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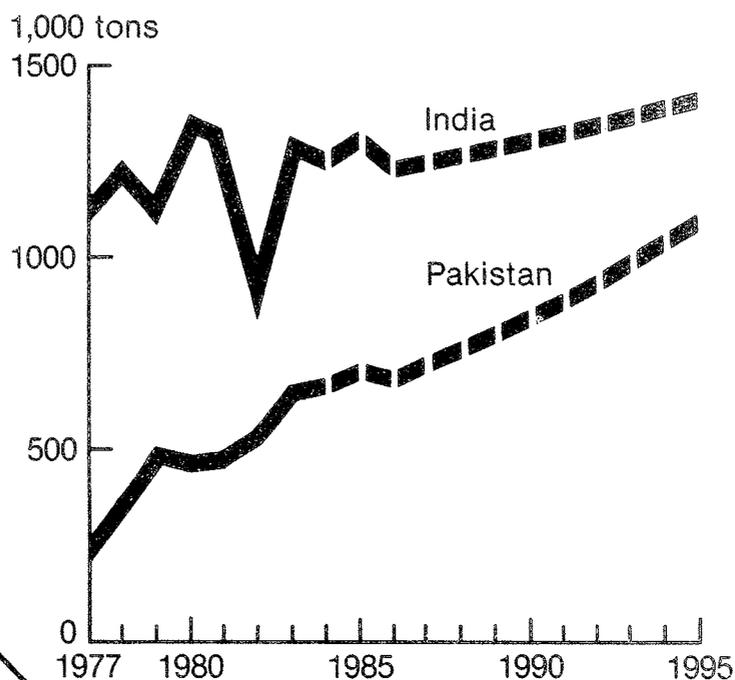
Economic  
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# South Asia

## Outlook and Situation Report

India and Pakistan's Edible Oil Imports  
Projected To Rise



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**Notes:** Discussion of Afghanistan has been omitted from this report because of the lack of meaningful information on that country since the Soviet incursion in December 1979. Farm production is normally reported by split years that include all crops grown under the influence of the same monsoon (i.e., 1983/84 includes crops harvested in fall 1983 through spring 1984). Split marketing and fiscal years are frequently used in the analysis and are defined when first used. Unless otherwise specified, rice data are for milled rice, dollars are U.S. dollars, and measures are metric.

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# Summary

**After staging strong recoveries** in 1983/84, most South Asian economies will likely achieve more moderate, but above-trend real growth in 1984/85. Except in Pakistan, where a rebound from weather- and pest-damaged harvests is likely, gains in farm production are projected to be smaller than in 1983/84, when harvests recovered from the severe 1982/83 drought. Above-trend gains are forecast in the region's growing nonfarm sectors, driven by stronger domestic and foreign demand; continued easing of infrastructural bottlenecks; and in some countries, more liberal policies toward imports of critical industrial raw materials.

The extreme balance-of-payments pressures that characterized most of the region's economies since 1979/80 eased during the last 2 years, and further improvement is expected in 1984/85. Strengthening world demand will likely boost export earnings, while stable petroleum costs will help slow growth in import bills. Despite the general improvement, the balance-of-payments positions of all South Asian countries will remain fragile. Efforts directed at expanding exports, substituting for imports, and limiting the need for foreign borrowing will remain priorities.

**U.S. farm exports to South Asia** are forecast to decline from a 7-year high of \$1.17 billion in U.S. fiscal 1983 to about \$930 million in fiscal 1984. Smaller sales of wheat to Pakistan, Bangladesh, and particularly, India will more than offset larger volumes and higher prices for soybean oil and cotton. Assuming average weather, a further one-third decline in U.S. exports is projected for fiscal 1985, as wheat import demand continues to drop and larger supplies of Malaysian palm oil and Pakistani cotton reduce U.S. sales of soybean oil and cotton.

South Asian cereal production rose 17 percent in 1983/84. Good weather, improved input supplies, and stronger producer price incentives contributed to record harvests of rice, wheat, and coarse grains. Wheat imports fell as India reduced its purchases, and as of July 1984, all countries in the region carried record wheat stocks. Rice imports more than doubled in 1983/84, as India made large purchases to partially rebuild its low stocks. Nevertheless, rice stocks in the region remained low as of July 1984. With an average 1984 monsoon, South Asia's wheat imports are expected to drop further in 1984/85, as production gains and improved stocks reduce import demand, particularly in India. However, rice imports may be higher than in 1983/84, as both India and Bangladesh buy more for stockbuilding.

**The region's imports of edible oils** are forecast at a near-record in 1984, despite alltime-high oilseed production in India and strong world vegetable oil prices. Damage to Pakistan's cottonseed crop and strong domestic demand in both India and Pakistan have buoyed imports. Tight world supplies of palm oil have boosted the share of soybean oil, including U.S. soybean oil, in the region's 1984 purchases. With an average 1984 monsoon, edible oil imports are projected to rise in 1985, as more moderate gains in Indian edible oil production offset a likely recovery in Pakistan's production.

The region's cotton production fell nearly 18 percent, and exports dropped more than 60 percent in 1983/84 (August/July), as poor weather and pests severely damaged crops in Pakistan and India. Pakistan cut exports nearly 80 percent and initiated imports, while India reduced exports 40 percent. Cotton production is projected to rebound in 1984/85, but supplies will remain tight, and cotton exports for the region as a whole will likely stay below the 1.6-million-bale average of the last few years.

**Edible oil purchases by India and Pakistan**, two of the world's largest importers, are projected to rise from an average of 1.67 million tons during 1981-83 to 2.2 million in 1990 and 2.5 million in 1995. Production gains in India are projected to largely offset rising demand, while in Pakistan, rapid demand growth continues to outstrip domestic supplies. Sustained competition from Malaysian palm oil, and from other exporters of soybean oil, may make it increasingly difficult for U.S. soybean oil to hold its current share of India and Pakistan's edible oil imports.

## REGIONAL OVERVIEW

### Farm Sectors Lead Regional Recovery in 1983/84

Most South Asian countries staged strong economic recoveries during 1983/84, led by a sharp rebound in farm production following the 1982/83 drought and general improvement in the region's external terms of trade. Farm production rebounded strongly in India, Nepal, and Sri Lanka, benefiting from good weather, and improved input supplies and price incentives. The recovery in farm production in India was particularly impressive, as food grain and oilseed harvests broke previous records by 12 percent and 3 percent, respectively. However, Pakistan's farm sector, which was largely unaffected by the 1982/83 drought, suffered a setback as poor weather and pest infestations damaged 1983/84 harvests of rice, wheat, and particularly, cotton.

The region's industrial sectors, which have shown signs of stronger growth in recent years, also registered gains in 1983/84, although growth slowed sharply in Sri Lanka as a result of civil unrest and raw material shortages. Growth in effective demand, steady improvements in infrastructure and basic industries, as well as policy initiatives designed to promote exports and/or liberalize imports of vital raw materials continued to fuel the improved industrial performance.

Higher rates of inflation accompanied the recoveries in most of the region's economies in 1983/84. Resurgent consumer demand, lingering shortages stemming from the 1982/83 drought, and rapid growth in credit and deficit financing were major causes of inflation. Stronger prices for food items were a major source of inflation in several countries, particularly India, although food prices tended to ease towards the end of the year as the record harvests reached the market. Recognizing the need to curb budgetary deficits and to slow growth in the money supply, most Governments implemented more cautious fiscal policies and tighter credit controls during the year.

### Balance of Payments Stronger As Terms of Trade Improve

The extreme balance-of-payments pressures that have characterized most of the South Asian countries since 1979/80 generally eased during 1982/83 and 1983/84. Improved export performance and slower growth in import bills held down trade deficits, and foreign reserves increased across the region. Stronger growth in export earnings was achieved largely through strengthening world demand and prices for the region's exports, but also was influenced by more attention to policies and programs to promote exports. Growth in import bills slowed as a result of stable petroleum prices and, in several countries, because of weak food grain prices and tighter restrictions on imports of nonessential goods.

Despite the general improvement, the balance-of-payments positions of all the region's economies remain fragile. Bangladesh's massive trade deficit leaves it dependent on aid, and rising foreign debt obligations are a matter of constant concern throughout South Asia. Efforts to reduce trade deficits and the need for foreign borrowing through import substitution, export expansion,

and the mobilization of domestic capital to finance development programs remain priorities.

### Record Cereal Crops Lead Region's Recovery

A sharp rebound in food grain production, led by particularly strong gains in India and Nepal, was the key feature of the region's economic recovery in 1983/84. Benefiting from a favorable 1983 monsoon, cereal production increased nearly 17 percent over the drought-affected 1982/83 crop, far surpassing the 8.3-percent recovery following the 1979/80 drought. Regional harvests of rice, wheat, and coarse grains broke previous records by 9.1, 12.3, and 4.5 percent, respectively (table 1). In addition to good weather, record harvests were stimulated by steady progress in improving the availability and use of fertilizers, irrigation water, and quality seeds, as well as stronger producer price incentives. Continuing a recent trend, the region's rice and wheat producers benefited from improved input/output price relationships, as policies appear to be placing more emphasis on price mechanisms to boost production.

### Cereal Imports Remain High and Stocks Rise

Despite record harvests, the region's total cereal imports fell only marginally in 1983/84 (July/June) (table 1).

**Table 1.—Supply and distribution of cereals in South Asia (July/June)<sup>1</sup>**

	Pro- duc- tion	Im- ports	Ex- ports	Consumption		End- ing gov't. stocks
				Total	Per cap	
Million tons						
<b>Rice</b>						
1979/80	60.9	1.1	1.5	62.7	71	7.8
1980/81	73.7	.3	2.1	72.8	81	6.9
1981/82	73.5	.3	1.7	73.0	79	6.0
1982/83	66.8	.6	1.4	67.3	71	4.7
1983/84 est.	80.4	1.2	1.5	80.0	82	4.8
1984/85 for.	78.6	1.4	1.4	77.5	78	5.9
<b>Wheat</b>						
1979/80	46.7	3.4	.4	52.4	59	10.3
1980/81	44.3	1.9	.1	47.1	52	9.3
1981/82	49.3	4.2	—	50.8	55	12.0
1982/83	50.5	6.3	.2	52.9	56	15.7
1983/84 est.	56.8	5.2	.2	57.9	60	19.6
1984/85 for.	58.0	2.6	.2	61.4	62	18.6
<b>Coarse grains</b>						
1979/80	29.8	—	.1	29.8	34	.2
1980/81	30.8	—	—	30.9	34	.1
1981/82	34.0	—	.1	33.7	36	.3
1982/83	30.5	.1	—	30.8	32	.1
1983/84 est.	35.5	—	—	35.4	36	.2
1984/85 for.	34.2	—	—	34.2	34	.2
<b>Total</b>						
1979/80	137.4	4.5	2.0	144.9	164	18.3
1980/81	148.8	2.2	2.2	150.8	167	16.3
1981/82	156.8	4.5	1.8	157.5	170	18.3
1982/83	147.8	7.0	1.6	151.0	159	20.5
1983/84 est.	172.7	6.4	1.7	173.3	179	24.6
1984/85 for.	170.8	4.0	1.6	173.1	174	24.7

— = less than 50,000 tons.

<sup>1</sup>Includes Bangladesh, India, Nepal, Pakistan, and Sri Lanka. Per capita consumption in kgs.

Sources: Official country data, USDA estimates.

Imports of wheat fell to about 5.2 million tons, but rice purchases more than doubled to about 1.2 million. Total imports declined only modestly, and rice imports rose, primarily because India purchased additional wheat and initiated large-scale rice imports in order to build stocks. Bangladesh and Sri Lanka also took advantage of favorable world prices by increasing wheat imports to boost stocks and domestic consumption.

With more than 65 percent of the region's wheat imports during 1981/82-1983/84 going into stocks, all countries in the region carried record wheat stocks by July 1984. However, while India's rice purchases helped increase its stocks somewhat, rice stocks in India, Bangladesh, and the region as a whole remained low by historical standards. Low rice stocks in India and Bangladesh are an after-effect of the 1979/80 and 1982/83 droughts that reduced domestic procurement and boosted demand for government-subsidized rice.

Pakistan's record exports of rice and wheat boosted South Asia's cereal exports to 1.7 million tons in 1983/84, but India's ban on exports of non-basmati rice held the region's cereal exports below the levels achieved in 1980/81 and 1981/82.

### Food Grain Imports Likely To Drop in 1984/85

Assuming an average 1984 monsoon, current projections indicate that South Asia's imports of food grains will drop to about 4 million tons in 1984/85, as wheat purchases fall to about 2.6 million and rice imports rise to about 1.4 million. Wheat imports are expected to decline as further steady growth in wheat production and improved stocks reduce import requirements across the region, particularly in India. Assuming continued relatively weak world rice prices, India and Bangladesh are expected to buy additional rice to improve their stocks. However, a monsoon failure similar to the ones in 1979/80 and 1982/83 would likely raise South Asia's import requirements to about 5 million tons of wheat and 2.5 to 3 million tons of rice in order to meet subsidized distribution needs and to ensure adequate stocks. The region's rice exports, primarily by Pakistan, are projected at about 1.4 million tons, as India continues to ban sales of non-basmati rice.

### Vegetable Oil Imports Remain High

The region's imports of edible oils reached a record of nearly 2.1 million tons in 1983, a result of a sharp, drought-induced decline in India's 1982/83 oilseed crop and steady growth in Pakistan's import demand (table 2). In 1984, imports are expected to be sustained at a near-record pace of 2 million tons, despite a strong rebound in India's oilseed production and relatively high world vegetable oil prices. Although India's production of oilseeds increased by an estimated 17 percent, edible oil imports have been sustained at nearly the 1983 level because of strong growth in domestic demand and prices. Pakistan's 1984 import requirements have been boosted by a sharp decline in its production of cottonseed, the principal indigenous source of edible oil.

Relatively tight world supplies and high prices for palm oil have increased the share of soybean oil, including U.S. soybean oil, in South Asia's vegetable oil imports in 1984.

Assuming an average 1984 monsoon, the region's edible oil imports are projected to rise to about 2.2 million tons in 1985, as more moderate gains in Indian edible oil production offset a likely recovery in Pakistan's cottonseed harvest.

### Cotton Production and Exports Drop

The region's cotton production fell nearly 18 percent, and exports dropped more than 60 percent in 1983/84, as unseasonal rains and heavy pest infestations devastated a large portion of Pakistan's crop and a smaller portion of India's (table 3). In response to a more than 40-percent drop in production, Pakistan cut exports nearly 80 percent to about 275,000 bales (480 lbs each) and initiated cotton imports of about 250,000 bales. In India, the more moderate 3.5-percent production setback corresponded with a resurgence in mill demand, and cotton exports were trimmed 40 percent to about 300,000 bales.

Overall, the region's net cotton exports dropped to nearly zero in 1983/84 (August/July), after averaging nearly 1.4 million bales during the previous 4 years. With more normal weather, cotton production is projected to rebound in 1984/85, but domestic supplies will likely remain tight and will continue to hold cotton exports well below the 1.6-million-bale average achieved during 1979/80-1982/83.

**Table 2.—Supply and distribution of vegetable oils in South Asia (calendar years)<sup>1</sup>**

	Pro- duc- tion	Im- ports	Ex- ports	Consumption		End- ing stocks
				Total	Per cap	
<i>Million tons</i>						
1980	2.95	1.90	—	4.81	5.4	.28
1981	3.10	1.94	.02	5.00	5.5	.30
1982	3.79	1.48	.04	5.23	5.6	.30
1983	3.50	2.07	.02	5.54	5.8	.31
1984 est.	3.93	2.02	.01	5.99	6.2	.26
1985 for.	4.00	2.19	.02	6.17	6.2	.26

— = less than 5,000 tons.

<sup>1</sup>Includes Bangladesh, India, Nepal, Pakistan, and Sri Lanka. Per capita consumption in kgs.

Sources: Official country data, USDA estimates.

**Table 3.—Supply and distribution of cotton in South Asia (August/July)<sup>1</sup>**

	Produc- tion	Im- ports	Ex- ports	Con- sump- tion	End- ing stocks
1979/80	9.45	.25	1.59	8.33	3.66
1980/81	9.41	.26	2.04	8.73	2.56
1981/82	9.92	.28	1.37	8.49	2.89
1982/83	10.11	.25	1.52	9.34	2.39
1983/84 est.	8.33	.51	.56	9.02	1.65
1984/85 for.	10.14	.33	1.21	9.47	1.45

<sup>1</sup>Includes Bangladesh, India, Nepal, Pakistan, and Sri Lanka.

Sources: Official country data, USDA estimates.

## U.S. Farm Exports to South Asia Fall

U.S. farm exports to South Asia are forecast to drop 20 percent to about \$930 million in U.S. fiscal year 1984, after reaching a 7-year high of \$1.17 billion in fiscal 1983 (table 4). Smaller wheat sales to Bangladesh, Pakistan, and particularly, India will more than offset increased volumes and values for shipments of soybean oil and cotton during the year. South Asia's demand for U.S. farm products during fiscal 1985 will depend on the performance of the 1984 monsoon. Preliminary projections, assuming average weather, call for an additional decline in U.S. sales to the region, to under \$600 million in fiscal 1985, as wheat import demand continues to decline and improved supplies of Pakistani cotton and Malaysian palm oil reduce U.S. soybean oil and cotton exports.

The decline in U.S. wheat sales in fiscal 1984 is the result of record food grain harvests and improved stocks in the region, as well as increased competition. Other wheat exporters—principally Canada, Argentina, Australia, and the European Community—have competed heavily for the region's commercial purchases and boosted their share of the region's total wheat imports from about 40 percent in 1981/82 and 24 percent in 1982/83 to about 60 percent in 1983/84. While the demand for wheat during fiscal 1985 will depend heavily on the 1984 monsoon, preliminary projections indicate a further 40- to 45-percent decline in U.S. wheat exports to the region. Bangladesh and, particularly, India will likely take smaller quantities of wheat as their import needs shift towards rice (table 5).

In contrast, U.S. exports of soybean oil to South Asia are forecast to jump more than 40 percent in volume and nearly 100 percent in value in fiscal 1984, with large Indian purchases explaining most of the growth (table 6). India's soybean oil purchases are forecast at the highest level since Brazilian soybean oil and Malaysian palm oil began to dominate the Indian market in fiscal 1981. Reduced supplies and higher prices for competing oils during October-April provided the opportunity for U.S. sales. Soybean oil sales to Pakistan, now the largest U.S. market in the region, are also expected to rise because of reduced domestic vegetable oil production and less competition from palm oil. With average weather and trend-level oilseed production in India and Pakistan in 1984/85, as well as a rebound in world palm oil supplies, U.S. soybean oil exports to the region are projected to decline to 300,000 to 350,000 tons in fiscal 1985.

**Table 4.—Total U.S. agricultural exports to South Asia (U.S. fiscal years)**

	FY81	FY82	FY83	FY84 est.	FY85 proj.
	<i>Million dollars</i>				
Afghanistan	—	.1	.1	—	—
Bangladesh	74.9	121.7	153.2	156.0	141.0
India	324.0	309.9	762.1	386.0	162.0
Nepal	3.2	2.2	2.5	4.0	5.0
Pakistan	147.0	218.0	214.7	345.0	238.0
Sri Lanka	48.5	59.5	37.6	39.0	46.0
Total	597.6	711.4	1,170.2	930.0	592.0

— = less than \$50,000.

Sources: U.S. Department of Commerce, Bureau of the Census; ERS estimates.

**Table 5.—U.S. exports of wheat and products to South Asia (U.S. fiscal years)**

	FY81	FY82	FY83	FY84 est.	FY85 proj.
	<i>1,000 tons</i>				
Afghanistan	0	0	0	0	0
Bangladesh	309	421	803	600	500
India <sup>1</sup>	948	1,293	4,143	1,270	270
Nepal	10	3	8	10	12
Pakistan	182	234	280	200	250
Sri Lanka	268	355	214	225	270
Total	1,717	2,306	5,448	2,305	1,302

<sup>1</sup>Includes bulgur wheat provided under P.L.-480, Title II.

Sources: U.S. Department of Commerce, Bureau of the Census; ERS estimates.

**Table 6.—U.S. exports of soybean oil to South Asia (U.S. fiscal years)**

	FY81	FY82	FY83	FY84 est.	FY85 proj.
	<i>1,000 tons</i>				
Afghanistan	0	0	—	—	—
Bangladesh	25	34	24	25	25
India	62	68	55	175	50
Nepal	—	—	0	—	—
Pakistan	126	260	237	250	250
Sri Lanka	1	1	1	1	2
Total	214	363	317	451	327

— = less than 500 tons.

Sources: U.S. Department of Commerce, Bureau of the Census; ERS estimates.

