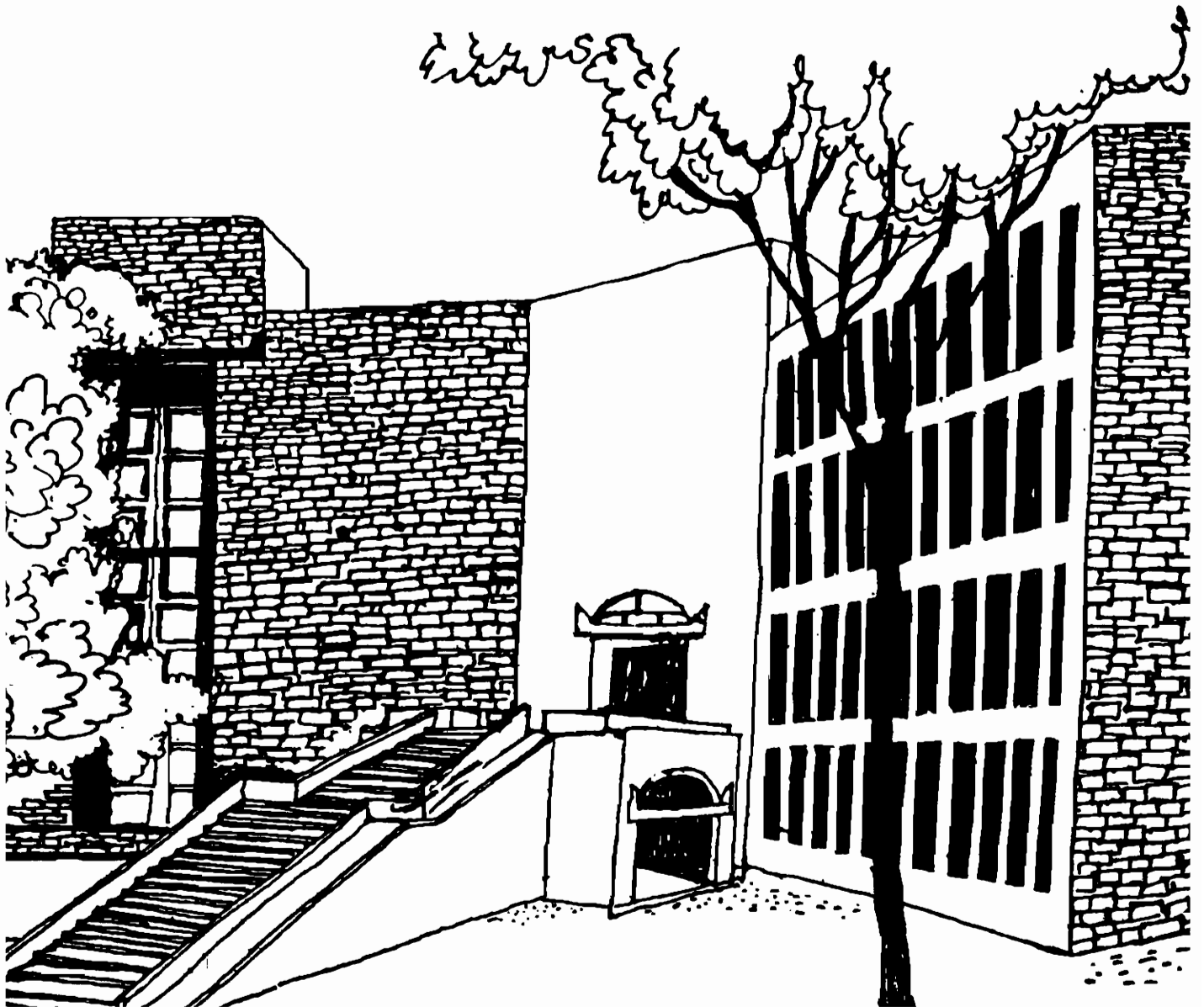




Working Paper



CASTOR OIL EXPORTS: A PROMISING BUSINESS

By

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CASTOR OIL EXPORTS: A PROMISING BUSINESS

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CASTOR OIL EXPORTS: A PROMISING BUSINESS

Of nine major oilseeds, castor is a non-edible oilseed crop and brings a sizeable amount of foreign exchange to the country (see Table 1). Although magnitude of foreign exchange earned from castor oil exports vary with market prices, to a great extent it depends upon what we can produce as well. For example, during drought years from 1985 to 1988, there was a substantial reduction in the foreign exchange earnings mainly because of reduced castorbeans production in the country. Since 1989 good monsoonic conditions have resulted into a good crop and higher production resulting into increased castor oil exports as well from the country (see Figure 1).

