .06 |
| Processing | .01* | .03* | .01 | .01* | .03* | .03 |
| Marketing | .15 | .11 | .02 | .03 | .16 | .16 |
| Production | .18 | .13 | .07 | .24 | .27 | .27 |
| Total | .40 | .31 | .20 | .34 | .52 | .52 |

* = Numbers indicated with an asterisk are averages.

Per-hectare yields in each country are comparable. A problem exists with regard to spreading the start-up costs for a crop such as mangoes, when there is a gestation period of several years before the first harvest. For this study, mango production, as well as all of the development and maintenance costs, is recorded for the first 10 years. These costs are divided by total kilograms produced over the 10 years to

determine the dollar cost per kilogram. For mangoes, Table 1 shows that the lowest costs are found in Nepal. Because exports of mangoes from Nepal simply cross over the borders to neighboring countries, marketing costs are comparatively low for packing materials. If exports to countries other than India were to be introduced, marketing costs would rise considerably. The relative cost of within-country transportation does, however, reflect the high cost of moving the product to the border.

The highest production cost is in Thailand, where labor and inputs are relatively expensive, and where the data reflect the fact that mangoes are produced exclusively for export. India appears to be the most competitive exporting country in this group. Sri Lanka has the same production costs as the others but very low marketing costs, presumably reflecting the fact that they export very little or that the packaging, grading, and sorting costs for exporting have not been included.

**Cost by Product: Banana**

TABLE 2

PRODUCTION AND MARKETING COSTS: BANANA
(Per-Kilogram Costs in US$)

| Cost Item | Bangladesh | India | Nepal | Sri Lanka |
|---|---|---|---|---|
| Exporting | .09 | .05 | .08 | .06 |
| Processing | .01* | .03* | .01 | .03* |
| Marketing | .06 | .06 | .02 | .05 |
| Production | .13 | .07 | .01 | .14 |
| Total | .29 | .21 | .12 | .28 |

* = Numbers indicated by an asterisk are averages.

As Table 2 shows, production costs for bananas vary considerably, with Nepal and India recording very low production costs. In Nepal, bananas are not considered to be a plantation crop but a garden crop. For this reason, production costs are minuscule. On the other hand, marketing and exporting costs are similar for all four countries studied.

**Cost by Product: Onion**

TABLE 3

PRODUCTION AND MARKETING COSTS: ONION
(Per-Kilogram Costs in US$)

| Cost Item | Bangladesh | India | Nepal | Sri Lanka | Philippines | Thailand |
|---|---|---|---|---|---|---|
| Exporting | .04 | .08 | .08 | .04 | .11 | .09 |
| Processing | .01 | .01* | .01 | .01* | .01* | .02 |
| Marketing | .08 | .01 | .01 | .01 | .10 | .01 |
| Production | .09 | .04 | .04 | .16 | .12 | .12 |
| Total | .22 | .14 | .14 | .22 | .34 | .24 |

* = Numbers indicated by an asterisk are averages.

Costs for the production and marketing of onions are similar for Sri Lanka, the Philippines, and Thailand (Table 3). Presumably, the processing and exporting costs for Sri Lanka overlap, and are closer to the costs of the other two countries than is apparent in the table. On the other hand, India and Nepal, and to a certain extent, Bangladesh, have significantly lower production costs and the first two have relatively minor marketing costs. Exporting costs are about the same as for other crops. Marketing costs of only 1 cent per kilogram presumably do not reflect total costs for this activity, and are underestimated.

**Cost by Product: Garlic**

TABLE 4

PRODUCTION AND MARKETING COSTS: GARLIC
(Per-Kilogram Costs in US$)

| Cost Item | Bangladesh | India | Nepal | Philippines | Thailand |
|---|---|---|---|---|---|
| Exporting | .04 | .04 | .15 | .10 | .11 |
| Processing | .01 | .01* | .01 | .01* | .05 |
| Marketing | .08 | .02 | .19 | .10 | .02 |
| Production | .11 | .38 | .12 | .51 | .55 |
| Total | .24 | .45 | .47 | .72 | .73 |

* = Numbers indicated by an asterisk are averages.

Table 4 shows that Bangladesh and Nepal have the lowest production costs, as well as the lowest marketing, processing, and exporting costs, more than likely reflecting the fact that these countries export very little of this product. Nevertheless, this may indicate a comparative advantage for these countries in

garlic production. In contrast, the Philippines has relatively high marketing costs on top of high production costs, reflecting the internal transportation problem within that country.

**Cost by Product: Cashew**

TABLE 5

PRODUCTION AND MARKETING COSTS: CASHEW
(Per-Kilogram Costs in US$)

| Cost Item | India | Sri Lanka** | Philippines | Thailand |
|---|---|---|---|---|
| Exporting | .05* | .04* | .10 | .12* |
| Processing | .40 | .55 (.44) | .50* | .50* |
| Marketing | .04* | .02 | .02 | .02* |
| Production | .43 | .67 (.54) | .51 | .37 |
| Total | .92 | 1.28 (1.04) | 1.13 | 1.01 |

* = Numbers indicated by an asterisk are averages.
**Figures in parentheses are less 20 percent profit margin and finance charges for producers and processors.

When costs for processing are estimated, we find that the total costs for cashews are similar for all the countries included in the study. The major exporter is India, and its competitive stance is demonstrated by the data in Table 5. However, given the high prices for cashews in the external markets, all of the countries analyzed appear to be extremely competitive vis-a-vis final demand market prices.

**Cost by Product: Okra**

TABLE 6

PRODUCTION AND MARKETING COSTS: OKRA
(Per-Kilogram Costs in US$)

| Cost Item | Bangladesh | India |
|---|---|---|
| Exporting | .06 | .06 |
| Processing | .01 | .01* |
| Marketing | .01 | .04 |
| Production | .02 | .03 |
| Total | .10 | .14 |

* = Numbers indicated by an asterisk are averages.

Only two countries in our study produce fresh okra for the market, and their within-country costs are identical (Table 6). Thailand produces okra for canning and its performance will be presented in the Set 2 report when the other processed products are analyzed.

### International Transportation

The costs of international transportation are also important in determining the windows of opportunity for selling the products discussed in this report. Two of the products analyzed in this study — mangoes and okra — are shipped largely by air. To the extent that it is possible to ship by land or sea, that is the preferred route because of the considerable discount in cost. Only processed products — canned or otherwise preserved products that are frozen, dehydrated, pickled, or dried — or products that can be shipped refrigerated with or without controlled atmospheres are feasible for sea shipment. Some mangoes are now being shipped by sea as are processed pineapples, tomato paste, and canned asparagus. Bananas, onions, garlic, cashews, potatoes, and ginger are also shipped fresh, as are frozen and chilled meats. Most of the other fresh products are sent by air. Costs vary considerably by country, by port in each country, and by destination. Also, the volume and seasonality of shipments alter the costs. Tables 7 and 8 give the available air freight and ocean freight rates to the principal markets served by each country. The costs for air shipment appear to be between $1.25 and $3.00 per kilogram, and for ocean shipments, between $0.08 and $0.60 per kilogram.

### Markets and Prices

The third important set of data that assist in determining the producer's window of opportunity is the price, over the year, of the products in question in significant markets worldwide. Four European markets (London, Frankfurt, Paris, and Amsterdam), two markets in the United States (Los Angeles and Baltimore), the Gulf States (Dubai), Taiwan-Taipei, Japan-Tokyo, and Hong Kong were used as sources of market prices. They were chosen because they provide sufficient information for making an analysis of the trends in wholesale prices throughout the year. Only one year of data was available on a weekly or monthly basis for this study, although several years of data would have been preferable to determine the reliability of year-to-year estimates of seasonality and price changes; however, such an analysis was outside the scope of this study.

## ANALYSIS: WINDOWS OF OPPORTUNITY BY PRODUCT AND MARKET

The data presented in Tables 7 and 8, and presented graphically in accompanying figures, show the way one can conduct an exploratory analysis to begin to identify potential windows of opportunity for each product, market, and source. In the figures, the costs for air freight are superimposed on the costs required to place each product at the port ready for shipment. Combining domestic costs with transportation costs gives the equivalent of the cost and freight (C&F) price, except that profit margins taken by all marketing agents are not always recorded at their full rates. This means that the costs derived in this study are on the conservative side.

TABLE 7
AIR FREIGHT RATES FROM RAP COUNTRIES TO PRINCIPAL FOREIGN MARKETS
(Dollars/Kilogram)
Country of Origin

| Destination | Bangladesh | India | Nepal | Sri Lanka | Philippines | Thailand | United States (to, ocean ) |
|---|---|---|---|---|---|---|---|
| Country | | | | | | | |
| Europe | | | 2.56** | | 2.75 | | |
| United Kingdom | 1.30 | 1.17 # | 2.82 | 1.24 | 2.75 | 2.52 | |
| Germany | | 1.17 # | 2.82, 1.80* | 1.24 | 2.75 | 2.52 | |
| France | | 1.17 # | 2.82 | 2.70 | 2.75 | | |
| Belgium | | 1.17 # | | | | | |
| Italy | | 1.13 # | | | | | |
| Holland | | | | 1.24 | | 2.52 | |
| United States | | | | | | | |
| New York/Baltimore | | 3.11 | 3.80, 2.10* | | 5.12 | 3.84 | |
| Los Angeles/Seattle | | 3.90 | 3.70, 3.25** | 5.02 | 4.08 | 2.16 | |
| Asia | | | | | | | |
| Singapore | | .82 | 1.48 | .66 | | .52 | .62rgr,.35o |
| Bangkok | | | 1.03 | | | | .55rgr,.31o |
| Japan | 1.13 | | 3.73, 1.60* | 2.63 | 1.20 | | |
| Korea | | | | | | | |
| Hong Kong | | 1.20 | 1.54 | | .55, 1.10++ | .44 | .37rgr,.19o |
| Australia | | | 2.95, 1.80* | | | 2.52 | |
| China | | | 2.62 | | | | |
| Middle East | | | | | | | |
| Dubai | | .57 ## | 2.06 | .82 | 1.30,1.75+++ | 2.40 | |
| Kuwait | .87 | .65 ## | | | | | |
| Jeddah | | | | | | 2.40 | |
| RAP Countries | | | | | | | |
| Bangladesh | | | .40 | | | | |
| India | | | .37, .50 | | | | |
| Nepal | | | | | | | |
| Sri Lanka | | | 1.60* | | | | |
| Philippines | | | | | | | .49rgr,.24o |
| Indonesia | | | | | | | |

#=.33 subdy
##=.20sbdy

*=air/ship
** = Consdted discount

+=rfrg ocn
++=f&v,frz mt
+++=GA,Em

TABLE 8
OCEAN FREIGHT RATES FROM RAP COUNTRIES TO PRINCIPAL FOREIGN MARKETS
(Dollars/Kilogram)
Country of Origin

| Destination | Bangladesh | India | Nepal | Sri Lanka | Philippines | Thailand | United States (to) |
|---|---|---|---|---|---|---|---|
| Country | | | | | | | |
| Europe | | | | | | | |
| United Kingdom | | .40,.50r,.14d | | | | | |
| Germany | | .14d | | | .18d,.22r | .16d | |
| France | | | | | | | |
| Belgium | | .14d | | | | | |
| Italy | | .40,.50r | | | | | |
| Holland | | .14d | | | | .16d | |
| United States | | | | | | | |
| New York/Baltimore | | | | | | | |
| Los Angeles/Seattle | | | | | .26r40,.48rfgr | .24,.18r | |
| Asia | | | | | | | |
| Singapore | | .08d | | | .16d,.20r | .04d | .61rfgr,.30r40 |
| Bangkok | | | | | | | .30r40,.54rfgr |
| Japan | | .10d | | | .28d,.34r,.22d | .10,.08d | |
| Korea | | | | | | | |
| Hong Kong | | .10d | | | .08d,.10r | .06,.08d | .37rfgr,.21r40 |
| Australia | | .20d | | | | .12,.12d | |
| China | | .18d | | | | | .31r40 |
| New Zealand | | .28d | | | | | |
| Taiwan | | | | | .16d,.20r,.22d | | |
| South Africa | | | | | .50d,.60r | | |
| Middle East | | | | | | | |
| Dubai | | .38,.28r,.08d | | | | | |
| Kuwait | | .40,.32r,.12d | | | | | |
| Jeddah | | .46,.34r,.12d | | | | .16,.18d | |
| RAP Countries | | | | | | | |
| Bangladesh | | | .40 | | | | |
| India | | | .37, .50 | | | | |
| Nepal | | | | | | | |
| Sri Lanka | | | | | | | |
| Philippines | | | | | | | |
| Indonesia | | | | | | | |

r=refrig container
r20=refrig20'
r40=refrig40'
rfgr=refrig fresh grape
d=dry container

These costs, in turn, are compared with price curves that show the timing of price rises and falls in the terminal markets and indicate how far they rise above the yearly trend.[2]

Wholesale prices run somewhat higher than imported value prices (or what we have termed "landed" prices), and so the margins detected must be discounted by perhaps 20 percent.[3] The combination of the domestic costs of production and marketing (transportation, grading, packaging, cooling, fees, levies, and so forth), and the costs of exporting (handling, port fees, and brokers margins, for example) are considered to be the derived cost required to place the product in the port ready for shipment, as mentioned above. This value is then added to the air freight or ocean freight costs and then compared with the landed price or the wholesale price in the destination market. If the landed or wholesale market prices are higher than the costs, then a market window of opportunity exists. These windows may exist throughout the year in a given market, may appear only at specific times in the year, or may not exist at all.

The figures accompanying the text show how the analyst can obtain an idea of when each country should plan to export each given product. Only one market for each commodity is illustrated in this way. Figures of the other markets for the six commodities are in Annex B. When the prices are overlaid onto the other costs, one must imagine the costs extended across the page, so that one would then look across the page for that cost level to find prices that are above these costs. When these occur a market window emerges for that time period. These windows of opportunity exist for a specific time period (weeks or months) in which the prices are above costs.

## Mangoes

### Europe (U.K.-London)

The wholesale price for mangoes seems to be the highest in November-December and higher in April and May than the average. Only India and Bangladesh appear to have an opportunity to penetrate this market, with the most likely market windows arising in these two high-price periods. With a wholesale price of $2.50 to $3.20 during the peak periods and landed costs of $1.40 for India and $1.80 for Bangladesh, profit margins range from $1.10 to $1.80 for India and $.70 to $1.40 for Bangladesh. Nevertheless, there appears to be a relatively high degree of volatility in the wholesale market price for mangoes in the United Kingdom, even within these high-valued market periods. An average price during the high-value periods seems to be closer to $2.25 per kilogram, giving profits of $.85 to $.45 respectively for India and Bangladesh.

Given the data presented in Figure 3, the Philippines, Thailand, and Nepal do not appear to have a comparative advantage in mangoes in this market, although Thailand does have a marketing opportunity in November, albeit not a very robust opportunity window.

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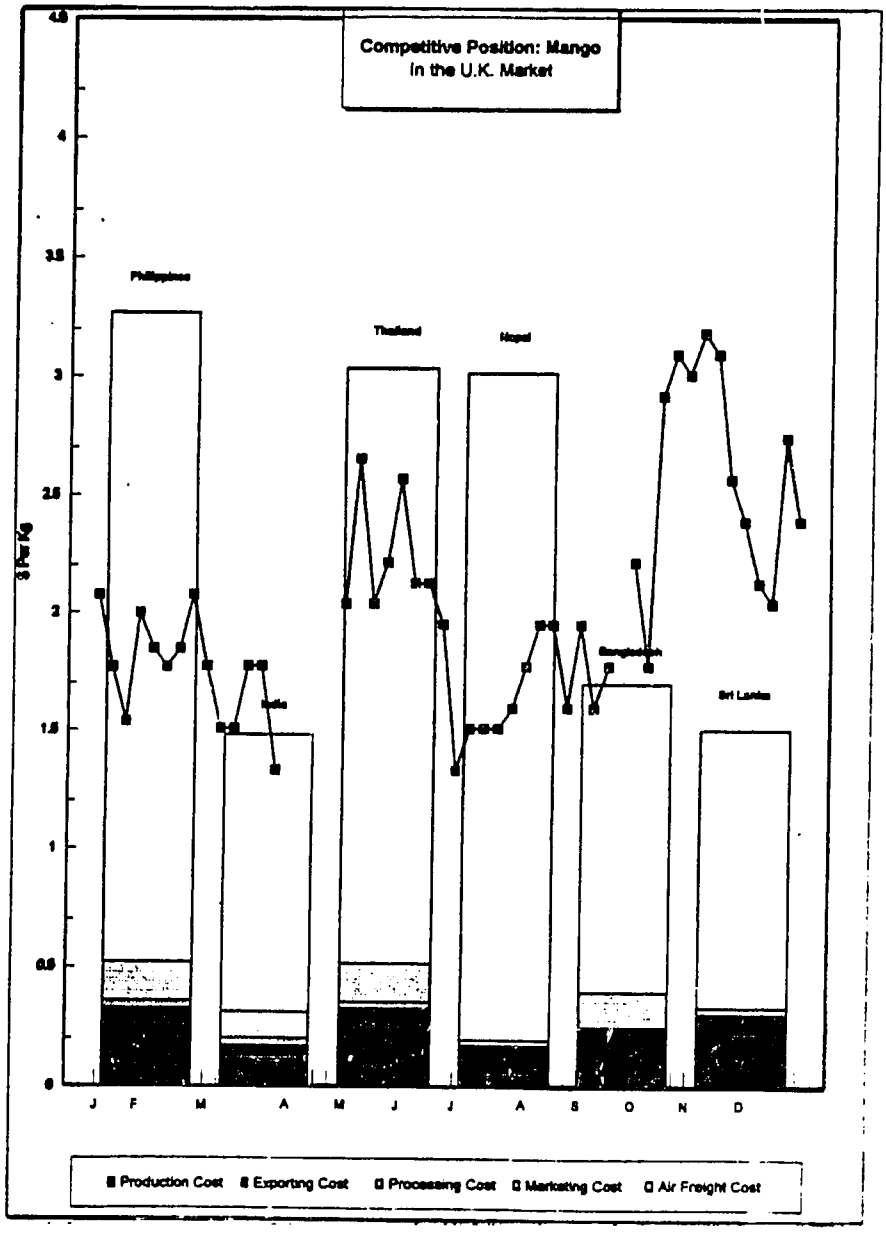
[2]As more data from different years are added to the data set, the degree of consistency and predictability with respect to the timing of the price peaks and their magnitude will be increased.

[3]Discounting is not required when imported value or landed prices are derived by dividing the value of imports by the volume of imports in a given market.

FIGURE 3

U.K. WINDOWS OF OPPORTUNITY: MANGOES




**Germany (Frankfurt), France (Paris), Netherlands (Amsterdam)**

German wholesale prices for mangoes fluctuate from $1.50 per kilogram to $3.50. However, they vary from these extremes all throughout the year almost like the bellows of an accordion, and this makes it very difficult to identify a specific time frame in which the higher prices will hold long enough to establish a bonafide window of opportunity. In comparing the German prices with the C&F costs, it can be seen that prices throughout the year remain above the Indian and Bangladesh costs, except for two to three weeks in May-June for Bangladesh, and are found to be significantly higher than the other European prices. Nevertheless, if the prices can flip flop so readily there is no guarantee that one's quoted prices will hold long enough to ship the fruit and expect the same prices a week later when the fruit arrives. This makes it somewhat risky to market into Germany from India or Bangladesh, unless some kind of a fixed pre-market price could be established — at the average of $2.50, for example — which would still give a handsome return.

Prices in France present a somewhat different pattern. Whereas the other European markets show a price rise in May and June, this does not occur in France. However, prices do remain above $2.00 per kilogram throughout most of the year, peaking in the November to January period.

The Netherlands follows much more closely the U.K. pattern. A precipitous high is found from November to January and again in April-May, but the average seems to hover around $2.00 per kilogram for the year as a whole, somewhat less than France and significantly lower than Germany.

**European Observations**

The significant decrease in price during late January and throughout February over most of Europe each year is curious. It could be that some constraint on the provision of a steady flow of mangoes during the period just prior to late January caused shipments to be held up and then released simultaneously in late January or early February, thereby driving down the price. On the other hand, it could be that tropical production in general cannot be programmed to reach the market before late January so that a real scarcity exists that drives up the price. This could occur in late April and May as well. A closer look at successive years of market prices could shed some light on this phenomenon, as well as a more in-depth analysis of the production patterns in the supplier countries, especially those countries that seem to have the comparative advantage in mango production and shipping.

**United States (Los Angeles, Baltimore)**

Los Angeles and Baltimore prices follow almost the exact same pattern: more than $2.00 per kilogram in February, March, and early April, rising precipitously to a high of $4.00 per kilogram in October and November, corresponding directly to the shift in prices in London in that latter time frame. However, when the cost of air freight is added to the costs of production and marketing, no windows of opportunity emerge for mango producers in the North American markets.

**Dubai**

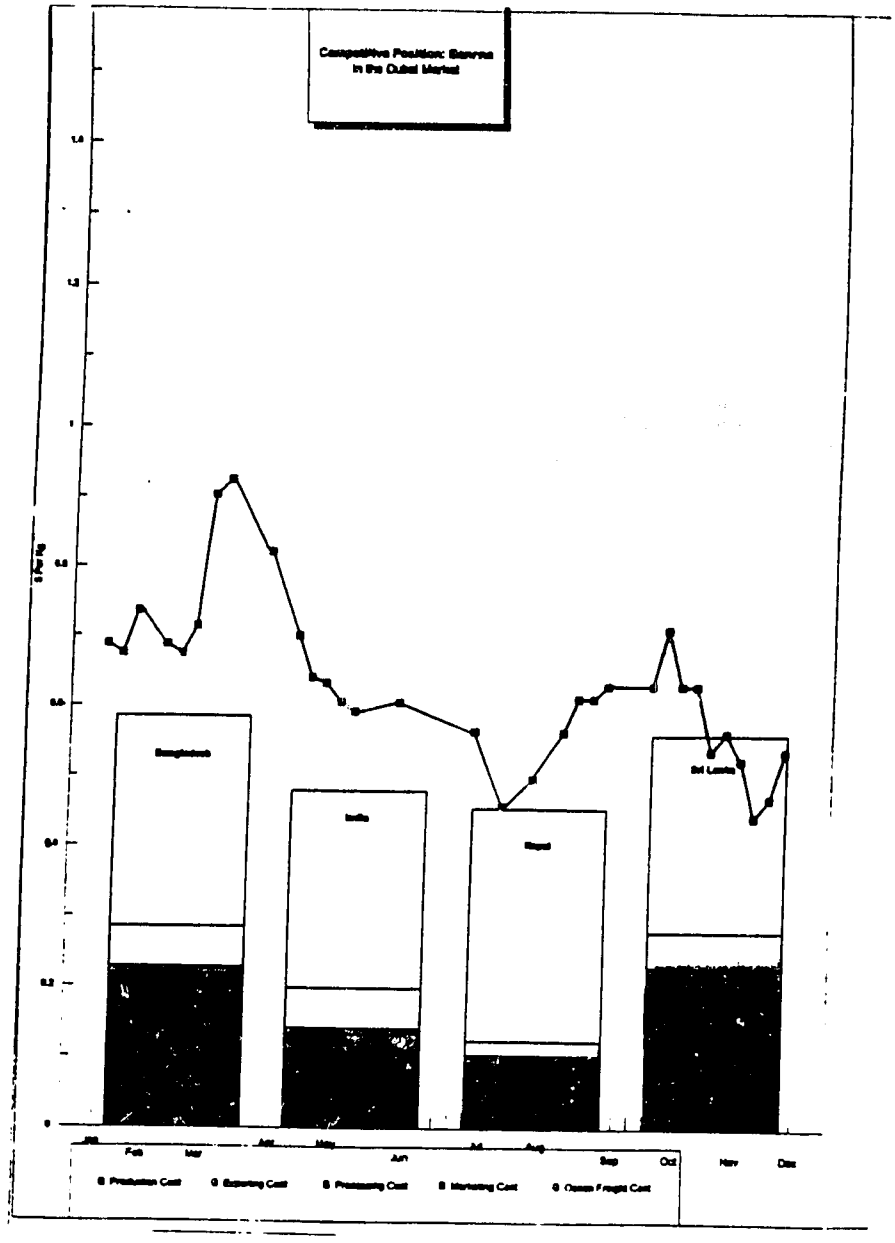
Dubai prices for mangoes are very high and are not complete over the whole year. It appears from this data that a significant market opportunity exists in Dubai, especially in the months of June through October, which coincides well with the peak production seasons in the producing countries. However, the market may be somewhat shallow in the sense that all of the countries in the analysis can ship profitably to Dubai, so competition should be fierce, and the total volume imported may not be sufficient to allow for large-volume shipments.