U.S. exports of cotton to South Asia will rise sharply from 63,000 bales in fiscal 1983 to about 250,000 in fiscal 1984, a result of Pakistan's uncharacteristic purchases of U.S. cotton. However, competition from Sudan is expected to hold fiscal 1984 cotton sales to Pakistan, now forecast at about 130,000 bales, below earlier expectations. Exports of cotton to Bangladesh, the only regular U.S. cotton market in the region, are forecast to rise more than 60 percent to about 100,000 bales because of reduced Pakistani supplies. With a recovery in cotton production in Pakistan likely in 1984/85, U.S. cotton sales to South Asia, primarily to Bangladesh, are projected to drop to about 100,000 bales in fiscal 1985.

### Above-Trend Growth Projected in 1984/85

Overall, the recoveries staged by most of the region's economies in 1983/84 were stronger than those that followed the last widespread drought over the subcontinent in 1979/80. The 1982/83 drought had a less severe impact on both farm and nonfarm sectors, and the ensuing recovery was stronger. Moreover, all of the region's economies emerged in significantly stronger balance-of-payments positions than they faced in 1980/81 because of stable petroleum costs and the gradual global recovery.

With average weather (early indications are that the monsoon pattern is well-established), 1984/85 is expected to be a year of more moderate, but above-trend real growth in the region. Except in Pakistan, gains in farm production will necessarily be smaller than in 1983/84,

when production rebounded from poor weather in 1982/83. But, a continuation of the emphasis on improving input supplies and producer price incentives observed in recent years could lead to larger gains than currently projected. All of the region's economies are expected to log above-trend gains in their nonfarm sectors in 1984/85, driven by stronger domestic demand, the continued easing of infrastructural bottlenecks, more liberal policies toward imports of necessary raw materials, and improved demand for the region's exports.

While balance-of-payments pressures generally eased in 1983/84, prospects for further improvement in 1984/85 rest heavily on the continued success of efforts to boost exports, substitute for imports where economically justified, and limit growth in foreign borrowing. While some countries have gradually liberalized imports of raw materials in order to improve industrial performance and exports, significant liberalization of farm commodity imports is unlikely. The region's dominant, and generally competitive, farm sectors will remain a prominent factor in both import substitution and export expansion programs. All of the countries in the region face increasing difficulties in securing foreign and domestic capital to finance development plans. These problems have been exacerbated by larger debt obligations and tight supplies of concessional and commercial capital in world markets. As a result, the success of policies aimed at mobilizing more domestic capital and expanding exports has become an increasingly important factor affecting future growth. [Maurice R. Landes (202) 447-8676]

## BANGLADESH

### Record Harvests Lead Growth

A record food grain harvest and a rebound in manufacturing boosted real Gross Domestic Product (GDP) by 4.5 percent in 1983/84 (July/June). This rate of growth was up 50 percent from the 1982/83 performance and slightly above the average of the previous 5 years. The recovery of industrial production in 1983/84 was encouraged by the steady performance of the farm sector the previous 2 years, a recovery in world demand for Bangladesh's exports, and new industrial policies that emphasize the private sector. New tax measures, subsidy reductions, and depreciation of the taka, coupled with rapid growth in worker remittances and a slight improvement in the external terms of trade, resulted in some rebuilding of foreign exchange reserves by the end of the year. Stronger jute and tea prices boosted export earnings by more than 20 percent, and 7-percent growth in imports was less than had been anticipated.

Despite these favorable developments, Bangladesh's balance of payments continues to be characterized by a massive trade deficit. The current account deficit amounted to more than 10 percent of GDP in 1983/84, matching the record of the past decade. This deficit continued to be financed almost entirely by foreign aid. In 1983/84, aid disbursements rose 2 percent to \$1.375 billion. Fluctuations in factors beyond the Government's control, including world demand for jute exports, the terms of trade, weather, and the level of aid commitments, continue to place pressures on the fragile balance-of-payments position and to affect economic performance.

**Table 7.—Economic indicators for Bangladesh**

	FY77-FY82 average	FY83	FY84 est.	FY85 proj.
<i>Gross domestic product (billion Taka)</i>				
Current prices	157.2	236.8	276.9	318.7
1972/73 prices	66.1	71.0	74.2	76.5
(% change)	(2.8)	(2.9)	(4.5)	(3.1)
Ag. sector share(%)	50.1	50.0	48.3	48.0
<i>Indices of production</i>				
Agriculture:				
(1969-71 = 100)	114.5	128.0	133.3	133.3
(% change)	(4.0)	(3.2)	(4.1)	(—)
Industry:				
(1973/74 = 100)	132.8	139.4	147.3	154.8
(% change)	(4.9)	(-4.3)	(5.7)	(5.1)
<i>Consumer price index (1973/74 = 100)</i>				
All items	217.1	325.9	368.3	412.5
(% change)	(13.6)	(9.9)	(13.0)	(12.0)
Food items	211.1	312.8	342.5	383.6
(% change)	(13.6)	(8.5)	(9.5)	(12.0)
<i>Foreign trade (\$ million)</i>				
Exports	594	684	825	885
(% change)	(10.4)	(9.3)	(20.6)	(7.3)
Imports	1,879	2,309	2,467	2,700
(% change)	(24.7)	(-10.7)	(6.8)	(9.4)
Trade balance	-1,285	-1,625	-1,642	-1,815
For. reserves	267	358	388	400
Exch. rate (Taka/\$)	16.28	23.76	25.00	27.00
<i>Population (millions)</i>				
	84.77	93.30	95.90	98.30
(% change)	(2.79)	(2.87)	(2.79)	(2.50)

Note: Data are for Bangladesh fiscal years. FY85 is the year ending June 30, 1985.

Sources: Government of Bangladesh, World Bank, International Monetary Fund, ERS estimates.

Domestic credit increased more than 20 percent in 1983/84, following a 28-percent expansion the previous year, adding to inflationary pressures. These pressures contributed to some acceleration of inflation as consumer prices rose 13 percent in 1983/84, compared with 9.9 percent the previous year. Because of stronger demand, consumer food prices rose more than anticipated with the record food grain harvest.

### Food Grain Situation Improves

Cereal production hit another record of 15.9 million tons in 1983/84. Good weather, expansion of irrigated area, and increased fertilizer use contributed to the record. Rice production rose nearly 3 percent as the main summer rice crop rebounded 5 percent from the poor outturn of the previous year. However, the winter rice harvest was damaged by late-season flooding, and production fell slightly after achieving a spectacular gain in 1982/83. The wheat crop, primarily unirrigated, also reached a record 1.21 million tons in 1983/84, a result of favorable subsoil moisture, timely rainfall during the growing season, and increased use of fertilizer.

The recent improvements in food grain production have resulted from revised agricultural policies, as well as

**Table 8.—Production of principal crops in Bangladesh<sup>1</sup>**

	1981/82	1982/83	1983/84 est.	1984/85 proj.
	1,000 tons			
Rice	13,631	14,220	14,600	14,400
Wheat	967	1,100	1,210	1,300
Coarse grains	51	51	51	51
Cereals	14,649	15,371	15,861	15,751
Jute	843	886	907	920
Sugarcane	7,136	7,308	7,240	7,323
Tea	39	41	41	41

<sup>1</sup>Production reported by Bangladesh crop years (July/June).

Sources: Government of Bangladesh, USDA estimates.

good weather. The growing importance of irrigated production of winter rice and wheat is reducing the variability of aggregate food grain production and prices. More irrigated production has been the result of significant progress in implementing an input-based production strategy emphasizing tube-well and other minor irrigation, fertilizer, high-yielding varieties (HYV's), and credit. An increased role for the private sector in the distribution of inputs, such as irrigation equipment and fertilizers, has improved the level and efficiency of agricultural input use. To support greater use of yield-increasing inputs, procurement prices were adjusted to maintain sufficient incentives for producers, including a 7-percent increase during the 1983 summer rice harvest.

#### **Food Grain Imports Show Another Sharp Increase**

To sustain consumption at 180 kilograms per capita and to help stabilize food grain prices through public distribution, the Government increased food grain imports about 3.5 percent in 1983/84 (July/June), to 1.9 million tons. Food grain imports were valued at close to \$490 million, about 20 percent of total imports. Constrained by an increase in foreign aid disbursements of only 2 percent, Bangladesh again purchased a substantial proportion of its imports—about 33 percent—on commercial terms. Even with the higher imports and record food grain harvest, stocks at the end of June 1984 amounted to only 759,000 tons, well below the 1.2 to 1.5 million that are considered desirable.

In its management of food grain operations, the Government has moved quickly when necessary in arranging adequate food imports, using commercial purchases to balance out shortfalls in domestic wheat and rice supplies and concessional food aid. It has also moved quickly to stabilize prices by making available larger quantities of food grains through the public distribution system (PDS). The primary objective of the PDS has also shifted somewhat since the late 1970's, from that of providing subsidized cereals as income support to urban areas and government employees, toward stabilizing market prices at levels affordable to lower income groups. However, domestic procurement for 1983/84 reached only 200,000 tons, less than one-third of the target, because of high open-market prices. As a result, additional imports had to be arranged out of Bangladesh's own resources to sustain public distribution and adequate stocks.

**Table 9.—Wheat and rice imports by Bangladesh by source and type of financing (July/June)**

	Commercial			Concessional		
	1981/ 82	1982/ 83	1983/ 84	1981/ 82	1982/ 83	1983/ 84
	1,000 tons					
Wheat						
Australia	—	—	390	112	49	60
Canada	—	—	193	100	251	294
EEC	—	196	—	130	150	140
France	—	—	—	13	14	14
India	—	103	—	—	—	—
UK	—	—	—	—	5	3
USA	—	383	50	452	315	370
W. Germ.	—	—	—	25	25	25
WFP <sup>1</sup>	—	—	—	278	9	161
Total	0	682	633	1,110	818	1,067
Rice						
Australia	—	—	—	—	—	17
Burma	—	45	17	15	—	—
Japan	—	—	—	17	142	90
Pakistan	99	—	—	—	—	—
Thailand	—	40	—	—	—	—
USA	—	—	—	—	90	56
WFP <sup>1</sup>	—	—	—	13	—	—
Total	99	85	17	45	232	163

<sup>1</sup>World Food Program imports from various donor sources.

Sources: Government of Bangladesh, USDA estimates.

#### **Vegetable Oil Shortfall**

Though hampered by untimely rains at planting, good weather during the rest of the growing season resulted in a more than 6-percent increase in oilseed production (primarily mustardseed and excluding coconuts) to 167,000 tons in 1983/84. Production was, however, sufficient to meet only 27 percent of total requirements, and consumption fell nearly 6 percent to about 185,000 tons. The drop in consumption was induced by a 74,000-ton decrease in imports because of high world prices and the Government's diversion of scarce foreign exchange to food grain purchases.

#### **Cotton Imports Register Gain**

Cotton imports are projected to rise more than 7 percent to about 208,000 bales in 1983/84. Bangladesh could be on the threshold of becoming a rapidly growing market for raw cotton. Annual per capita use of cloth is only 6 square meters, and there is great potential for growth if income and foreign exchange constraints are mitigated. Nearly 40 percent of total cotton imports come from the United States on concessional terms, with Pakistan, the Soviet Union, and India the other major suppliers.

#### **U.S. Agricultural Exports to Bangladesh Hold Steady**

In U.S. fiscal 1984, U.S. farm exports to Bangladesh, helped by the blended credit program, are projected to about match the fiscal 1983 high of \$153 million. U.S. wheat exports are projected at 600,000 tons, down 25 percent from fiscal 1983, but an increase in earnings from cotton sales is expected to offset the decline in food grain shipments. Further declines in purchases of U.S. wheat in fiscal 1985 will likely result in total U.S. exports of about \$140 million.

### **Future Food Grain Production Gains Uncertain**

If domestic production continues to increase faster than population growth, it will be possible to supply current food grain intake with progressively less reliance on food imports over the next several years. But questions remain as to whether Bangladesh can continue to sustain the 3.35-percent production growth rate achieved during 1972/73-1983/84. The success of the minor irrigation and fertilizer distribution program during 1983/84 suggests that recent policy reforms, including reduced subsidies and more private-sector involvement in input distribution, have had a positive influence on production.

Future gains in winter rice production seem assured, based on recent trends. Winter rice production can particularly benefit from further increases in irrigation, fertilizer, and improved seed supplies. Future production increases in the other two rice crops, however, seem much less assured. Spring rice production is constrained by competition with jute for land, and also has less and less desirability in cropping patterns that include long-season, HYV winter and summer rice. In the case of summer rice, there is limited scope for area expansion. Furthermore, lack of research on deep water rice, which accounts for 50 percent of area sown to summer rice, suggests that yields for this crop will remain low.

After registering spectacular gains in production in the late 1970's and early 1980's, growth in wheat output has slowed in the mid-1980's as production has expanded to more marginal lands. Growth in wheat area is still likely on the more permeable soils in northwest Bangladesh, but competition from more profitable crops, including winter rice and vegetables, limits possibilities for expansion elsewhere. In general, while there is substantial potential for further growth in Bangladesh's food grain production, achievement of this potential will require more basic research and the continued success of production initiatives implemented by the Government.

### **Food Grain Imports To Remain High in 1984/85**

Food grain imports are expected to total about 2.2 million tons in 1984/85 (July/June), with large purchases of Thai rice accounting for about 20 percent of total imports. Aid sources are likely to supply 1 to 1.4 million tons. The forecast for 1984/85 hinges on the expected balance between production and domestic procurement on the one hand, and stocks and public food grain distribution on the other. Procurement and distribution are difficult to predict because they depend on forecasts of domestic production and market prices, as well as Government decisions on procurement and PDS issue prices, which have yet to be made for 1984/85.

Food grain production is currently projected to fall marginally below 1983/84 because of early-season flood damage to the main rice crop. However, above-trend winter harvests could lead to higher production. Procurement is forecast at 300,000 tons, 50 percent more than in the previous 2 years, but consistent with 1974/75-1982/83 when procurement averaged 3.2 percent of production. Adjustments in procurement prices will likely be consistent with increases in the cost of production. Total PDS offtake is projected at 2.2 million tons in 1984/85, about 20 percent above the previous 2 years. Demands on the PDS will probably increase because of tighter

domestic rice supplies, although an increase in the PDS issue price could dampen demand. Food grain stocks are projected to be held at about 750,000 tons by the end of 1984/85, but they could be built closer to the target of 1.2 to 1.5 million tons if additional concessional imports are available.

### **Balance-of-Payments Pressures and Dependence on Aid To Continue**

Bangladesh's balance of payments will remain characteristically tight in 1984/85, although larger aid disbursements will likely produce some improvement. Exports are projected to rise about 7 percent, assuming a continued world recovery and a modest increase in inflation. Sales of jute goods, the major export, though bolstered by a stronger U.S. market, are projected to rise only about 5 percent because of low stocks. Earnings from other traditional exports, including tea, leather, and fish products, are projected to make more substantial gains, particularly if tea prices continue at present high levels. Imports are expected to rise more than 9 percent, resulting in a more than 10-percent increase in the merchandise trade deficit. However, aid disbursements are projected to rise 18 percent to \$1.62 billion in 1984/85 because of donor concern over balance-of-payments pressures.

Current projections of the balance of payments to 1986/87 suggest that even at the existing rate of growth of aid disbursements—and assuming 5-percent annual growth in exports and remittances, 14-percent growth in imports, and 5-percent growth in GDP—Bangladesh will continue to face serious balance-of-payments constraints. There will be a sustained need for larger amounts of project aid to support agricultural and other development programs, as well as aid in the form of food and other commodities. [Richard F. Nehring (202) 447-8229]

## **INDIA**

### **Strong Farm-Sector Gains Drive Economy**

India's real GDP rose about 7 percent in 1983/84 (April/March), as the economy rebounded from a year of poor weather and below-trend growth in 1982/83. Growth was led by an impressive 11-percent recovery in the farm sector, as an excellent 1983 monsoon, good input supplies, and stronger producer incentives contributed to sharp gains in food grain and oilseed production. Total food grain production increased 16 percent, as the 1983/84 rice crop broke its previous record by 10 percent, and the 1984 wheat harvest was a record by 5 percent. Oilseed production bounced back 17 percent, more than 3 percent above the previous record. The only significant declines in the farm sector occurred in cotton, when poor late-season weather damaged what was expected to be a record crop, and in sugarcane, where a huge domestic sugar surplus and weak prices sharply reduced production.

The performance of the industrial sector during 1983/84, however, disappointed earlier expectations. Growth in industrial output was held to about 4.5 percent, a result of the lingering effects of the 1982/83 drought, including accumulated inventories, significant shortages of hydroelectric power, and early in the year, slack effective demand. Poor performance in the power, steel, and

**Table 10.—Economic indicators for India**

	FY77-FY82 average	FY83	FY84 est.	FY85 proj.
<i>Gross domestic product (Rs. billion)</i>				
Current prices	1,084	1,644	1,935	2,225
1970/71 prices	529.5	598.2	640.1	668.9
(% change)	(3.6)	(2.6)	(7.0)	(4.5)
Ag. sector share(%)	35.7	31.2	32.4	32.0
<i>Indices of production</i>				
Agriculture: (1969-71=100)	130.3	137.0	152.1	156.7
(% change)	(2.7)	(-4.0)	(11.0)	(3.0)
Industry: (1970=100)	149.1	173.8	181.6	192.5
(% change)	(3.9)	(3.9)	(4.5)	(6.0)
<i>Consumer price index (1960=100)</i>				
All items	361.3	486.0	547.0	602.0
(% change)	(8.2)	(7.8)	(12.6)	(10.0)
Food items	379.3	508.0	585.0	644.0
(% change)	(8.0)	(6.7)	(15.2)	(10.0)
<i>Foreign trade (\$ million)<sup>1</sup></i>				
Exports	7,336	8,001	8,466	9,386
(% change)	(8.9)	(-6.1)	(5.8)	(10.9)
Imports	10,787	14,249	14,412	14,881
(% change)	(24.0)	(-8.1)	(1.1)	(3.3)
Trade balance	-3,451	-6,248	-5,946	-5,495
For. reserves	5,744	4,964	5,883	6,569
Exch. rate (Rs./\$)	8.48	9.63	10.31	10.70
<i>Population (millions)</i>				
	674.81	733.25	749.56	765.15
(% change)	(2.58)	(2.27)	(2.22)	(2.08)

<sup>1</sup>Trade data exclude imports and exports of petroleum under temporary swap arrangements.

Note: Data are for Indian fiscal years. FY85 is year ending March 31, 1985.

Sources: Government of India, World Bank, International Monetary Fund, ERS estimates.

engineering industries largely offset relatively strong gains in petroleum, cotton textiles, coal, and cement. Growth in petroleum output, a key element of India's on-going efforts to reduce its trade deficit, continued to be a bright spot in the economy. Production of crude petroleum, primarily from wells off-shore near Bombay, increased 32 percent in 1982/83 and 24.5 percent in 1983/84, helping to significantly reduce India's dependence on imported oil.

### Food Prices Spur Inflation

After a period of relative price stability, inflation again emerged as a trouble spot in the economy in 1983/84, as average wholesale and consumer prices rose 9.3 percent and 12.6 percent, respectively. Food items, particularly edible oils (up 15.8 percent), rice (up 14.5 percent), and pulses (up 11.5 percent), along with steel and coal, led the overall price rise. Higher real food prices occurred despite production gains, additional wheat imports, the initiation of rice imports, and larger imports of edible oils.

The price increases were caused primarily by continued shortages stemming from the 1982/83 drought, as well as a likely resurgence in consumer demand toward the end of the year. Prices for most food items, particularly cereals, began to ease during late 1983 and early 1984, as the record crops reached market. Increases in administered prices and stronger growth in the money supply also contributed to inflationary pressures, and the Government took steps to restrict monetary growth. Control of inflation is a priority issue, not only because of the approach of general elections sometime before January 1985, but because of the importance of price stability for achievement of real investment targets in the context of tightening supplies of investment capital.

### Balance of Payments Improves

India's balance-of-payments position continued its steady improvement in 1983/84, as the trade deficit narrowed and foreign reserves grew. A decline in the volume and value of petroleum imports and generally declining dollar prices held down the import bill, despite more liberal import policies. Export performance improved on the basis of stronger earnings from diamonds, clothing, engineering goods, sugar, and tea. While the current account deficit grew in absolute terms because of higher interest payments and smaller remittances by Indians living abroad, it fell as a percentage of GDP. Disbursements of concessional aid and drawings from an International Monetary Fund (IMF) Extended Fund Facility (EFF) declined, and foreign exchange holdings improved, largely on the basis of increased commercial borrowing and inflows of investment capital from non-resident Indians.

Because of its success in controlling the trade deficit and prospects for continued improvement in 1984 and 1985, the Government announced that it will forego the final \$1.1 billion in scheduled drawings from the EFF. Despite the substantial improvement, India's balance of payments will remain very tight. Ongoing import substitution programs, including those in the petroleum and farm sectors, as well as export expansion efforts, will remain priorities in order to hold down the current account deficit and the need for foreign borrowing, particularly in view of the declining availability of concessional capital.