[Insert Table 1 and Figure 1 around here]

It is interesting to note that the demand for Indian castor oil has been increasing over time from both domestic and foreign sources; both domestic and export demands have been increasing with an exponential growth rate of 5-7% per annum during the past 1971-92 period (Figure 2). The major reason for this increase has been the multitude uses of castor oil such as in making dyes, detergents, plaster of paris, soaps, ointments, costumes, polishes, greases, rubber, wetting agents and so on (see Figure 3). As a result, demand for castor oil in and out-side the country has been growing with the advancement of industrialization all over the world.

[insert Figures 2 and 3 around here]

In fact, international trade has become a major activity in the world castor economy. For example, some 40-60% of the world castor oil production is internationally traded, including beans and oil; and, 80% of this trade is in the form of oil alone. In the oil trade, both India and Brazil are major players in the international market. They jointly supply some 60 to 80% of the world castor oil exports; and, India's share in the world exports is about 30 to 40%. Interesting to note that India's oil market has steadily risen since 1970s (see Figure 4). The credit of this spectacular success goes to the success of castor hybrids in Gujarat. Four major castor growing province in India are Gujarat, Andhra Pradesh, Karnataka, and Orissa. And Gujarat alone produces more than two-thirds of Indian castorbeans production with only one-third of the castor acreage in the country. Such an achievement has been made possible through fantastic yield improvement in Gujarat. The introduction of castor hybrids has doubled the national average castor yield from 282 Kg/ha. during 1961-65 period to 583 Kg/ha. during the 1981-85 period and further to in 1990-92. The speedy adoption of hybrids and ample water and use of other high payoff inputs in Gujarat paved the way for higher castor yields. All the more, the average castor yield (1200 Kg/ha.) in Gujrat is now twice the national (583 Kg/ha.) averages and has surpassed the Brazilian yield too (see Figure 5).

[insert Figures 4 and 5 around here]

Increased castorbeans production has thus contributed to boom in castor oil exports. But more so has happened due to high international prices of castor oil in the past. For example, during the last few days, average price

of edible oil in the international market has hovered around \$500-700 per tonne as opposed to \$900-1100 per tonne of castor oil. In contrast, castor oil is the cheapest oil in the domestic market and is used in a great quantity in soap-making and other industries. This may be considered an inefficient use as other cheaper oil can be found for this purpose and thus castor oil exports can be raised further.

But all that looks rosy about castor oil exports at present may not last long because of increasing competition from other exporting countries such as Brazil and China. Although Brazil's production of castorbeans has been declining steadily overtime, policymakers in Brazil have realized the significance of castor oil trade and they are hell-bent to maintain the market leadership. For example, in the past, Brazil has tried to maintain her castor oil exports by allowing large quantities of imports of castorbeans from China and Thailand and then re-exporting the castor oil after crushing it domestically; some 74 and 90 thousand tonnes of castorbeans were imported respectively in 1987 and 1988 by Brazil from China. All the more, in recent years, Brazilian policymakers have shifted their focus upon raising castor yields and have visited India too in this regard. At the same time, China is also emerging a major exporter of castorbeans and her castor oil exports are also increasing rapidly. For example, China's exports of castor oil during the 1961-86 period have increased at the rate of 16.4% per annum as opposed to India's exports of 7.1% and the world export of 1.3%. India has therefore to struggle with existing competition from Brazil and the potential competition from China. It is believed that a 10% increase in castor hectareage in China by year 2000 can increase castorbeans production in China by 40% from what

otherwise it would be (Tewari and Rao, 1992). This will certainly create fierce competition in the international castor oil market and may snatch our share too.

What India Can do!