**Banana**

The attempt here (Figure 4) was to analyze the potential for exporting the Cavendish banana. The exotic, small, sweet bananas were not considered in this study. The mode of shipping for this product is by ocean freight. Differences between countries and destinations in the cost for ocean shipping are not as great as they are for air freight costs. Costs per kilogram run between $.08 and $.60.

FIGURE 4

DUBAI WINDOWS OF OPPORTUNITY: BANANA




**Europe**

Shipping costs to Europe are roughly $.40 to $.50 per kilogram for refrigerated containers. When this cost is added to the production and marketing costs of $.12 to $.28, we find that total costs are still competitive in several markets, most notably in Germany. Prices in Germany are constantly over $1.00 per kilogram and rise to more than $1.50 from mid-January to July. This would indicate significant profitability for the Asian countries that can produce a quality Cavendish banana. However, the European markets have assisted former colonies in the production of bananas and have special tariff relationships with them. Also, the large multinationals tend to dominate in the banana market, leaving little room for new entries. Nevertheless, the new elements of the GATT-UR indicate that some form of access for new entrants may be forthcoming if the producing countries make an issue out of this point. This requires a coordinated approach from the potential new producers and exporters, and successful market penetration is not guaranteed.

**United States (Los Angeles-Baltimore)**

The situation in the United States is one in which the supply is dominated by the Latin American countries, where large multinationals control production. Although the price of bananas is more than $.70 for three months, mid-January through mid-April, market penetration would be virtually impossible for small firms from Asia. In addition, the market prices are at the wholesale level and at least $.10 per kilogram would have to be deducted for port to market costs. Only firms such as Dole or Del Monte could compete from the Philippines in this market.

**Japan**

Tokyo banana prices are extremely low. However, shipping and production/marketing costs appear to be very low also for Thailand, and some degree of competitiveness is apparent for Thai exporters in this market. If their production costs are in the $.20 range, and shipping costs are $.10 to $.15, then the $.40 to $.50 landed price is workable in Japan for them. Although cost of production figures are not available for bananas in the Philippines, they also could be competitive in this market, although the information on shipping costs suggests that this may figure against them to a certain extent. Lastly, the countries of India, Sri Lanka, and Bangladesh would be competitive if their shipping costs are kept to $.10 per kilogram. However, because of the added distance, these countries may have higher transport costs depending upon the degree of refrigeration or controlled atmosphere required, which would then knock them out of the competitive range.

**Hong Kong**

The situation in Hong Kong looks brighter. Landed prices seem to hold above $.60 per kilogram throughout the year, rising to $.75 during two peaks in February and March and again in August and September. Because Hong Kong is closer to the producing RAP countries, transport costs and transit time would be less than for Japan, making profitability higher for the producing countries if Hong Kong were to source from these countries.

**Middle East (Dubai)**

Dubai's wholesale price runs between $.50 and $.90 per kilogram, but rises above $.70 only during March and April. The shipping costs to Dubai are around $.30 per kilogram from India. This would make India quite competitive. However, since the cost of production and marketing for Sri Lanka and Bangladesh are about $.10 higher than India's, coupled with perhaps a marginal $.05 increase in shipping costs, then their total costs would reach almost $.70, making them suspect in terms of competitiveness in this market. Although both Thailand and the Philippines could be competitive, the volume of the Dubai market for Cavendish bananas may not be large enough to attract interest from either of those countries, even though they could compete rather well, assuming a $.20 production and marketing cost and a $.35 shipping cost.

**Taiwan (Taipei)**

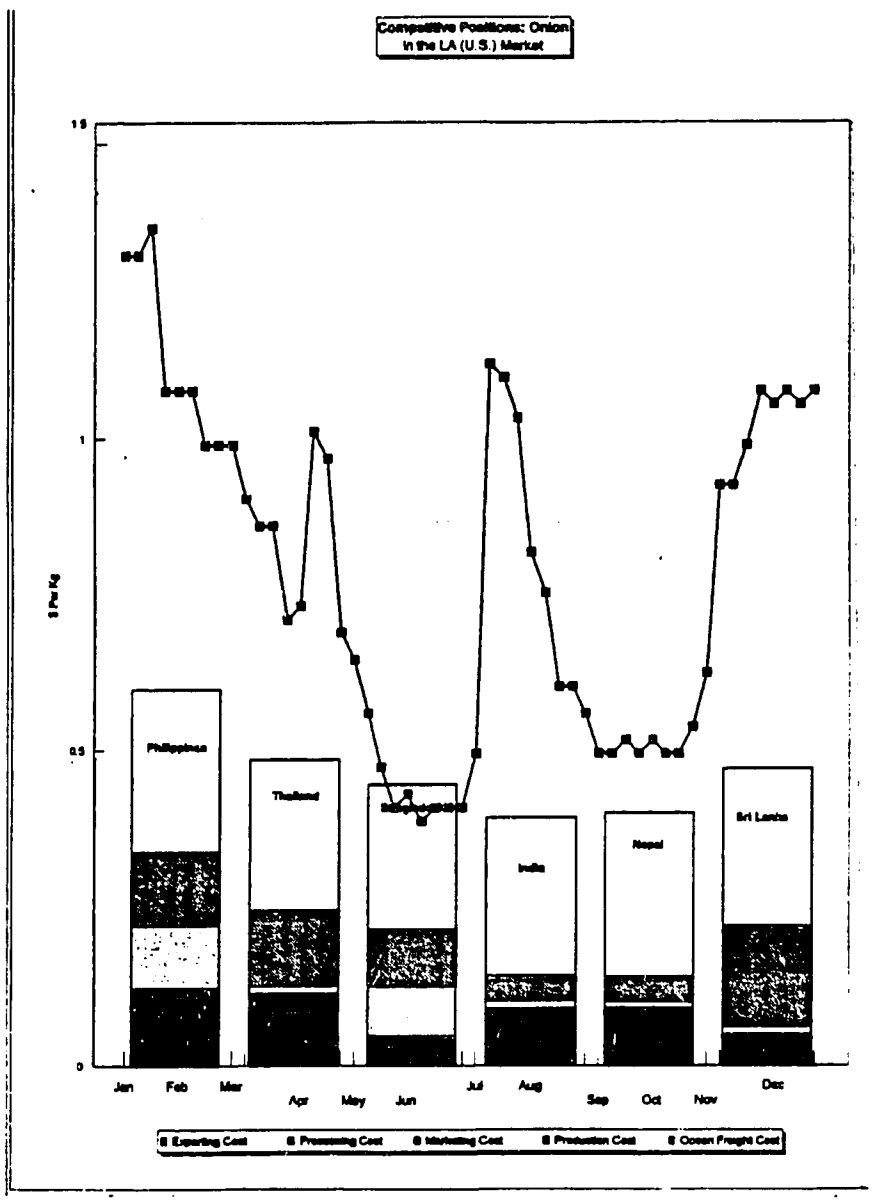
With shipping costs from the Philippines of around $.20, which would probably be the same for Thailand and are roughly equivalent to India, it is still difficult to find a viable market window in Taipei. Landed prices remain less than $.50 per kilogram throughout the year. However, it is certain that Taipei's wholesale price has increased over the years, and that current prices are significantly higher, so that market windows would appear if more accurate data were obtained. Although it is unlikely that a market the size of Taipei would attract bananas from Latin America, this is apparently occurring, but RAP countries should be able to compete if they can hold production, marketing, and shipping costs to around $.50 per kilogram.

**Onions**

Onions (Figure 5) would normally be shipped by sea because of their longer shelf life and relative lack of perishability. However, they may be partially refrigerated or put under controlled atmosphere for

FIGURE 5

U.S. WINDOWS OF OPPORTUNITY: ONIONS



longer trips. Given the low costs of production and marketing, at $.14 to $.22 per kilogram for the RAP countries — except for the Philippines, which is at $.34 — it appears to be feasible to ship onions to several markets in certain seasons.

**United States (Los Angeles and Baltimore)**

The Los Angeles and Baltimore prices mirror each other almost perfectly, rising and falling in unison. At the peak price periods, which is four times during the year, wholesale prices rise to more than $1.25 per kilogram. Adding $.30 to $.54 to the production and marketing costs of $.22 and $.14 gives a total price range of $.44 to $.76, well below this $1.25 price. If these prices are consistent, it would be profitable to ship onions from the RAP countries to the United States, assuming the producers could meet the U.S. standards for quality and food safety. And unlike a tree fruit, it should be possible to grow onions in the October to April season to meet this high-priced market demand. The majority of U.S. imports come from Mexico and Central America. Nevertheless, minimum access must be granted to new countries as the GATT agreements unfold.

**Taiwan (Taipei)**

The landed price in Taipei is considerably lower than the U.S. wholesale price, running between $.30 to $.50 per kilogram for most of the year. Only during late August to early October does the price jump to $1.00. However, since the shipping costs and transit time are quite low to Taipei, it appears to be feasible to ship there during this time period.

**Garlic**

Garlic has relatively high production and processing costs of approximately $.75 per kilogram for the Philippines and Thailand, and $.45 per kilogram for India and Nepal (Figure 6). Since garlic can be shipped by ocean freight, shipping costs are not the major factor in this product's competitiveness standing.

**United States (Los Angeles, Baltimore)**

Garlic prices in Los Angeles and Baltimore range from a high of almost $3.00 per kilogram in February and March to around $1.75 per kilogram in September and October. Prices fall slowly during this interval. Shipping costs for dry containers run $.25 to $.30 a kilogram from the Philippines and Thailand, and slightly more from India. As a result, total delivered costs are roughly $1.00 for four countries — the Philippines, Thailand, India, and Bangladesh, and slightly higher for Nepal at $1.20. All of these countries appear to be competitive in the U.S. market.

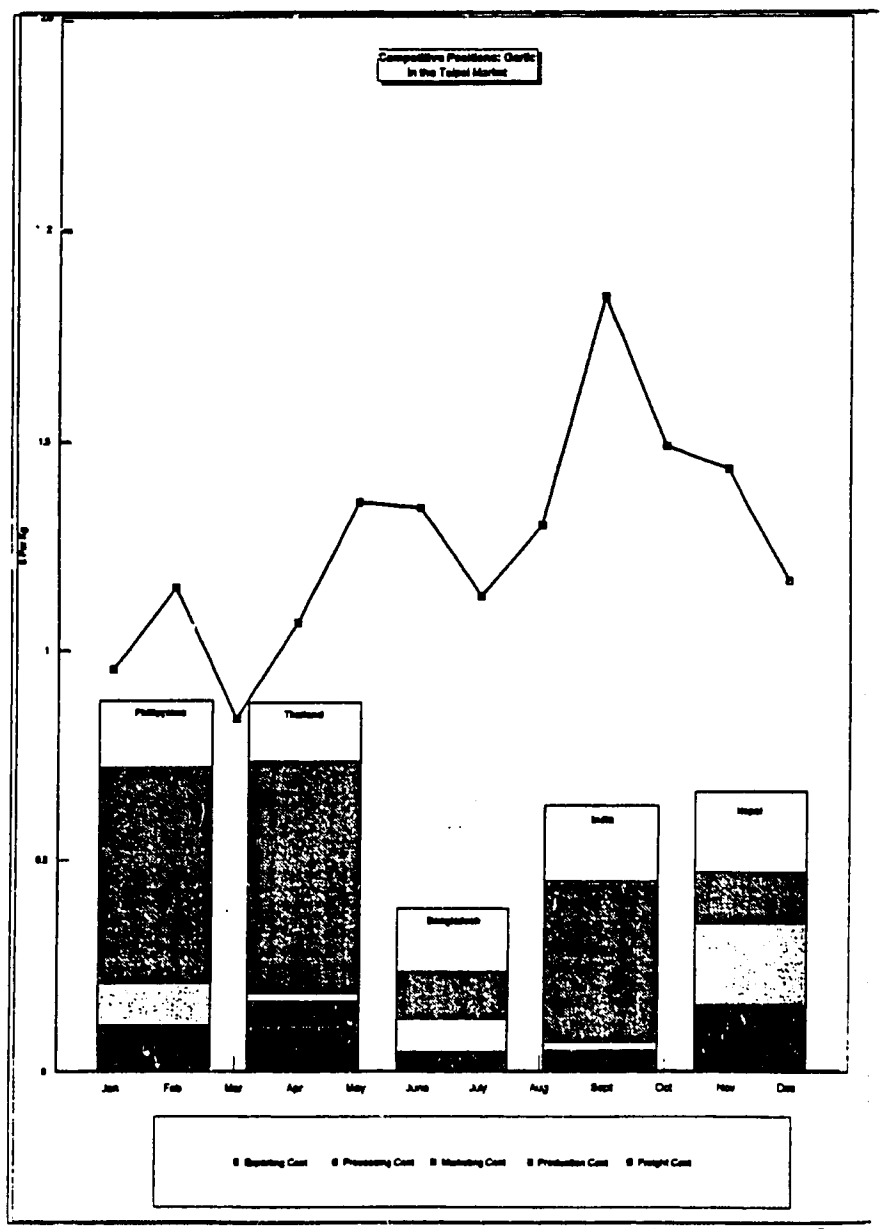
**Taiwan (Taipei)**

In Taiwan the situation is not as robust as it is in the United States Wholesale prices are around $1.00 during the first part of the year, and then starting in May rise to $1.25, peaking at $1.75 in September-October. However, shipping costs are less than to the United States, making total delivered

costs of around $.90 for the Philippines and Thailand and $.80 for India. Nepal's costs would be closer to $1.10, still competitive throughout most of the year in Taiwan.

FIGURE 6

TAIPEI WINDOWS OF OPPORTUNITY: GARLIC

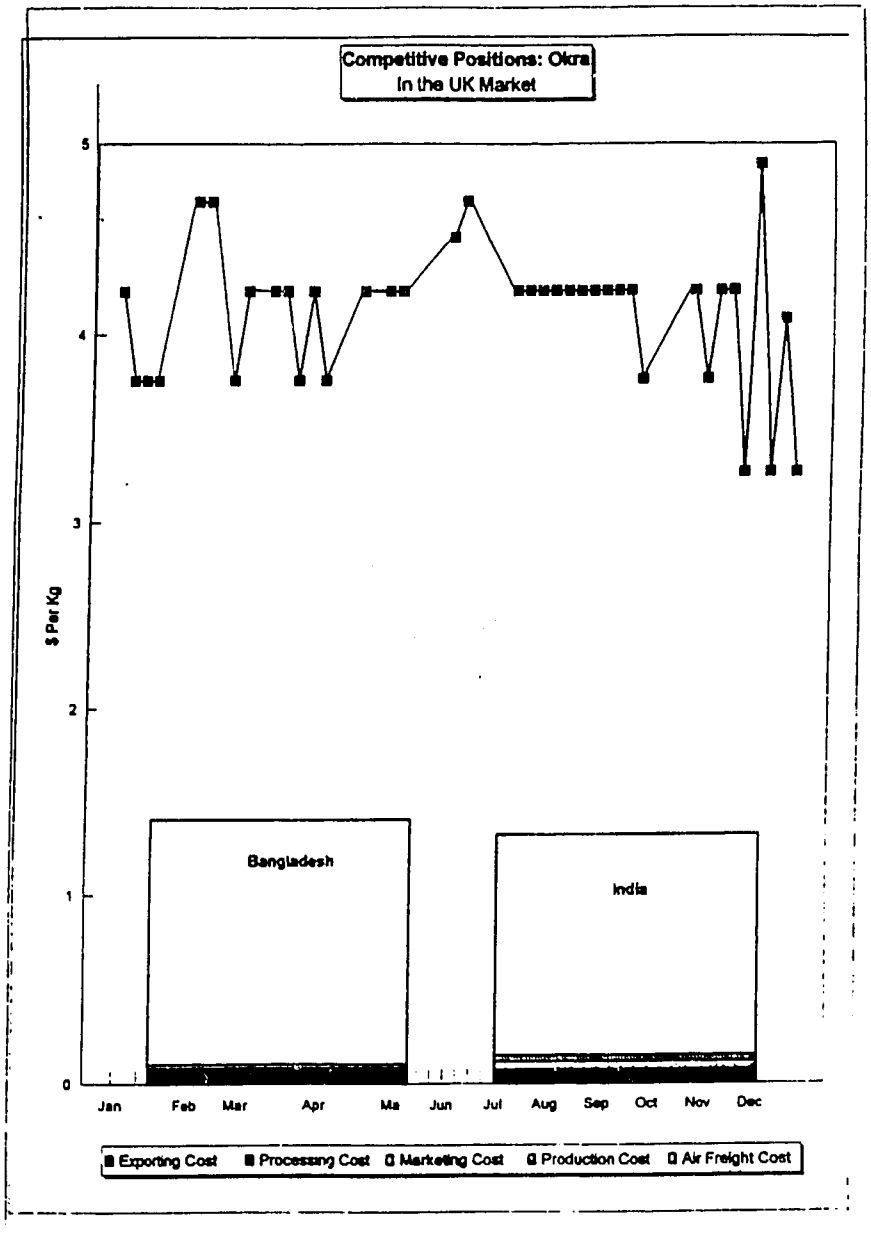


## Okra

Okra is another product that seems to have a very high market price relative to the costs of production and in-country marketing, but the air transport costs determine the product's competitiveness (Figure 7). For the two countries that produce okra, India and Bangladesh, their production and marketing costs are minimal, $.14 and $.10 per kilogram, respectively. Yet air transport costs vary significantly.

FIGURE 7

U.K. WINDOWS OF OPPORTUNITY: OKRA



**Europe (U.K.-London)**

Air freight costs per kilogram from Bangladesh are $1.30 per kilogram and $1.17 plus a $.33 subsidy, or $1.50 from India. With wholesale prices of between $3.50 and $4.50 throughout the year, okra appears to be a product with high profitability in that market.

**United States (Baltimore)**

Prices in the United States do not allow for air freight shipments of okra from either India or Bangladesh. With air freight costs of $3.11 per kilogram, and market prices at the wholesale level that fail to pass $3.00, okra is not competitive in this market. Since air freight charges are even higher for the west coast destinations, okra is even less viable for those markets, in spite of the low in-country production and marketing costs.

**Middle East (Dubai)**

The Middle East appears to be a competitive market for okra. With air transport costs of approximately $.60 per kilogram from India and $.87 from Bangladesh, combined with the production and marketing costs of $.14 and $.10 cents, respectively, total delivered costs reach only $.74 for India and $.97 for Bangladesh. Market prices in Dubai are relatively constant at around $1.35, leaving an acceptable margin for the exporter.

**Cashews**

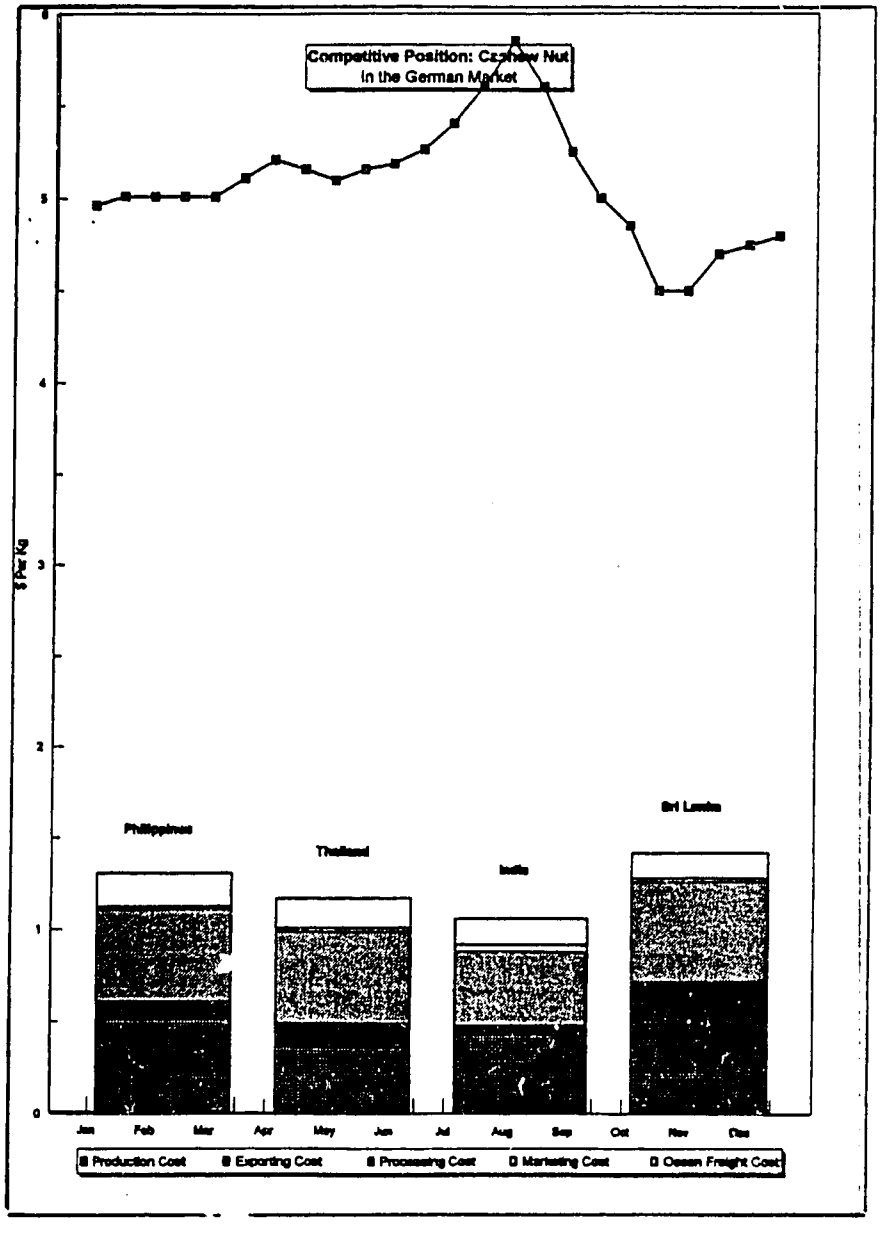
The cashew nut is delivered to market in a semiprocessed form, dried and shelled. Production and marketing costs in-country account for approximately $1.00 of its costs. Ocean freight is between $.10 to $.20 for the Asian markets and $.40 to $.50 for the more distant European and American markets. The demand for confectionary nuts is high in the North American, European, and affluent markets of Asia. Cashews are a high-valued product. This is reflected by the high market prices (Figure 8).