Despite, and partially in response to, balance-of-payments pressures, India's trade policy maintained its general trend toward liberalization of both imports and exports in 1983 and 1984. Trade liberalization has reflected the need for more imports to eliminate raw material bottlenecks, improve industrial efficiency and growth, and enhance the availability and competitiveness of Indian exports. Import liberalization measures have focused primarily on the raw materials and technology required by the industrial sector and have generally not affected farm commodities. Export liberalization and promotion measures, reflecting India's diverse export base, have dealt with a broad range of commodities, including gems and jewelry, engineering goods, consumer goods, and light manufactures, as well as farm commodities, such as oilmeals and extractions, and processed teas, fruits, and meats.

**Table 11.—Production of selected crops in India<sup>1</sup>**

	1981/82	1982/83	1983/84 est.	1984/85 proj.
	1,000 tons			
Rice	53,248	46,481	59,000	57,300
Wheat	37,452	42,502	44,600	46,500
Corn	6,897	6,274	7,500	7,000
Millet	10,136	8,986	11,200	10,500
Sorghum	12,062	10,676	12,300	12,000
Barley	1,993	1,862	2,000	2,000
Cereals	121,788	116,781	136,600	135,300
Pulses	11,507	11,569	12,800	12,500
Food grains	133,295	128,350	149,400	147,800
Cotton <sup>2</sup>	6,400	6,324	6,100	6,400
Sugarcane	183,647	189,129	162,000	175,000

<sup>1</sup>Data reported by Indian production years (July/June). See table in special article for area and production of oilseeds. <sup>2</sup>Production in 1,000 480-lb bales.

Sources: Ministry of Agriculture and Cooperation, Government of India; USDA estimates.

### **Good Weather and Price Incentives Boost Food Grain Output**

The generally excellent 1983 monsoon provided the major impetus for the impressive gains in food grain and, particularly, rice production in 1983/84 (table 11).

Although the monsoon arrived about 2 weeks late, it provided ample and well-distributed rainfall over key kharif (spring planted, fall harvested) rice-producing regions in eastern India, and in south India, where poor rainfall had hampered farm operations during the previous 3 years. The good monsoon provided excellent soil moisture conditions that contributed to record plantings of wheat and pulses during November and December. Rainfall during the rabi (fall planted, spring harvested) season was normal or above in most rainfed producing areas, with below-normal rainfall confined to heavily irrigated regions in Punjab, Haryana, and western Uttar Pradesh.

In addition to favorable weather, producers benefited from relatively attractive price incentives and improved supplies of cheap fertilizer, which contributed to record plantings and a sharp increase in fertilizer use. Prices of all fertilizers were cut by 7.5 percent in June 1983, followed by an additional 10-percent price reduction on large stocks of imported fertilizer in July. These constituted the first easing of fertilizer prices since large increases were announced in 1980/81. The combination of good weather and attractive prices led to a 15-percent increase in fertilizer consumption, the largest gain since 1978/79.

Output price incentives were particularly strong for rice producers and may have contributed to the sharp increase in production after 6 years of near-stagnation. Continuing a recent trend, the Government announced another substantial 8.2-percent increase in the rice procurement (support) price in 1983. The trend has been accompanied by an even stronger upward push in open-market rice prices during the harvest period (table 12). Although open-market wheat prices eased during 1983/84 as result of comfortable domestic supplies, and the procurement price was raised less than 1 percent, wheat producers also saw relatively strong price incentives because of lower fertilizer costs and larger procurement price increases during the preceding 3 years.

**Table 12.—Wheat, rice, and fertilizer prices in India**

Year	Procurement		Harvest WPI <sup>1</sup>		Fertilizer WPI
	Wheat	Paddy	Wheat	Rice	
	Rs./ton -		1970/71 = 100		
1974/75- 1978/79 average:	1095	768	153	165	191
(% chg.)	(2.5)	(3.2)	(-1.4)	(-3.5)	(-4.8)
1979/80 (% chg.)	1170 (1.7)	950 (11.8)	162 (6.6)	92 (19.3)	167 (-4.6)
1980/81 (% chg.)	1300 (11.1)	1050 (10.5)	184 (13.6)	206 (7.3)	243 (45.5)
1981/82 (% chg.)	1420 (9.2)	1150 (9.5)	193 (4.9)	230 (11.7)	274 (12.8)
1982/83 (% chg.)	1510 (6.3)	1220 (6.1)	217 (12.4)	264 (14.8)	278 (1.5)
1983/84 (% chg.)	1520 (.7)	1320 (8.2)	203 (-6.5)	290 (9.8)	268 (-3.6)

<sup>1</sup>Average wholesale price index for peak harvest/marketing months.

Source: Government of India.

### **Rice and Wheat Procurement Reach Records**

Government procurement of rice from the 1983/84 crop to supply the PDS is forecast at a record 7.7 million tons (October/September), compared with 7 million in 1982/83 and the previous record of 7.3 million in 1981/82. Although open-market rice prices remained relatively strong, primarily because of the after-effects of recent droughts, successful procurement was assured by the use of levies on rice millers, the relatively strong increases in procurement and levy prices, and larger contributions from the southern States of Tamil Nadu and Andhra Pradesh. A larger gain in procurement was probably prevented by the fact that a substantial portion of the rice production gains occurred in rice-deficit, nonprocuring States in eastern India.

Wheat procurement from the 1984 crop is nearly completed and is estimated at about 9 million tons in 1984/85 (April/March), compared with the 1983/84 record of 8.3 million. Unlike rice, wheat is procured in competition with private traders and, despite the small increase in the procurement price, the Government was able to procure successfully during April-July because of ample supplies and weak prices on the open market. Recent political unrest in the key wheat- (and rice-) surplus State of Punjab did not seriously affect total procurement, partly because the Government provided the most remunerative price in Punjab, and because of record procurement in other surplus States.

### **PDS Offtake Remains Relatively Strong**

Distribution of wheat and rice through the PDS during 1983/84 (July/June) is estimated to have fallen only marginally from the 16-million-ton record in 1982/83, placing continued pressure on Government stocks, particularly of rice. Rice distribution fell following some easing of open-market rice prices and Government efforts to boost wheat allocations to substitute for rice. Increased rice distribution since 1980/81 has been associated with

**Table 13.—Summary of government wheat and rice operations in India (July/June)**

	Pro- cure- ment	Im- ports	Ex- ports	PDS	End- ing stocks
<i>Million tons</i>					
<b>Wheat</b>					
1979/80	6.08	—	.35	8.97	8.82
1980/81	6.41	.05	.05	6.84	7.73
1981/82	7.57	2.26	—	6.88	10.15
1982/83	8.38	3.63	.08	8.01	13.50
1983/84 est.	9.00	2.49	.01	7.90	16.80
1984/85 for.	9.00	—	—	8.70	16.50
<b>Rice</b>					
1979/80	3.77	—	.38	5.58	7.09
1980/81	5.66	—	.87	5.64	5.85
1981/82	7.19	—	.80	7.07	5.12
1982/83	7.02	—	.21	7.98	3.76
1983/84 est.	7.50	.87	—	7.70	4.20
1984/85 for.	7.60	.70	—	7.00	5.30
<b>Total</b>					
1979/80	9.85	.00	.73	14.55	15.91
1980/81	12.07	.05	.92	12.48	13.58
1981/82	14.76	2.26	.80	13.95	15.27
1982/83	15.40	3.63	.29	15.99	17.26
1983/84 est.	16.50	3.36	.01	15.60	21.00
1984/85 for.	16.60	.70	.00	15.70	21.80

— = none or negligible.

Note: Annual supply and use data do not balance because of storage losses and reporting lags.

Sources: Government of India, Attache reports, ERS estimates.

the poor rice crops in 1979/80 and 1982/83, corresponding price increases, and a wider margin between open-market prices and the subsidized Government-issue price. Distribution of wheat in 1983/84 is estimated to have remained near 1982/83, despite efforts to boost wheat offtake through higher monthly allocations, because weak open-market prices slackened demand for subsidized wheat.

The pattern of increased distribution of rice and relatively stable distribution of wheat observed since 1980/81 has contributed to the recent deterioration of the Government's rice stocks and the improvement in wheat stocks (table 13). More decisive steps to stem rice offtake by reducing allocations or raising the issue price are politically sensitive, particularly this year because of impending general elections.

#### **Imports Help Boost Stocks Near Target**

Total Government cereal stocks were estimated at about 21 million tons, including a record 16.8 million of wheat and 4.2 million of rice as of July 1, 1984. Wheat stocks rose about 3.3 million tons during 1983/84 (July/June), as domestic procurement exceeded PDS offtake and an additional 2.5 million tons of imported wheat were added to stocks. Wheat imports included about 360,000 tons of hold-over deliveries of U.S. wheat from 1982/83 purchases and 2.13 million tons of new purchases from the United States (980,000 tons), Argentina (650,000), and Canada (500,000).

Because of the continued pressure on already depleted rice stocks, the Government initiated large-scale imports

of rice for the first time since 1975/76. Also, while exports of about 200,000 tons of basmati rice by the private trade continued, exports of fine and super-fine varieties of rice from Government stocks were halted. Rice purchases during 1983/84 are estimated at 970,000 tons, including 370,000 tons from Thailand, 100,000 from Bangladesh as repayment of an earlier loan, and 500,000 from Burma. About 870,000 tons were scheduled for delivery during 1983/84 (July/June). The purchases of Thai and Burmese rice were made at relatively low (c.i.f.) prices, reportedly averaging about \$220 a ton, compared with \$190 to \$200 for imported wheat. While the imports helped improve Government rice stocks, stocks remained well below those held in recent years.

Although targets for Government food grain stocks have never been clearly stated and are currently under revision, current targets are believed to call for a total of about 21.4 million tons, including about 14.7 million of wheat and 6.7 million of rice as of July 1. Using these estimates, total stocks on July 1, 1984, were near target, with wheat stocks 2.1 million tons above and rice stocks 2.5 million below target. Because of the comfortable wheat stock position and the likelihood of continued stable wheat prices and slack demand for wheat through the PDS, no wheat imports are likely in 1984/85, unless a monsoon failure leads to a sharp decline in food grain production and increased PDS requirements. However, significantly below-target rice stocks suggest the likelihood of additional rice imports, particularly if world prices remain favorable, unless PDS demand slows more than is currently projected.

#### **Oilseed Production Rebounds**

Good weather in most oilseed producing regions and a continuation of the recent trend towards higher relative prices for oilseeds contributed to the sharp recovery in oilseed production in 1983/84, following an 11.9-percent drought-induced decline in 1982/83. Oilseed area is estimated to have increased nearly 2 percent and average yields nearly 15 percent, both achieving records. Substantial increases were recorded by most oilseeds, with record production estimated for groundnut (peanuts) and rapeseed, India's two major oilseeds. Kharif groundnut production was hindered by relatively poor weather in Gujarat, but this was more than offset by kharif production gains in southern India, as well as a further increase in area and production of irrigated groundnut during the rabi season.

Good weather, favorable prices, and increased cultivation of new short-duration varieties in northern India stimulated a record 2.7 million tons of rapeseed production. The output of soybeans and sunflowers, nontraditional oilseeds receiving emphasis in Government development programs, is also reported to have achieved a significant increase (See special article for more details on recent oilseed production trends.)

#### **Edible Oil Imports Remain High Despite Production Gains**

Based on the rebound in oilseed production, total production of edible oils recovered by an estimated 16 percent, to 3.5 million tons in 1984, more than 5 percent above the previous record in 1982. However, despite the sharp

improvement in supplies, domestic edible oil prices continued to rise in real terms during early 1984, an issue that is of particular concern in an election year. As a result, purchases of imported oils have remained high even though world prices have been relatively strong. Imports during 1984 are forecast to be only marginally below 1983's 1.31 million tons and well above the 849,000 tons imported in 1982, the previous record production year (table 14).

In addition to the resurgence in consumer demand, domestic prices and import demand have been affected by the ban on inedible tallow imports announced in late 1983 because of concern over its illegal use in vanaspati (hydrogenated vegetable oil) production. Before the ban, annual imports of tallow, principally for nonfood uses, had averaged about 150,000 tons. In the absence of imported substitutes for tallow, there has been a sharp increase in demand for domestic oils, including cottonseed and rice bran oil, for nonfood uses. These oils are normally used in vanaspati production, and as a result, demand for imported oils in the vanaspati industry has increased.

India's imports of edible oils in 1984 have continued to reflect the requirements of the vanaspati industry and the PDS, the only marketing channels for imported oils, as well as relative world prices of various oils. Purchases of soybean oil, used almost exclusively in vanaspati, have remained strong and are forecast at about 600,000 tons

**Table 14.—Supply and distribution of edible oils in India**

	1981	1982	1983	1984 est.	1985 for.
	1,000 tons				
Opening stocks	160	170	180	170	180
Production					
Coconut	207	210	169	189	213
Cottonseed	224	231	238	238	245
Groundnut	1,177	1,615	1,339	1,658	1,634
Linseed	116	140	138	145	139
Nigerseed	41	46	34	44	44
Rapeseed	601	714	742	810	780
Safflower	72	90	80	90	96
Sesame	135	179	152	167	174
Soybean	69	73	76	93	108
Sunflower	22	54	76	102	118
Total	2,664	3,352	3,044	3,536	3,551
Imports <sup>1</sup>					
Coconut	71	14	10	10	10
Palm	453	425	620	370	600
Rapeseed	112	52	74	200	200
Soybean	653	358	602	600	550
Sunflower	0	0	0	70	0
Cottonseed	28	0	0	0	0
Total	1,317	849	1,306	1,250	1,360
Total supply	4,141	4,371	4,530	4,956	5,091
Exports	0	0	0	0	0
Domestic disappearance	3,971	4,191	4,360	4,776	4,911
Per capita(kgs)	5.7	5.8	5.9	6.4	6.4
Ending stocks	170	180	170	180	180

<sup>1</sup>Imports based on partner-country export data.

Sources: FAS, partner-country trade data, ERS estimates.

because of the industry's enlarged requirements, as well as strong relative prices for palm oils, a principal substitute. Purchases of palm oil, used both in vanaspati and the PDS, are expected to fall sharply to about 370,000 tons, reflecting its prevailing high price relative to soybean oil and to other imported oils used in the PDS, primarily rapeseed and sunflower. Imports of rapeseed and sunflower oils are forecast to rise sharply to 200,000 and 70,000 tons, respectively, because of competitive prices and their use in both vanaspati and the PDS.

Oilseed production and vegetable oil import prospects for 1984/85 will hinge primarily on the performance of the 1984 monsoon. The area planted to oilseeds is expected to maintain its recent upward trend in response to higher relative prices. However, most production remains under rainfed conditions and highly sensitive to poor weather. Therefore, the record 1983/84 yields may not be duplicated. Assuming average weather, oilseed crops and oil production are projected to remain near the 1983/84 record. Imports are projected at 1.3 to 1.4 million tons, as slower growth in demand and an easing of domestic prices limit growth in import requirements. With a recovery in world palm oil supplies, 1985 imports will likely consist of a larger share of palm oil and a smaller share of soybean oil than in 1984.

### **Cotton Supplies Tighten**

Cotton production during 1983/84 is estimated to have fallen to about 6.1 million bales (480 lbs each), below the drought-affected 1982/83 harvest of 6.3 million. Heavy unseasonal rains and pest infestations during September-October in the northern producing areas of Punjab and Haryana dealt a major setback to what had been expected to be a record crop. The drop in production corresponded with a recovery in mill demand following the settlement of a strike by mill workers in the key textile center of Bombay. As a result, cotton supplies tightened markedly, and during the first half of 1984, cotton prices began to rise in real terms following 2 years of slack demand and declining real prices.

Supplies of short-staple cottons have become particularly tight, while supplies of longer staple varieties remain satisfactory, reflecting recent emphasis on boosting production of long-staple cottons. To protect domestic supplies in the context of strong world demand for Indian cotton, the Government reduced export quotas, and exports, primarily of long-staple cotton, declined from about 550,000 bales in 1982/83 (August/July) to an estimated 300,000 in 1983/84. Sharp reductions in excise duties on yarns made from long-staple cottons were also announced to help boost the share of these varieties in mill consumption.

With an average monsoon, stronger cotton prices and a continuation of recent productivity gains are expected to lead to a record cotton crop of about 6.4 million bales in 1984/85. While improved production will likely ease currently tight supplies, relatively low raw cotton stocks, a further rise in domestic mill demand, and improved world cotton supplies are projected to constrain long-staple cotton exports to about 200,000 bales in 1984/85. If the shortage of short-staple varieties persists, the Government may again opt to import small quantities of short-staple cottons, as it did in 1981/82.

## **Large Stocks and Weak Prices Cut Sugar Production Sharply**

Following 2 years of record-breaking production and the accumulation of unprecedented sugar stocks amounting to about 65 percent of domestic consumption, weak prices led to a sharp drop in sugar production in 1983/84. Sugarcane plantings and production dropped an estimated 14 percent, while mill sugar production fell an estimated 32 percent, from 8.8 million tons to about 6 million. The downturn marked yet another iteration of what has become a somewhat predictable, and increasingly volatile, sugar cycle.

Overproduction in 1981/82 and 1982/83 was stimulated in large part by the high administered cane prices offered by sugar mills, which led to record cane crops as well as record shares of those crops diverted away from the production of traditional sweeteners to the sugar mills. As open-market mill sugar prices declined, financial losses incurred by sugar mills led to delayed payments to cane producers, contributing to a sharp drop in plantings in 1983/84. Mill sugar production dropped even more sharply, as strengthening prices for nontraditional sweeteners, gur (non-centrifugal brown sugar produced on the farm) and khandsari (centrifugal, semi-white sugar produced in small-scale plants), resulted in more diversion of cane away from the mills.

Reduced production, along with increased domestic consumption and exports, is expected to reduce India's burdensome sugar stocks about 50 percent to 2.4 million tons (including a 1-million-ton Government buffer stock) by the end of the 1983/84 season in September. While stocks will remain ample, the poor financial condition of many sugar mills and continued weak open-market prices resulting from large Government sales of sugar could result in another year of poor mill sugar production in 1984/85.

In an effort to stabilize domestic sugar prices and supplies, the Government has increased the size of its buffer stock and allocated \$55 million to subsidize exports of India's relatively high-priced sugar. The Government is also seeking to expand India's export quota from the International Sugar Organization (ISO), from the current 600,000 tons to 1 million. In a surprise move, the Government has also reportedly purchased sugar on the international market, most likely for reexport in order to boost 1984 shipments and to improve its negotiating position with the ISO. India's sugar exports totaled 471,769 tons in 1982, 724,383 in 1983, and are forecast at 750,000 in 1984. The major markets are Indonesia, Egypt, Sri Lanka, China, Yemen, and Morocco.

### **U.S. Farm Exports to India Drop in 1983/84**

After surging to a 7-year high of \$762 million in U.S. fiscal 1983, U.S. farm exports to India are expected to fall to about \$386 million in fiscal 1984 because of a dropoff in wheat sales. Wheat exports to India are forecast to fall from 4.1 million tons in fiscal 1983 to about 1.3 million in fiscal 1984, a result of smaller Indian requirements and increased competition from Argentina and Canada.

However, an even sharper drop in total U.S. exports to India will be averted by a resurgence in exports of soy-

bean oil. Steady Indian import demand and reduced supplies of Malaysian palm and Brazilian soybean oil are expected to boost U.S. soybean oil sales from 54,870 tons in fiscal 1983 to about 175,000 in fiscal 1984—the highest since competing oils began to dominate the Indian market in fiscal 1981.

During fiscal 1985, U.S. farm exports to India are projected to fall below \$200 million. With average weather, India's wheat import requirements will likely be minimal, and other exporters, particularly Australia, will offer stiff competition. U.S. sales of soybean oil will likely drop with an improvement in supplies of Brazilian soybean oil and Malaysian palm oil.

### **Above-Trend Growth Projected for 1984/85**

India's economy is showing signs of more rapid growth. While annual growth in real GDP has averaged 3.5 percent since independence, it averaged 5.1 percent between the 2 recent drought years of 1979/80 and 1982/83 and about 4.9 percent between the 2 recent recovery years of 1980/81 and 1983/84. Moreover, the achievement of positive real growth led by the industrial sector during the severe 1982/83 drought suggests that the economy is becoming less vulnerable to setbacks in farm production.

While the performance of both the farm and nonfarm sectors will continue to depend heavily on the monsoon, 1984/85 is expected to be another year of above-trend expansion. Early indications, which are not always reliable, suggest that the 1984 monsoon is on schedule. Because of the sharply above-trend gains achieved in the farm sector during the 1983/84 recovery, more moderate growth is likely in 1984/85, particularly in food grains and oilseeds. The industrial sector is expected to improve on its disappointing 1983/84 showing, benefiting from better power supplies, reduced inventories, steady growth in demand, and the continuation of more liberal policies toward imports of needed raw materials.

With average weather, inflation, particularly in food prices, will likely ease as the lingering shortages stemming from the 1982/83 drought are alleviated and the Government continues its vigilance over growth in the money supply. Steady, but moderate improvement in the balance of payments is expected, as gains in domestic petroleum output continue to slow growth in the import bill, and the global recovery and India's diverse export base combine to boost export earnings. However, the balance of payments will remain tight, and measures to mobilize domestic resources to keep the need for foreign borrowing within manageable limits will remain a key focus of economic policy.