India has the edge to compete with China and Brazil provided some suitable steps are taken. These are as follows:

Developing Stable Production System

The Indian castor oil exports are very much affected by monsoon conditions and steadily rising castorbeans production is a key to have a strategic edge over competitors. The instability in production arises mainly from two sources: acreage and yield. Acreage-induced instability is originated primarily by fluctuating producer prices and other public policies which create uncertainty in the minds of castor producers towards making planting decisions. This is specially true in Gujarat where castor producers are very much price-responsive and hence a protective shield against low prices would be necessary. The most critical is the yield-induced instability in production which needs to be monitored through use of hybrid seed, fertilisers, and water; and here water and high yielding seeds are most critical ones. This technology can be extended to other castor growing areas; and, new areas where castor can be grown easily such as in Uttar Pradesh and Madhya Pradesh, if proper marketing framework in these areas is developed, can be developed.

Developing Adequate Crush Capacity

Having streamlined production the next step would be to develop adequate

crush capacity. Currently we do not know the existing capacity as there is very little reliable data. Also aggregate crushing capacity is not a sufficient information to decide and forecast the future needs as castor crushing requires slightly different technology from other edible oilseeds. Sufficient crushing capacity must be there should we raise production steadily over time. In addition to building up the crushing capacity, we also need to decrease underutilization of the existing one perhaps by resorting to solvent extraction plants.

Developing International Markets and Promoting Exports

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The ex-USSR has been major importer of castor oil from India in the past under bilateral trade agreements. However since 1983 there has been a sea change in the trade relations and more and more castor oil is now being exported to Western or hard currency areas. Developing good customer relations and market promotions would hence be required for continuous absorption of our exports. It is interesting to note that castor-oil is the cheapest oil in the country and the costliest one in the international market; for example, the domestic average price of the edible oils is about twice the castor oil price while in the international market castor prices are much higher than the average price of edible oils, about 40-60% higher over others. As a result, a very large proportion (40%) of domestic consumption of castor oil goes to inefficient uses such as to the soap industry. If other oil bearing materials can be found for the soap industries, such inefficient uses can be avoided and more castor oil can be released for export market.

Developing the Castor Oil Derivatives Industry

Since castor oil has many industrial uses such as in manufacturing paints, cosmetics, aircraft lubricants, surface coatings, perfumes, medicines, soaps, nylons, etc, exporting these value-added products of castor oil can be a new avenue which will increase domestic employment and at the same time bring foreign exchange to the country. Other uses of castor oil have also been found in recent years such as urethane foams, dimers, etc. These products are biodegradable hence environmentally harmless. The export demand for such products is likely to rise from the West as a result of increased environmental awareness. Some estimates suggest that exports of castor oil derivatives from India have been rapidly rising from Rs 855 million in 1987/88 to Rs 3596 million in 1989/90--an increase of 320% during the three year period (CHEMEXIL 1989/90).

At last it should be noted that castor oil is a lucrative export item at present and ample scope exists for doubling exports from the current level by improving the farm-level agriproduction technology. Based on author's study, the potential for earning foreign exchange ranges between US \$250 to 350 million in 1995, and US \$260 to 360 million in 2000 AD. Various new firms have taken to this new business.

References

CHEMEXCIL (1990), **The Annual Report**, Bombay.

Tewari, D.D. and V.M. Rao, (1990), **Castor Economy: A Profile and Analysis of Indian and International market**, Oxford & IBH Publishing Co Pvt Ltd. New Delhi, pp 171.

Tewari, D.D. and V.M. Rao, (1992), **International Castor Oil Market: An Econometric Analysis**, CMA Monograph Manuscript.

Table 1: Value of Foreign Exchange Earned from Castor Oil Exports and from all Agri-exports, 1973-92.

Year	castor oil exports (million US\$)	agri-products exports (million US\$)	castor as proportion of agri-exports (%)
1973	42.33	1015.43	4.17
1974	23.91	1376.10	1.74
1975	11.74	1710.83	0.69
1976	18.31	1728.00	1.06
1977	21.00	1937.50	1.08
1978	37.89	1734.16	2.18
1979	40.56	2019.67	2.01
1980	42.30	1836.61	2.30
1981	37.00	2698.00	1.37
1982	46.00	2309.50	2.00
1983	51.00	2403.50	2.12
1984	95.00	2259.20	4.21
1985	55.00	2264.60	2.43
1986	31.50	2376.10	1.33
1987	28.80	2373.40	1.21
1988	36.00	2207.40	1.63
1989	88.30	2469.00	3.58

Source: FAO, FAO Trade Year Book, Various Volumes.