**Europe (U.K.-London, Germany-Frankfurt, France-Paris)**

With a total cost of between $1.80 for Sri Lanka to $1.30 from India, cashews appear to generate significant margins in all the European markets. Prices hold at more than $4.00 for all markets throughout the year, peaking somewhat in the summer months of May through July for the United Kingdom and France, and in July and August for Germany. Germany seems to be more stable at a minimum price of $5.00 per kilogram, peaking at $5.85. Presumably, these prices include some in-country processing and packaging costs as well as some distribution costs, but still the potential for high earnings can be shown for cashews in these markets. Because cashews are a tree crop and require a five-to-seven-year gestation period, one must analyze the long-run stability of prices. This must be done along with an analysis of recent plantings in the producing countries to determine what might be the price five years from now.

FIGURE 8

GERMAN WINDOWS OF OPPORTUNITY: CASHEWS




**United States, Landed Price**

The price for cashews in the United States as derived by calculating the value of imports divided by the volume ranges between $4.25 and $4.70 per kilogram throughout the year. Adding the transport costs from the Asian RAP countries to their production and marketing costs gives a delivered cost of around $1.50. To date, India has been the largest supplier of cashews to the United States, and other countries could also profitably export to the United States if they could reach the same quality standards that Indian producers have achieved.

**Japan**

Japanese prices for cashews hover around $5.00 per kilogram. With shipping costs of only around $.20 per kilogram, Japan becomes an extremely high-valued market for Asian cashew producers. This product should merit a high level of attention in all of the RAP countries.

## CAVEATS TO THE ANALYSIS

Several caveats must be considered to this analysis. The first deals with production and marketing costs. The gathering of the data used in this analysis for cost of production was accomplished by finding secondary data in most cases. Secondary data were located in studies or reports published by agriculture ministries or other government offices, project proposals, international institutions, or wherever the information could be obtained. It was not based on field surveys using statistical sampling of farmer-producer populations. However, in some instances when data were not available, the data gatherers interviewed individual farmers to obtain their rule of thumb allocations for different cost and input levels. In each case analyzed, the study director adjusted the figures to fit within the norms for the input and output categories corresponding to those products in each country, and by comparing each product across the board in the region and even outside the region. In this way, outlying data was eliminated. Because the study director has carried out cost of production field survey analyses with thousands of farmers in several countries in each continent — Latin America, Africa, the United States, and Asia — the adjustments that were made are felt to be within the acceptable range for these cost figures.

With respect to the marketing data within each country, the data gatherers interviewed marketing agents, producers, truckers, and government officials as well as consulted official and commercial documents in order to come up with the relative costs for these types of services. Once again, this information is not based upon the collection of information from a statistical field survey.

Shipping costs were obtained by contacting several freight forwarders in each country and the principal airlines to obtain the relative transport costs for each destination. Since these prices are fairly standard — in other words, the deviation among different freight forwarders is minuscule — and because the total population of transport vendors is so small, one could almost claim that this information was obtained from a statistically sampled field survey.

Although the collection of production and marketing costs and transport costs generated fairly consistent information, this is not the case for market prices. Prices in some markets are difficult to obtain. In some instances the value of imports was divided by the volume of imports to obtain an import value or landed price. This price is close to what is known as the custom value or the C.I.F. value but not equivalent to it. It is not the wholesale price, however, because it does not include the cost of importing and the cost of transportation (with profit) for placing the product in the wholesale market, wherever that may be. In other markets, especially where the U.S. Market News Service operates and where the International Trade Center (ITC) records data, the wholesale price is used. Nevertheless, these prices should be discounted somewhat although we do not have a rule of thumb for the rate of this discount, albeit 10 to 20 percent would not be out of the realm of possibility for these costs.

However, the real dilemma with market prices is not so much what their relative base rate is, but the year-to-year seasonal variability that is so hard to capture and record with any degree of consistency. Market prices for perishables vary throughout the year as availability increases and decreases. When

storage is limited to a few weeks, and normal shelf life is less than a month, market prices become extremely volatile. This is what gives rise to the market window of opportunity. But just as this phenomenon creates an opportunity, it also introduces a tremendous risk, because the perceived window (in terms of time period, degree, volume, and place) may vary year to year as well as season to season within the year. In other words, a window that may appear in January and February in one year may be delayed to March and April in the succeeding year. A review of at least the last four years of price data would give more confidence to anyone trying to nail down the characteristics of any specific window, but more than likely the data would present a staccato of price volatility that would make one hesitant to pinpoint a particular set of dates for the window. In the data presented for price information in this study, some data is presented for 1993, other data for 1992 or 1994, depending on the data source and availability. Although 1991 or 1992 data could be upgraded to 1993 by inflating the values one or two years, respectively, this was not done in the charts, but left for the reader to carry out on one's own. Since the cost of production and marketing for each commodity was collected for 1993, this is the year that should be taken as the base year for this analysis. If 1994 prices are presented, one should deflate these prices accordingly.

Given this situation with regard to the reliability of price information, several adjustments in the methodology should be made by the reader prior to taking direct action based on these results. Different types of market evaluation are possible. These alternative approaches will be discussed in the "How to" section which follows.

## HOW TO CONDUCT YOUR OWN COMPETITIVE POSITIONS ANALYSIS: A SET OF GUIDELINES

### Step I: Determining the Costs of Crop Production

The costs of crop production are usually estimated on a per-hectare or per-acre basis. To achieve comparability across regions, these costs must be reduced to a common unit of measure and a common currency. Since many of the other costs in the marketing channel are not based on the unit of area, it is preferable to use the kilogram as the unit of measure. This means that all of the production costs must be estimated on an area base and then divided by the average quantity or volume of production in kilograms for that reference area. Thus, the costs of production would be divided by the yield. In terms of currency, for our purposes, the dollar is used. However, given the volatility of the dollar in international currency markets, any other more stable currency could be used as long as consistency is maintained throughout the analysis. If the analyst is not making country-to-country comparisons but just trying to identify one's own competitiveness in international consumer markets, then the users own currency could and perhaps should be used.

#### Land Costs

To determine the costs of land one finds the going rate for land rental for the chosen crop in the producing region. Even if the land was purchased and is not rented by the producing firm, the land rental rate is used as the per-hectare or per-acre land cost. This rate is then divided by the yield to give a per-kilogram cost of land. If land improvements have been made on top of what would normally have been the status of the land when rented — for example, installing drainage or irrigation — then these costs must be added separately, as a new category. If the cost of these improvements are added each year, then their

total value is divided by the yield and entered into the cost total. However, sometimes these improvements are long-term investments, such as drainage tiles or irrigation canals or tube wells. In these cases the total value of the investment must be distributed over the lifetime of the improvement and divided by the yield that corresponds to each year of use. Although some improvements last beyond 10 years of usefulness, it would be convenient to account for their costs within a 10-year time frame.

The procedure for discounting future expenditures in crop production to a current number is difficult. Two methods have been used and this author does not claim either one as the only appropriate method. They are presented simply as an attempt to adjust and estimate costs incurred over the life cycle of their usefulness. One way is to add up the costs, without discounting, for up to 10 years; then add up the total yield over the same time frame; and then divide by this number. The other method is to record the costs for each year and divide by a discount rate— for example, $(1+I)$ to the $t^{th}$ power, where I equals the current average interest rate on commercial loans and deposits, and t equals each year. Each year's value is then divided by the yield for each year and these totals are summed up for the 10-year period (or less if the cycle is shorter).

### Inputs

All of the inputs that go into production except labor are considered in this group of costs. Some examples of inputs to be included are seeds and planting materials, stakes, seed beds, trellises, other seeding/planting input costs, fertilizers of all kinds, chemicals used as fungicides, herbicides, pesticides, and any other inputs that can be identified. All of these costs are recorded on an area basis and then divided by the average yield to obtain a per-kilogram measure. If the crop takes more than a year to deliver an average yield, then the same type of procedure as described above is used. All costs are added together over the life cycle of the crop or up to 10 years, whichever comes first, and then the accumulated yield corresponding to this same time frame is used to divide into each cost element, to obtain the per-kilogram cost figures.

### Labor

Labor is made up of family labor, hired labor, bullock labor, exchange labor, and, in some cases, machinery labor for ploughing, for example. Because the machinery labor actually supplants what used to be human labor, we have chosen to place this cost category in the labor group. The key to the labor costs is to estimate the wage rate (or rental rate for bullocks and machinery) for each labor expenditure. Because family labor, and sometimes exchange labor, does not have a known wage rate, each day's labor must be recorded at the equivalent hired labor wage rate. Cash expenditures plus in-kind expenditures are added together for each day's wage rate. These values are then treated the same way as those recorded for inputs, by dividing by the average yield rate.

### Harvesting

Harvesting costs are basically labor costs plus some packaging materials. The labor costs are treated as labor above and the packaging materials the same as the inputs described above.

### Total Production Costs

The costs for the elements in each category are added together to form the costs for each group; the sum of the costs for each group make up the total production costs.

### How to Use These Cost Figures

Once the cost figures are obtained for each element in each category for all four of the cost groups, then a comparison to the norm can be made. The norm is determined by observing similar costs for the same product in other countries or those costs estimated by the local agricultural offices, or what the knowledgeable extension agents in the area recommend. If one's own costs exceed these norms, one needs to closely analyze the cause of the exaggeration. Since the measures take into consideration the relationship between inputs and yield, the figures obtained from the analysis have already adjusted for one's level of technology. If a significant amount of fertilizer is used without a corresponding yield increase, this will be detected in excessive per-kilogram costs for inputs. If the land is high priced (perhaps near a city) and does not yield well, this will be detected in high land costs. This kind of analysis can be made for each cost variable. However, if one's costs are low and yields are high, then the total of all input costs, including labor, will be low relative to the norm and could place the producer in a competitive position regardless of the average of neighboring producers. This analysis shows how one compares within a region based on one's own merits as a producer.

## Step II: Identifying the Costs of Marketing

Marketing costs are more difficult to ascertain in the sense that costs are sometimes determined by volume rather than by weight. To deal with this issue a proxy value must be identified that replaces a volume or other non-weight value with a weighted measure. For example, transportation costs are often cited by 20' or 40' containers, without stipulating the weight they contain. And often the weight is different for the volume of each commodity that can fit into a container. Nevertheless, an attempt is made to standardize these costs into our per-kilogram measure.

### Packaging Materials

Often a product is harvested in one type of container and then repackaged into another for marketing. Packaging material may enter the equation several times as the product is moved from the field to the market, either a domestic market or an export market. The costs for all of this packaging must be recorded and estimated on a per-kilogram basis, as best one can.

### Packing, Sorting, Handling

Once the crop has been harvested it must be prepared for marketing. This involves a series of packing, sorting, cleaning, and packaging procedures, often taking place and repeated at various stages of the marketing chain. It can be done at the producer's end, in the central market place, or at the port, wherever it is the most convenient for those carrying out these activities. At each stage of product handling, the poorer quality product is discarded or used for some other purpose. This means that the quantity that reaches the final market is not the same as that which enters the chain directly after harvest.

Hence, some additional cost must be added to the product if, for instance, a 25 percent spoilage rate is incurred for products being prepared for export. If 100 tons at $2.00 a kilogram enter the packing shed and only 75 tons emerge, priced at $2.10 per kilogram, then the packing, sorting, and handling charge is $.13 per kilogram.

### Domestic Transportation

Throughout the marketing channel there are several transportation charges. Transport costs are incurred from the farm to the packing sheds, from there to the assembly markets, to the wholesale markets, and to the ports. All of these costs must be adjusted to per-kilogram charges and added together for this category.

### Storage and Port Handling

If the product is to be exported, charges for the godowns are used to hold the product prior to shipment and for loading and unloading at the port facilities. These charges are added on a per-kilogram basis even though they may be calculated as a percentage of the customs value of the product.

### Brokerage Charges

Marketing agents of various kinds enter into the marketing channel, as truckers, middle men (and women), freight forwarders, or export agents; these actors in the chain know how to register a product, pay the appropriate taxes and fees, obtain the licenses for export, and so forth. These services cost money and these are the brokerage fees, which are recorded in this category. They are often derived as a percentage of the value of the product being handled. These costs also must be translated into per-kilogram charges.

### Taxes, Fees, Levies, Duties

A myriad of additional charges are added to the marketing costs all along the marketing channel. Taxes are charged at the village and municipality level, at the terminals and docks, and elsewhere along the chain. Fees, levies, and duties are names used for these taxes, which are simply additional costs collected by some institution for the privilege of moving your product through their jurisdiction. Sometimes these charges are justified, in the cases of fees for the use of a service such as a stall at a market place. Other times these fees are for paying the salaries of the officials inspecting the products or overseeing their passage. And, in some instances, charging a duty on a product for domestic use or for export is the government's opportunity for collecting taxes. Exporting presents a focal point that can be clearly observed with a stated value that reflects the total income that product has generated, and creates the opportunity for direct taxation. Whatever the reason, these charges need to be recorded and then compared with those being charged to one's competitors.

**Total Marketing Costs**

The total value of all of the charges for the elements in the categories that make up the marketing group are then recorded as total marketing costs.

**Step III: International Transportation Costs**

Air freight and ocean freight costs vary by product from each sourcing country to each destination country. Air cargo availability is limited and refrigerated container services are scarce in the region. Nevertheless, estimated prices can be obtained from the air lines. The freight forwarders may have cargo plane services available also for which they would provide a per-kilogram rate. Prices vary by the amount shipped, with quantities under 100 kilograms costing more than 500-kilogram and 1,000-kilogram volumes. For this analysis, the lowest rate for the highest volume should be used.

Ocean freight is more standard and the shipping lines and freight forwarders can easily give quotes for their shipping charges. However, quotes are often given for the volume of the container and not its weight. According to the Ocean Freight Bulletin published in the United States, 40' containers vary by weight according to their products. In order to establish a rule of thumb for this analysis, we have chosen 16 tons as the average weight for a 40' container of produce. Thus, as one defines the product that is to be shipped, more accurate prices can be obtained and compared against the standards developed in this study. If the resulting rates fall below those calculated in this study, then the commodity in question will obviously become more competitive from a shipping standpoint.

Once the individual rates for countries and destinations are obtained, these rates can be added to the production and marketing costs for each product to determine the landed costs for each market. Figure 9 illustrates Steps 1-3.

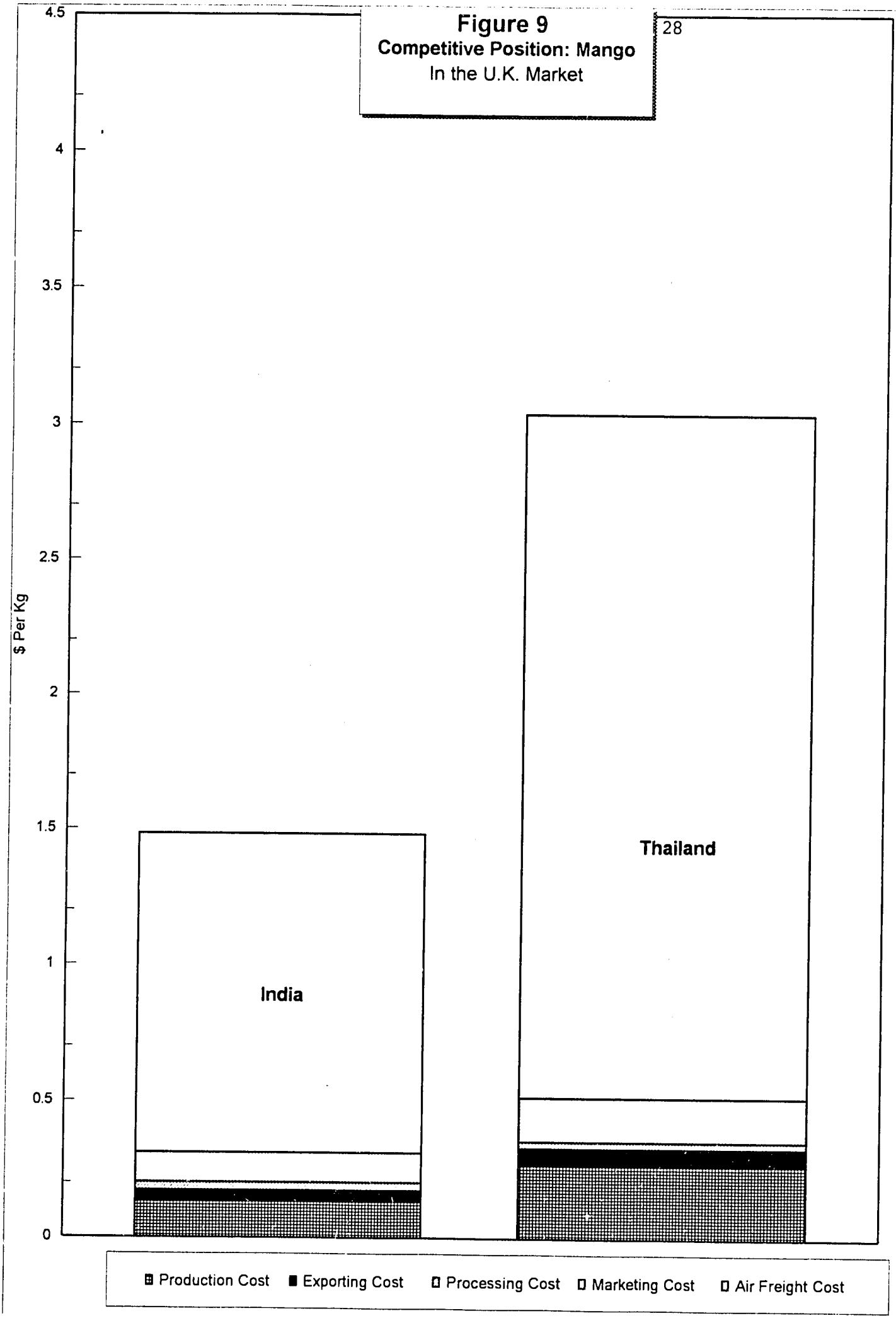
**Step IV: Market Prices**

Market prices are ideally obtained from market news services on a weekly basis. ITC publishes prices for a fee on European markets and Middle East markets for a number of fresh fruits and vegetables, cut flowers, juices and spices. The RAP project has recently contracted with ITC to assist them in expanding their services to the principal Asian markets. In the United States, this information is provided by the Market News Service, which reports wholesale prices from wholesale terminals throughout the United States on a weekly basis. Both of these services will provide several years of data for a minimal fee. Price data from other markets or for crops not covered by the services are much harder to come by. One way to estimate these prices is to look at the value of imports per month and dividing by the corresponding volume of imports. This will give a landed price, and will serve the needs of the potential exporters in the absence of weekly wholesale prices.

**Step V: Calculating One's Competitive Position**

Market prices fluctuate throughout the year. Most prices follow a predictable seasonality in the sense that when production is low in Europe or North America, imports increase and prices tend to follow suit. The highest prices for fresh perishable fruits and vegetables are in late December through April or May. However, for some commodities, many countries attempt to serve these market windows and glut

**Figure 9**
**Competitive Position: Mango**
In the U.K. Market



the markets with imported produce. This may lead to a rapid fall in the resulting market price. Market trends and market news regarding the overall conditions of the market must be determined to avoid such situations. Tracking the markets and producing areas can provide insight into how the market is expected to react in different time periods for different commodities.

The dried or processed products, which have a longer shelf life, seem to have different price schedules. For this reason a competitive positions study is required for each product, to assure oneself that prices are actually moving in the direction predicted. As more analyses are carried out, price trends will become more predictable.

To calculate the competitive position for each commodity in each market, the costs of production and marketing and the international transport costs are added together and placed under the price curves, as we saw in Figures 3-8, above. When the price curves rise above these combined costs, a potential market window of opportunity unfolds. The timing of such a window and its duration are important actors to consider. First of all, one must determine if the period of production most suited in the producing country can match up with harvest dates that coincide with the window period. Secondly, the duration of the harvest should fit within the duration of the window, with adjustments for the time lost in shipping and adding time for the shelf life of the product.

The second consideration is the size of the window. If it is marginal, just a few cents above the costs, the window may not be robust enough to be counted upon. It would seem that a significant percentage above the costs would be required before the decision is made to try to supply a specific window. Lastly, the size of the window is important in terms of the volume of product that enters and is consumed in that market. Prior to entering into a marketing decision or agreement, this should be checked out, to make sure that the price will not catapult downwards if some rival makes a similar decision at the same time. If the potential market is quite large, any individual shipment will not unduly influence the market price. Figure 10 combines the 5 Steps for this how-to section.

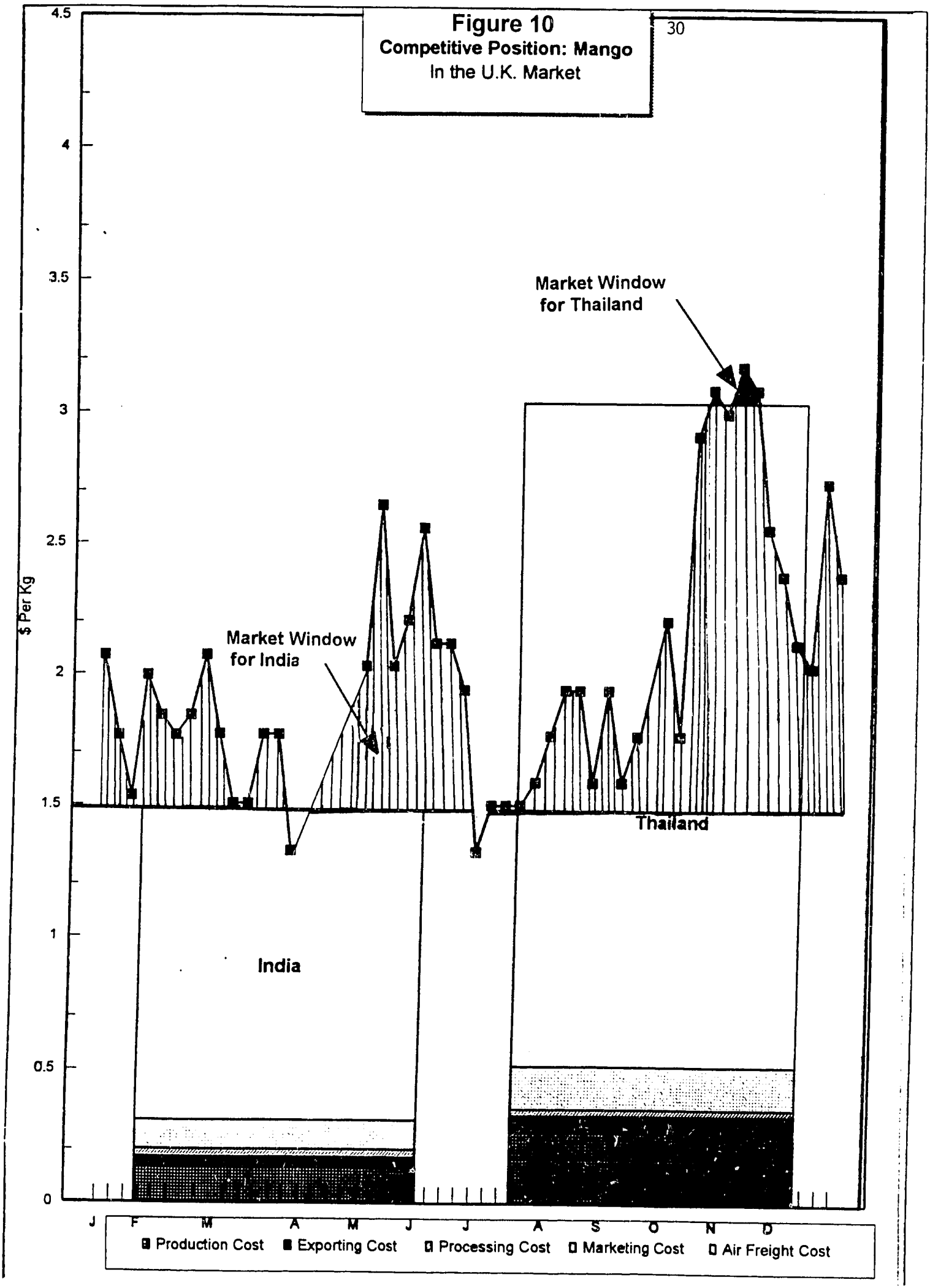


Figure 10
Competitive Position: Mango
In the U.K. Market
$ Per Kg
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Market Window
for Thailand
Market Window
for India
India
Thailand
J
F
M
A
M
J
J
A
S
O
N
D
Production Cost
Exporting Cost
Processing Cost
Marketing Cost
Air Freight Cost

## ACCESSING RAP SERVICES

The obvious choice for potential markets are those that are most popular, such as the United States and the United Kingdom (for the ex-British colonies), but in searching for markets, one should span out much more broadly. The more obscure markets may have the higher prices. For this reason, the market price search that is available from RAP for any client will scan several markets and attempt to identify and compare many more markets than those accessible to most producers. As mentioned in the caveats section, relying on one year of data, be it weekly or monthly, will not say much about the variation of prices and the seasonality of prices over several years. More than one year of price data should probably be used. However, this significantly increases the cost of analysis. If more price schedules are desired from RAP, a corresponding increase in the charge for the service would be requested.