Assuming average weather, current projections place 1984/85 food grain production near the 1983/84 record. Continued strengthening of input and output price incentives and improvement in input supplies could lead to a more substantial gain. Budgetary considerations, however, may necessitate higher fertilizer prices and smaller producer price increases. During 1983/84, lower prices and increased use produced a record \$780 million fertilizer subsidy, and distribution of more expensive imported food grains, larger stocks, and higher procurement prices contributed to a record \$830 million food grain subsidy. In any event, while additional rice imports are likely in

order to bolster stocks, no wheat imports are likely in 1984/85 because of record stocks and some easing of open-market cereal prices and PDS requirements.

Oilseed production in 1984/85 is also projected near the 1983/84 record. However, with oilseed prices remaining high relative to competing crops, average weather could lead to a more substantial supply response and smaller edible oil imports than currently projected. The longevity of the import ban on inedible tallow is uncertain, but a relaxation of that ban, or the initiation of imports of substitute inedible oils, could reduce India's import demand for soybean and other edible oils.

India's current 6th 5-year plan will end in 1984/85, and the new 7th plan document, establishing development priorities through 1989/90, will be completed during the year. Agricultural and irrigation development are expected to maintain their current priority in the new plan, and the trend towards substantial real increases in annual plan outlays in these sectors—estimated at 12 percent in recent years—will likely be sustained. Under consideration for the new plan are proposals to boost investment in research and technology in oilseeds, pulses, and dryland farming; to increase rice production in the key eastern region by expanding irrigation and extension efforts; and to generally improve supplies of farm inputs, including fertilizer, irrigation, and electric power.

Because of India's considerable past success in mobilizing domestic resources to finance its development—the domestic savings rate now averages about 23 percent of GDP—it may become increasingly difficult to meet agricultural and other investment targets through additional gains in domestic savings during the 7th plan. More emphasis on exports, the continued liberalization of the imports needed to make Indian industry more efficient and competitive in export markets, as well as more foreign borrowing are expected in order to generate resources for the new plan. [Maurice R. Landes (202) 447-8676]

## NEPAL

### Good Weather Leads to Strong Recovery

The performance of the Nepalese economy, which is based almost entirely on rainfed subsistence agriculture, fluctuates widely from year to year. In 1983/84 (July 16/July 15), the economy rebounded by more than 9 percent as favorable weather resulted in 12-percent growth in the farm sector following a drought-induced decline in 1982/83. Industrial output, based mostly on agro-processing industries, rose about 5 percent in 1983/84 because of improved supplies of raw materials and hydroelectric power, as well as stronger demand. Improved domestic food supplies contributed to a sharp drop in inflation, from 14.2 percent in 1982/83 to about 7.3 percent in 1983/84.

Nepal's balance of payments improved markedly in 1983/84, after a sharp deterioration in 1982/83 when reduced farm exports and uncharacteristic food grain imports led to an abrupt increase in the trade deficit. In 1983/84, exports rebounded by about 25 percent and imports dropped about 8 percent as food grain purchases declined and licensing restrictions were placed on

imports of nonessential goods. The current account in Nepal's balance of payments is usually in deficit, reflecting a chronically low ratio of merchandise exports to imports. This deficit has traditionally been covered by inflows of grants and concessional loans; debt obligations have therefore remained relatively small. However, balance-of-payments pressures, stemming from the steady decline in exportable surpluses of farm commodities and a growing gap between domestic savings and investment, are now more cause for concern. In response to these concerns, during 1983/84 the Government placed more restrictions on nonessential imports, announced a nine-point export promotion program, and cut the budgetary deficit, partly by reducing development expenditures.

### Huge Gain in Rice Production Boosts Farm Output

The recovery of Nepal's farm sector in 1983/84 was led by a 47-percent increase in rice production, based on a 4-percent rise in area and a 43-percent rebound in yields. The huge increase in rice production resulted from excellent weather in the Terai (plains) region following the 1982/83 drought, as well as additional efforts on the part of the Government to boost supplies of irrigation water, fertilizer, seeds, and credit.

Production of corn, an important staple in the food-deficit hill regions, rose about 5.6 percent, while wheat output fell about 5 percent as wheat area was diverted to rice. Total food grain output rose more than 21 percent to a record 3.34 million tons, helping to arrest the downward trend in per capita production in recent years. Cash crop output increased moderately in 1983/84, as gains in oilseeds and potatoes were largely offset by declines in the area and production of sugarcane and jute.

### Farm Trade Surplus Restored as Food Grain Imports Drop

Nepal's traditional surplus in agricultural trade turned into a deficit in 1982/83, when the drought sharply reduced supplies of most major exports, including rice, corn, and jute, and when severe domestic shortages resulted in uncharacteristic food grain imports. Food

**Table 15.—Production of principal crops in Nepal<sup>1</sup>**

	1981/82	1982/83	1983/84 est.	1984/85 proj.
	1,000 tons			
Rice	1,706	1,220	1,798	1,865
Corn	751	718	758	750
Wheat	526	660	626	626
Millet	130	130	130	130
Barley	25	25	25	25
Cereals	3,138	2,753	3,337	3,396
Jute	43	31	30	30
Oilseeds	79	69	75	80
Potatoes	320	375	380	385
Sugarcane	596	638	640	670

<sup>1</sup>Production reported by Nepalese crop years (July/June).

Sources: Government of Nepal, USDA estimates.

grain imports during 1982/83 were provided entirely on concessional terms and included about 50,000 tons each of wheat, corn, and rice.

With the sharp improvement in domestic supplies in 1983/84, most food grain imports ended, farm exports picked up moderately, and the positive balance of farm trade was restored. However, the long-term trend towards declining exportable surpluses, particularly of rice and corn, continues. U.S. farm exports to Nepal, consisting primarily of wheat, wheat flour, and nonfat dry milk, totaled \$2.5 million in U.S. fiscal year 1983, and are projected to rise to about \$4 million in fiscal 1984 and \$5 million in fiscal 1985.

### Government Places More Emphasis On Food Grain Production

Because of the steady decline in per capita production of food grains and its implications for both consumer welfare and the balance of payments, the Government has begun to channel a larger share of investment into the farm sector than in the past. Programs focus on the expansion of irrigation facilities, fertilizer distribution and use, supplies of improved seed, credit, and extension services. There is substantial potential to boost production of wheat and rice by expanding irrigation in the Terai region. Currently, about 15 percent of all cultivatable land is irrigated, while the estimated potential is 60 percent. Fertilizer use, which has grown rapidly in recent years, remains confined to small areas with assured irrigation; average fertilizer use of about 10 kilograms per hectare is among the lowest in Asia. Past efforts to provide adequate supplies of improved seed have fallen well below target and only about 12 percent of the rice area is now sown to improved varieties.

### 1984/85 Outlook Hinges on Monsoon

The performance of Nepal's farm sector and the economy as a whole during 1984/85 will, as usual, depend on the 1984 monsoon. The monsoon has arrived on schedule and is currently projected to provide average rainfall. With average weather, farm output is expected to grow by about 3 percent, slightly above the long-term trend, while real GDP grows by about 3.5 percent. Food grain production is projected at near the 1983/84 record and should be sufficient to allow a further recovery in exports and to further reduce imports. Production gains could be larger if recently strengthened programs to boost farm output are successful. However, with Nepal's food grain supply and demand balance becoming increasingly fragile, a poor monsoon would likely necessitate additional quantities of concessional food grain imports.

A recovery in farm exports, combined with stricter controls on nonessential imports, is expected to result in reduced balance-of-payments pressures in 1984/85. But despite the availability of substantial amounts of concessional development loans and grants, the Government may find it increasingly difficult to achieve targets for development investments. This is so because of Nepal's limited ability to generate foreign exchange for debt repayment and the need to curb deficit financing of development expenditures. [Amjad H. Gill (202) 447-8676]

## PAKISTAN

### Economy Slowed by Setbacks in Farm Sector

Growth in Pakistan's economy during 1983/84 (July/June) was slowed by an uncharacteristic setback in its farm sector. Unseasonal rains during September-October and heavy pest infestations severely damaged the cotton crop, and dry winter weather temporarily reversed the steady upward trend in wheat production. Growth in total farm production is estimated to have slowed to about 4 percent in 1983/84, below the strong performance of Pakistan's heavily irrigated farm sector in recent years. Manufacturing output is estimated to have grown at near the 1982/83 pace of 8.3 percent in 1983/84, but slightly below the relatively strong average annual growth of over 10 percent achieved during 1979/80-1981/82. During 1982/83, gains in the manufacturing sector included a 32.1-percent increase in fertilizer production, a 7.9-percent gain in cement, and a 5.7-percent increase in steel output.

During 1983/84, the Government continued the cautious fiscal policies of the previous year, when growth in deficit financing was slowed significantly with the help of large increases in private deposits in Government savings schemes. However, a sharp 26.3-percent increase in the money supply during 1982/83, resulting from a sharp rise in foreign remittances, contributed to inflationary pressures in 1983/84. After a period of relatively stable

Table 16.—Economic indicators for Pakistan

	FY77-FY82 average	FY83	FY84 est.	FY85 proj.
<i>Gross domestic product (Rs. billion)</i>				
Current prices	226.9	368.0	418.1	485.0
1959/60 prices	49.1	60.0	62.7	66.5
(% change)	(6.3)	(5.8)	(4.5)	(6.0)
Ag. sector share(%)	31.0	30.8	30.4	30.2
<i>Index of agricultural production</i>				
(1959/60=100)	229.4	269.6	280.9	294.7
(% change)	(5.3)	(4.8)	(4.2)	(4.9)
<i>Consumer price index (1970=100)</i>				
All items	308.3	416.5	458.2	504.0
(% change)	(10.4)	(5.2)	(10.0)	(10.0)
Food items	314.1	414.3	455.7	501.3
(% change)	(9.5)	(2.5)	(10.0)	(10.0)
<i>Foreign trade (\$ million)</i>				
Exports	1,922	2,623	3,022	3,475
(% change)	(19.7)	(13.1)	(15.2)	(15.0)
Imports	4,196	5,616	6,445	7,218
(% change)	(21.1)	(-2.7)	(14.8)	(12.0)
Trade balance	-2,274	-2,993	-3,423	-3,743
For. reserves	757	2,032	2,042	2,000
Exch. rate (Rs./\$)	10.01	12.70	13.40	14.00
<i>Population (millions)</i>				
	81.04	89.73	92.41	95.18
(% change)	(2.99)	(2.99)	(2.99)	(2.99)

Note: Data are for Pakistani fiscal years. FY85 is the year ending June 30, 1985.

Sources: Government of Pakistan, World Bank, International Monetary Fund, ERS estimates.

prices in 1982/83, the inflation rate rose to about 10 percent in 1983/84, a result of strong expansion in the money supply, stronger domestic prices for some food items, and higher prices for imported vegetable oils and tea.

### **Balance of Payments Improves Dramatically**

Following a period of deterioration stemming from a widening merchandise trade deficit, Pakistan's balance of payments improved dramatically in 1982/83. Exports rebounded by 13 percent, led by stronger sales of cotton, cotton yarn, and particularly, nontraditional goods such as fertilizer, wheat, and light manufactures. In addition, imports fell about 3 percent as the rupee depreciated following a decision to delink it from the strong U.S. dollar. The smaller trade deficit, coupled with a 30-percent surge in workers' remittances to about \$2.9 billion, reduced the current account deficit to \$554 million—less than half that incurred in recent years. Additional aid and IMF credits helped to more than double foreign exchange reserves to about \$2 billion.

The gains achieved during 1982/83 were consolidated during 1983/84, as foreign reserves remained stable despite wider trade and current account deficits. Exports rose by about 15.2 percent as a sharp decline in the volume of raw cotton sales was more than offset by stronger raw cotton prices and increased earnings from exports of textiles and nontraditional items. A 14.8-percent rise in imports in 1983/84 reflected import liberalization measures for private industry and higher world vegetable oil prices.

### **Wheat Production Drops, But Exports To Continue**

Production of wheat, Pakistan's major food staple and an emerging export, fell about 7 percent in 1984. While the crop was planted under optimal moisture conditions, an extended period of dry weather during October 1983-February 1984 reduced yields, particularly in rainfed areas that account for about 20 percent of total wheat area. The decline occurred despite a further 10-percent increase in fertilizer use and a 30-percent expansion in the distribution of improved seed.

Despite the setback in production following several years of strong and steady growth, the Government procured a

**Table 17.—Production of principal crops in Pakistan<sup>1</sup>**

	1981/82	1982/83	1983/84 est.	1984/85 proj.
	1,000 tons			
Wheat	11,304	12,414	11,500	13,000
Rice	3,430	3,445	3,473	3,500
Coarse grains	1,585	1,619	1,637	1,690
Cereals	16,119	17,478	16,610	18,190
Cottonseed	1,497	1,648	952	1,360
Rape & mustard seed	238	246	242	250
Chickpea	275	286	499	500
Cotton <sup>2</sup>	3,494	3,750	2,187	3,516
Sugarcane	36,579	32,533	34,500	35,000

<sup>1</sup>Production reported by Pakistani crop years (July/June). <sup>2</sup>Cotton production in 1,000 480-lb bales.

Sources: Government of Pakistan, USDA estimates.

near-record 3.98 million tons of wheat from the 1984 crop. July 1984 stocks were a record 2 million tons, and the Government plans to continue exporting wheat in 1984/85. Pakistan's wheat exports, primarily to Iran, climbed from 78,000 tons in 1982/83 (July/June) to about 200,000 in 1983/84, and the Government has established a target of 300,000 in 1984/85. Pakistan's wheat imports, estimated at 580,000 tons in 1982/83 and 420,000 in 1983/84, are received through the World Food Program to assist in feeding the estimated 3 million Afghan refugees now in Pakistan.

Current projections suggest that Pakistan will gradually increase its exportable surpluses of wheat as growth in production continues to outstrip domestic demand. Average wheat yields remain substantially below the potential of the HYV's that are grown. Yields have increased steadily, benefiting from continued improvement in input supplies, particularly fertilizer, irrigation, and improved seed, as well as supportive government pricing policies. While input subsidies have been gradually removed, high priority has been given to ensuring adequate producer incentives through compensating increases in support prices. Consistent with Government farm pricing policies, domestic wheat prices remain below those in the world market. In 1982/83, surplus wheat was procured from Pakistani farmers at a price equivalent to \$125 a ton.

Historical trends, coupled with the likely continuation of current price support policies and input distribution programs, suggest that Pakistan's wheat production will continue to grow at about 6.7 percent annually, reaching about 14.8 million tons by 1987/88. Consumption is projected to increase about 4.7 percent annually, consistent with historical trends, reaching about 14.3 million tons by 1987/88. Assuming current stocking patterns, these projections suggest an exportable wheat surplus of about 400,000 tons annually by 1987/88.

### **Rice Production Unchanged in 1983/84**

For the second consecutive year, Pakistan's rice crop was hit by poor weather in 1983/84. The 1983/84 harvest, while estimated at a record 3.47 million tons, was only marginally above the harvests of the previous 2 years. Production was hampered by the late arrival of the 1983 monsoon, resulting in delayed plantings, followed by excessive rains and heavy pest infestations in the key producing provinces of Sind and Punjab.

Despite the recent setbacks, rice production has generally increased at a steady pace, benefiting from continued Government emphasis on improving supplies of fertilizer, pesticides, and certified seed, and on promoting improved cultural practices. As is the case with wheat, the Government has ensured adequate output price incentives for rice producers, with recent emphasis on HYV's developed by the International Rice Research Institute (IRRI). Pakistan's 1984/85 rice harvest is currently projected at 3.5 million tons, but good weather could result in a more substantial gain.

### **Rice Exports Remain High**

After slumping badly in 1982, Pakistan's rice exports rebounded to a record 1.3 million tons in 1983 and are

projected to remain near that level in 1984. Major markets for Pakistani rice in 1983 were Cameroon, the Ivory Coast, Iran, and Cuba. Despite record volumes, weak prices have sharply reduced earnings for rice exports, contributing significantly to Pakistan's widening trade deficit. With a 3.5-million-ton rice crop in 1984/85, rice exports are projected at about 1.2 million tons in 1985.

### ***Cotton Production and Exports Plunge***

In the worst setback in recent history, cotton production plunged an estimated 42 percent to 2.2 million bales (480 lbs each) in 1983/84, after reaching a record 3.75 million bales in 1982/83. Unseasonal rains just before to the fall harvest and severe pest infestations resulted in heavy damage to what had been expected to be another record crop in the principal producing areas of Sind and Punjab. The heavy rain and pest damage counteracted record plantings under ideal conditions and the continued efforts of the Government to boost cotton yields by improving the availability of high-yielding seed and fertilizer.

The abrupt decline in cotton supplies, coupled with steady growth in textile mill demand, necessitated a sharp drop in raw cotton exports and the initiation of cotton imports. Cotton exports, primarily to China, Japan, Hong Kong, and Bangladesh, dropped from 1.27 million bales in 1982/83 (July/June) to an estimated 275,000 in 1983/84. Cotton imports during 1983/84 totaled an estimated 250,000 bales, primarily from the United States and Sudan.

### ***Cotton Export Prospects Uncertain***

With more normal weather, the 1984/85 cotton harvest is expected to rebound to about 3.5 million bales. However, raw cotton consumption, fueled by rapid growth in textile mill demand to supply both domestic and export markets, is forecast to rise to about 2.4 million bales in 1984/85. As a result of growth in mill demand, and the need to rebuild depleted stocks, raw cotton exports may be limited to about 1 million bales in 1984/85.

The outlook for longer term growth in Pakistan's cotton exports is clouded. Despite substantial potential for improved yields and a spurt in productivity during the late 1970's, yield growth has generally been disappointing, even though there have been substantial increases in input use. Between 1972/73 and 1982/83, production rose at an annual rate of 1.75 percent, with area increases accounting for 70 percent of the growth. The small gains achieved in productivity are significant because the scope for additional area expansion is limited by competition with other crops, as well as salinity problems encountered on land currently planted to cotton.

Lack of adequate research and farm extension are considered to be major constraints on improving yields. The need to achieve better yield performance is underscored by the fact that domestic support prices for cotton are close to international prices. As a result, there is limited scope for inducing more cotton production through higher support prices and increased cotton area without incurring costly producer or export subsidies. The current phasing out of fertilizer subsidies must, therefore, be accompanied by more emphasis on improving

yields, primarily involving improved institutional support for research and extension.

The continuation of production and consumption trends observed during 1972/73-1982/83 will result in little growth in exportable surpluses of raw cotton during the late 1980's. While the current 5-year plan sets a cotton production target of 4.7 million bales by 1987/88, historical trends indicate production of only about 4.1 million bales. The maintenance of trend production, together with trend growth in consumption, which has been rising at about five times the rate of production, would lead to a decline in raw cotton exports by 1987/88. Under these assumptions, the availability of cotton for export would be about 900,000 bales in 1987/88, compared with the 1980/81-1982/83 average of 1.3 million bales.

### ***Oilseed Production Decline Boosts Edible Oil Imports***

The total oilseed harvest dropped an estimated 35 percent in 1983/84 because of the sharp decline in the production of cottonseed, Pakistan's principal oilseed. Production of other oilseeds, including rapeseed and recently introduced nontraditional oil crops such as sunflower and soybeans, continued to show little growth.

With the poor oilseed crop, domestic edible oil production fell about 26 percent to an estimated 188,000 tons in 1983/84, leading to an increase in edible oil import requirements. Imports during 1984 are forecast at 700,000 tons, compared with 576,000 in 1983 and 484,000 in 1982. Because of strong world prices for palm oil relative to soybean oil, imports of soybean oil for use in vegetable ghee (hydrogenated vegetable oil) are forecast to rise to about 390,000 tons in 1984, compared with 241,000 in 1983. (See special article for more information on recent trends in Pakistan's oilseed sector.)

### ***Sugar Surplus Mounts***

Sugarcane production climbed 6 percent to about 34.5 million tons in 1983/84. Favorable weather, a 10-percent increase in fertilizer use, and more cultivation of improved varieties boosted yields and offset a small decline in area. Refined sugar output fell about 4 percent in 1983/84 because of a weakening of prices offered by mills but, at 1.15 million tons, remained well above production achieved as recently as 1980/81. Sharply higher refined sugar production since 1980/81 has resulted in the accumulation of large sugar stocks of about 525,000 tons, or 48 percent of domestic use, by September 1983. While the Government continues efforts to find export markets, the relatively poor quality and high cost of production of Pakistani sugar hampers overseas marketing. Pakistan exported 47,000 tons of sugar to Iran in 1983/84 (July/June).

In view of the large sugar stocks and depressed world prices, sugarcane procurement prices have not been raised in the last 3 years. The Government also announced the decontrol and derationing of sugar in August 1983, with the Government's role now limited to maintaining a reserve stock and supplying subsidized refined sugar to remote areas. Assuming average weather, sugar production is projected at about 1.2 million tons in 1984/85, with sugar exports, primarily to Iran, rising to about 100,000 tons.