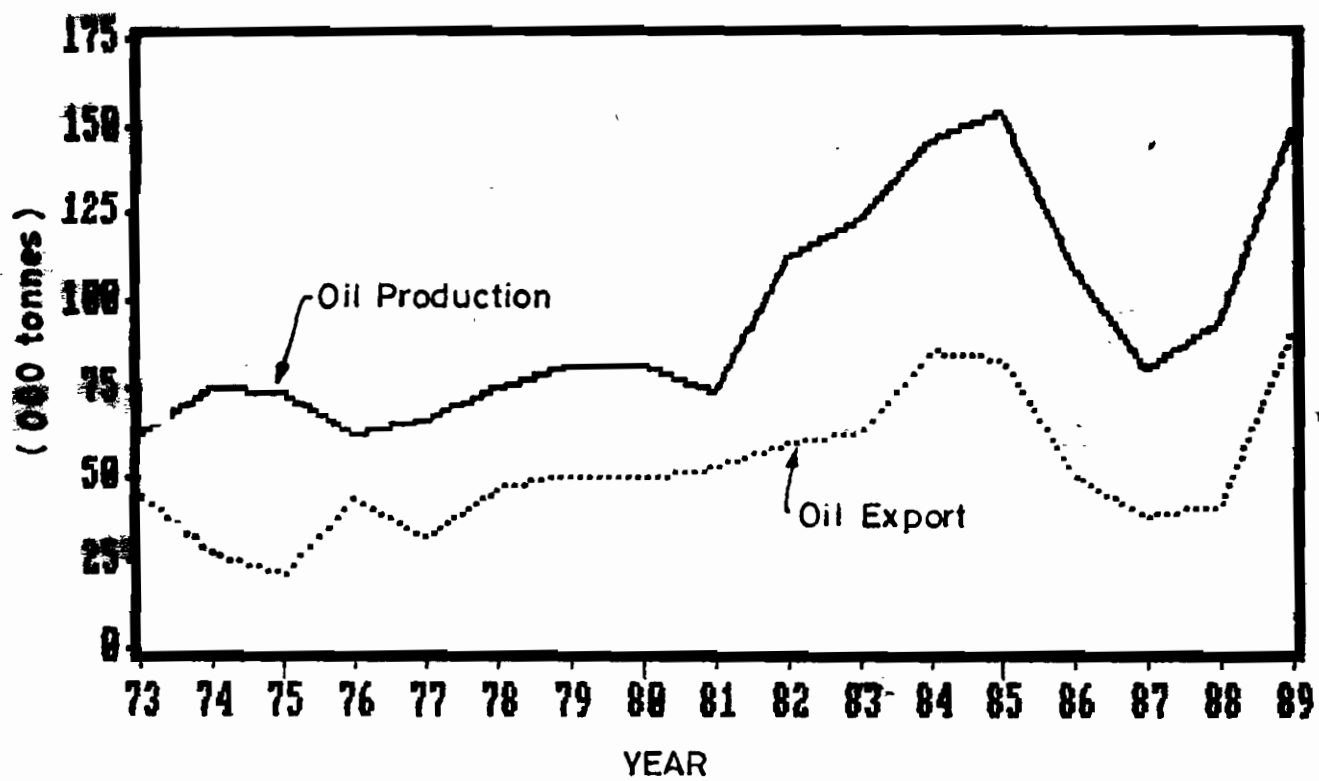


Figure 1 Castor Oil Production and Exports, India

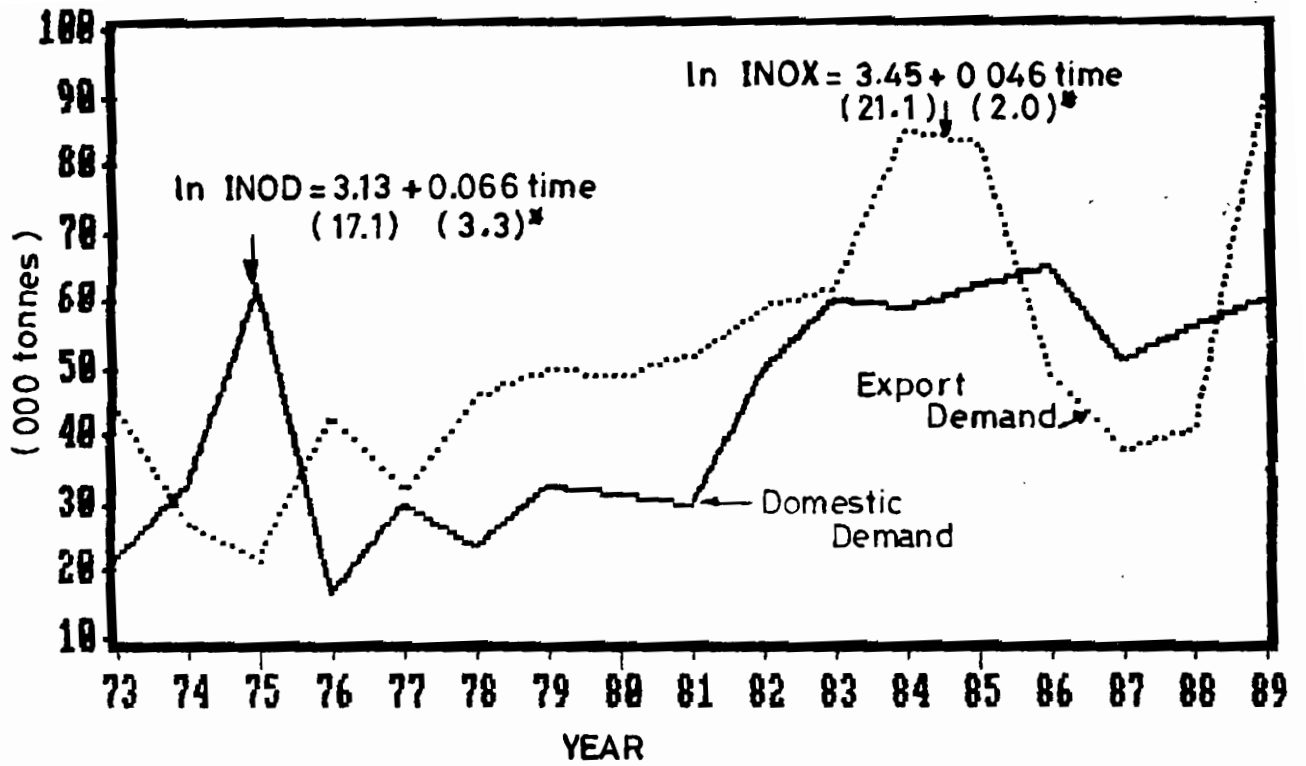