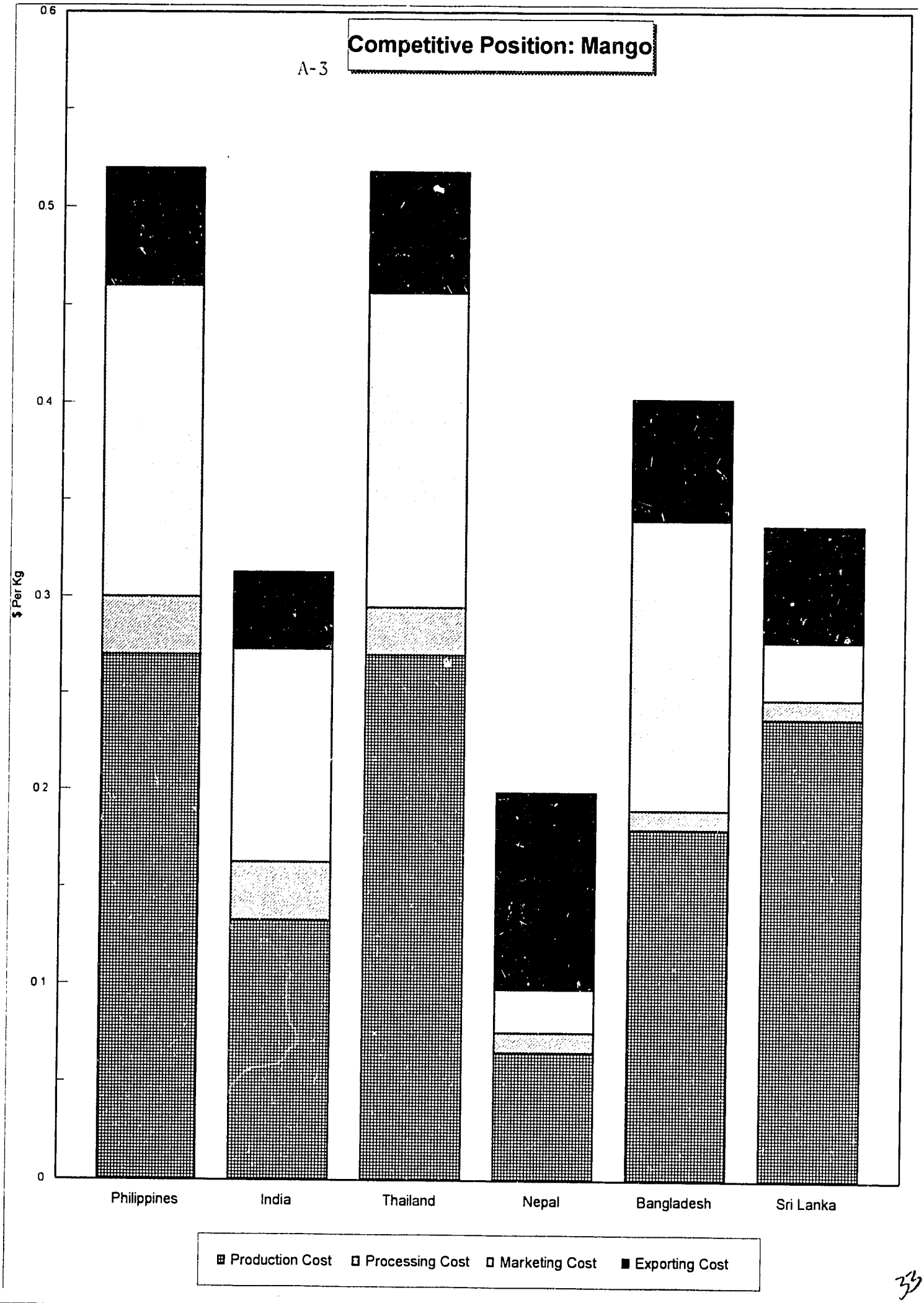
It is recommended that a broker be contacted in each market who would be able to verify the reliability of the price movements and to provide an indication as to what prices could be assured for any specific market window in which the producer is interested. The RAP project would also be able to provide the services of brokers in various markets.

Such a broadening of the market horizon should lead to many more possibilities than originally expected. Other services such as market news services and cost assessments are also available from RAP. For example, the information needed to determine the size of the market window in terms of total market share can be provided by RAP whenever an interested party is close to making a production and marketing decision. To access RAP's services, contact Kenneth Swanberg at the Regional Agribusiness Project, 7250 Woodmont Avenue, Suite 200, Bethesda, Maryland, 20814 USA (Fax: 301-907-2655, Tel.: 301-215-7014, INTERNET: rap@dai.com.).

# ANNEX A

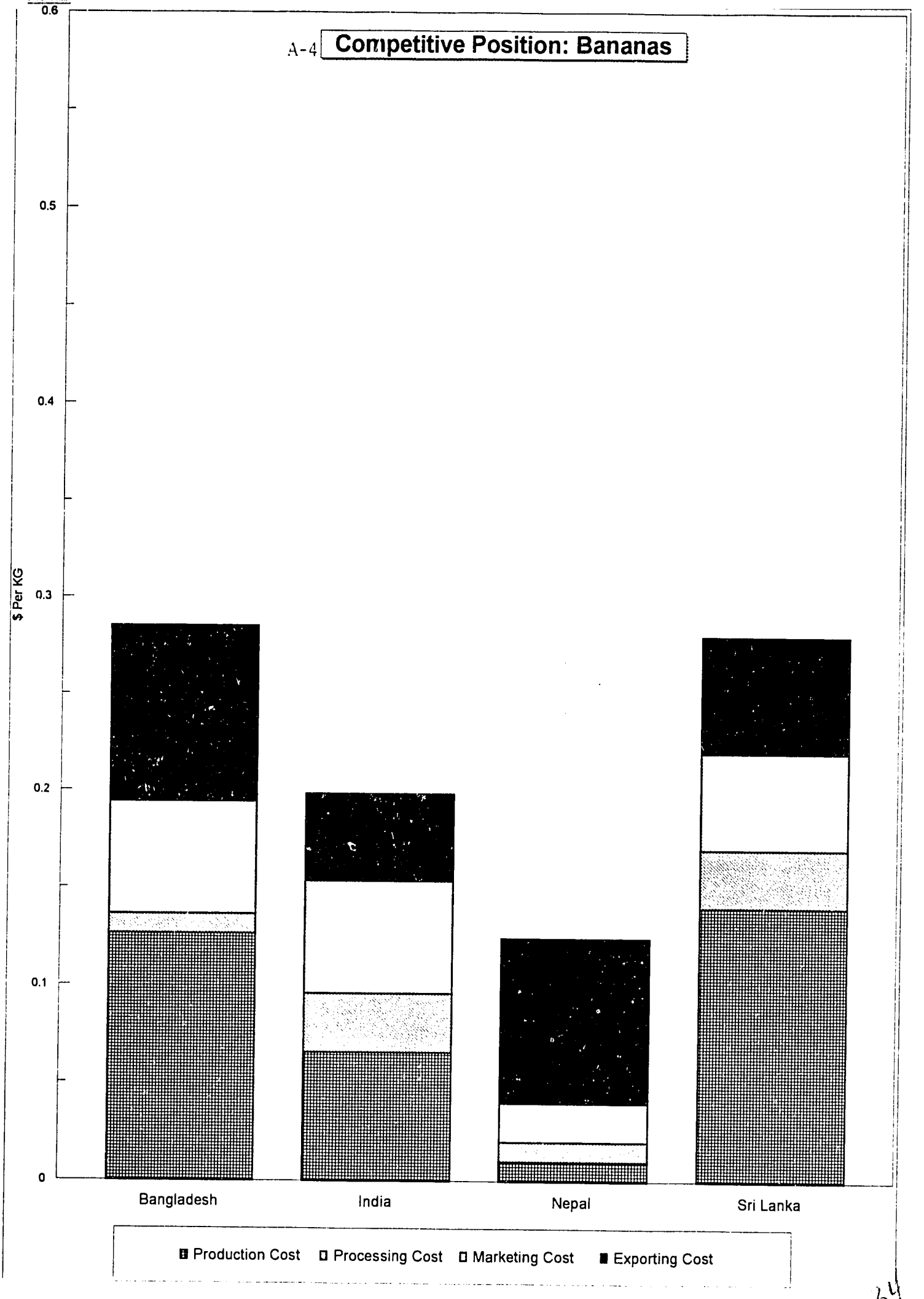
# COMPARATIVE COMPETITIVE POSITIONS BY PRODUCT

A-3


Competitive Position: Mango
$ Per Kg
0.6
0.5
0.4
0.3
0.2
0.1
0
Philippines
India
Thailand
Nepal
Bangladesh
Sri Lanka
Production Cost
Processing Cost
Marketing Cost
Exporting Cost