## U.S. Farm Exports to Pakistan Rise Sharply

U.S. farm exports to Pakistan are forecast to rise 60 percent to about \$345 million in U.S. fiscal 1984, primarily a result of uncharacteristic sales of U.S. cotton and stronger earnings from soybean oil sales. Pakistani imports of U.S. cotton, necessitated by the sharp decline in domestic production, are forecast at about 130,000 bales in fiscal 1984. As a result of reduced supplies of Malaysian palm oil and stronger prices, U.S. exports of soybean oil are expected to rise 5 percent in volume and over 50 percent in value, to about \$192 million. Shipments of U.S. wheat to Pakistan through the World Food Program are forecast to drop from 280,322 tons in fiscal 1983 to about 200,000 in fiscal 1984. The total value of U.S. farm exports to Pakistan in fiscal 1985 is projected to drop to about \$240 million, as Pakistani purchases of U.S. cotton cease, and weaker prices reduce the value of soybean oil sales.

## Stronger Economic Performance Likely in 1984/85

A rebound in cotton and wheat production will likely provide the impetus for stronger growth in Pakistan's economy in 1984/85 (July/June). Government targets call for real GDP to grow 6 percent, based on a 4.9-percent gain in farm output and a 9.3-percent increase in the industrial sector. However, because of the key role of cotton in Pakistan's economy, achievement of the goals will heavily depend on the extent to which cotton production can recover from the heavy pest infestations incurred in 1983/84. Cotton not only provides the primary source of income for a majority of farmers in Sind and Punjab, it also accounts for about 34 percent of industrial-sector employment and 33 percent of total export earnings.

Although little improvement is projected, Pakistan's balance of payments is expected to remain manageable in 1984/85. Exports of nontraditional commodities, including garments, fertilizers, and light manufactures, are expected to continue to improve based on steady growth in world demand. But limited supplies and weaker prices may prevent strong growth in earnings from traditional exports of rice and raw cotton. With a continuation of the more flexible exchange rate policies adopted in 1983/84 and lower bills for imported cotton and edible oils, import growth is expected to slow to about 12 percent in 1984/85. Foreign reserves are projected to remain near \$2 billion as a slightly larger trade deficit is offset by inflows of worker remittances and aid. Despite the recent easing of balance-of-payments pressures, the economy is increasingly vulnerable to adverse developments in world trade, local weather, and largely unpredictable inflows of emigrant remittances.

Among the priorities established in the current 5-year plan, which runs through 1987/88, are efforts to strengthen the balance of payments and reduce vulnerability to adverse external developments. These include plans to continue to expand exports of nontraditional commodities, to improve the mobilization of domestic resources for financing development investments, and to increase self-sufficiency in energy. To make the economy more productive and competitive in export markets, the plan also calls for improvement of the currently low yields achieved in the farm sector, gradual deregulation and removal of various subsidies, and a greater role for the private sector. While the plan calls for rapid growth

in the production of oilseeds, dairy products, fruit, poultry, and livestock for domestic use, the farm sector is expected to become increasingly export oriented. To help achieve these goals, the Government will allocate about 10.5 percent of total public-sector investment to drainage, land reclamation, and irrigation projects. [Amjad H. Gill (202) 447-8229]

## SRI LANKA

### Drought and Civil Unrest Slow Economy

Despite major setbacks stemming from drought and communal riots, Sri Lanka's economy managed to move ahead in 1983. Real GDP increased by about 4.9 percent, down from 5.1 percent in 1982 and short of the 6-percent growth that had been expected. The agricultural sector was not affected by the July riots, and output increased by about 5.4 percent, despite the adverse effects of drought in early 1983. Growth in the manufacturing sector, however, slowed sharply to less than 1 percent because of losses resulting from the riots, a maintenance-related drop in petroleum refinery output, and a decline in agro-processing activity stemming from drought-induced declines in tree crop harvests. The service sector, which contributes 55 percent of GDP, grew by about 6 percent. Wholesale prices rose sharply, by

Table 18.—Economic indicators for Sri Lanka

	FY76-FY81 average	FY82	FY83 est.	FY84 proj.
<i>Gross domestic product (Rs. billion)</i>				
Current prices	49.1	91.6	111.3	130.2
1970 prices	17.9	21.8	22.8	23.9
(% change)	(6.4)	(5.1)	(4.9)	(5.0)
Ag. sector share(%)	28.4	27.5	27.6	27.5
<i>Index of agricultural production</i>				
Agriculture: (1968=100)	128.8	147.0	155.0	159.7
(% change)	(4.7)	(2.1)	(5.4)	(3.0)
<i>Consumer price index (1978=100)</i>				
All items	115.4	182.6	208.2	233.2
(% change)	(14.0)	(10.8)	(14.0)	(12.0)
Food items	122.5	189.7	213.2	238.8
(% change)	(16.6)	(12.7)	(12.4)	(12.0)
<i>Foreign trade (\$ million)</i>				
Exports	877	1,014	1,059	1,250
(% change)	(13.6)	(-4.9)	(4.4)	(18.0)
Imports	1,289	1,990	1,922	2,050
(% change)	(29.0)	(6.0)	(-3.4)	(6.7)
Trade balance	-412	-976	-863	-800
For. reserves	314	352	309	400
Exch. rate (Rs./\$)	14.09	20.81	23.53	26.00
<i>Population (millions)</i>				
	14.51	15.46	15.76	16.06
(% change)	(1.78)	(1.90)	(1.91)	(1.90)

Note: Data are for Sri Lankan fiscal years. FY84 is the year ending December 31, 1984.

Sources: Government of Sri Lanka, World Bank, International Monetary Fund, ERS estimates.

about 26 percent in 1983, including a 30-percent increase in food prices, while consumer prices rose 14 percent. Large budgetary deficits, along with partial removal of some price subsidies and higher import costs stemming from depreciation of the rupee, contributed to inflationary pressures.

Sri Lanka's trade deficit declined and the balance of payments showed some improvement in 1983, a result of a substantial increase in prices and earnings for tea exports and a slight decline in the import bill. Total export earnings increased about 4.4 percent, with traditional commodities, including tea, rubber, and coconut products, showing gains based on higher prices. Most nontraditional exports, except garments, showed declines. Imports fell more than 3 percent because of smaller purchases of crude petroleum, a cutback in capital goods purchases, and rupee depreciation. Despite the moderate improvement in 1983, Sri Lanka's balance of payments remains under considerable strain as a result of weakening terms of trade, slow growth in export volume, and particularly, increased foreign borrowing in order to finance the large gap between domestic savings and investment. Although the bulk of the increased borrowing has been on concessional terms, debt service obligations, estimated at 17.7 percent of current receipts in 1983, have emerged as a threat to the economy. As a result, efforts to expand exports, boost domestic savings, and reduce budgetary deficits have become more important.

#### **Rice Crop Leads Gain in Farm Production**

Above-average rainfall during 1983 hiked total agricultural production about 5.4 percent in 1983/84, following a poor year in 1982/83. Total food grain output rose more than 6 percent to 1.7 million tons, as rice production climbed about 7 percent to a record 1.57 million tons (table 19). In addition to good weather, record area and production of rice was stimulated by an 8.7-percent increase in the paddy support price, the provision of low-interest credit for buying fertilizer and seed, and further gains in the adoption of HYV's and improved cultural practices.

Production of tea, the major export commodity, fell about 6 percent in 1983/84, mainly because of the prolonged dry spell during late 1982 and early 1983. The 1983/84 tea crop was one of the lowest on record, and in order to stimulate production, the Government has provided substantial increases in subsidies for planting new tea land and the replanting of old land. Production of rubber, the second major export commodity, increased about 4 percent in 1983/84 because of adequate rainfall, favorable world rubber prices, and increased availability of fertilizers. Copra production fell 45 percent in 1983/84, a result of poor weather in major producing areas and reduced application of fertilizer.

#### **Food Grain Imports Rise Marginally**

Sri Lanka's total imports of food grains increased marginally from 712,000 tons in 1982 to about 729,000 in 1983, as larger wheat purchases offset a decline in rice imports. Rice imports, purchased largely on barter terms from China and Pakistan, fell from 217,000 tons in 1982 to 157,000 in 1983, as improved domestic supplies

**Table 19.—Production of principal crops in Sri Lanka<sup>1</sup>**

	1981/82	1982/83	1983/84 est.	1984/85 proj.
	1,000 tons			
Rice	1,469	1,466	1,571	1,520
Cassava	423	450	450	450
Corn	35	35	35	35
Copra	174	131	72	129
Tea	210	188	177	190
Rubber	124	125	130	130

<sup>1</sup> Production reported by Sri Lankan crop years (July/June).

Sources: Government of Sri Lanka, USDA estimates.

**Table 20.—Sri Lanka's commercial and concessional imports of wheat by origin**

	1981	1982	1983
	Tons		
Commercial:			
Australia	95,933	119,889	53,190
Canada	0	0	108,593
France	8,000	0	147,958
United States	165,052	205,224	0
Total	268,985	325,113	309,741
Concessional:			
Australia	15,000	16,704	10,000
Canada	21,100	0	40,763
EEC	20,000	32,000	37,000
France	5,500	0	0
United States	108,739	120,920	174,176
Total	170,339	169,624	261,939
Total	439,324	494,737	571,680

Source: Government of Sri Lanka.

reduced import requirements. However, imports of wheat, which is not produced locally, rose nearly 16 percent to 572,000 tons, a result of rising consumer demand and low prices. The U.S. share of Sri Lanka's wheat imports dropped sharply, from 66 percent in 1982 to 30 percent in 1983, as other suppliers dominated commercial purchases and boosted concessional sales (table 20).

#### **Smaller Wheat Sales Reduce U.S. Farm Exports**

U.S. agricultural exports to Sri Lanka dropped from \$59.5 million in U.S. fiscal 1982 to \$37.6 million in fiscal 1983, as increased competition reduced shipments of wheat and products from 355,000 tons to 214,000. Continued competition for wheat sales is expected to prevent growth in both wheat and total exports to Sri Lanka in fiscal 1984. Concessional sales of dairy products (\$2.1 million in fiscal 1983) and blended food products (\$1.5 million) are expected to show some growth in fiscal 1984.

#### **Pricing Policies and Investments Boost Rice Production Prospects**

Sri Lanka's rice production rose 38 percent between 1977 and 1983, a result of increases in harvested area and strong average annual yield gains of 6.2 percent. Increases in rice production have corresponded with a steady decline in rice import requirements, as well as

slower growth in imports of wheat. Major factors contributing to these trends have been the implementation of more producer-oriented price policies associated with reduced public intervention in food grain markets and improved institutional support for rice producers.

Before 1977, the Government monopolized rice trading, and consumer-oriented policies kept prices for both wheat and rice artificially low. In 1977, domestic rice trading was converted to the private sector, with the Government's role confined to ensuring a floor price and distributing imported wheat and rice through ration shops. The resulting steady increases in both support and open-market prices enhanced the profitability of rice cultivation. Stronger rice prices, as well as slower growth in wheat demand, were reinforced by adjustments in the administered prices charged by ration shops; the adjustments made wheat flour more expensive than rice. In 1979, producer incentives were further strengthened when the ration system was replaced by a smaller food stamp program, and the Government moved to full-cost pricing of imported rice and wheat.

Along with the improvement in producer price incentives, the Government has enhanced institutional support for rice producers through credit and extension programs and continued fertilizer subsidies. The bulk of public-sector investment in the farm sector is currently devoted to the Mahawali Development Program which, when completed, will boost irrigated area by about 142,000 hectares, much of it devoted to rice production. During the 1980's, continuing emphasis on ensuring adequate producer incentives, coupled with the anticipated Mahawali acreage increases, is expected to lead to a further decline in rice import requirements and sluggish growth in wheat imports.

### ***Steady Growth Expected in 1984***

Assuming average weather and no major communal riots, Sri Lanka's economy is expected to grow about 5 percent in 1984. Growth in the agricultural sector will likely slow in 1984, following the 1983 recovery, but a rebound in the industrial sector and steady improvement in the service sector should provide the basis for real growth in the economy. Heavy unseasonal rains and flooding have damaged the 1984 Maha (main) rice crop, but the Yala (second) crop is expected to be better than last year. Total rice production for 1984 is forecast at about 1.52 million tons, down about 3 percent from the 1983 record. Despite the drop in production, 1984 rice imports are expected to fall to about 100,000 tons, mostly to maintain adequate stocks. Wheat imports are forecast at 600,000 tons in 1984. While a portion of the wheat imports will come from the United States under P.L.-480 and Commodity Credit Corporation loans, sustained competition from other suppliers may prevent a substantial improvement in 1983's relatively low U.S. market share.

Sri Lanka's balance-of-payments position is projected to improve moderately in 1984, based on increased export earnings stemming from stronger world commodity prices, as well as the disbursement of substantial amounts of concessional loans already in the pipeline. Imports will likely be constrained during the next several years as the Government attempts to reduce the budgetary deficits that have been supported by foreign borrowing and have resulted in increasingly burdensome debt obligations. Needed cutbacks in the currently high rate of public investment may affect ongoing agricultural development programs, but there will likely be more emphasis on commercial crops to boost export earnings. *[Amjad H. Gill (202) 447-8229]*

# The Vegetable Oil Economies of India and Pakistan: Trends, Policies, and Prospects

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**Abstract:** India and Pakistan are two of the world's largest importers of edible oils and are major markets for U.S. soybean oil. In India, production gains are projected to largely offset rising demand while, in Pakistan, rapid growth in demand is projected to continue to outstrip production. Competition from palm oil and other suppliers of soybean oil may make it increasingly difficult for U.S. soybean oil to hold its current share in the two markets.

**Keywords:** India, Pakistan, oilseeds, edible oils, supply, demand, imports, projections.

## INTRODUCTION

During the 1970's, India and Pakistan emerged as two of the world's major importers of vegetable oils. India has been the world's largest importer since 1977, with annual purchases averaging nearly 1.2 million tons during 1977-83. Pakistan, with imports averaging more than 500,000 tons during 1981-83, now ranks among the top five importers. Crude soybean oil, palm oil products, and in India, crude rapeseed oil are the primary oils imported.

India and Pakistan are the two largest world markets for soybean oil, together accounting for an average of 25 percent of total world imports between 1977 and 1982. They are the second and third largest importers of palm oil products (behind Singapore), accounting for an average of 23 percent of world imports during the same period. India also ranks among the top three world importers of rapeseed oil, with imports averaging 25 percent of world imports during 1977-82. Until competitors began to dominate the Indian market in 1981, India was the largest world market for U.S. soybean oil. Pakistan is now the largest U.S. market, and during 1977-83, the two countries together accounted for 38 percent of total U.S. exports of soybean oil.

The principal reasons for the wide gaps between domestic supply and demand for edible oils in India and Pakistan are similar. First, until recently, policies and resources in both countries have been focused on food grain production. The advent of high-yielding cereal technology in the mid-1960's sharply enhanced the relative profitability of wheat and rice cultivation and, as a result, growth in oilseed production slowed in both countries. Second, rapid population growth, combined with stronger economic growth in both countries, has boosted demand for edible oils.

However, edible oils have now become the third largest item on India's import bill, behind petroleum and fertilizers, and the second largest item on Pakistan's import

bill, behind petroleum. In response to the threat posed by these substantial outlays of scarce foreign exchange, current development plans in both countries place a high priority on expanding oilseed production for the express purpose of substituting for imports. This article explores past trends and future prospects for oilseed production and edible oil consumption in India and Pakistan, and their implications for future trade.

## INDIA

Oilseeds are the second most important farm commodity produced in India, after food grains. During 1981-83, oilseeds were planted on an average of 27 million hectares, or about 15 percent of gross cropped area, and accounted for about 11 percent of the total value of farm output. Significant quantities of a wide variety of oilseeds are produced (table 21). India has the largest area in the world planted to groundnut (peanuts), rapeseed, sesame, linseed, safflower, and cottonseed; is the largest producer of groundnut and sesame; and ranks among the top producers of rapeseed, linseed, safflower, and cottonseed.<sup>1</sup>

Unlike most other countries, the economic returns to oilseed production and processing in India are determined primarily by demand for edible oils for human consumption, rather than the demand for protein meals for livestock feeding. Religious beliefs and low per capita income have constrained demand for most livestock products and feedstuffs. This structural difference, combined with the very low productivity of oilseeds in India, contributes to domestic oilseed and edible oil prices that

<sup>1</sup>India is also a major producer of castorseed, but castor oil is excluded from this study because it is consumed primarily in nonfood uses. Also excluded are numerous minor tree oilseeds that are produced in India and the growing amounts of oil and meal extracted from rice bran. While these commodities have significant potential, little reliable data currently exist on their supply and use.

**Table 21.—Area, production, and yield of principal oilseeds in India<sup>1</sup>**

Oilseed	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84 est.	1984/85 proj.	Growth rates <sup>2</sup>			
								1968- 1983	1968- 1975	1976- 1983	1976- 1984
<i>Area (1000 ha)</i>								<i>Percent</i>			
Coconut	1,067	1,083	1,068	1,080	1,082	1,082	1,085	.65	2.52	.18	.19
Cottonseed	8,119	8,078	7,823	7,987	8,074	8,100	8,200	.58	-.47	1.65	1.44
Groundnut	7,433	7,165	6,801	7,429	7,345	7,450	7,550	-.08	-.65	.30	.45
Kharif	6,737	6,402	5,908	6,373	6,243	6,200	6,250	NA	NA	-1.28	-1.15
Rabi	696	763	893	1,056	1,102	1,250	1,300	NA	NA	16.04	15.30
Linseed	2,091	1,614	1,673	1,820	1,758	1,800	1,800	-.14	2.34	-2.70	-2.12
Nigerseed	612	584	599	604	501	550	550	2.08	3.66	-1.45	-1.43
Rapeseed	3,544	3,471	4,113	4,399	4,194	4,400	4,500	1.85	2.45	4.49	4.33
Safflower	703	733	720	748	755	760	775	3.00	1.21	1.61	1.54
Sesame	2,389	2,377	2,472	2,593	2,780	2,700	2,700	.69	-1.57	3.00	2.83
Soybean	275	400	392	622	768	800	850	49.30	28.61	29.91	27.85
Sunflower	107	61	119	282	431	550	650	21.08	16.80	20.38	25.21
Total	26,340	25,566	25,780	27,564	27,688	28,192	28,660	.55	.30	1.80	1.57
<i>Production (1,000 tons)</i>											
Coconut <sup>3</sup>	317	329	329	335	268	300	338	-.45	1.71	-2.26	-1.35
Cottonseed	2,734	2,643	2,700	2,730	2,700	2,600	2,700	3.14	3.30	4.64	3.55
Groundnut	6,208	5,768	5,005	7,223	5,553	7,300	7,000	.95	-.27	-.53	1.00
Kharif	5,207	4,727	3,714	5,520	3,811	5,300	4,900	NA	NA	-3.98	-2.45
Rabi	1,001	1,041	1,291	1,703	1,742	2,000	2,100	NA	NA	20.45	18.44
Linseed	535	269	423	483	476	500	480	.19	4.55	-2.62	-1.23
Nigerseed	147	105	146	160	118	150	150	3.35	4.81	-.43	.42
Rapeseed	1,860	1,428	2,002	2,382	2,472	2,700	2,600	2.45	4.66	5.10	6.08
Safflower	209	280	335	422	372	420	450	14.45	10.96	10.53	10.40
Sesame	514	348	446	590	502	550	575	.17	-1.03	1.38	1.99
Soybean	220	350	442	467	491	600	700	52.90	25.90	30.67	27.88
Sunflower	55	32	66	159	225	300	350	30.53	26.26	22.31	27.01
Total	12,799	11,552	11,894	14,951	13,177	15,420	15,343	1.78	1.78	2.26	2.90
<i>Yield (kgs/ha)</i>											
Coconut <sup>3</sup>	297	304	308	310	248	277	312	-1.10	-.81	-2.44	-1.54
Cottonseed	337	327	345	342	334	321	329	2.56	3.77	2.99	2.11
Groundnut	835	805	736	972	756	980	927	1.03	.38	-.83	.55
Kharif	773	738	629	866	610	855	784	NA	NA	-2.70	-1.30
Rabi	1,438	1,364	1,446	1,613	1,581	1,600	1,615	NA	NA	4.41	3.14
Linseed	256	167	253	265	271	278	267	.33	2.21	.08	.89
Nigerseed	240	180	244	265	236	273	273	1.27	1.15	1.02	1.85
Rapeseed	525	411	487	541	589	614	578	.60	2.21	.61	1.75
Safflower	297	382	465	564	493	553	581	11.45	9.75	8.92	8.86
Sesame	215	146	180	228	181	204	213	-.52	.54	-1.62	-.84
Soybean	800	875	1,128	751	639	750	824	3.60	-2.71	.76	.03
Sunflower	514	525	555	564	522	545	538	9.45	9.46	1.93	1.80
Total	486	452	461	542	476	547	535	1.23	1.48	.46	1.33

NA = not available.