Figure 2 : Domestic and Export Demand for Castor Oil, India

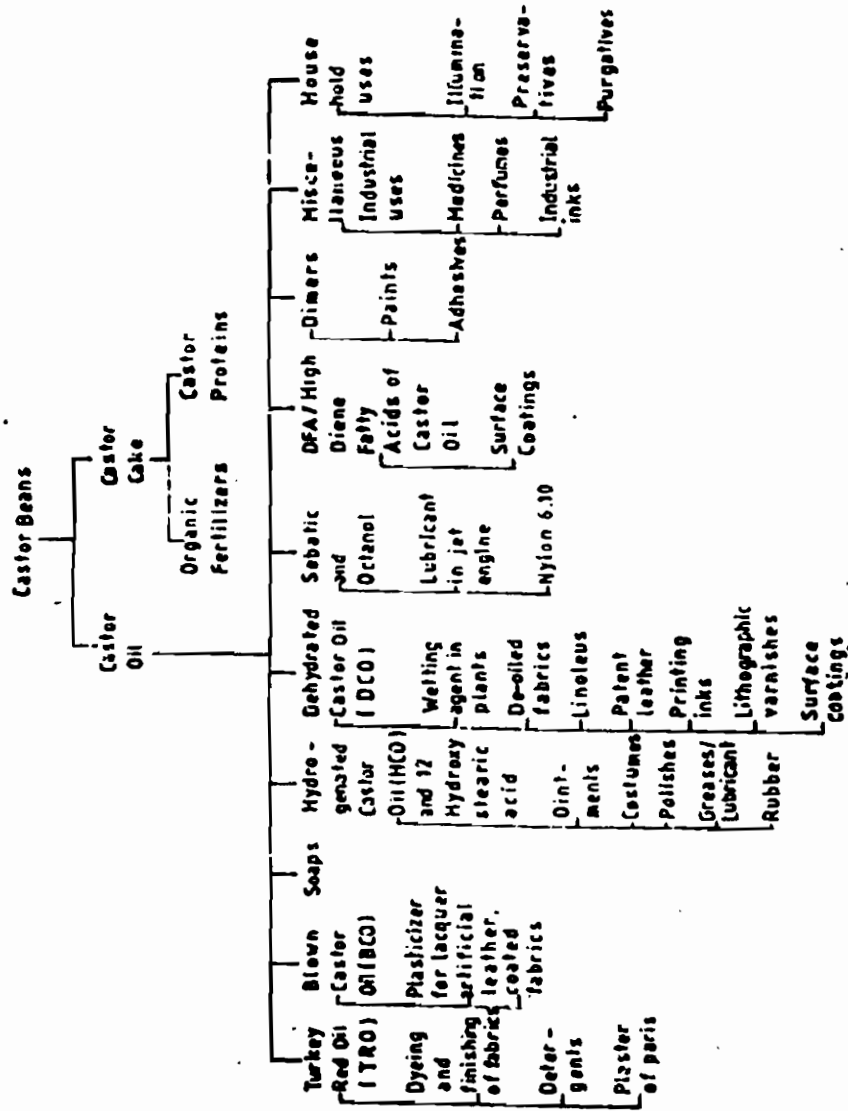


Fig. 3 : Different Uses of Castor Oil