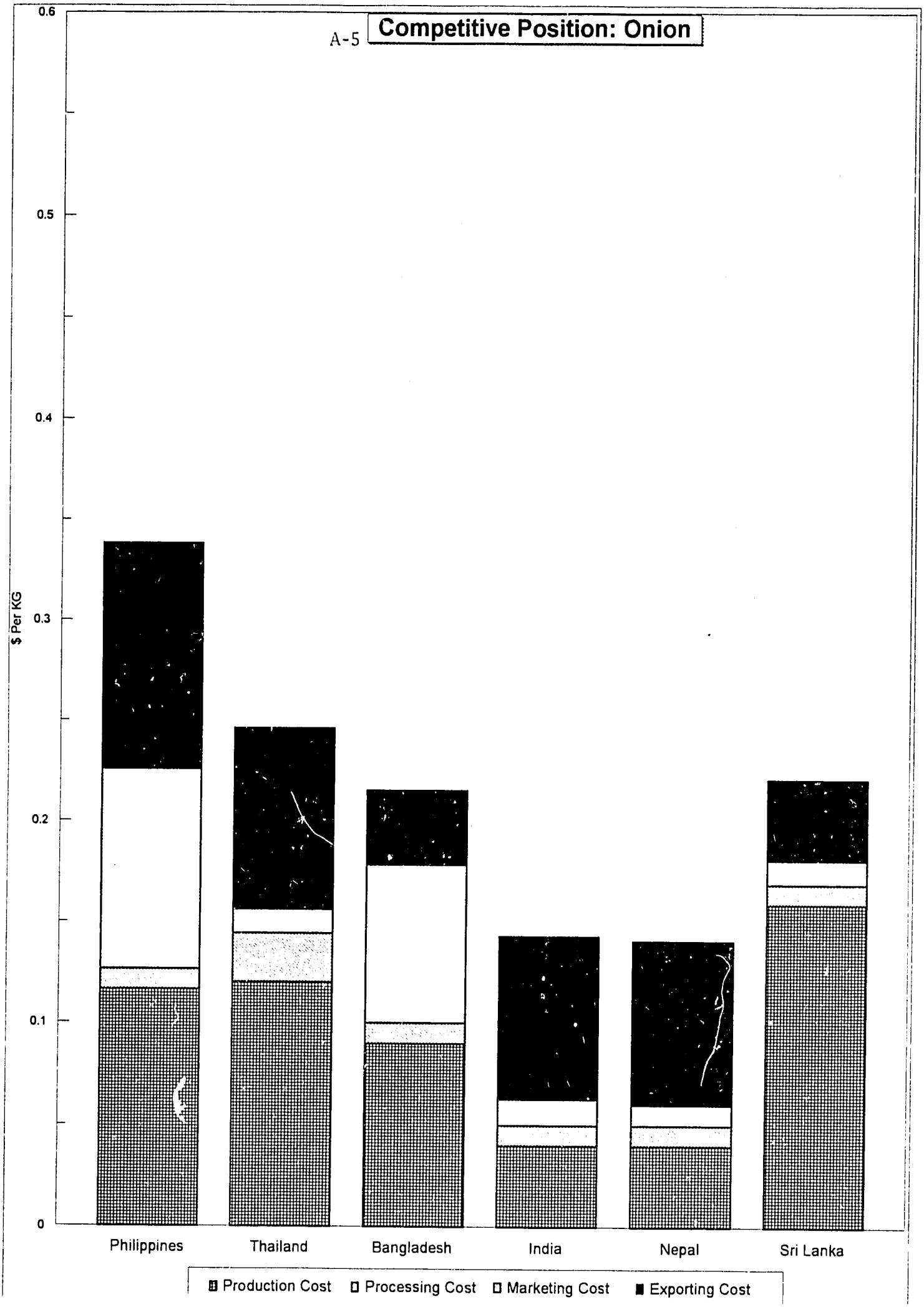
A-4

# Competitive Position: Bananas

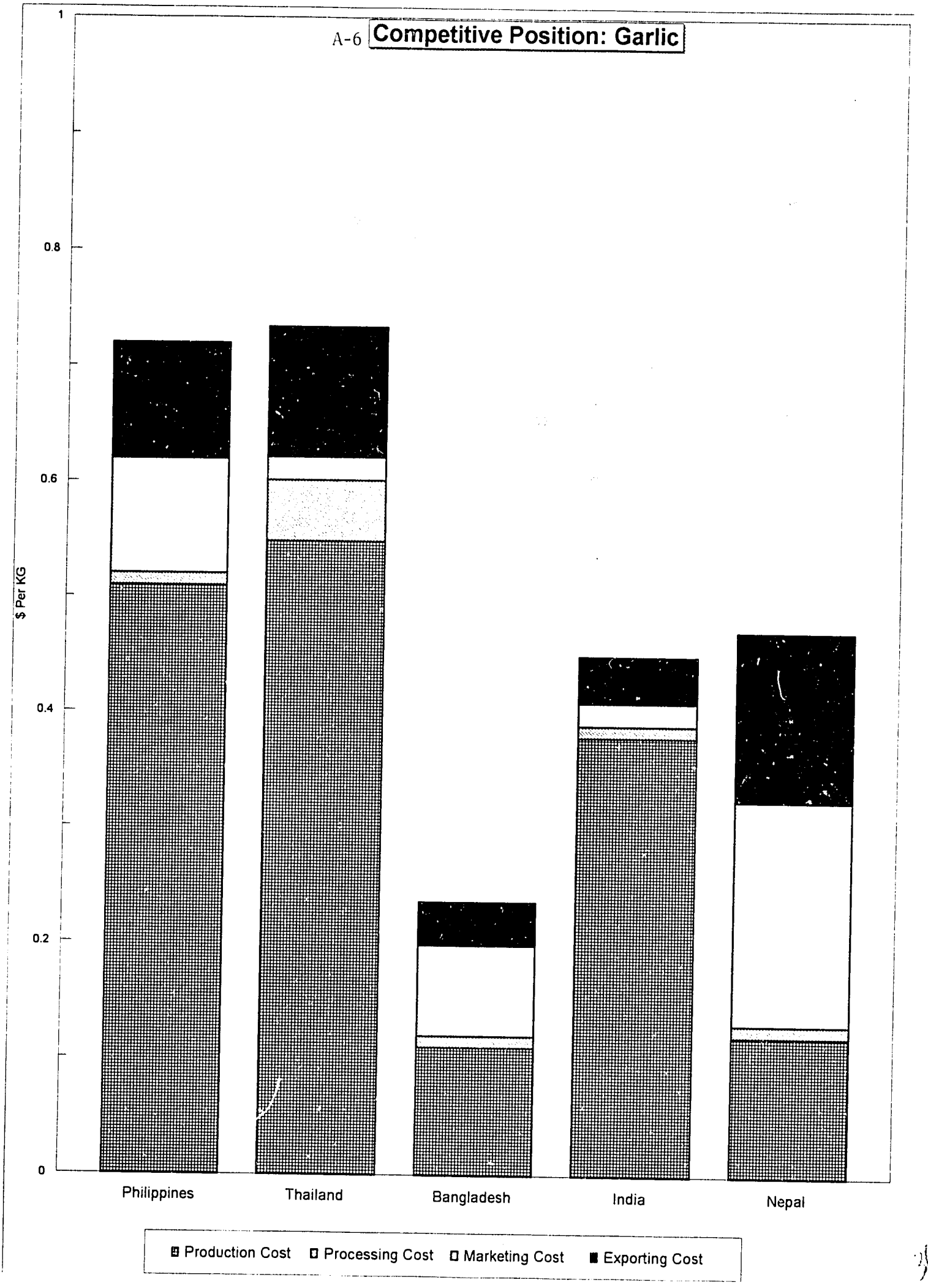


A-5

# Competitive Position: Onion

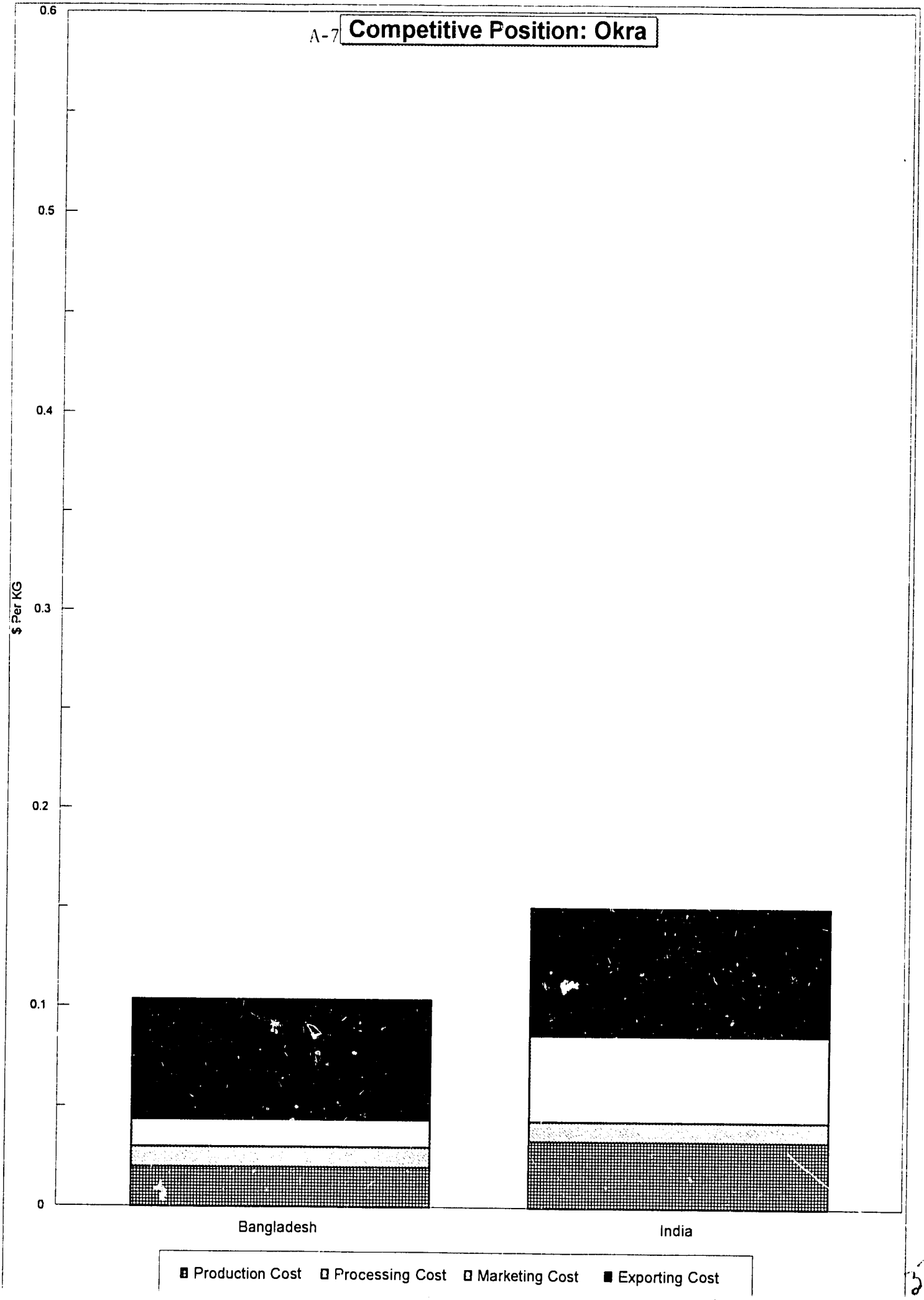


A-6 **Competitive Position: Garlic**



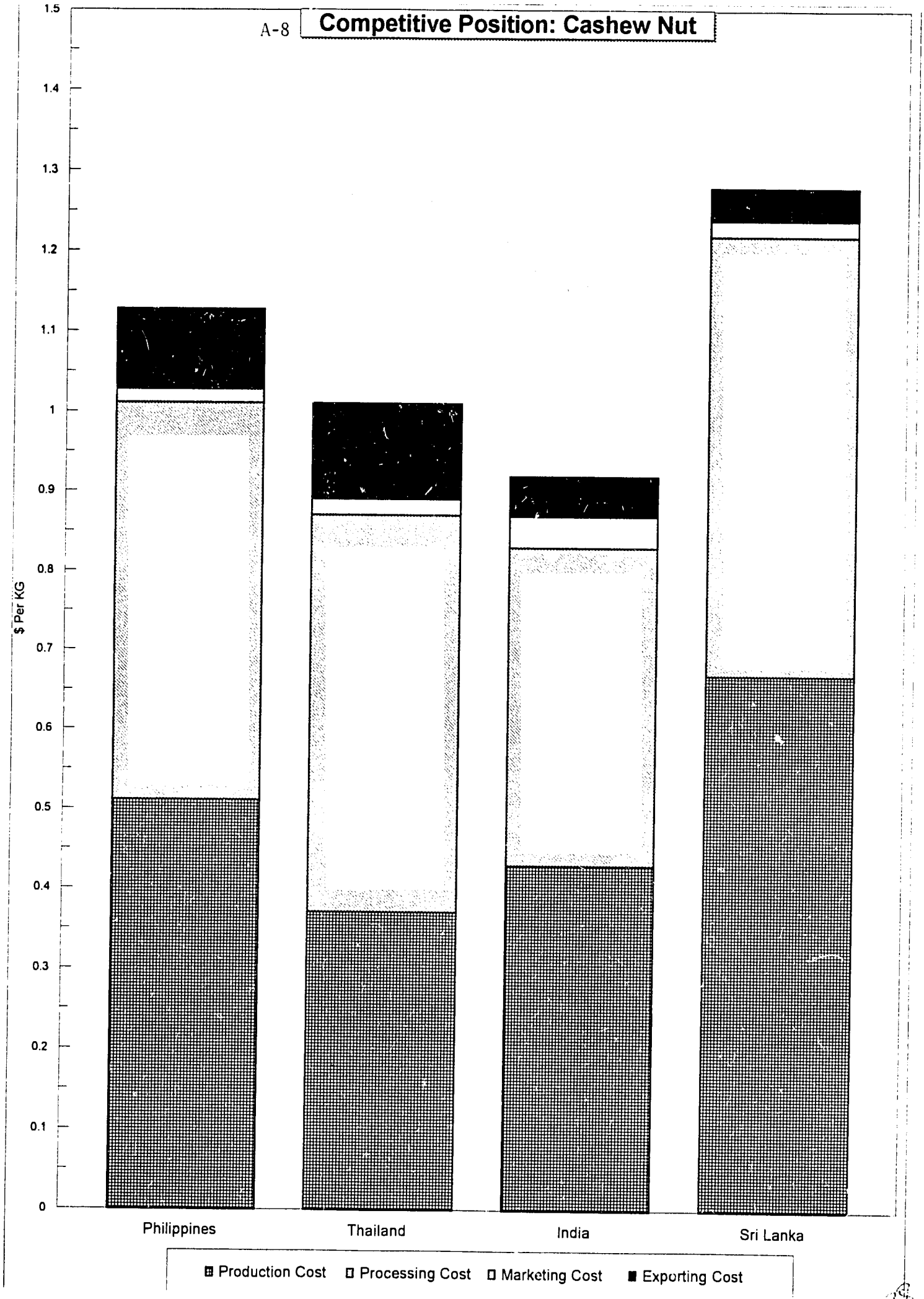
A-7

# Competitive Position: Okra



A-8

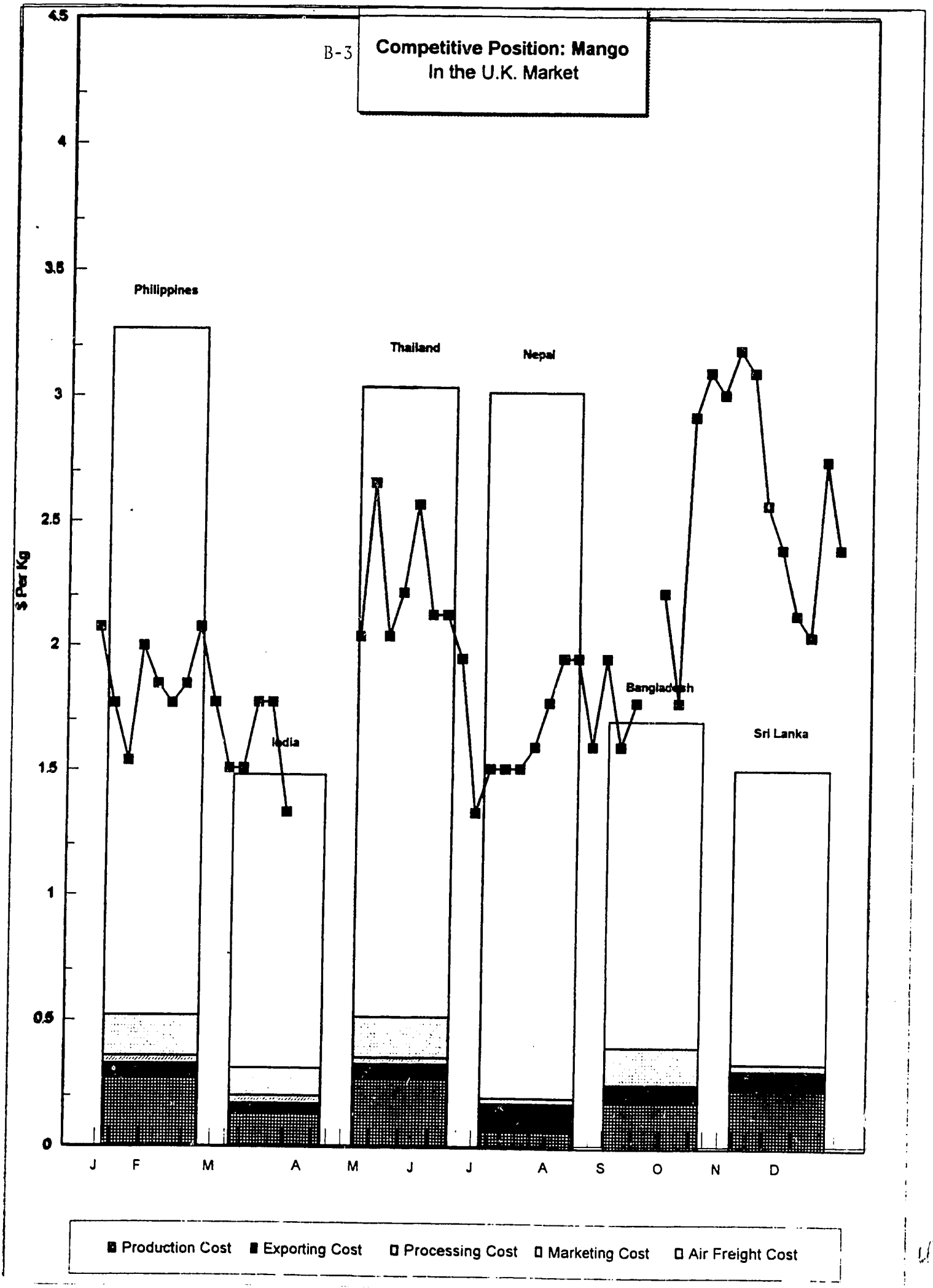
# Competitive Position: Cashew Nut



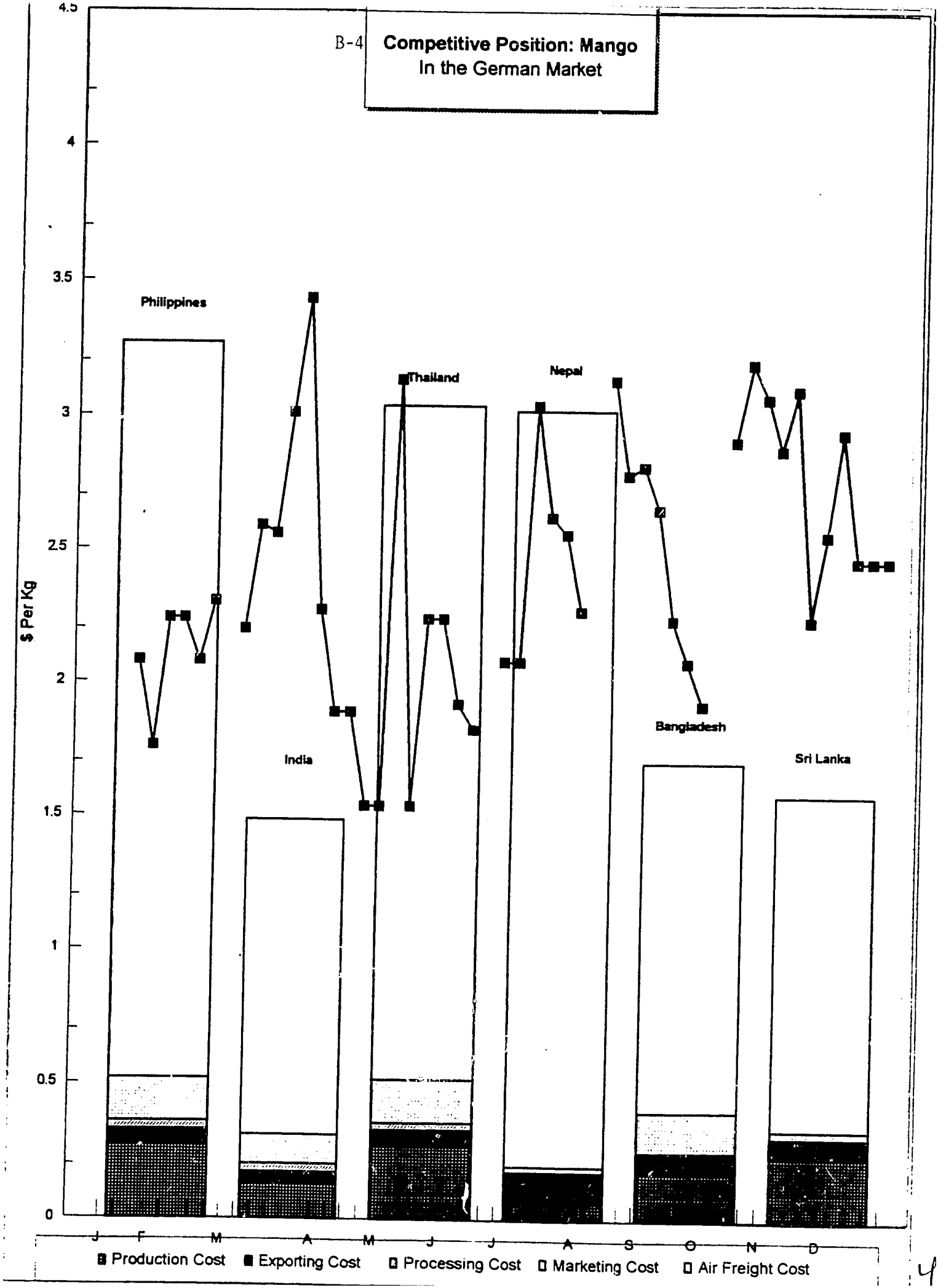
# ANNEX B

## WINDOWS OF OPPORTUNITY BY PRODUCT AND MARKET

B-3

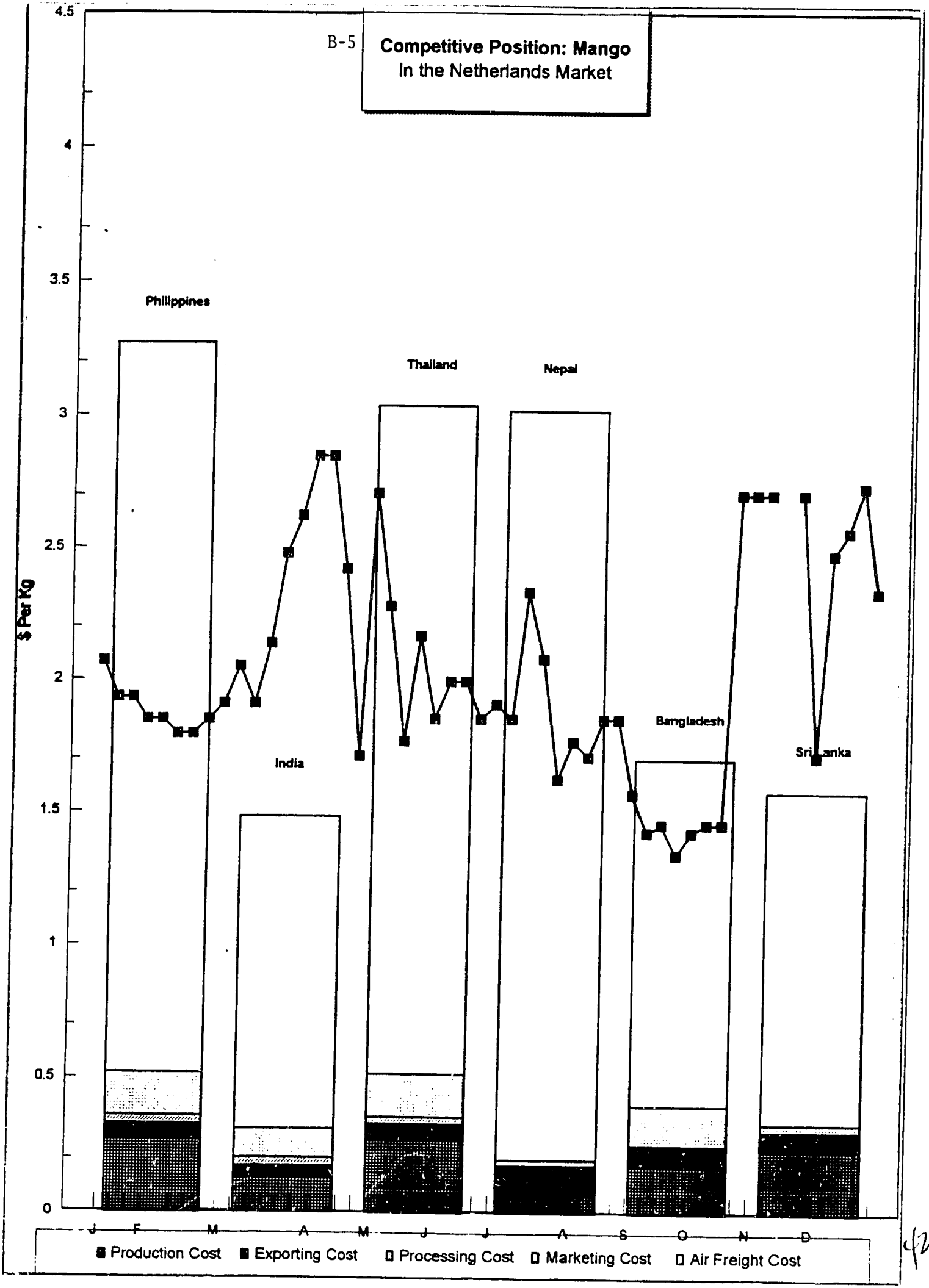

Competitive Position: Mango
In the U.K. Market
$ Per Kg
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Philippines
Thailand
Nepal
India
Bangladesh
Sri Lanka
J
F
M
A
M
J
J
A
S
O
N
D
Production Cost
Exporting Cost
Processing Cost
Marketing Cost
Air Freight Cost

B-4

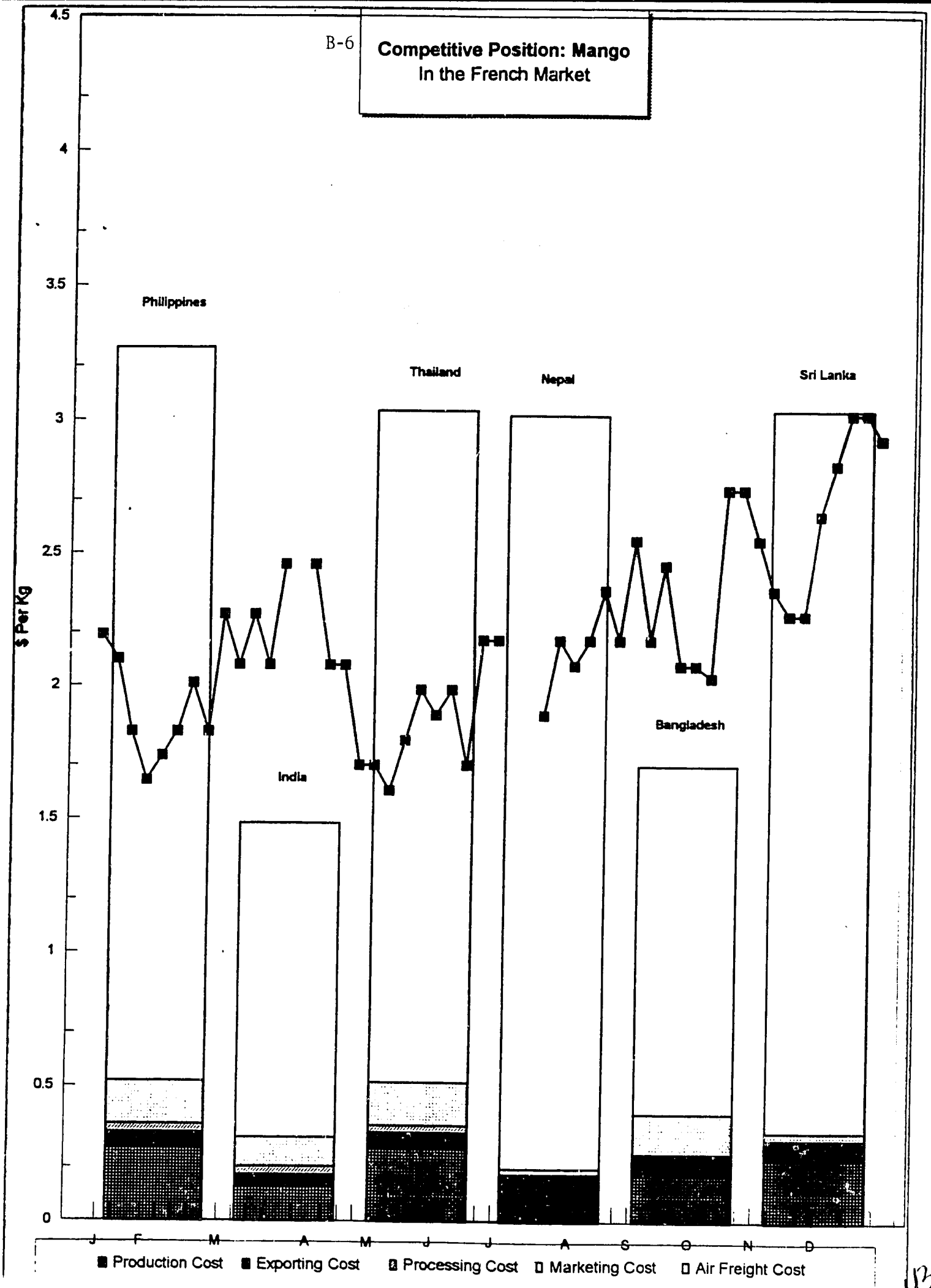

Competitive Position: Mango
In the German Market
$ Per Kg
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Philippines
India
Thailand
Nepal
Bangladesh
Sri Lanka
J
F
M
A
M
J
J
A
S
O
N
D
Production Cost
Exporting Cost
Processing Cost
Marketing Cost
Air Freight Cost

41

B-5

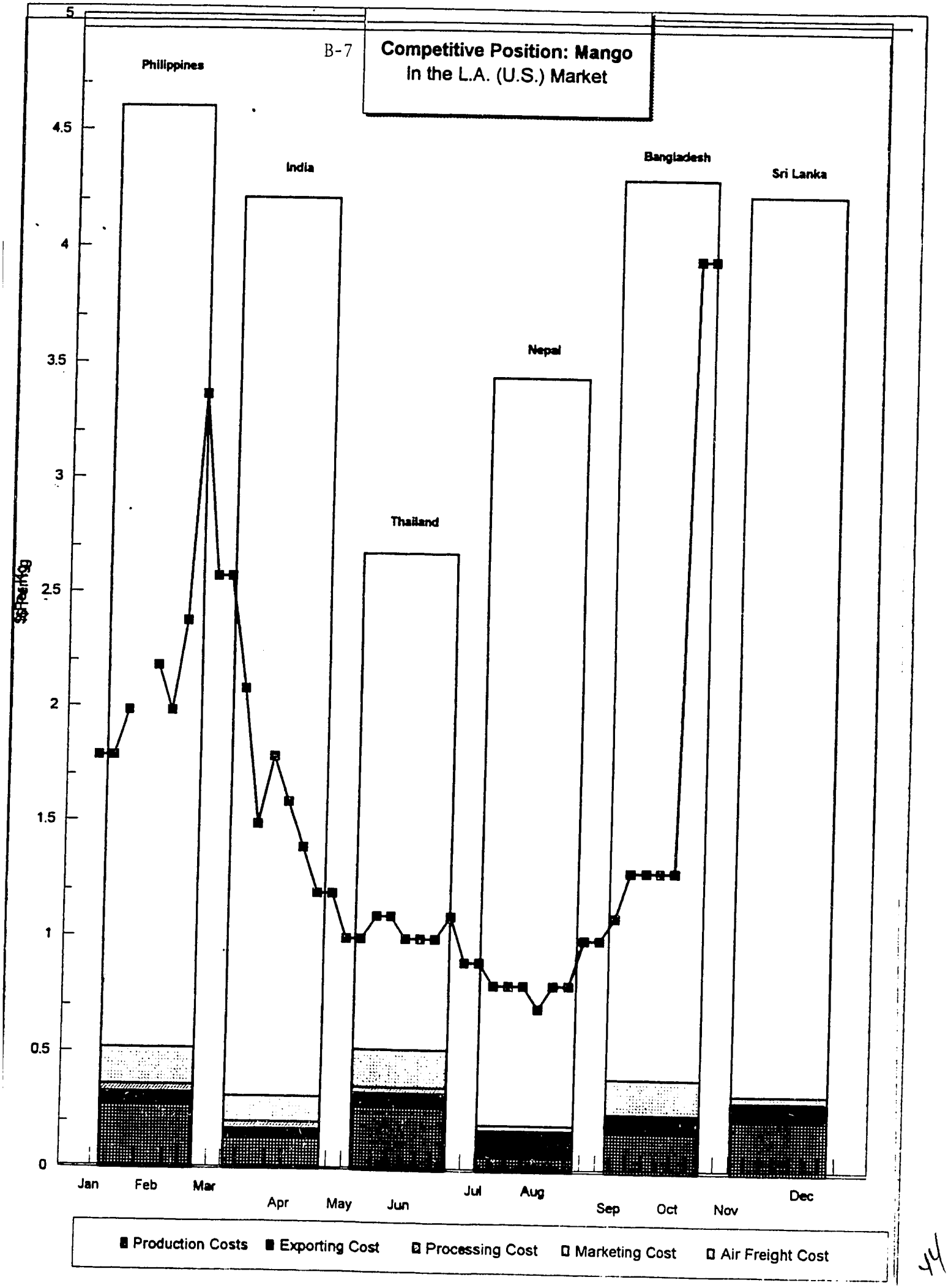

Competitive Position: Mango
In the Netherlands Market
$ Per Kg
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Philippines
India
Thailand
Nepal
Bangladesh
Sri Lanka
J F M A M J J A S O N D
Production Cost
Exporting Cost
Processing Cost
Marketing Cost
Air Freight Cost