<sup>1</sup>Data reported by Indian production years (July/June). <sup>2</sup>Growth rates computed using log linear trends. <sup>3</sup>Production and yield in terms of copra

Sources: Government of India, USDA estimates.

are generally well above, and oilmeal prices that are generally well below, world markets. Relatively high domestic edible oil prices provide a basic rationale for imports. While India is an important traditional meal exporter, relatively weak domestic demand and prices for meal, the major byproduct of oilseed processing, continue to offer a fundamental problem in ensuring adequate incentives to domestic producers and processors.

#### **Oilseed Production Trends and Policies**

Trends in oilseed area, yield, and production have diverged during the various stages of India's agricultural development since independence (table 22). During the 1949/50-1964/65 pre-green revolution period, oilseed production grew strongly, primarily because of increases in

area. Yields, however, showed slow growth and high variability.

During 1967/68-1974/75, following the introduction of green revolution technology for cereals, growth in oilseed production slowed significantly, as increases in area dropped off sharply and yield gains were marginal. This slowdown in oilseed production is attributed to the influence of high-yielding technology and supportive extension and pricing policies for cereals. Technological advances and Government support for expanding oilseed production were largely absent. As a result, oilseed cultivation was increasingly relegated to lower quality and unirrigated land that was unsuited to high-yielding cereals.

**Table 22.—Selected growth rates for oilseeds in India<sup>1</sup>**

Period	Oilseeds			Edible oil production
	Area	Yield	Production	
Percent				
1949/50-64/65	2.75	.90	3.65	NA
1967/68-82/83	.55	1.23	1.78	2.18
1967/68-74/75	.30	1.48	1.78	2.51
1975/76-82/83	1.80	.46	2.26	1.96
1975/76-83/84	1.57	1.33	2.90	2.93

<sup>1</sup>Growth rates computed using log linear trends.

Source: Calculated from Government of India and USDA data.

However, growth in area and production of most oilseeds has picked up substantially since 1975/76. Growth rates for 1975/76-1983/84, which include preliminary estimates for 1983/84 harvests, show even stronger gains in production, including a sharp improvement in yields. These growth rates may be more accurate indicators of recent production trends, because poor weather made 1982/83 an abnormally poor year for oilseed production. However, as indicated by the sharp declines in production in 1979/80 and 1982/83, the stronger growth performance masks continued high-variability in oilseed production. Oilseeds continue to be grown primarily on low-quality, rainfed land using less than optimal technology and resulting in low and variable yields.

#### Factors Behind Recent Production Gains

The gains in oilseed production observed since 1975/76 have corresponded with several factors that have relaxed prior constraints on production. A major impediment to improved oilseed productivity has been a general lack of institutional support for producers. Public- and private-sector attention to varietal research and development, production and testing of certified seed, provision of other needed inputs, and development and extension of improved agronomic practices has been limited. Also, while support price mechanisms established in 1976/77 have helped to introduce soybean and sunflower cultivation, the Government generally has not been effectively involved in supporting oilseed producer prices. Support prices were first announced for groundnut in 1976/77 and for rapeseed in 1983/84, but these prices have been well below those in the open market, and there is no operational procurement mechanism.

However, beginning with the implementation of the 6th 5-year plan in 1980, significantly more resources have been allocated to programs directly concerned with boosting oilseed production. Annual plan outlays for oilseed development jumped from an average of Rs 22.5 million (\$2.75 million) during 1978/79-1979/80 to Rs 133.2 million (\$15.22 million) during each of the first 3 years of the current plan. The rationale for increasing expenditures includes the pressing need to provide adequate supplies of edible oils for consumers and to control expenditures of scarce foreign exchange. Major elements of the new oilseed development program include increased availability and use of quality seeds; more intensive extension efforts; expanding oilseed cultivation in nontraditional areas and on irrigated land; introduction of non-

traditional oilseeds, such as soybeans, sunflowers, and oil palms; and support of farm prices for oilseeds.

Another major constraint on production has been the riskiness of oilseed cultivation because of year-to-year variability in both yields and prices. Until recently, oilseed prices tended to fluctuate widely because of weather-induced variation in production, the lack of an effective Government price-support program, and trade restrictions that forced imbalances in domestic supply and demand to be reflected largely in prices. Risk sharply curtailed use of inputs, particularly seed, which constitutes a major share of production costs for groundnut and some other oilseeds.

Compounding the risk problems associated with annual yield and price variability has been a pattern of sharp seasonal price movements that has been partially attributed by officials to collusion among private traders to hold down prices during harvest, when most producers must market their crop. While it is not possible to prove the collusion theory, comparison of harvest prices with annual average wholesale prices for groundnut and rapeseed in several markets indicates significant and highly variable markups between harvest and annual average prices.

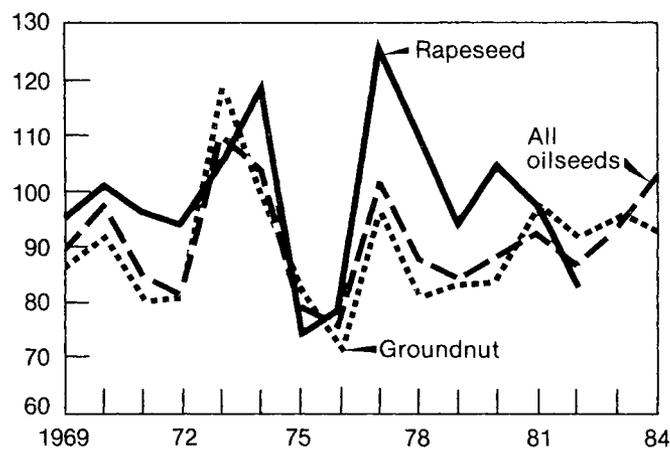
While the Government still has not become involved in supporting oilseed producer prices by means of effective support prices and procurement, it has influenced prices indirectly through its increasingly strict control of edible oil imports. Although there has been no clear policy to control imports to support domestic oilseed prices, and imports have undoubtedly dampened prices somewhat, oilseed prices generally have become more stable in real terms (figure 1) and have risen relative to most competing crops (figures 2 and 3) since 1977.

The trend toward higher relative oilseed prices appears to be rooted in policy and demand factors that suggest that it will continue. Agricultural development policy continues to emphasize import substitution and export

Figure 1

#### India: Deflated Wholesale Price Indices for Groundnut, Rapeseed, and All Oilseeds

1970/71 = 100

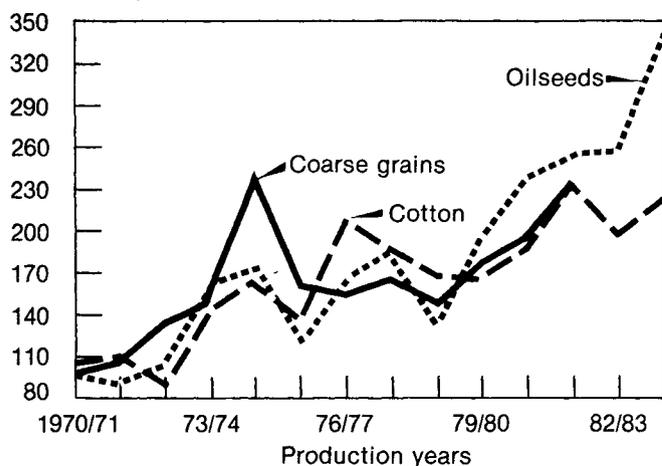


Source: Government of India.

Figure 2

### India: Harvest Wholesale Price Indices for Kharif Oilseeds and Competing Crops

1970/71 = 100

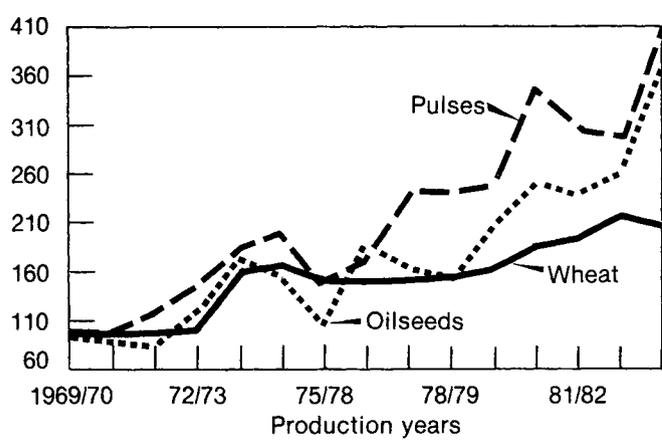


Source: Government of India.

Figure 3

### India: Harvest Wholesale Price Indices for Rabi Oilseeds and Competing Crops

1970/71 = 100



Source: Government of India.

expansion in order to conserve foreign exchange for imports of critical industrial raw materials and capital goods. On the demand side, price trends will probably continue to favor oilseeds because oilseeds have been shown to have higher income elasticities of demand than coarse grains, the principal competing crop.

However, there are limitations to a policy of stimulating oilseed production through higher prices. First, oilseed prices in India tend to be above world prices, suggesting that for efficiency reasons it may be necessary to focus on achieving production gains by exploiting the large potential for increasing yields, rather than by relying on area response to higher prices. Second, the impact of higher oilseed prices, either on consumer prices for edible oil, or on the budgetary cost of implementing consumer subsidies, could make higher prices unfeasible.

Finally, oilseed production has been constrained by a lack of new varieties of oilseeds that offer a clear economic advantage over competing crops, principally cereals. Available oilseed varieties generally have had neither the yield potential to compete with cereals for high-quality and irrigated land, nor the drought resistance necessary to yield well and justify increased input use on rainfed land. Recently, however, several new oilseed varieties, including high-yielding strains of groundnut that provide economically competitive yields on irrigated land in south and western India, have become available. Also recently introduced are short-duration varieties in the rapeseed family that provide a profitable catch crop in both irrigated and rainfed areas of north India.

#### Recent Gains in Groundnut and Rapeseed Production

Area, yield, and production of groundnut, India's major oilseed and the main source of variability in total oilseed production, have shown a stronger upward trend since 1975/76. Gains have been led by substantial increases in the area and yield of groundnut planted under irrigation during the rabi season. However, the larger and rainfall-dependent kharif crop continues to show wide fluctuations (table 21).

The increase in irrigated production of groundnut in competition with cereals and other cash crops is indicative of stronger relative prices, the availability of improved varieties, and Government promotion efforts. The marginal returns of small amounts of protective irrigation have been demonstrated to be particularly strong for groundnut, giving it an advantage where supplies of irrigation water are tight. Continued gains in irrigated plantings have the potential to reduce the typically high variability in production of both groundnut and total oilseeds.

Area and production of rapeseed, the second largest source of edible oil, have risen sharply since 1975/76 (table 21). Rapeseed is grown during the rabi season in northern India, where the competing crops are wheat, barley, pulses, and rabi sorghum. Production has been stimulated by higher prices, the recent availability of short-duration varieties that fit better into existing rotations, and the high marginal return to irrigation. Despite rising prices for competing pulse crops, the low yield potential of pulses has limited their competitiveness.

#### Sunflower and Soybean Production Below Target

Sunflower and soybean production has increased substantially in recent years, indicating some success for Government efforts to stimulate production of these non-traditional crops. However, both crops have faced problems, and production has been below target. Sunflower has good potential because of its short season, seasonal adaptability, and high proportion of high-quality oil. Problems have included the lack of suitable varieties, seed availability, high incidence of bird and other pest damage, and lack of appropriate harvest technology.

Soybean cultivation has increased in central India, primarily through pre-monsoon planting in areas that previously remained fallow during the kharif season because

their deep, poorly drained, clay soils are unworkable once the rains begin. Problems include the limited availability of such monsoon fallows, low yields, expensive and low-quality seed, and diseases. While net returns to soybeans have reportedly been higher than for possible alternative crops, primarily because of soybeans' tolerance to heavy rains, returns have been lower than expected. The longer term economics of soybean cultivation is in question because of soybean's relatively low yield of an oil that is considered inferior by most Indian consumers. There may also be problems in finding remunerative markets for the relatively large yield of high-quality meal.

### Trends in Oilseed Use

The bulk of the oilseeds produced in India are crushed for oil and meal. During 1980-83, about 79 percent of total production was crushed; about 15 percent went for feed and seed; and 5 percent, consisting primarily of groundnut, sesame, and rapeseed, was consumed directly as food. Less than 1 percent of total production was exported, and less than 1 percent of the total crush was imported (table 23). The share of total production that is processed has grown since the early 1960's, primarily because of a steady increase in cottonseed crushing. The cottonseed crush has increased from about 30 percent of production in the late 1960's to about 61 percent during 1981-83, because of new delinting and decortication capacity and regulatory actions to divert cottonseed away from direct feeding to livestock.

Crushing margins are highly volatile because of the variability of domestic oilseed production and prices, and because demand for edible oil tends to be responsive to changes in income (income elastic) and unresponsive to changes in price (price inelastic). In addition, domestic meal demand is generally weak, and quality-control problems, high transport and handling costs from inland plants, and export quotas hinder export marketing.

**Table 23.—Oilseed production, crush, and trade in India<sup>1</sup>**

Year	Pro- duc- tion	Crush		Imports		Exports	
		Quantity	Per- cent	Rape- seed	To- tal	G'- nut	To- tal
		1,000 tons		1,000 tons			
1967	8,580	6,203	72	5	29	0	0
1968	10,649	7,213	68	5	23	24	24
1969	9,098	7,269	80	4	26	58	59
1970	10,092	7,497	74	17	33	42	42
1971	11,420	8,083	71	45	53	40	40
1972	11,600	9,133	79	70	71	44	44
1973	9,243	7,668	83	62	64	33	37
1974	11,509	8,595	75	32	33	128	134
1975	11,531	8,944	78	18	19	73	87
1976	12,654	9,674	76	3	11	239	289
1977	10,509	8,852	84	30	55	90	98
1978	12,148	9,379	77	250	295	0	17
1979	12,799	9,750	76	24	54	27	44
1980	11,552	8,946	77	9	19	26	41
1981	11,894	9,379	79	7	12	71	84
1982	14,951	11,677	78	0	5	46	58
1983	13,177	10,715	81	0	5	35	47

<sup>1</sup>Includes all oilseeds shown in table 21.

Sources: Government of India, USDA.

Despite substantial variability, margins are consistently positive, and the oilseed processing industry has a large surplus of capacity.

Expeller capacity, estimated at 20 million tons, operated at about 47 percent of capacity in 1981, while the estimated 6.8 million tons of solvent extraction capacity operated at about 25 percent. However, a substantial portion of the reported expeller capacity, and a smaller portion of solvent extraction units, are considered to be either out of service or very old, small-scale, and technically inefficient. Most oilseeds are processed in simple expellers, with only a small proportion of oilseeds and expeller cakes processed in solvent extraction units.

The poor technical and economic efficiency of the processing industry suggests large potential for reducing costs and improving product quality and oil recovery. In particular, there is wide scope for improving oil recovery through solvent extraction. The growth of the solvent extraction industry has been impaired by limited domestic demand for relatively high-quality extractions for livestock feed, as well as slow consumer acceptance of refined, solvent-extracted oils that are relatively high priced.

### Trade in Oilseeds

India's involvement in oilseed exports is limited by high domestic prices for most oilseeds relative to world markets (table 24), and by strict export controls aimed at protecting domestic supplies for crushing. Exports have been confined primarily to groundnut and small quantities of sesame and nigerseed. India played a major, though highly variable, role in the world groundnut market until the mid-1970's, when exports were constrained by high domestic prices and Government concern with domestic supplies of groundnut oil—the oil preferred by most Indian consumers. Since 1977, India has accounted for only about 3.5 percent of world groundnut exports. Since 1980, domestic prices have been well above world prices, and India's small groundnut exports have been confined to the Soviet Union and Eastern Europe, where India has rupee trade agreements.

While the low use of processing capacity and relatively low external prices suggest potential for oilseed imports, India has not been a significant importer of oilseeds. A period of import liberalization led to large imports of rapeseed during 1977-79, but imports of all oilseeds, except small amounts of copra, are currently banned by the Government.

Private traders in India have urged the liberalization of oilseed imports, primarily rapeseed and soybeans. They argue that oilseed imports would be cheaper than imports of edible oils, and that capacity use and employment in the processing industry would be enhanced. The Government is reluctant to allow imports for two major reasons. First, in the context of efforts to improve oilseed producer incentives, the Government is concerned with the impact of low-priced imports on producer prices. Second, given the limited domestic market for oil meals, the economic viability of oilseed imports would require reexport of the meal. With most surplus processing capacity located inland and bulk handling and transport facilities unavailable, the transportation and handling costs associated with reexports may be prohibitive.

**Table 24.—Comparison of Indian and world prices for selected oilseeds and products**

	India			World		
	Seed	Meal	Oil	Seed	Meal	Oil
	\$/ton					
<b>Groundnut<sup>1</sup></b>						
1975	364	116	833	436	140	786
1976	304	142	606	425	176	692
1977	455	183	949	543	214	846
1978	397	159	863	621	205	1,079
1979	470	174	1,060	565	211	889
1980	578	200	1,279	500	240	859
1981	668	223	1,594	636	239	1,043
1982	620	182	1,448	385	189	585
1983	645	198	1,556	392	196	711
<b>Rapeseed<sup>2</sup></b>						
1975	294	80	697	293	129	551
1976	288	80	661	246	154	415
1977	494	146	1,180	312	169	584
1978	501	157	1,150	300	169	597
1979	463	141	1,170	312	187	636
1980	583	178	1,570	311	204	571
1981	589	153	1,516	299	200	483
1982	506	121	1,257	287	179	417
1983	549	141	1,371	319	180	499

<sup>1</sup>Indian prices: Bombay (whlsl); world prices: Rotterdam (cif). <sup>2</sup>Indian prices: Kanpur (whlsl); world prices: seed: Eur. ports (Can.,cif); meal: Hamburg (Ex. mill, fob); oil: Dutch (Ex. mill, fob).

Sources: Government of India, Oil World.

### Oil Supply and Use Trends

Total edible oil output in India has shown slightly stronger growth than oilseed production because of a steady increase in the shares of some oilseeds, particularly cottonseed, that are crushed. Available data do not indicate any substantial improvements in oil recovery. The bulk of the primarily edible oils included in this study are consumed as food, with about 9 percent of total production consumed in nonfood uses. The growing demand for oils for nonfood uses is met largely by inedible oils that are not included in this study; e.g., castor, rice bran, and various minor seed oils, as well as imported inedible tallow.

Most domestically produced oils intended for food use are marketed by the private trade in the crude, unrefined form preferred by most Indian consumers. Pure refined and, particularly, solvent-extracted and refined oils are not widely consumed, although they are finding a growing market among urban and higher income consumers. There are strong regional preferences for various oils, including groundnut oil in western India, rapeseed oil in eastern regions, and coconut oil in the south. While oils are technically substitutable in response to relative prices, these taste preferences have hindered substitution. Exceptions are the rapid acceptance of relatively low-priced imported palm and sunflower oils.

A comparatively small share of domestic oils and a large share of imported oils are marketed primarily in urban areas in the form of vanaspati—a hydrogenated blend of assorted refined oils used for cooking that is typically higher priced than pure, unrefined oils. Vanaspati production and consumption has grown rapidly in recent years because it has provided a means of marketing non-traditional imported oils and some domestic oils that are

**Table 25.—Production, trade, and total use of edible oils in India<sup>1</sup>**

Year	Pro-duction	Imports				Ex-ports	Total use
		Soy-bean	Palm	Rape-seed	All oils		
1,000 tons							
1967	1,882	52	8	0	60	0	1,942
1968	2,166	36	2	0	38	2	2,202
1969	2,195	84	0	0	84	1	2,278
1970	2,259	117	0	0	120	1	2,378
1971	2,462	157	1	0	158	1	2,619
1972	2,686	61	8	3	74	0	2,760
1973	2,250	48	52	20	120	1	2,369
1974	2,505	22	40	13	80	21	2,564
1975	2,627	4	62	10	77	31	2,673
1976	2,814	151	40	36	246	49	3,011
1977	2,592	438	320	287	1,115	6	3,671
1978	2,737	511	486	190	1,221	5	3,863
1979	2,854	553	396	130	1,096	3	3,837
1980	2,527	660	555	123	1,351	0	3,948
1981	2,664	653	453	112	1,317	0	3,971
1982	3,352	358	425	52	849	0	4,191
1983	3,043	602	620	74	1,306	0	4,359

<sup>1</sup>Production includes oils derived from all oilseeds shown in table 21.

Sources: USDA, partner-country trade data.