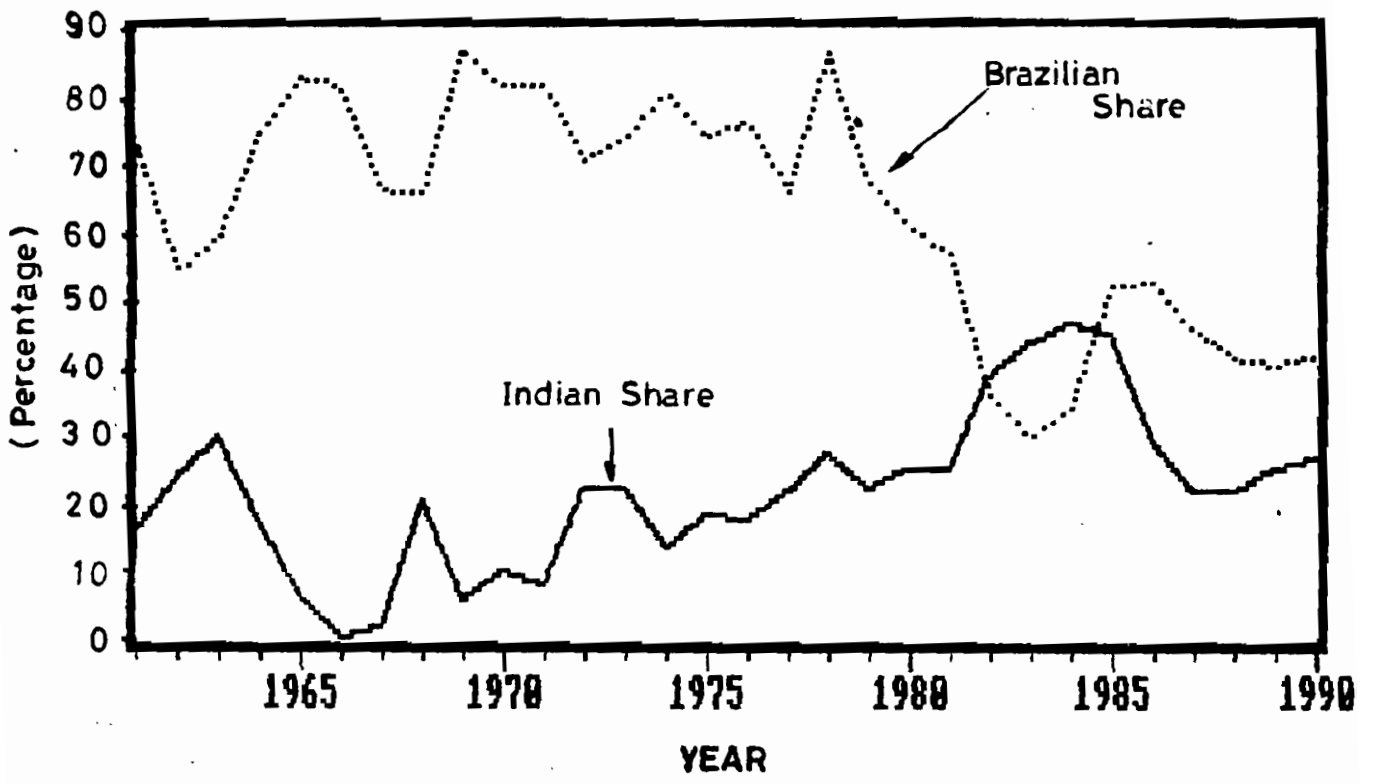


Figure 4 : Relative Shares of India and Brazil in the World Castor Oil Exports