42

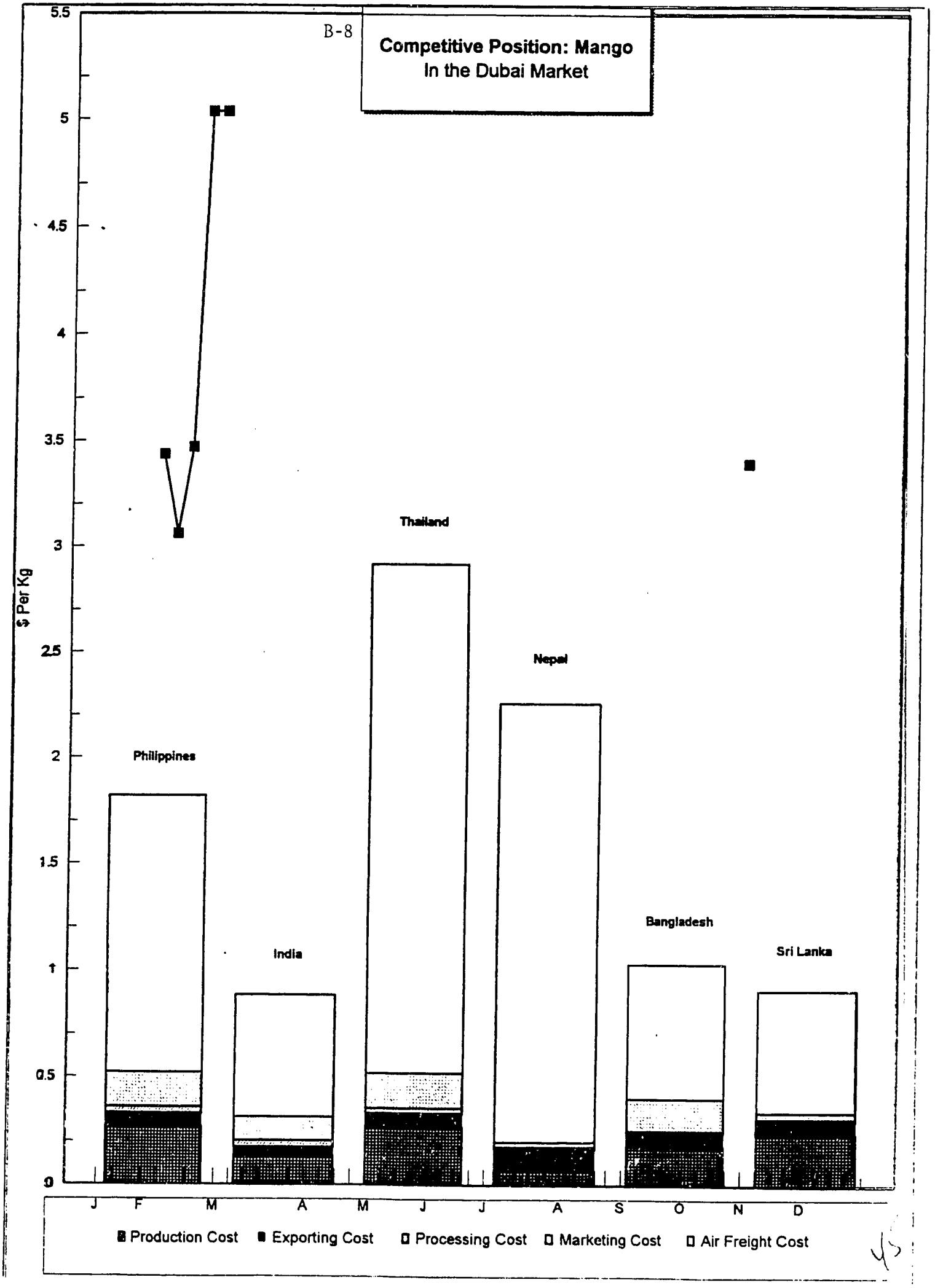

Competitive Position: Mango
In the French Market
$ Per Kg
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Philippines
India
Thailand
Nepal
Bangladesh
Sri Lanka
J F M A M J J A S O N D
Production Cost
Exporting Cost
Processing Cost
Marketing Cost
Air Freight Cost

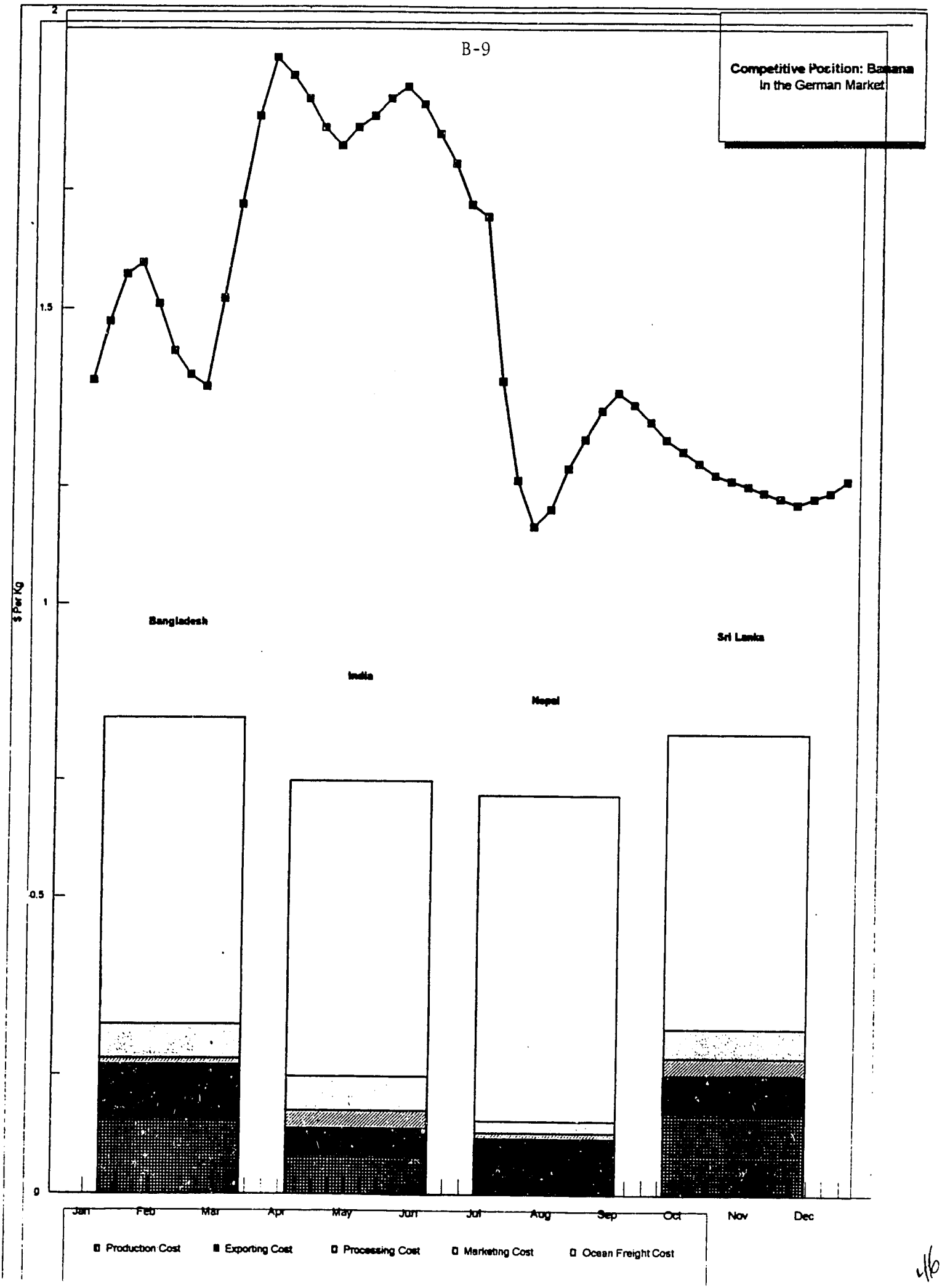
43

B-7


Competitive Position: Mango
In the L.A. (U.S.) Market
Philippines
India
Thailand
Nepal
Bangladesh
Sri Lanka
$/kg
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Production Costs
Exporting Cost
Processing Cost
Marketing Cost
Air Freight Cost

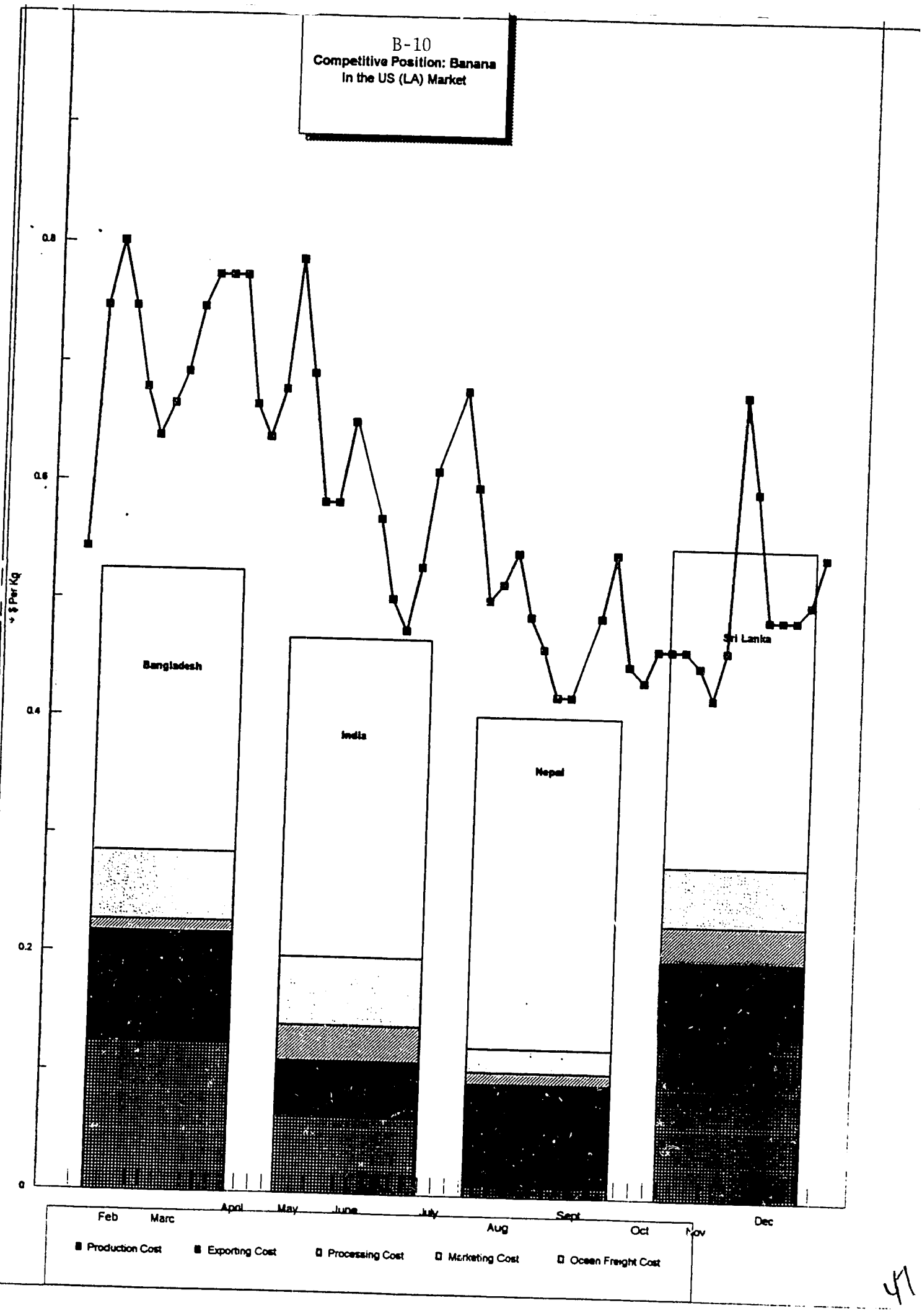
44


Competitive Position: Mango
In the Dubai Market
$ Per Kg
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Philippines
India
Thailand
Nepal
Bangladesh
Sri Lanka
J F M A M J J A S O N D
Production Cost
Exporting Cost
Processing Cost
Marketing Cost
Air Freight Cost


Competitive Position: Banana
In the German Market
$ Per Kg
2
1.5
1
.0.5
0
Bangladesh
India
Nepal
Sri Lanka
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Production Cost
Exporting Cost
Processing Cost
Marketing Cost
Ocean Freight Cost

B-10

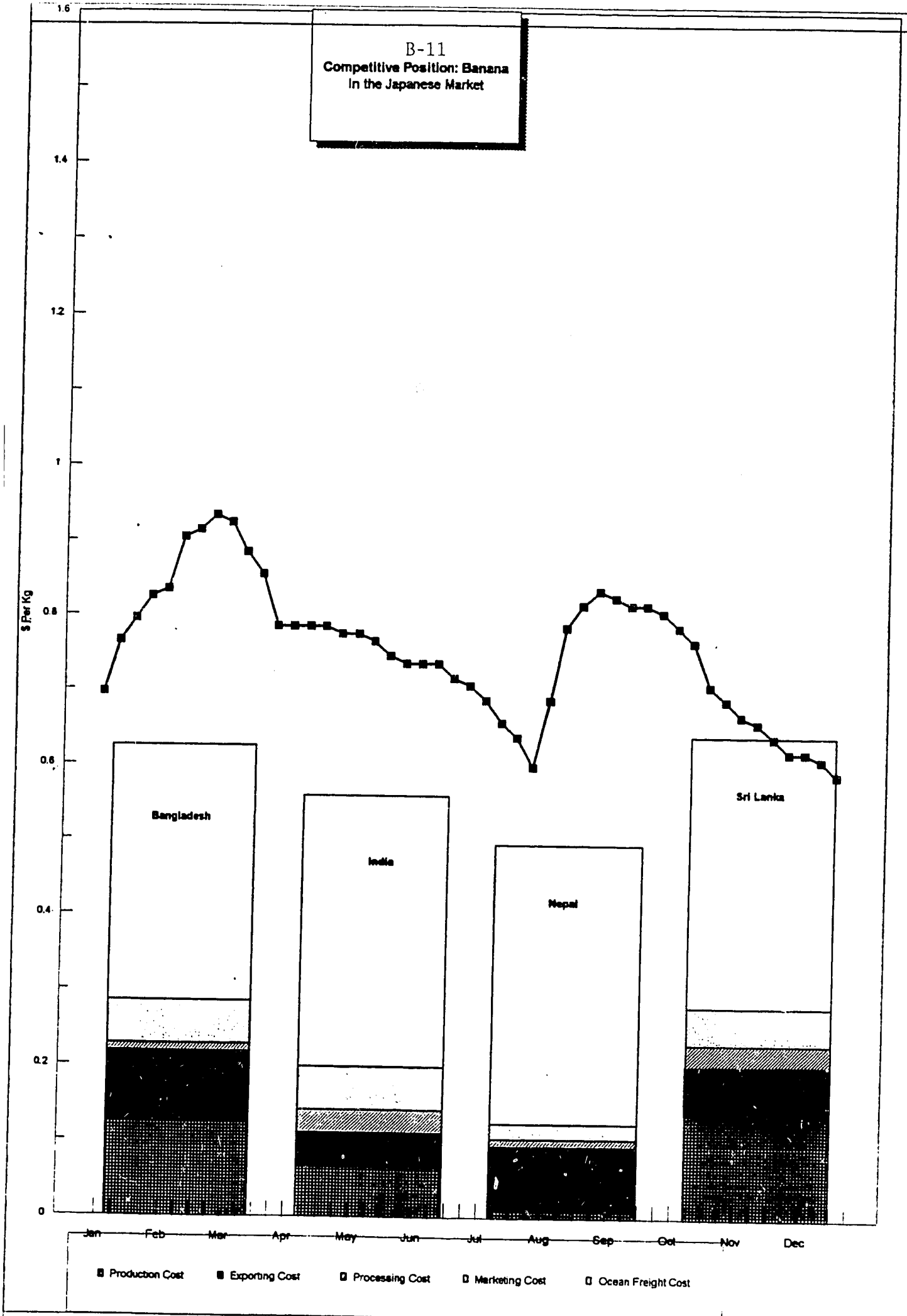
**Competitive Position: Banana in the US (LA) Market**




41

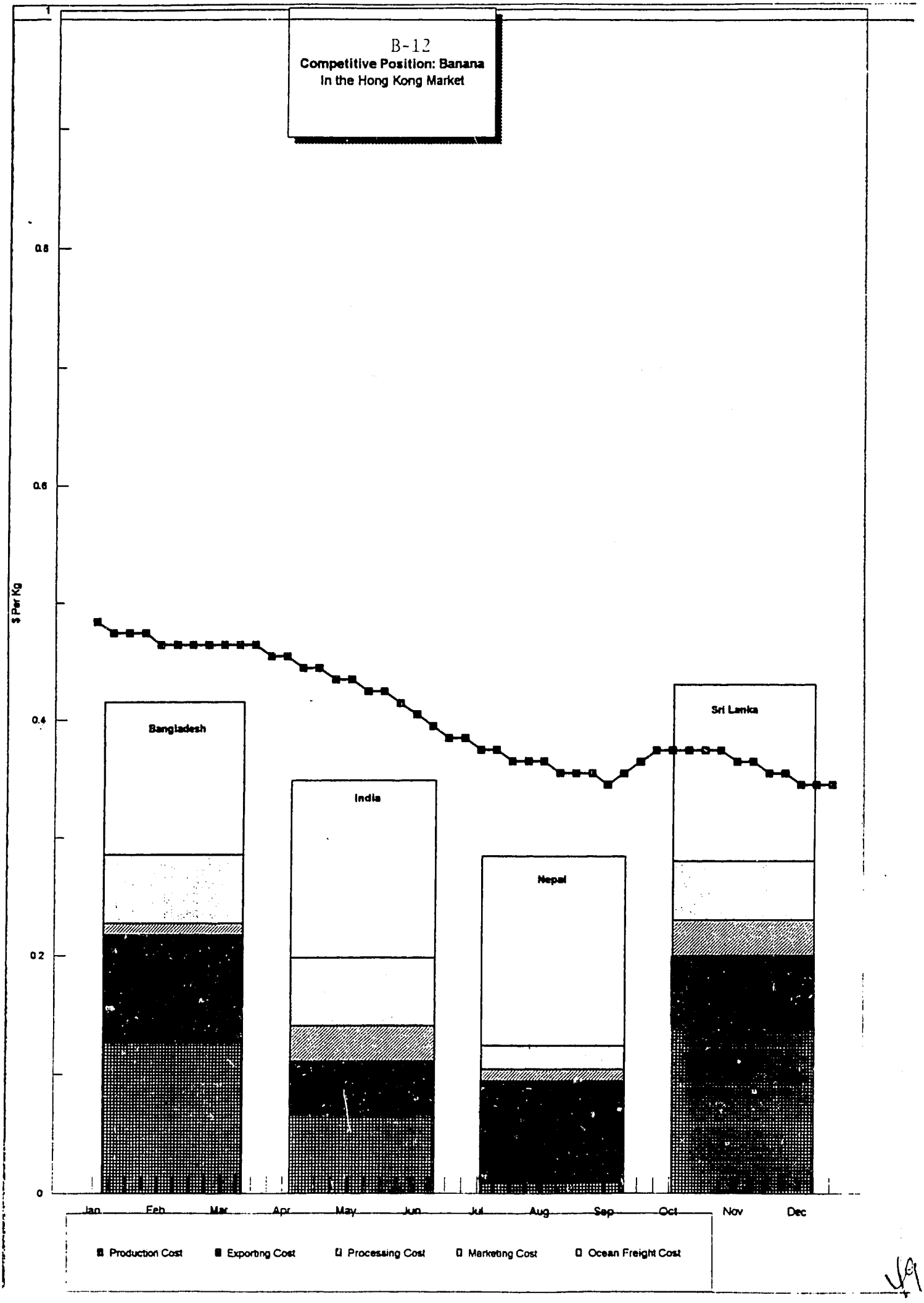
B-11

**Competitive Position: Banana in the Japanese Market**



B-12

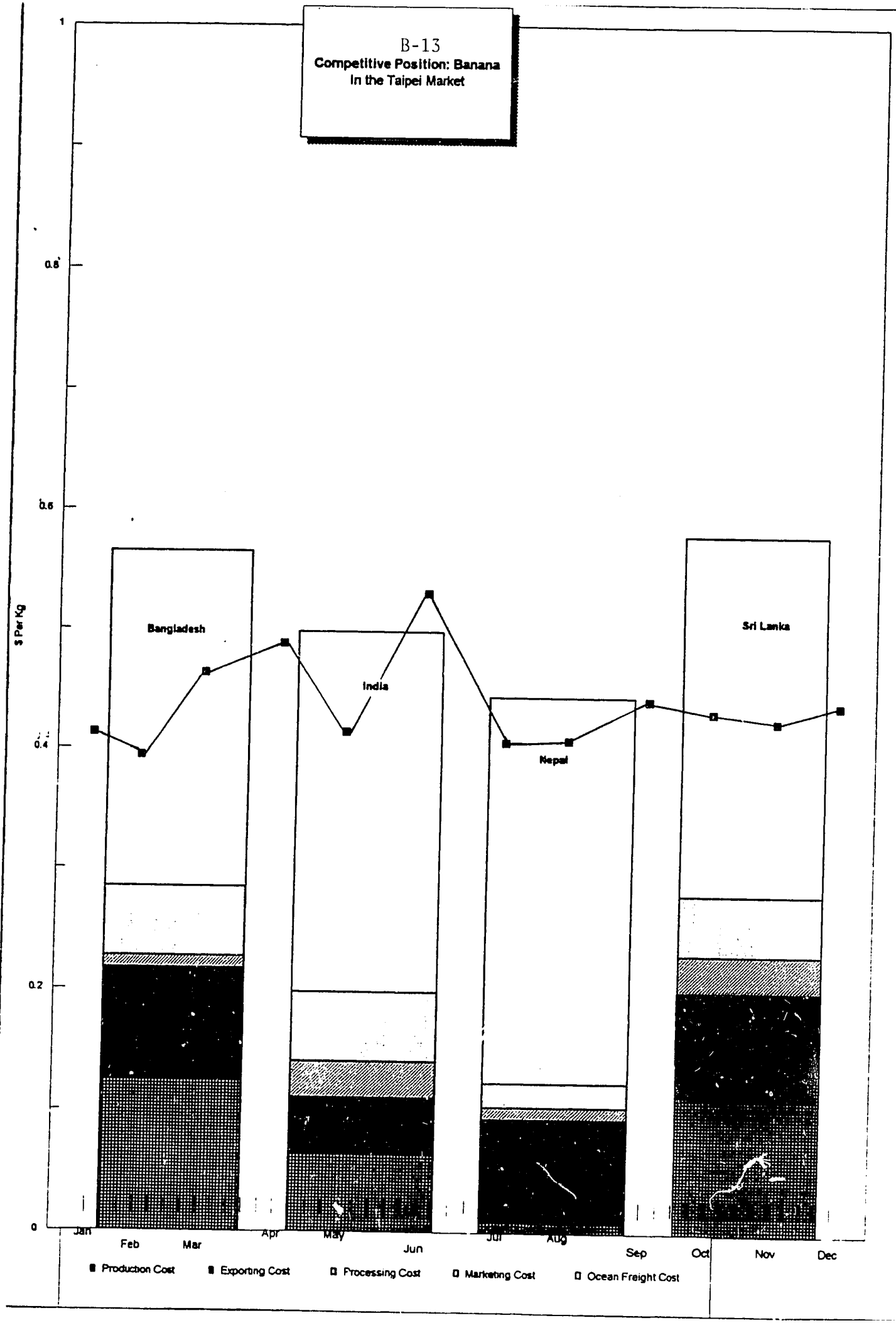
**Competitive Position: Banana**
In the Hong Kong Market