**Table 26.—Estimated use of edible oils in vanaspati and the public distribution system**

Year	Pro-duction	Vanaspati			PDS (imp. only)	
		Oil consumption				
		Total	Domes-tic	Imported <sup>1</sup>		
		1,000 tons			Per-cent	1,000 tons
1977	580	601	60	541	90	58
1978	657	681	68	613	90	52
1979	638	679	231	447	66	93
1980	706	719	85	634	88	354
1981	849	876	223	652	74	436
1982	900	948	355	593	63	403
1983	900	940	320	620	66	537

<sup>1</sup>Government allocations only. Note that total use of imported oils in vanaspati and the PDS is not equal to total imports because of stock adjustments and unknown marketings of imported oils by private traders during 1977-81.

Sources: Government of India, ERS estimates.

difficult to market in pure form (table 26). Nearly all imported soybean oil is used to manufacture vanaspati. Imported rapeseed and palm oils are also used in vanaspati when their prices are competitive with soybean oil.

The Government allots imported oils to the vanaspati industry at prices that are below those in the domestic market (but above import costs), according to supply conditions for domestic oils used in vanaspati, primarily cottonseed, soybean, sesame, and rice bran oils. It also regulates vanaspati prices. Use of groundnut and domestically produced rapeseed oil in vanaspati is banned in order to maximize supplies of these preferred oils for direct consumption.

The other major sector of consumption of edible oils is the distribution of imported oils through the

Government's public distribution system (PDS). While the PDS has been principally involved in sales of subsidized food grains, current policy is to expand the availability of other foods through the PDS. The distribution of imported edible oils has grown rapidly since the liberalization of imports in 1977 (table 26). Distribution is limited to imported oils and is at prices that are below the domestic market, but above import costs. The PDS is the main outlet for imported palm olein, and rapeseed and sunflower oils. Only small amounts of soybean oil have been distributed because of slow consumer acceptance.

The level and pricing of allocations of imported oils to the vanaspati industry and the PDS are the Government's primary means of influencing domestic prices of oilseeds and edible oils. Larger allocations of imported oils are provided to the vanaspati industry in years of poor domestic oilseed production. During the short duration of edible oil distribution through the PDS, allocations of imported oils have generally increased in years of poor production and strong prices, and declined in years of good production. While prices through the PDS are always below the domestic market, consumers exercise their preference for traditional oils as the margin between PDS and market prices shrinks in good production years.

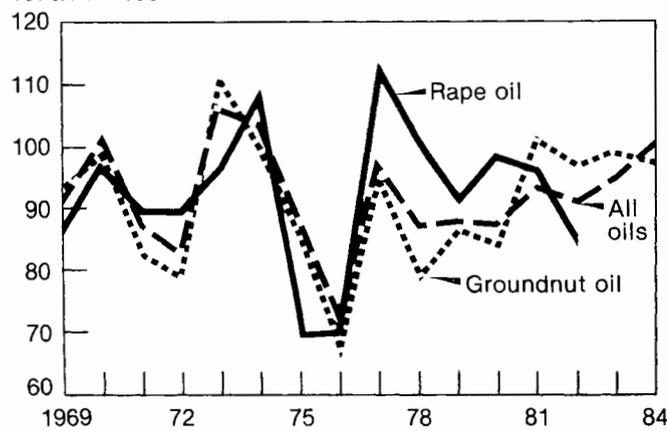
Since 1977, the allocation and pricing of imported oils for these programs have contributed to more stability in real prices for oils, although, with the exception of rapeseed oil, prices have risen in real terms (figure 4). The upward pressure on edible oil prices has been a function not only of the continued imbalance between domestic supply and demand, but also of increased pressure on crushing margins stemming from declining real prices and weak foreign demand for India's oilmeals. Competition, as well as chronic aflatoxin and quality-control problems, has prevented any growth in total meal exports in recent years.

Aggregate and per capita domestic disappearance of edible oils in India increased sharply in 1977, following the

Figure 4

#### India: Deflated Wholesale Price Indices for Groundnut, Rapeseed, and All Oils

1970/71 = 100



Source: Government of India.

initiation of large-scale imports. However, annual growth in total disappearance during 1977-84, about 3.05 percent, was only marginally higher than during the period preceding large-scale imports (table 27). Demand for edible oils has been shown in other research to be relatively income elastic and price inelastic, having an income elasticity of about 1.0 and an own price elasticity of about -.3. These elasticity estimates are roughly consistent with the actual growth rates in total edible oil disappearance, real GDP, and real edible oil prices of recent years.

#### Edible Oil Trade

High domestic prices in India preclude any significant involvement in oil export trade and provide the basic rationale for India's current position as the world's largest importer of edible oils. In 1977, improved foreign exchange reserves, very low per capita oil consumption, and a need to stem the wide swings in domestic oilseed and oil prices prompted the Government to lift its long-standing restrictions on imports. From 1977 to 1980, both the Government and the private trade, using import licenses provided by the Government, were involved in oil imports.

In 1980, all edible oil imports were canalized through the Government's State Trading Corporation (STC), but the private trade continued to import oils using outstanding licenses through 1981. The decision to canalize imports was made in order to more closely regulate expenditures of scarce foreign exchange (as edible oils became one of the largest items on the import bill) and to assure imports consistent with the objective of adequate producer incentives.

Annual import levels are now decided by an inter-ministerial committee that allocates foreign exchange to the STC. Because domestic oil prices are well above import costs, the Government earns a profit on its sales of imported oils to the vanaspati industry and the PDS. The need to conserve scarce foreign exchange and maintain remunerative oilseed producer prices—not budgetary costs—are the constraints on expanding the distribution of imported oils through these programs. The STC purchases oils strictly on a cash basis on the world spot market. Since 1981, there have been no purchases through long-term delivery contracts, although there is interest in these as well as government-to-government agreements, if they offer a price advantage.

Since 1977, India's imports of edible oils—primarily soybean, rapeseed, and palm oil—have ranged between 0.85

Table 27.—Growth in selected demand indicators for edible oils in India

Period	Total edible oil disappearance	Real GDP	Real edible oil prices <sup>1</sup>
<i>Growth rates (percent)</i>			
1969-76	2.80	2.84	-.96
1977-83	2.58	3.62	1.49
1977-84 est.	3.05	4.10	1.71

<sup>1</sup>Wholesale price index for edible oils deflated by the index for food commodities.

Sources: Calculated from Government of India and USDA data.

million and 1.35 million tons, with no perceptible trend (table 25). The composition of oils purchased has reflected the requirements for the various oils for vanaspati production and the PDS, as well as the relative prices of oils in world markets. Because imported soybean oil is used almost exclusively in vanaspati, annual soybean oil imports are limited by the requirements of the vanaspati industry and the relative prices of other imported oils that can be used in vanaspati, including palm and rapeseed oil. Because certain quantities of imported palm, rapeseed, or other oils acceptable for direct consumption are required for the PDS, total purchases of these oils tend to have a lower bound, but they can be significantly higher if they are more competitively priced than soybean oil.

### Supply and Demand Projections For 1990 and 1995

Alternative projections of supply and demand for edible oils are provided below to permit analysis of the implications of various assumptions regarding supply and demand growth on future trade. The alternative oilseed and oil supply projections are shown in table 28. For each alternative, projected oilseed production was calculated by applying the assumed log linear growth rates of area and yield to base-period averages. A 1981-83 base was used for cottonseed, rapeseed, safflower, soybean, and sunflower, while a 1981-84 base was used for coconut, groundnut, linseed, nigerseed, and sesame because the abnormally poor production year in 1982/83 heavily affected the 1981-83 averages for these crops. The growth rate assumptions involved in each oilseed production alternative are:

*Low supply.* Area and yield of each oilseed change at the same rate observed during 1967-83. It is implied in this alternative that reduced Government policy emphasis and/or lower relative oilseed prices will lead to slower production growth than in recent years.

*Medium supply.* Area and yield of each oilseed change at the rate observed since 1976. Growth rates for 1976-83 are used for cottonseed, rapeseed, safflower, soybean, and sunflower, and 1976-84 rates are used for coconut, groundnut, linseed, nigerseed, and sesame. It is assumed that continued policy emphasis and high relative oilseed prices will lead to a continuation of the gains achieved since 1976. This is considered the most likely scenario.

*High supply.* Area and yield of each oilseed change at the rates implied by current 5-year plan targets. This is considered the maximum that could be achieved.

Different procedures were used to derive low and medium projections for soybean and sunflower, because recent rapid expansion from a small base resulted in unrealistic growth rates. For these crops, the low projection assumes 1976-83 linear trends in area and yield, and the medium projection assumes achievement of 75 percent of the growth rates implied by the 5-year plan targets.

The area projections are feasible for each alternative. They do not necessarily require a decline in area planted to other crops because of increases in cropping intensity that will accompany the planned addition of 2 to 2.5 million hectares of irrigation potential annually. With a few exceptions, projected 1995 yields under each alterna-

**Table 28. Summary of oilseed and oil supply projections for India**

Projection and year	Oilseeds			Oil production
	Area	Yield	Prod.	
	<i>Mil. ha</i>	<i>kg/ha</i>	<i>Million tons</i>	
1981-83 average:	27.0	494	13.3	3.0
Low:				
1990	29.3	576	16.9	3.8
1995	31.0	643	19.9	4.6
Gr.rate (%)	1.07	2.07	3.14	3.30
Medium:				
1990	31.8	576	18.3	4.1
1995	35.9	645	23.2	5.2
Gr.rate (%)	2.22	2.11	4.33	4.26
High:				
1990	32.0	653	20.9	4.7
1995	37.1	797	29.5	6.7
Gr.rate (%)	2.46	3.84	6.30	6.31

Note: Growth rates computed between 1981-83 average and 1995. See text for explanation of alternative projections.

tive remain well below 1981 world averages. Only in the high projection do groundnut, safflower, and linseed yields approach or surpass 1981 world averages.

Oil supply projections were calculated using base-period average shares of production of each oilseed crushed and oil recovery rates. A continued gradual increase in cottonseed crushing and moderate improvement in currently low oil recovery rates for groundnut, cottonseed, and safflower were assumed. The use of base-period average crush percentages implies no change in the base-period pattern of oilseed trade.

The three alternative oil demand projections are based on varying assumptions regarding real GDP growth and trends in real edible oil prices. The degree of current, and likely future, priority given to the conservation of foreign exchange and import substitution provides the rationale for adjusting real prices. The income and own price elasticities of demand are assumed to be 1.0 and -.3, respectively. Edible oil demand projections were computed by applying the alternative growth rates to the 1981-83 average for total consumption and assuming no change in stocks. The alternative assumptions are:

*Low oil demand.* Annual growth in demand of 3.15 percent, based on 3.6-percent real GDP growth and 1.5-percent growth in real prices. This alternative is consistent with trends observed during 1977-84 and implies continued concern over balance-of-payments pressures and import substitution efforts.

*Medium oil demand.* Annual demand growth of 3.7 percent, based on stronger 4-percent growth in real GDP and slower 1-percent growth in real prices. Higher GDP growth is consistent with recent stronger performance and projections for the Indian economy. Slower real price increases are consistent with a balance between concerns with the efficiency implications of high oilseed prices and the maintenance of adequate producer incentives. This is considered the most likely demand scenario.

**Table 29.—Summary of alternative edible oil supply and demand projections for India**

Consumption	Production					
	Low		Medium		High	
	1990	1995	1990	1995	1990	1995
	<i>Million tons</i>					
Low:						
Prod.	3.8	4.6	4.1	5.2	4.7	6.7
Cons.	5.3	6.2	5.3	6.2	5.3	6.2
Imports	—	—	—	—	—	—
Imports	1.5	1.6	1.2	1.0	.6	-.5
Medium:						
Prod.	3.8	4.6	4.1	5.2	4.7	6.7
Cons.	5.5	6.6	5.5	6.6	5.5	6.6
Imports	—	—	—	—	—	—
Imports	1.7	2.0	1.4	1.4	.8	-.1
High:						
Prod.	3.8	4.6	4.1	5.2	4.7	6.7
Cons.	5.8	7.1	5.9	7.3	5.8	7.1
Imports	—	—	—	—	—	—
Imports	2.0	2.5	1.8	2.1	1.1	.4

Note: See text for explanation of alternative projections.

*High oil demand.* Annual demand growth of 4.5 percent, based on 4.5-percent real GDP growth and constant real prices. Improved economic growth of this order would likely correspond with significantly better overall export performance and less concern over balance-of-payments pressures and import substitution.

Table 29 shows the alternative oil supply and demand projections and their implications for trade in 1990 and 1995. The extreme combinations of high demand and low supply, and low demand and high supply are probably inconsistent, because price adjustments would likely preclude such a wide divergence of domestic supply and demand. The medium supply and demand alternative is considered the most likely and indicates 1.4 million tons of edible oil imports in both 1990 and 1995. It implies annual growth in imports of about 2.4 percent between 1981-83 and 1990, and less than 1.5 percent between 1981-83 and 1995.

Under the most likely scenario, and assuming that both vanaspati production and the distribution of oils through the PDS will grow, increases in domestic oil supplies may tend to reduce the share of imported oils used in vanaspati, and a growing proportion of imported oils may be used in the PDS. The high direct budgetary cost of subsidies that would be involved in replacing imported oils with more expensive domestic oils in the PDS also supports the notion that the PDS will become a more important marketing channel for imported oils. Imports of oils preferred for direct consumption, presently including palm, rapeseed, and sunflower oils, may tend to rise in relation to soybean oil, unless soybean oil achieves more consumer acceptance for direct consumption.

## PAKISTAN

Oilseeds are the fifth most important crop produced in Pakistan, after wheat, rice, cotton, and sugarcane. During 1981-83, oilseeds were planted on an average of 2.7 million hectares, or about 17 percent of cultivated area. Oilseed production is dominated by cottonseed; Pakistan is the world's fifth largest producer. Production of other

traditional oilseeds, including rapeseed, groundnut, and sesame, accounts for an almost insignificant share of world production. Nontraditional crops introduced within the last decade include safflower, soybean, and sunflower.

Following the inception of the 6th 5-year plan in July 1983, oilseeds are now the most critical commodity in Pakistan's strategy for food self-sufficiency. During 1982-84, imported edible oils accounted for 70 percent of total edible oil consumption, compared with only 55 percent during 1975-77. Foreign exchange expenditures on imports of edible oil averaged close to \$300 million during 1982-84. Because of the limited scope for increasing edible oil production from cottonseed, efforts to achieve self-sufficiency largely hinge on the introduction of non-traditional oilseeds. The immediate goal of the new oilseed initiative is to freeze the edible oil deficit at the current average of about 610,000 tons, even in the face of rapidly growing consumption.

## Oilseed Production Trends and Policies

Trends in oilseed area, yield, and production during the last 25 years indicate a substantial deterioration in growth rates in the 1970's and early 1980's, compared with the 1960's (table 30). During 1961-70, oilseed production grew strongly, with equal growth in area and yields. Growth in area, primarily sown to cotton, was made possible largely by the improved availability and use of irrigation. The area planted to groundnuts increased strongly, but production was primarily for home use, and commercial production of the crop was hampered by seed storage problems, lack of processing equipment, and the presence of aflatoxin.

Gains in oilseeds yields during the 1960's were also led primarily by cotton, a result of the introduction of HYV's and expanded use of fertilizer, as well as improved water availability. Several new cotton varieties were introduced in 1960's, and by the end of the decade, about 70 percent of cotton area was sown to HYV's, compared with about 50 percent in 1960. At the same time, estimated fertilizer use per hectare, encouraged by Government subsidies, quadrupled to more than 40 kilograms per hectare. Growth in yields of rapeseed and groundnuts, by contrast, was inhibited by lack of varietal improvement and little or no fertilization or irrigation.

During the 1960's, the Government's emphasis on implementing policies to improve food grain production did not seriously constrain oilseed production, although gains in the oilseed sector were confined largely to cottonseed. During 1971-84, however, the promotion of rice for export and of wheat for the domestic market was associated with a sharp slowdown in the growth of production of cottonseed and most other oilseeds. Since 1971, there has been almost no growth in oilseed area, and yields have stagnated. During this period, Government policies—including price supports, input subsidies, and research—bolstered the profitability of food grain production and, to a lesser extent, cotton, but neglected oilseeds.

## Cottonseed Production Potential Limited

In 1983/84, 2.77 million hectares were sown to cotton in Pakistan, making cotton second only to wheat in area.

**Table 30.—Area, production, and yield of principal oilseeds in Pakistan<sup>1</sup>**

Oilseed	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	Growth rates <sup>2</sup>			
										1961-1983	1961-1970	1971-1983	
<i>Area (1,000 ha)</i>											<i>Percent</i>		
Cottonseed	2,031	1,851	1,865	1,843	1,891	2,081	2,108	2,215	2,262	2.17	3.69	1.45	
Groundnut	41	44	45	51	46	41	47	60	69	7.11	20.09	5.17	
Rapeseed	452	470	519	412	433	409	417	386	385	-.71	.77	-3.12	
Sesame	23	28	30	32	46	46	44	43	29	.88	-3.51	2.20	
Sunflower	1	—	—	—	4	6	7	18	23	NA	NA	NA	
Total	2,548	2,395	2,459	2,338	2,408	2,578	2,620	2,708	2,754	1.63	2.91	.76	
<i>Production (1,000 tons)</i>													
Cottonseed	1,268	992	836	1,151	920	1,436	1,429	1,497	1,648	3.38	6.70	1.46	
Groundnut	61	62	64	72	45	50	57	72	84	6.84	21.81	3.00	
Rapeseed	244	267	292	236	248	247	252	238	246	.90	1.37	-1.58	
Sesame	8	11	12	13	19	19	18	17	11	3.70	-.66	4.02	
Sunflower	—	—	—	—	1	2	5	15	19	NA	NA	NA	
Total	1,581	1,367	1,242	1,471	1,259	1,772	1,759	1,828	1,995	3.05	5.90	1.13	
<i>Yield (kgs/ha)</i>													
Cottonseed	624	555	466	624	500	700	678	676	728	1.21	2.91	.01	
Groundnut	1,390	1,409	1,422	1,412	1,243	1,220	1,213	1,200	1,217	-.27	1.51	-2.17	
Rapeseed	549	568	570	573	573	604	607	617	637	1.61	1.17	1.54	
Sesame	348	393	400	406	413	413	409	395	379	2.73	2.49	1.67	
Sunflower	—	—	—	—	—	—	667	800	857	NA	NA	NA	
Total	620	571	505	629	523	687	671	675	724	1.42	2.91	.37	

— = none or negligible. NA = not available.

<sup>1</sup>Data reported by Pakistani production years (July/June). <sup>2</sup>Growth rates computed using log linear trends.

Source: Government of Pakistan.

Cottonseed is by far the most important oilseed in Pakistan, accounting for about 60 percent of the edible oils and 74 percent of the oilmeal produced during 1981/82-1983/84.

The slowdown in the growth of cotton and cottonseed production since 1971, with a sharp decline in both area and yield growth, reflects two major factors. First, while support prices (table 31) and open-market prices (figure 5) have favored cotton, available cost of production data indicate that the net returns to rotations that include HYV cotton are somewhat less than for alternatives, particularly those including rice and wheat. Cotton is a kharif crop that competes directly with rice. Cotton is also traditionally grown as a monocrop and is not followed by wheat or other rabi crops, in part because lengthy manual harvest operations interfere with timely sowing of rabi crops. In addition, Government price support policies made production of sugarcane, which covers both the kharif and rabi seasons, very competitive with cotton, encouraging a substantial increase in sugarcane area during the 1970's and early 1980's.

Second, while crop competition has hindered growth in cotton area since 1970, poor performance in developing and extending improved cultivation practices has led to little improvement in cotton yields. There continues to be very little use of insecticides, and a significant proportion of sowing is done by broadcasting rather than more advanced line sowing.

The Government's ability to induce increased production of cotton through pricing policy is limited. Domestic prices for cotton lint (about \$1,000 a ton in 1983/84) are

**Table 31. Government support prices for oilseeds and competing crops in Pakistan**

Crop	1976/77-1980/81 average			
	1981/82	1982/83	1983/84	
<i>Rs./ton</i>				
Cotton	3,973	4,450	4,575	4,925
(% change)	(3.4)	(4.1)	(2.8)	(7.7)
Sunflower <sup>1</sup>	2,118	3,325	3,500	3,500
(% change)	(8.4)	(12.7)	(5.3)	(—)
Soybean <sup>1</sup>	2,545	2,925	3,050	3,050
(% change)	(7.0)	(9.1)	(4.3)	(—)
Safflower	1,210	2,800	3,000	3,000
(% change)	(7.5)	(16.2)	(7.1)	(—)
Wheat	1,178	1,450	1,600	1,600
(% change)	(10.4)	(—)	(10.3)	(—)
Rice(basmati)	1,594	2,125	2,200	2,250
(% change)	(6.9)	(13.3)	(3.5)	(2.3)
Rice(IRRI)	836	1,125	1,225	1,275
(% change)	(3.7)	(16.6)	(8.9)	(4.1)

<sup>1</sup>Averages for 1977/78-1980/81.