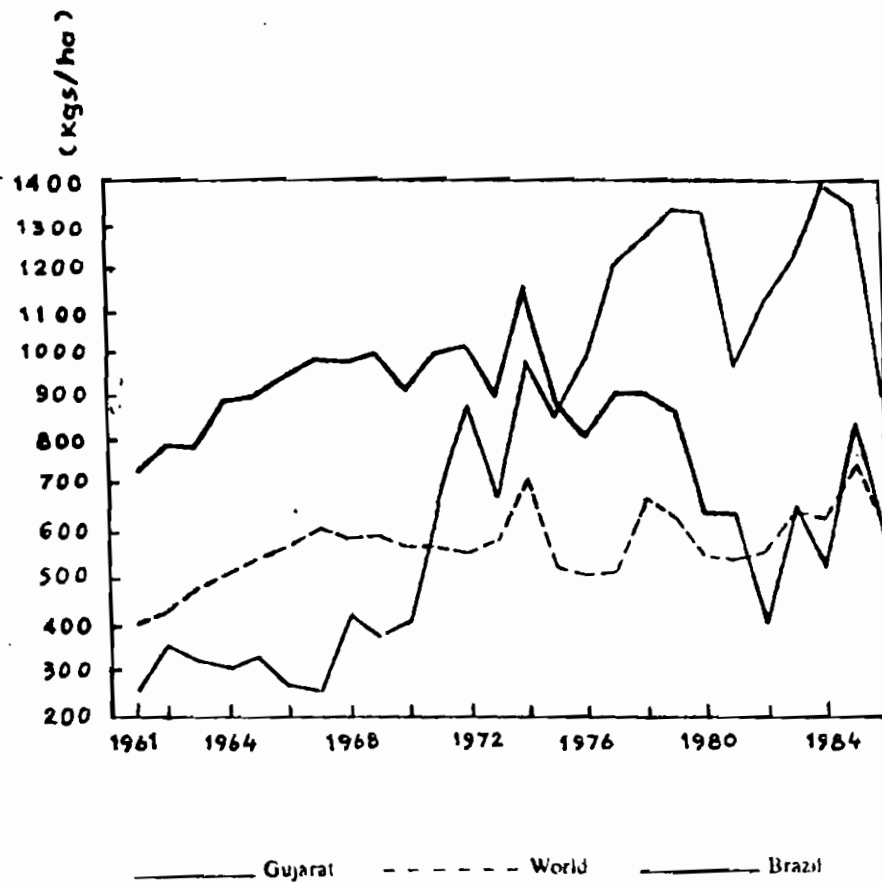


Fig. 5: Average Castor Yield in Gujarat, Brazil, and the World .

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