49

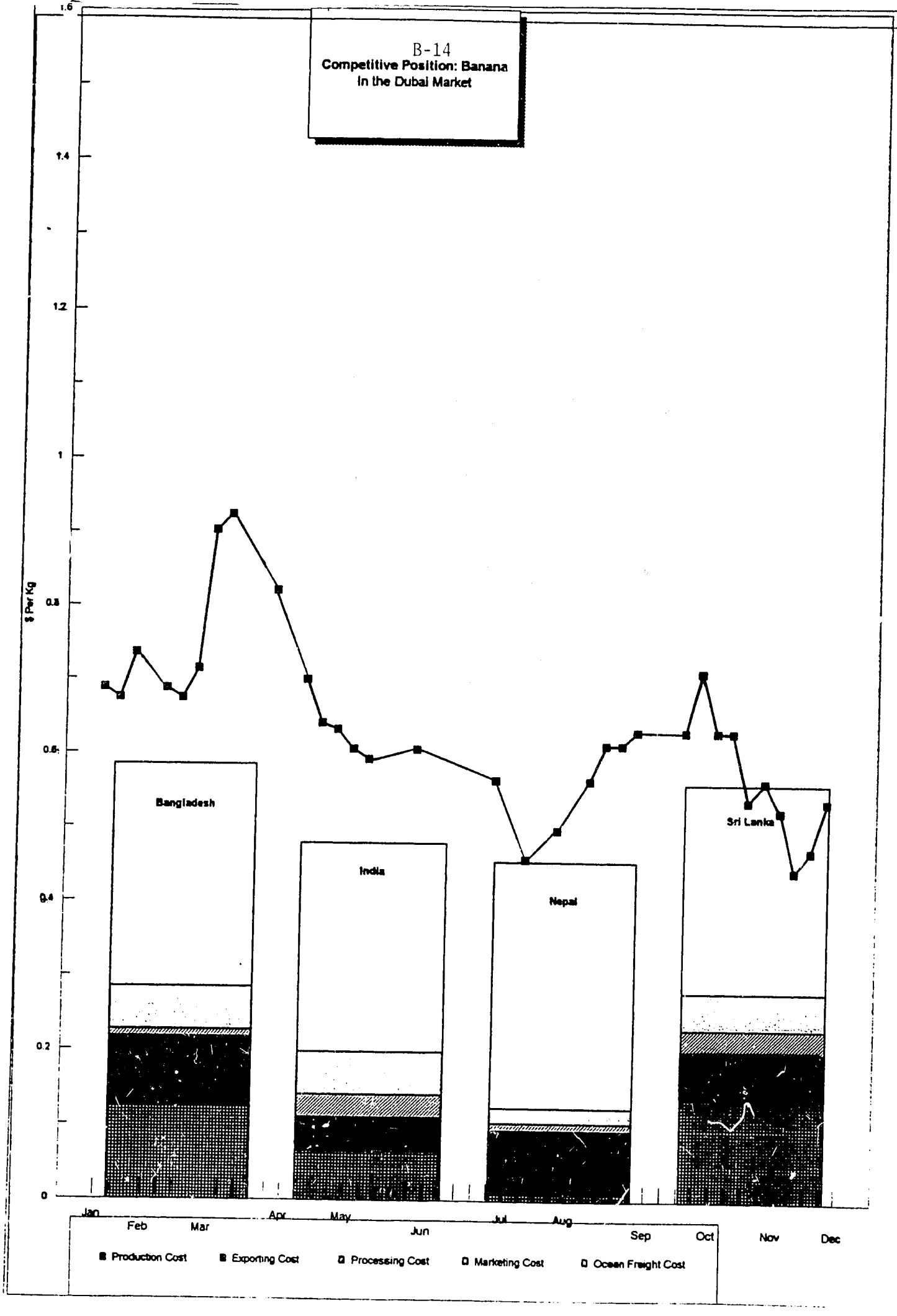
B-13

**Competitive Position: Banana in the Taipei Market**



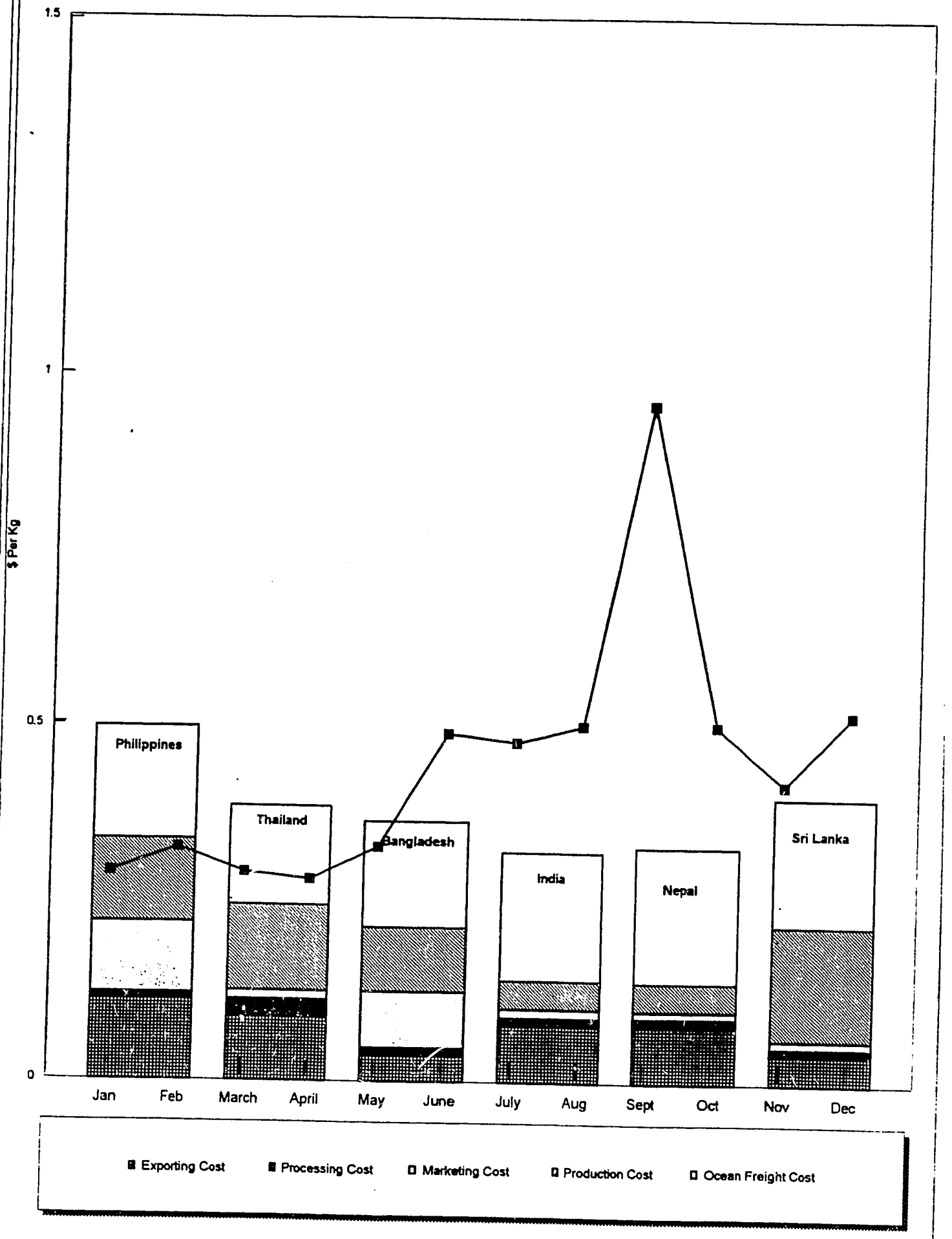
B-14

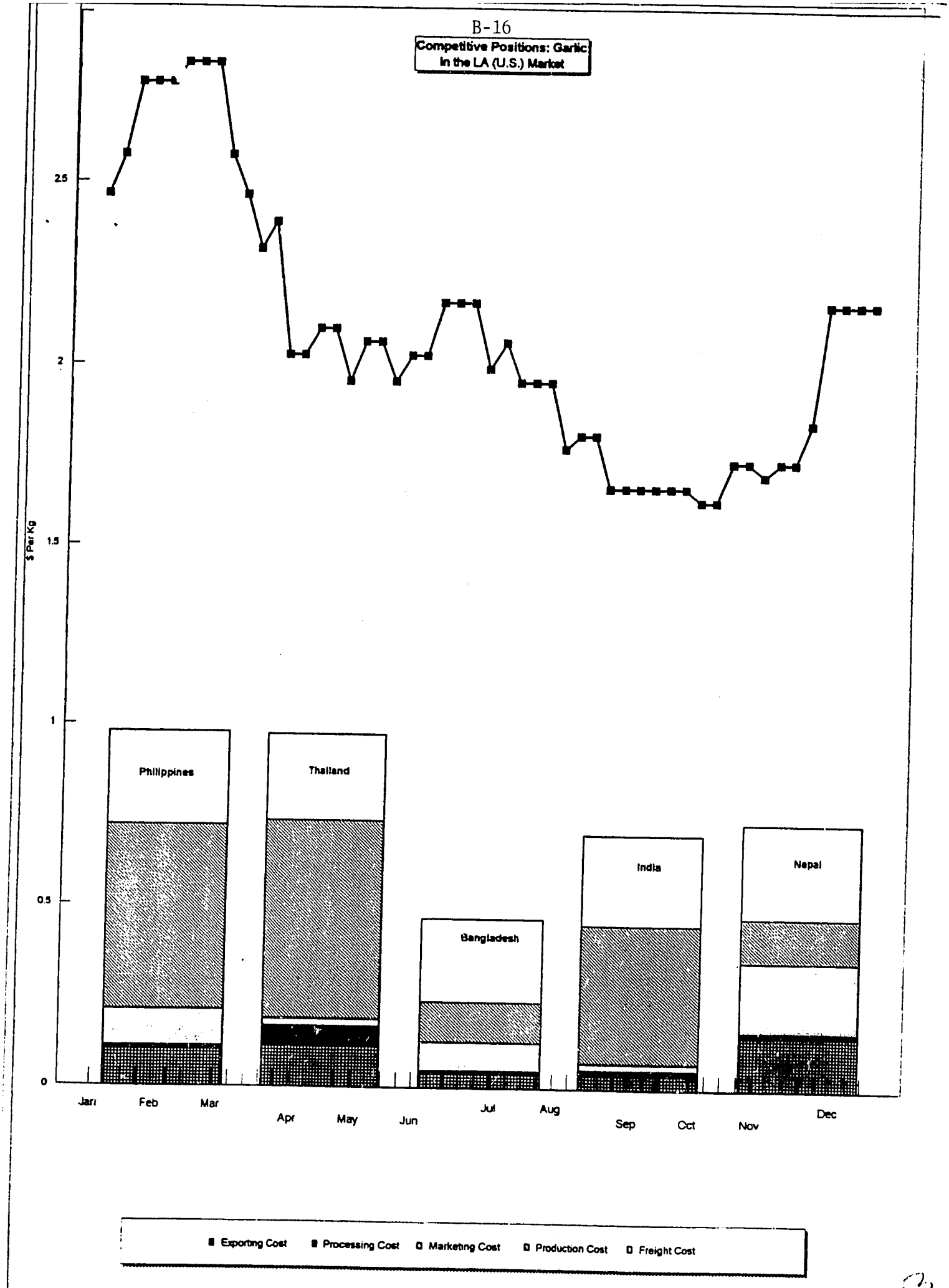
**Competitive Position: Banana in the Dubai Market**



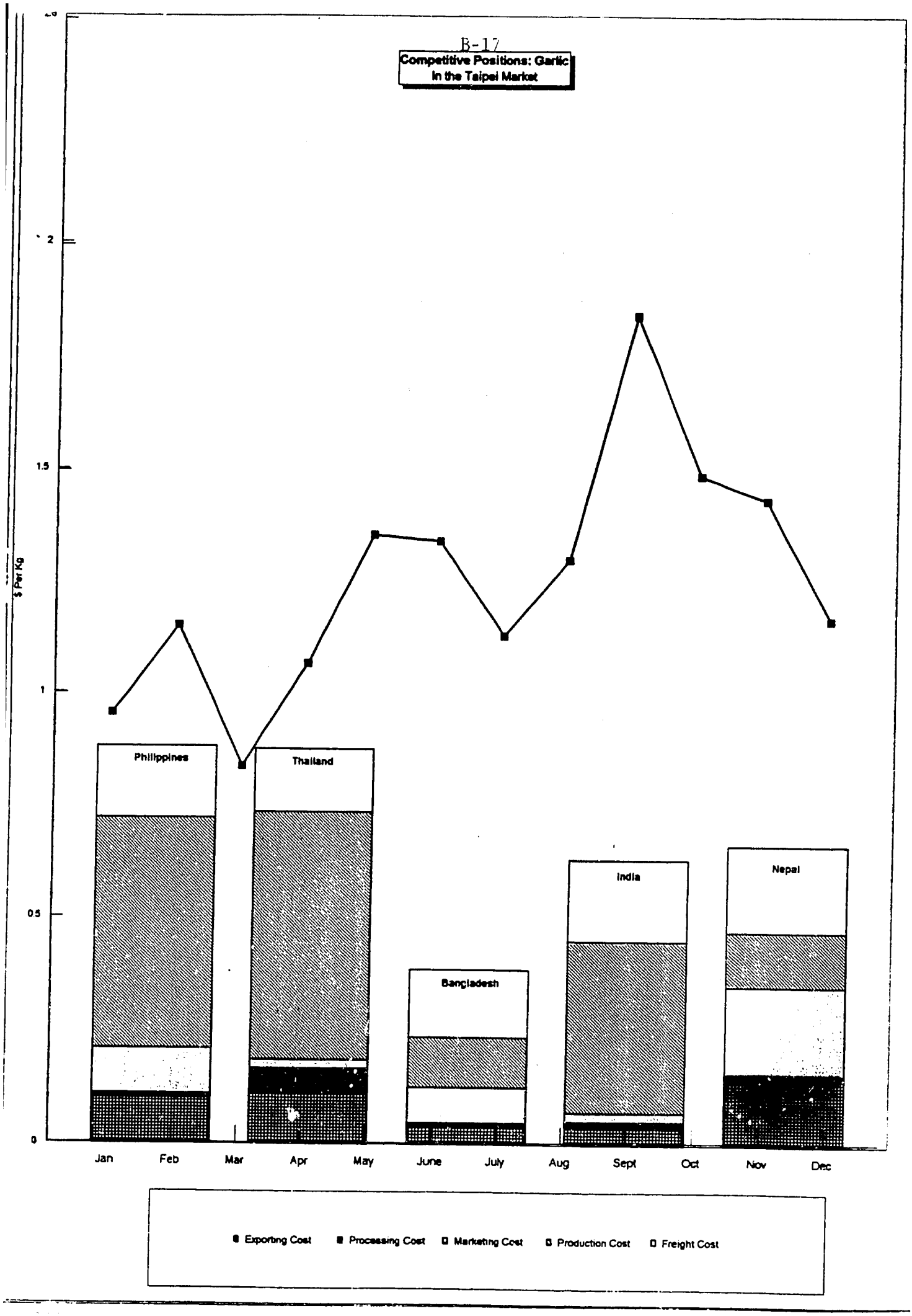

51

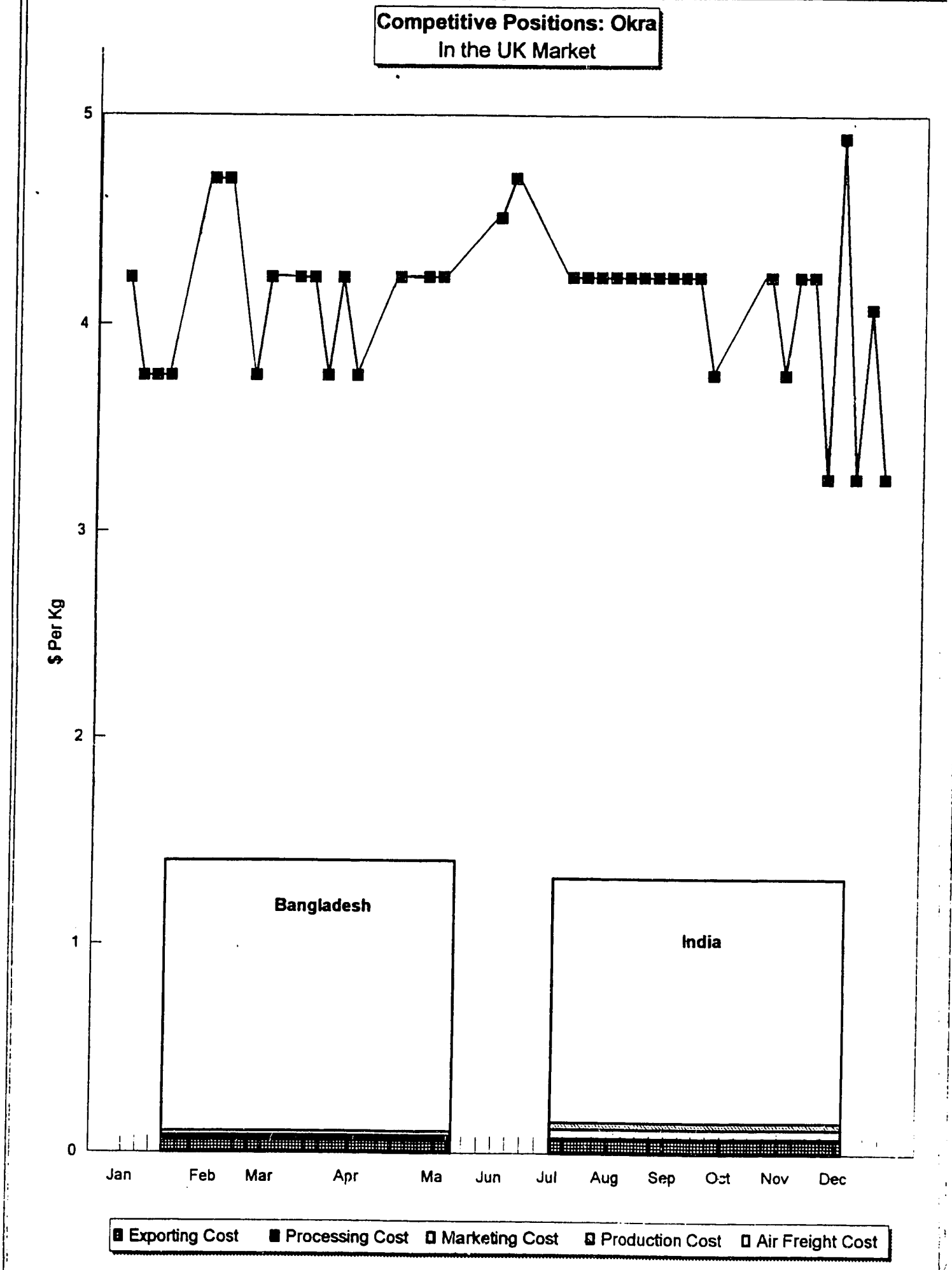
**Competitive Positions: Onion**
**In the Taipei Market**



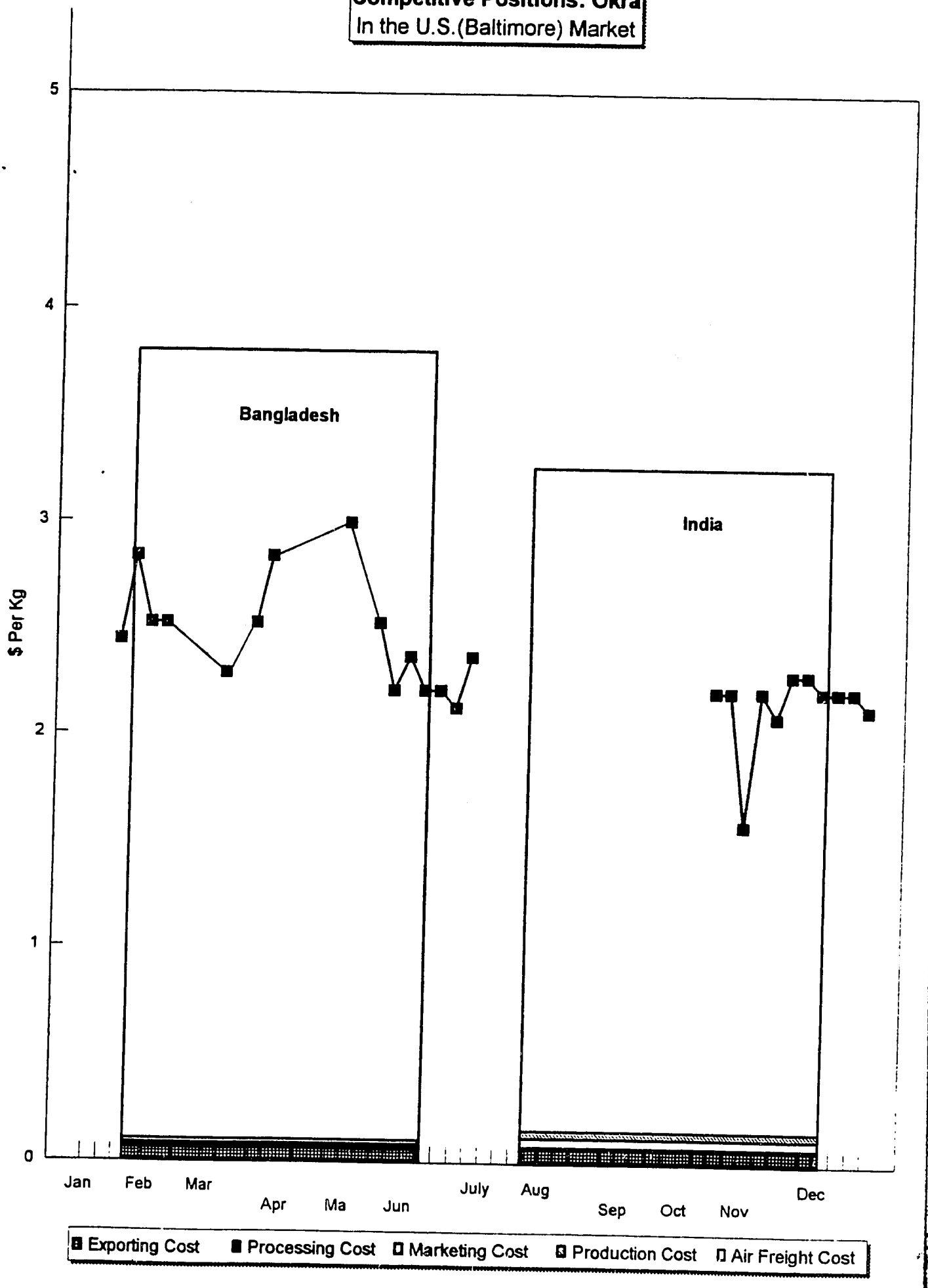

Competitive Positions: Garlic
In the LA (U.S.) Market
$ Per Kg
2.5
2
1.5
1
0.5
0
Philippines
Thailand
Bangladesh
India
Nepal
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Exporting Cost
Processing Cost
Marketing Cost
Production Cost
Freight Cost