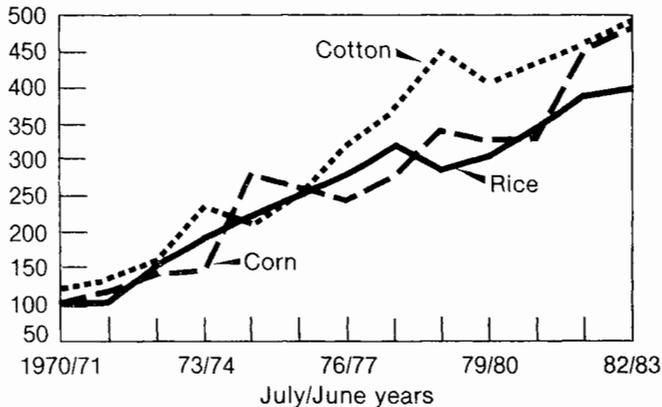
Source: Government of Pakistan.

now near international prices, and with cotton production strongly based on exports of raw cotton and textiles, further adjustments in support prices will depend on international price movements. Moreover, because cotton is produced primarily for lint, there is limited potential for significantly enhancing producer incentives through stronger prices for cottonseed and its byproducts. Cotton lint accounts for about 72 percent of the value of an acre of seed cotton, with meal accounting for about 16 percent; oil, 8 percent; and seed and waste, 4 percent.

Figure 5

### Pakistan: Wholesale Price Indices for Cotton and Competing Crops

1969/70 = 100



Source: Government of Pakistan.

To the extent that prices for cottonseed and its byproducts influence incentives for cotton production, Government policies regulating the price of cottonseed oil have provided a disincentive. Fixed prices for cottonseed oil, Rs. 6,700 (\$515) a ton in 1983/84, while consistent with international prices, have allowed domestic cottonseed oil prices to decline about 4 percent annually in real terms since the mid-1970's. Although growing demand for livestock and poultry feeds has boosted cottonseed meal prices in real terms, the steady decline in real prices for the oil has limited producer returns and also offered little incentive to improve oil recovery rates.

Cottonseed oil's low price elasticity of supply, in combination with relatively low oil yields per hectare (about 70 kilograms compared with 200 for rapeseed), suggests that Pakistan must emphasize other oilseeds if it is to significantly boost vegetable oil production. The 6th 5-year plan establishes a cottonseed production target of 2.07 million tons in 1987/88, implying strong average annual growth of 5.2 percent during 1982/83-1987/88. However, even should this target be achieved, the increase in cottonseed production would translate into only 70,000 tons more oil. Additionally, while cotton is characterized by relatively high yields of oilmeal per hectare (over 500 kilograms, compared with less than 400 for rapeseed), the meal produced cannot be used in large quantities in poultry rations because of the presence of gossypol (a growth inhibitor in non-ruminants), low-quality protein content, and high fiber. This is an especially important constraint in Pakistan, where demand for poultry meat is growing rapidly, but the poultry industry is hampered by short supplies of high-quality feeds.

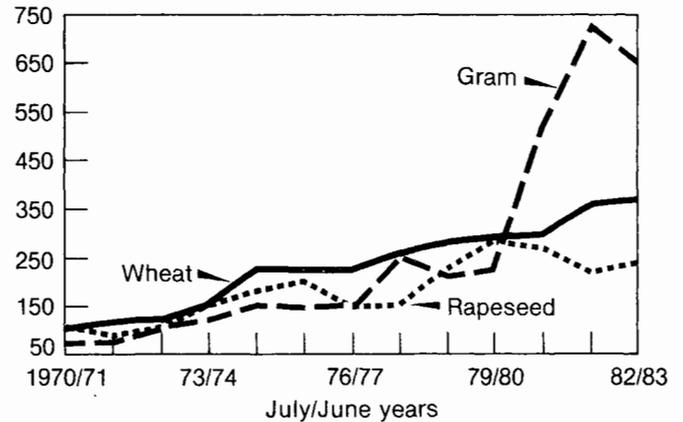
#### Rapeseed Production Declines

Rapeseed is Pakistan's second largest oilseed crop, accounting for about 36 percent of domestic oil production and 20 percent of meal output during 1981/82-1983/84. Production of rapeseed fell during 1971-83, as a decline in area offset marginal gains in yields. Area fell primarily because of weak prices and low profitability

Figure 6

### Pakistan: Wholesale Price Indices for Rapeseed and Competing Crops

1969/70 = 100



Source: Government of Pakistan.

relative to other competing rabi crops, including wheat, gram, and barley (figure 6). While the introduction of new Canadian varieties led to some recent improvement in yields, low and uncertain profitability has constrained the use of irrigation, fertilizer, and plant protection inputs.

Except for the recent introduction of new varieties, the Government has given little attention to rapeseed production. There continues to be no support price or input subsidies for rapeseed. Rapeseed prices are influenced indirectly by the Government's pricing and allocation of domestic cottonseed oil and imported oils. Although rapeseed oil is a preferred oil in Pakistan and commands a premium price, large allocations of less expensive imported oils have contributed to a steady decline in real prices for rapeseed and rapeseed oil. In addition, domestic demand for rapeseed meal has been weak because its low-quality protein and high fiber content hinder its use in poultry rations.

The improved yields of the new Canadian varieties, coupled with rapeseed's relatively high oil yield per hectare, could eventually lead rapeseed oil production to surpass that of cottonseed oil. However, support price mechanisms and stronger relative prices for competing crops suggest that Government efforts to strengthen rapeseed prices will be necessary to achieve a substantial breakthrough in production.

#### Groundnut and Sesame Production Demphasized

Growth in groundnut production slowed sharply during 1971-83, while sesame production picked up. Production of both of these minor oilseeds is linked primarily to demand for home use, and they are not processed for oil and meal. Little research has been done on groundnut in Pakistan, primarily because of concern with aflatoxin. Moisture control during seed storage has also been a problem for both groundnut and sesame. The Government is not encouraging production of either oilseed.

## Current Initiatives Stress Nontraditional Oilseeds

Recognizing the limited scope for increasing production from traditional oilseeds, the new 5-year plan's primary strategy for boosting edible oil production is the introduction of nontraditional oilseeds, including sunflower, soybean, and safflower. These crops are viewed as having substantial potential for fitting into multiple cropping patterns and increasing per hectare yields of oil and meal.

Sunflower appears the most promising if seed production and distribution problems can be overcome. Its seasonal adaptability will allow it to fit into existing rotations, either preceding wheat or following cotton or maize. It has the potential to provide the highest oil yield per hectare in Pakistan; oil yields per hectare from current varieties are estimated at 430 kilograms. Its oil meal yield per hectare, at 340 kilograms, matches that of rapeseed and is 35 percent below that of cotton.

Soybeans must be grown as a kharif crop in competition with rice and cotton, and production will also likely be constrained by a lack of indigenous varietal research and the need for careful cultural practices. Safflower is highly drought-tolerant and produces high-quality oil, but does not have the potential to produce a high yield of oil per hectare, and spiny varieties are difficult to harvest.

The Government production plan for nontraditional oilseeds includes the announcement of price supports for safflower, soybean, and sunflower (table 31), and supplies of improved seed, credit, and inputs to growers. Price supports are near international market prices. The Oilseed Development and Processing Corporation now has responsibility for policies and operations of the new program. The Ghee Corporation of Pakistan (GCP) will provide an assured market for edible oil derived from safflower, soybean, and sunflower at the same controlled prices as for cottonseed and imported oils. The poultry industry will provide an assured market for soybean meal produced by either expeller or solvent plants. Exploiting potential demand for safflower and sunflower meal in the beef sector, and to a lesser extent in the poultry industry, depends on solvent extraction because of the low quality of cakes produced from expellers.

### Trends in Oilseed Use

The bulk of the cottonseed and rapeseed produced in Pakistan is crushed for oil and meal, while virtually all groundnut and sesame are consumed directly as food. About 83 percent of cottonseed, 90 percent of rapeseed, and 82 percent of total oilseed production is crushed (table 32).

Oilseeds are processed by three different methods. In 1982, simple expeller plants accounted for about 80 percent of the 1.5 million tons of oilseeds processed. Solvent extraction plants accounted for about 10 percent of oilseed processing, and local processors, using the indigenous kohlu method, processed about 7 percent, all rapeseed. Expeller processing capacity, estimated at 3.2 million tons, operated at about 38 percent of capacity in 1982, while solvent extraction capacity, estimated at 500,000 tons, operated at about 30 percent of capacity.

**Table 32.—Supply and distribution of oilseeds in Pakistan<sup>1</sup>**

	Pro- duc- tion	Net im- ports	Crush		Food use	Feed & waste
			Quantity			
	1,000 tons		Per- cent		1,000 tons	
1974/75	1,573	0	1,252	80	57	230
1975/76	1,321	2	1,087	82	58	197
1976/77	1,192	0	990	83	60	145
1977/78	1,459	0	1,130	77	66	247
1978/79	1,214	0	1,019	84	41	195
1979/80	1,735	0	1,461	84	45	235
1980/81	1,743	0	1,461	84	52	237
1981/82	1,824	0	1,520	83	66	245
1982/83	2,000	0	1,564	78	76	366
1983/84	1,302	0	1,094	84	77	137

<sup>1</sup>Includes all seeds in table 30, except sesame.

Sources: Government of Pakistan, USDA estimates.

Local expellers are inefficient in processing cottonseed, losing an estimated 30 percent of the oil. But the cost of switching over to more efficient solvent plants appears to be prohibitive given prevailing weak domestic oil prices.

### Oil Supply and Use Trends

Total edible oil output in Pakistan averaged 227,000 tons during 1982-84, or about 25 percent of total domestic consumption (table 33). Consumption has increased dramatically, from about 400,000 tons in 1974/75 to close to 900,000 in 1983/84, while oil production has risen only marginally. The strong increase in consumption is the result of growing population, urbanization, and rising per capita income. Pakistan's population is increasing at a rate of nearly 3 percent a year, one of the highest in Asia. During 1975-84, real per capita income increased at an average annual rate of over 3 percent. Rising per capita incomes, combined with falling real edible oil prices (figure 7) and a general tendency for oil consumption to rise as incomes increase, translated into an average annual increase in oil consumption of close to 10 percent during 1975-84.

Final edible oil products from domestically produced and imported oils can be placed into four categories: vegetable ghee, refined cooking oil, unrefined cooking oil, and soap stock for industrial use. Vegetable ghee (hydrogenated vegetable oil) is usually a blend of cottonseed, soybean, and crude palm oils. The blend is adjusted based on the seasonal availability of cottonseed oil, as well as the relative prices of soybean and palm oils in the world market.

In recent years, vegetable ghee has replaced desi ghee (clarified butter) as the primary frying medium, because chronically tight supplies of desi ghee have sharply increased its cost. The Government controls the wholesale price of vegetable ghee, while the price of desi ghee reflects market clearing levels. During the past decade, vegetable ghee consumption grew from 272,000 tons to more than 500,000, an average annual growth rate of close to 10 percent. Growth in vegetable ghee consumption has been spurred by 3 percent annual growth in per capita income, as well as a decline in administered prices in real terms (figure 7).

**Table 33.—Supply and distribution of edible oils in Pakistan<sup>1</sup>**

Production	Imports				Use	
	Coco-nut	Palm	Soy-bean	All oils	Total	Veg. ghee
1,000 tons						
1974/75	196	0	130	63	194	272
1975/76	177	2	136	102	240	277
1976/77	170	0	134	98	232	326
1977/78	179	0	132	206	348	360
1978/79	154	10	203	277	490	422
1979/80	223	13	233	217	463	452
1980/81	223	15	237	219	471	505
1981/82	238	3	220	304	527	531
1982/83	254	0	335	310	645	513
1983/84	188	0	310	350	660	530

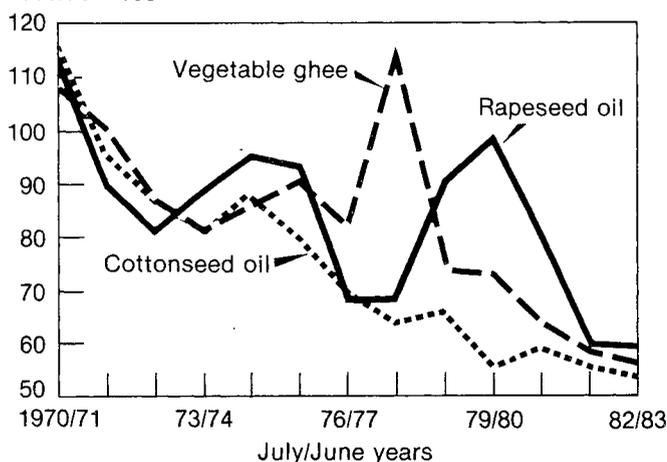
<sup>1</sup>Production includes oils derived from all oilseeds shown in table 30, except sesame.

Sources: Government of Pakistan, USDA estimates.

Figure 7

**Pakistan: Deflated Wholesale Price Indices for Edible Oils**

1969/70 = 100



Source: Government of Pakistan.

Though growth in consumption of vegetable ghee was strong during the last decade, growth in consumption of refined and unrefined cooking oil was even greater, particularly in the last 5 years. The primary reason has been even stricter Government control on the wholesale prices of domestic cottonseed oil and imported oils consumed directly as cooking oil than on prices of vegetable ghee. During 1979-1984, real prices for cottonseed and imported oils declined at an annual rate of more than 7 percent, compared with a 5-percent annual decrease in the price of vegetable ghee. Rapeseed oil prices, which are not controlled, also declined in real terms in sympathy with competing oils. Consequently, per capita consumption of cooking oil increased more than 37 percent to 3.7 kilograms while per capita consumption of vegetable ghee rose 11 percent to 5.9 kilograms.

**Edible Oil Trade**

About three fourths of the edible oil consumed in Pakistan is imported. Since 1974/75, Pakistan's imports of

edible oils, about equally divided between soybean and palm oil, have increased sharply, from less than 200,000 tons to 660,000. The composition of the oils purchased primarily reflects the requirements for vegetable ghee production; the availability of soybean oil on concessional or credit terms, and the relative market prices of the two oils.

The Trading Corporation of Pakistan (TCP) purchases over 70 percent of total imports. A growing private trade accounts for the remainder. When world prices are low, as was the case in the early 1980's, the TCP and private traders resell to the GCP at the higher fixed domestic prices, making large profits. When the world price is above the domestic price, the TCP absorbs the loss.

The major constraint on imports of edible oil is Pakistan's chronically tight foreign exchange position. The Government sets limits on imports according to the projected needs of the vegetable ghee industry and the cooking oil market. P.L. 480, Title I, and CCC credit have been important financing tools for the United States in its effort to maintain its share of Pakistan's edible oil market. In 1983/84, P.L. 480 and CCC credit accounted for 35 percent of soybean oil imports, with the remainder paid for on commercial credit terms. The United States accounts for about 90 percent of commercial soybean oil purchases, with Brazil's inability to provide credit constraining its sales in the Pakistani market.

**Supply and Demand Projections For 1990 and 1995**

Two alternative projections of edible oil supply and three projections of demand are provided to assess the implications of alternate assumptions on future trade. The projections are summarized in table 34. Alternative supply projections were calculated by applying assumed oilseed production growth rates to 1981/82-1983/84 averages, and assuming no change in the average rates of crush and oil recovery during the same period. A 1980/81-1982/83 production base was used for cottonseed because 1983/84 was an atypically bad year for cotton production. The assumptions made in the alternative supply projections are:

*Low supply.* For traditional oilseeds, it is assumed that production will continue to change at the same rate observed during 1971-83. It is expected that policies will have no impact on traditional crops because of the crop competition factors discussed previously, as well as lack of emphasis on rapeseed, groundnut, and sesame in the 5-year plan. It is assumed that sunflowers will be successfully introduced, but that there will be less success with soybeans and safflower. Under this alternative, oilseed production increases at 2.8 percent annually, while edible oil production grows 6.7 percent. This is considered the likely scenario.

*High supply.* Production of each oilseed changes at the rate implied by the 5-year plan targets for 1987/88. It is assumed that Government policies will be successful in boosting the growth rate of cottonseed production close to that achieved in the 1960's, and that the three non-traditional oilseeds will be successfully introduced and achieve their production targets. Under this alternative, total oilseed production grows 6.3 percent annually,

while edible oil production grows 13.3 percent. This is considered the maximum that could be achieved.

The alternative oil demand projections are based on Government targets, as well as alternative assumptions regarding movements in real edible oil prices. Real GDP growth of 6 percent is assumed in all alternatives. Based on other research, the income and own price elasticities of demand are assumed to be 0.9 and -0.6, respectively. Projections are calculated by applying the alternative growth rates to 1981/82-1983/84 average total consumption and assuming no change in stocks. The alternative assumption are:

*Low demand.* Annual demand growth of 3.5 percent, based on the 5-year plan target of holding imports at the 1981/82-1983/84 average of 610,000 tons, given the achievement of the Government production targets indicated in the high production alternative. With the assumed demand elasticities and real GDP growth, this alternative implies a 3.2-percent annual increase in edible oil prices.

*Medium demand.* Annual growth in demand of 6.5 percent, based on 6-percent real GDP growth and a 2-percent annual decline in real edible oil prices. It is implied in this alternative that policies will slow the historical decline in real prices to manage demand, but that the reversal in real price trends implied in the low demand alternative will not be feasible because of concern with consumer welfare. This is considered the likely demand scenario.

*High demand.* Annual demand growth of 9.7 percent, based on 6-percent real GDP growth and a 7-percent annual decline in real edible oil prices. This alternative is consistent with the trends in real GDP and edible oil prices since 1974/75.

The projections indicate that import demand for edible oils will grow considerably if Government production targets are not met, or if consumer price policies are not adjusted to allow the real price of edible oils to rise. With the low supply and medium demand combination that is considered most likely, edible oil imports will rise about 6.5 percent annually, reaching 820,000 tons in 1990 and nearly 1.1 million in 1995. In the absence of any current Government initiatives to manage demand for edible oils, and with uncertainties regarding the

introduction of new varieties of oilseeds, this seems to be a reasonable projection. Because both soybean and palm oils are consumed in the same end products, either as vegetable ghee or cooking oil, both oils have equal potential to share in the projected growth of Pakistan's imports. Imports of each oil will likely continue to depend primarily on their relative prices.

## CONCLUSIONS

India and Pakistan have emerged as major edible oil importers for similar reasons, and there are common elements in their recently devised strategies to reduce dependence on imports. There are, however, key differences in the policies adopted in each country, particularly with regard to the role of pricing mechanisms and prospects for successfully reducing import requirements.

India's broad traditional oilseed production base, coupled with the apparent commitment to allow stronger real prices to stimulate production and manage demand growth, appears to offer more potential for limiting growth in oil imports through 1995. However, the growing distortion between Indian domestic and world prices may eventually force greater dependence on the more difficult course of improving oilseed yields.

In Pakistan, where the traditional oilseed production base is limited, reliance on the introduction of nontraditional crops and an apparent commitment to more consumer-oriented pricing policies make prospects for closing the current gap between supply and demand more questionable. In both countries, however, it may be unwise to underestimate the potential to increase oilseed production, given their rich agricultural resource bases and past successes in implementing policies and programs in the food grain sector.

According to the import demand scenarios considered most likely in each country, total edible oil imports by India and Pakistan are projected to grow at an annual rate of about 3.1 percent, rising from 1.67 million tons during 1981-83 to about 2.2 million in 1990 and 2.5 million in 1995. If the market share for soybean oil were to remain at the 1981-83 average of 46 percent, soybean oil imports would also rise 3.1 percent annually, from 816,000 tons in the base period to about 1 million in 1990 and 1.1 million in 1995. During 1981-83, the U.S. share of Indian and Pakistani soybean oil purchases was 261,000 tons (32 percent), and if this share is maintained, U.S. soybean oil exports to the two countries would reach about 325,000 tons in 1990 and 370,000 in 1995.

However, since 1977, the soybean oil component of India and Pakistan's edible oil imports has varied between 40 and 52 percent, primarily reflecting price competition with palm oil. With strong growth projected in Malaysian palm oil production through 1995, palm oil may tend to capture an increasing share of edible oil trade. In addition, since 1977, the U.S. share of annual soybean oil purchases by the two countries has varied between 31 and 61 percent, primarily because of competition from Brazilian soybean oil. Continued strong price competition from Malaysian palm and Brazilian soybean oil, coupled with the expectation that Indian import demand will gradually shift toward palm oil, may make it increasingly difficult for U.S. soybean oil to hold its current share of India and Pakistan's edible oil imports.

**Table 34. Summary of alternative edible oil supply and demand projections for Pakistan**

Production	Consumption					
	Low		Medium		High	
	1990	1995	1990	1995	1990	1995
	<i>Million tons</i>					
High:						
Prod.	.46	.59	.46	.59	.46	.59
Cons.	1.07	1.20	1.17	1.50	1.32	1.83
Imports	.61	.61	.71	.91	.86	1.24
Low:						
Prod.	.35	.41	.35	.41	.35	.41
Cons.	1.07	1.20	1.17	1.50	1.32	1.83
Imports	.72	.79	.82	1.09	.97	1.42

Note: See text for explanation of alternative projections.

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