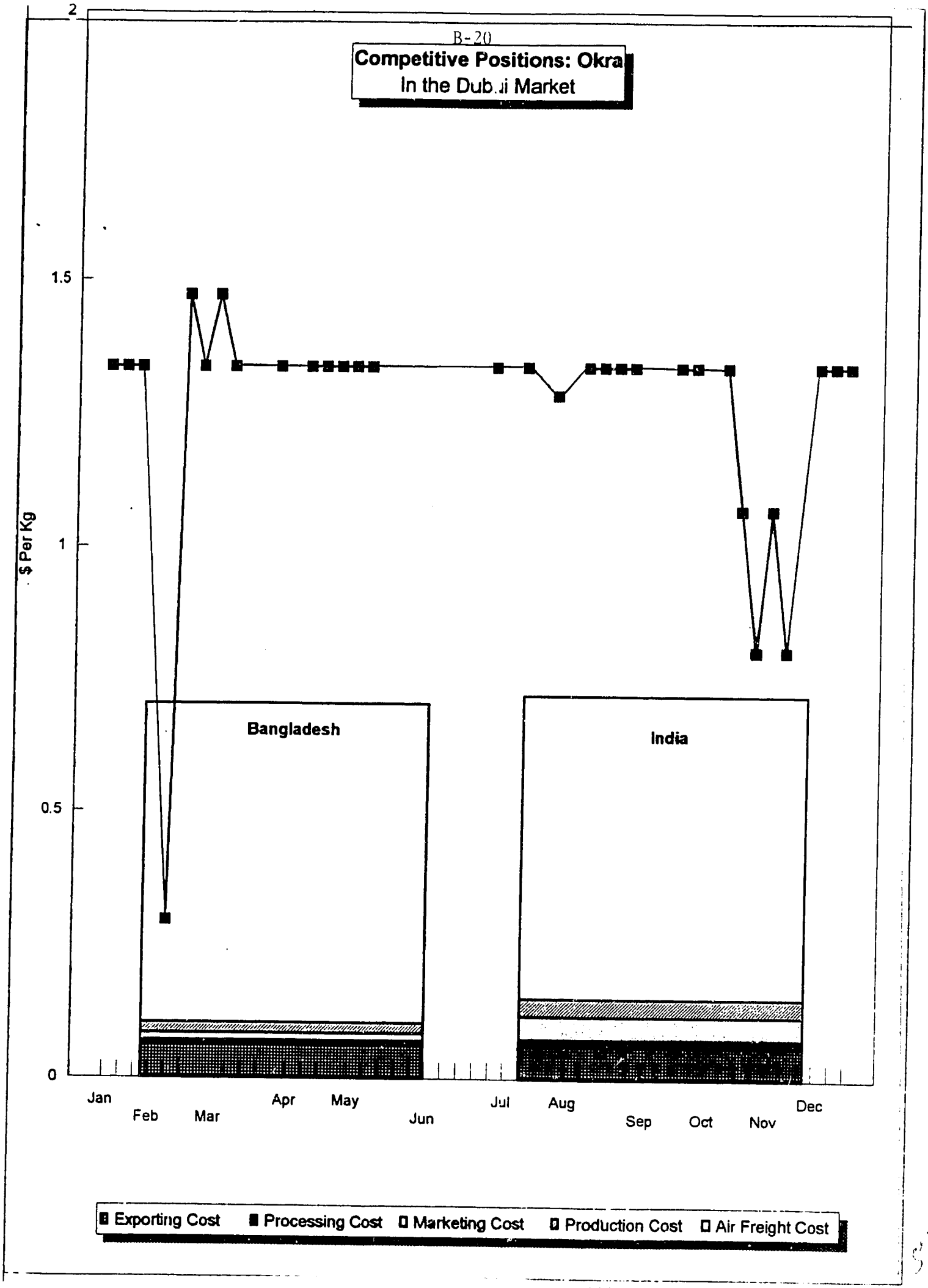
**Competitive Positions: Garlic in the Taipei Market**

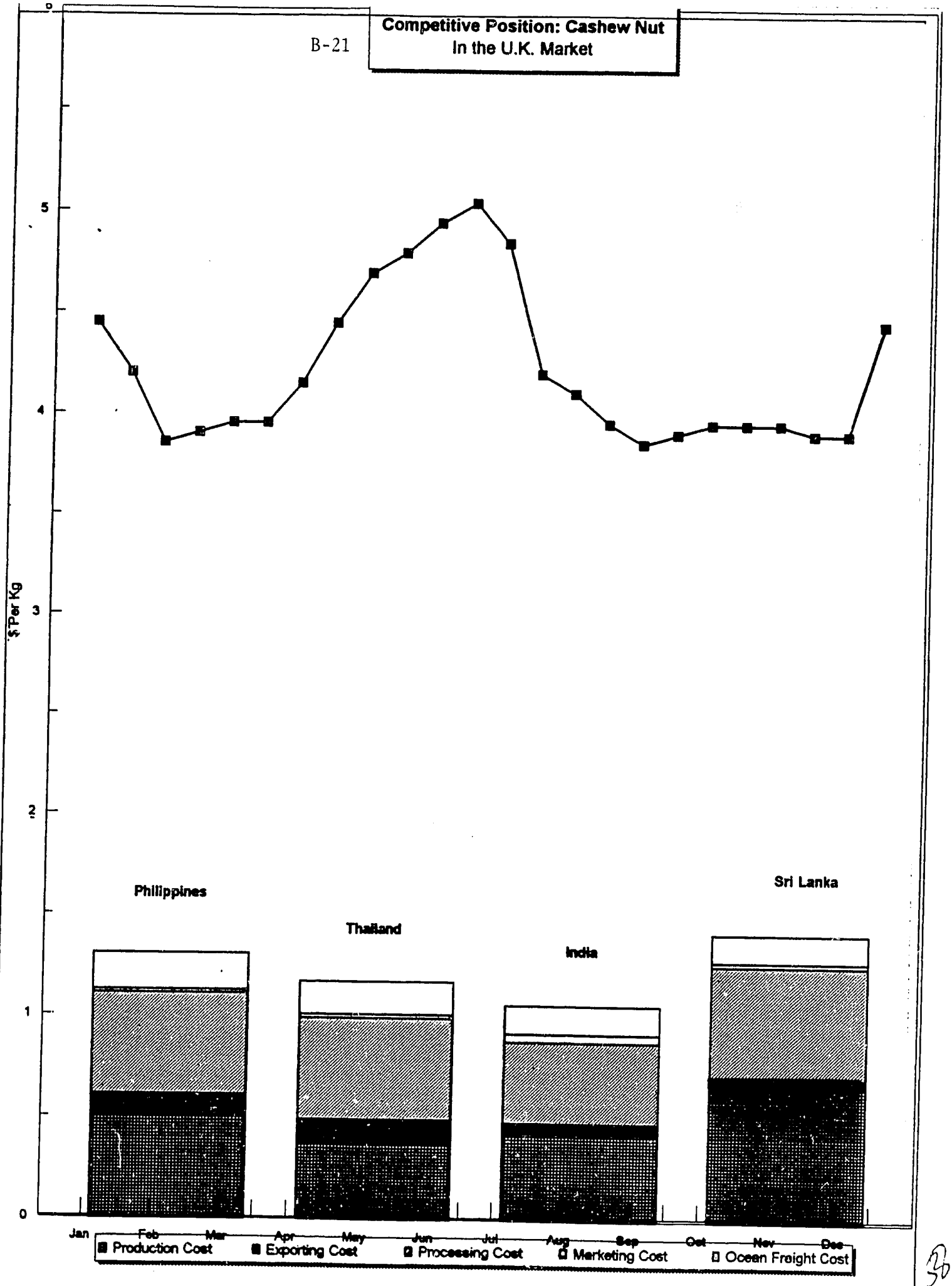


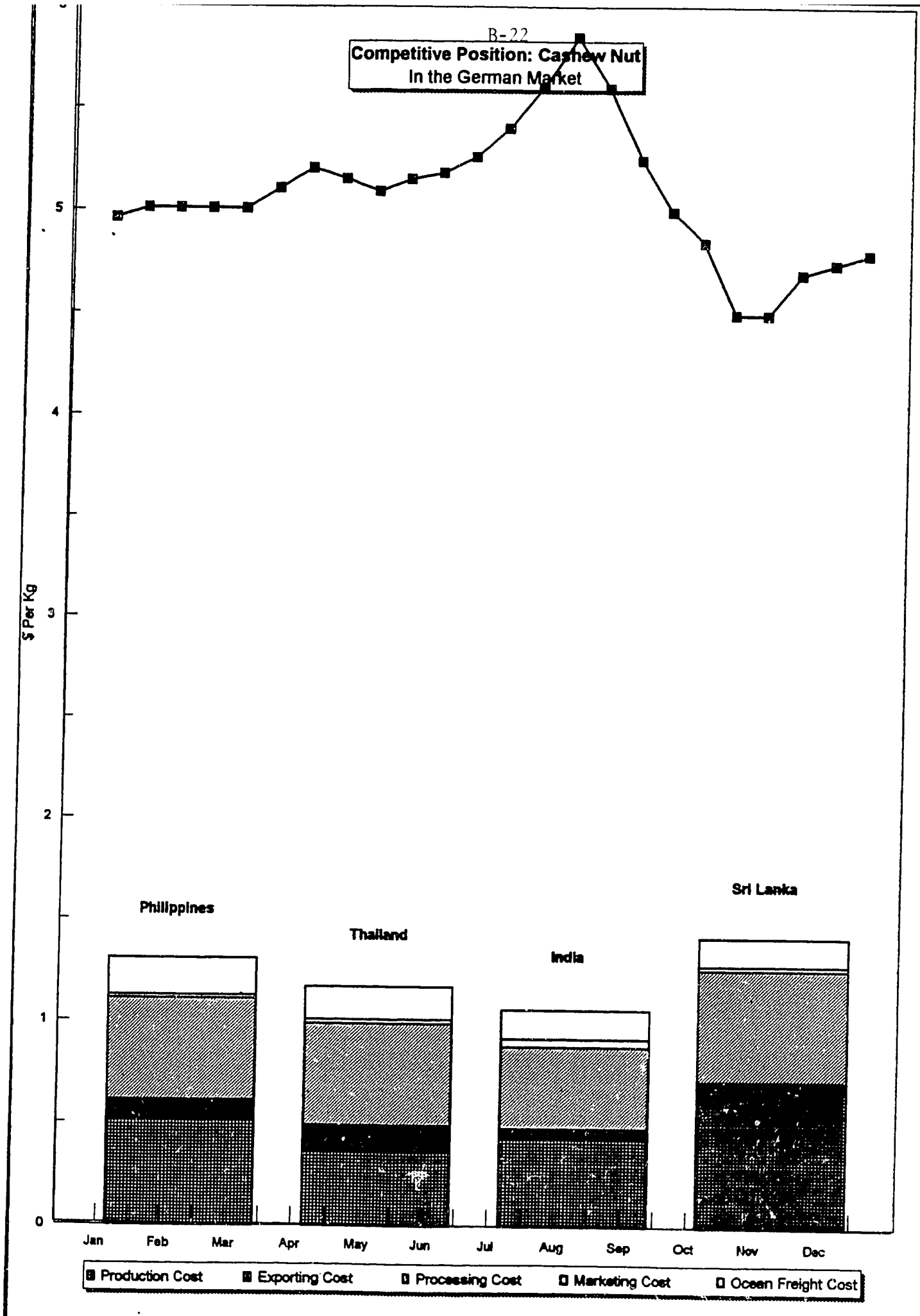

Competitive Positions: Okra
In the UK Market
$ Per Kg
5
4
3
2
1
0
Bangladesh
India
Jan
Feb
Mar
Apr
Ma
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Exporting Cost
Processing Cost
Marketing Cost
Production Cost
Air Freight Cost

**Competitive Positions: Okra**
In the U.S.(Baltimore) Market

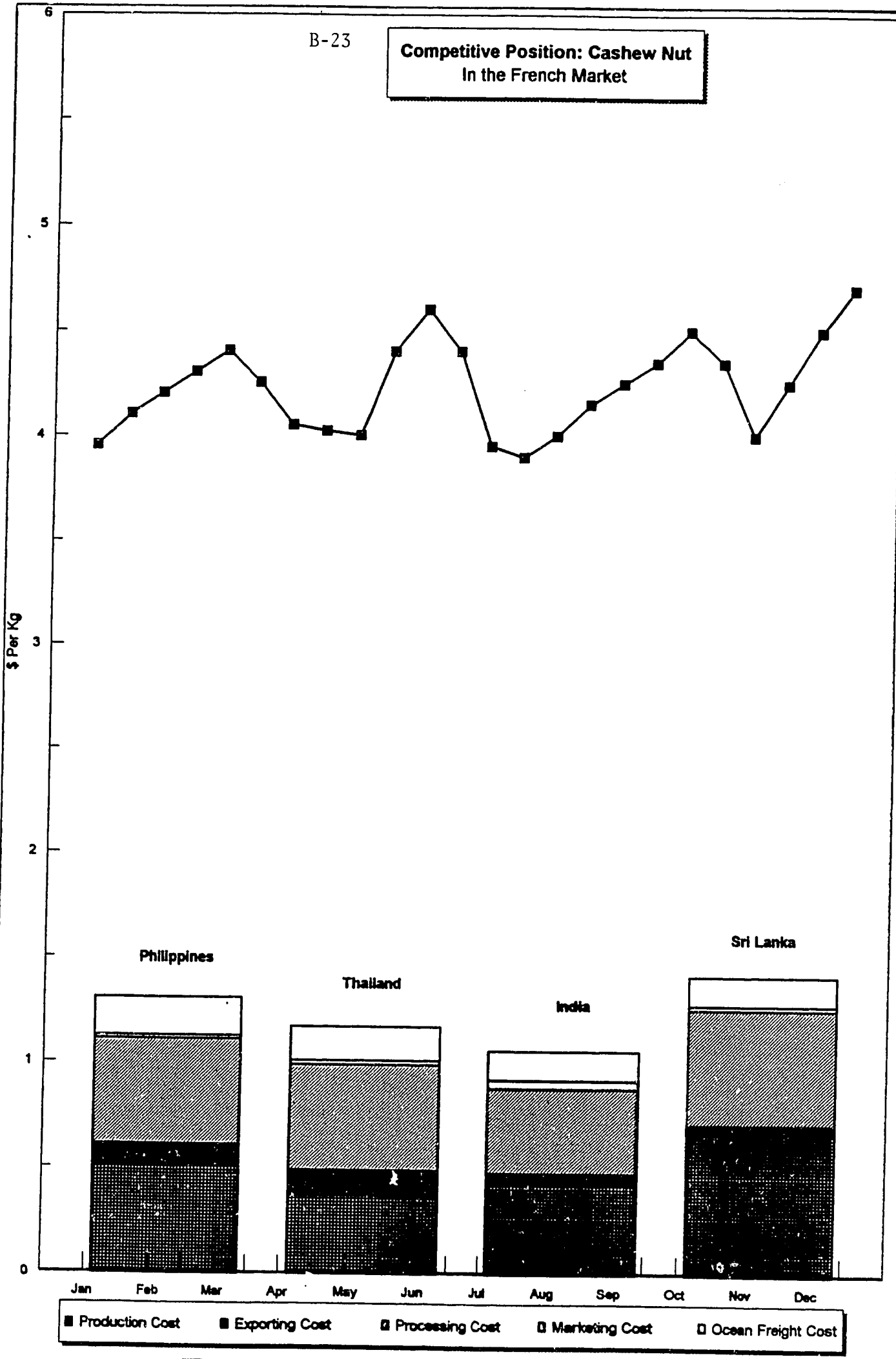


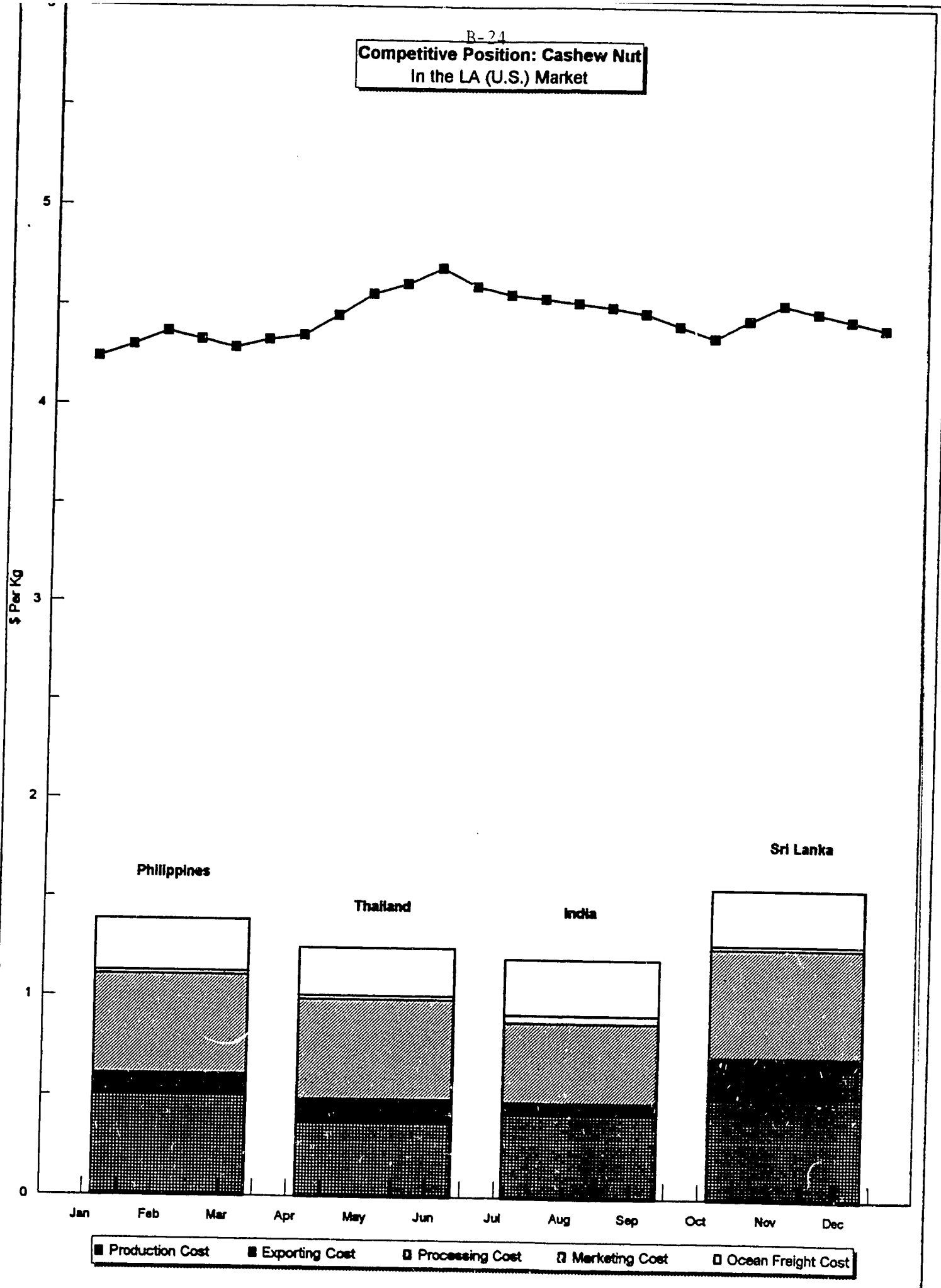

Competitive Positions: Okra
In the Dubai Market
$ Per Kg
2
1.5
1
0.5
0
Bangladesh
India
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Exporting Cost
Processing Cost
Marketing Cost
Production Cost
Air Freight Cost


Competitive Position: Cashew Nut
In the U.K. Market
$ Per Kg
0
1
2
3
4
5
Philippines
Thailand
India
Sri Lanka
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Production Cost
Exporting Cost
Processing Cost
Marketing Cost
Ocean Freight Cost

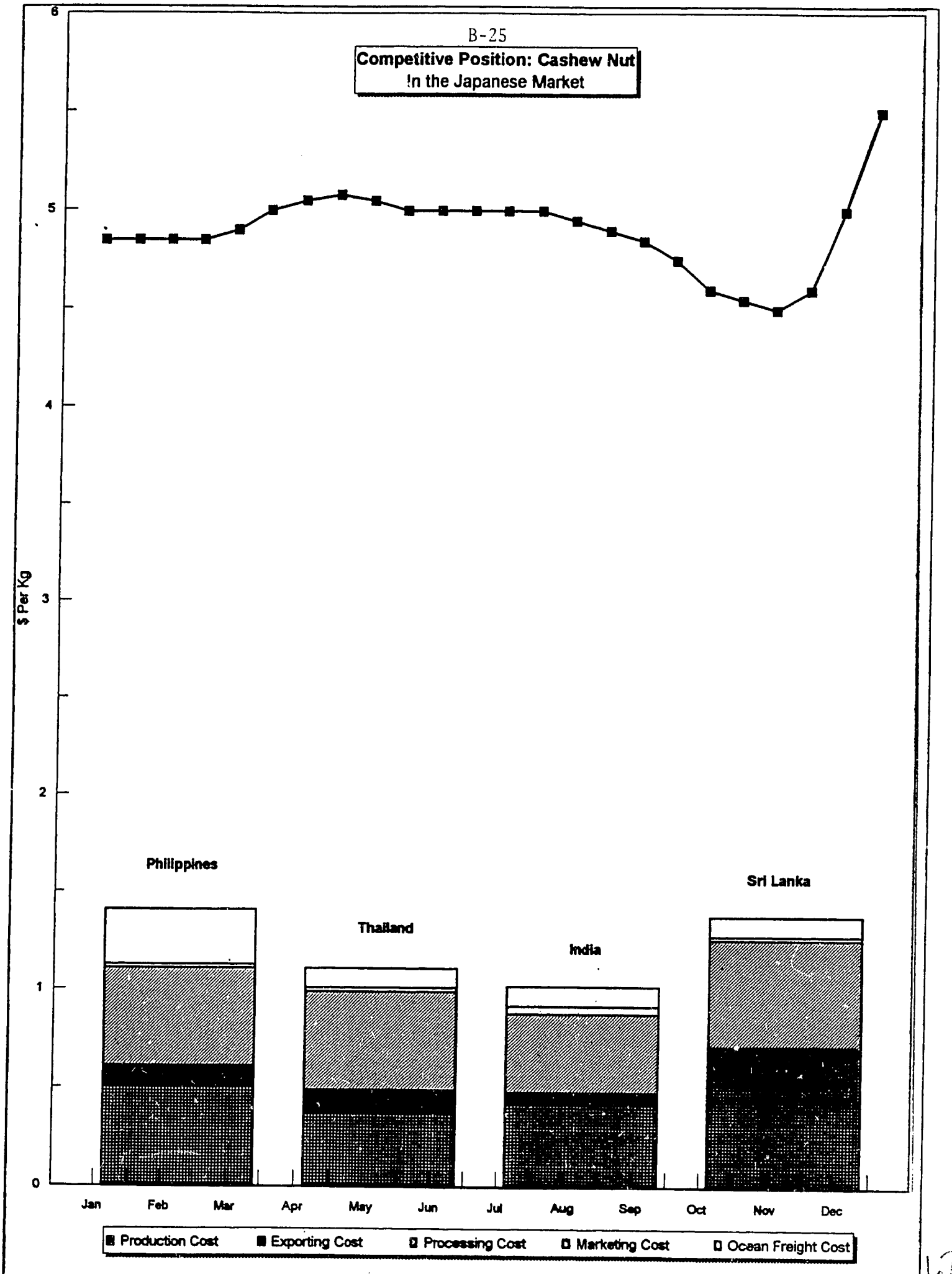

Competitive Position: Cashew Nut
In the German Market
$ Per Kg
0
1
2
3
4
5
Philippines
Thailand
India
Sri Lanka
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Production Cost
Exporting Cost
Processing Cost
Marketing Cost
Ocean Freight Cost

**Competitive Position: Cashew Nut**
In the French Market




Competitive Position: Cashew Nut
In the LA (U.S.) Market
$ Per Kg
0
1
2
3
4
5
Philippines
Thailand
India
Sri Lanka
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Production Cost
Exporting Cost
Processing Cost
Marketing Cost
Ocean Freight Cost

61


Competitive Position: Cashew Nut
In the Japanese Market
$ Per Kg
0
1
2
3
4
5
6
Philippines
Thailand
India
Sri Lanka
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Production Cost
Exporting Cost
Processing Cost
Marketing Cost
Ocean Freight Cost

62