United States Department of Agriculture
Economic Research Service
https://www.ers.usda.gov

United States
Department of
Agriculture

**Economic
Research
Service**

**Agriculture
and Trade
Analysis
Division**

Government Intervention in Pakistan's Agricultural Economy

Gary Ender

It's Easy To Order Another Copy!

Just dial 1-800-999-6779. Toll free in the United States and Canada. Other areas, please call 1-301-725-7937.

Ask for *Government Intervention in Pakistan's Agricultural Economy* (AGES 9027)

The cost is $8.00 per copy. For non-U.S. addresses, add 25 percent (includes Canada). Charge your purchase to your VISA or MasterCard, or we can bill you.

Or send a check or purchase order (made payable to ERS-NASS) to:

ERS-NASS
P.O. Box 1608
Rockville, MD 20849-1608.

We'll fill your order by first-class mail.

Government Intervention in Pakistan's Agricultural Economy. By Gary Ender. Agriculture and Trade Analysis Division, Economic Research Service, U.S. Department of Agriculture. Staff Report No. 9027.

Abstract

This report analyzes the nature of the Government of Pakistan's policy interventions in the agricultural sector using producer and consumer subsidy equivalents (PSE's and CSE's). It outlines the Government's position toward the Uruguay Round of multilateral trade negotiations under the General Agreement on Tariffs and Trade (GATT) and possible changes in Pakistan's policies if trade were liberalized. Commodities examined are cotton, wheat, basmati rice, and coarse rice.

Keywords: Pakistan, cotton, wheat, rice, producer subsidies, PSE, consumer subsidies, CSE, GATT, trade liberalization.

Acknowledgments

The author thanks John Reddington, William Brant, and Arif Mahmood of USDA's Foreign Agricultural Service (FAS) for assistance in gathering information and Gene Mathia, Rip Landes, Carl Mabbs-Zeno, Nicole Ballenger, and Barry Krissoff of USDA's Economic Research Service (ERS) for valuable comments. Wynette Phillips and Nora McCann, also of ERS, provided wordprocessing services.

1301 New York Avenue, NW
Washington, DC 20005-4788

April 1990

Contents

Government Intervention in Pakistan's Agricultural Economy

Gary Ender

Introduction

Pakistan makes a good case study for those interested in government intervention in agriculture. Many of Pakistan's policies are typical of developing countries, particularly its taxation of agricultural exports to raise revenue and its consumer subsidy on the dietary staple. This report analyzes the effects of the Government of Pakistan's policies on the agricultural sector using producer and consumer subsidy equivalents (PSE's and CSE's). It outlines the Government's position toward the Uruguay Round and the possible changes in policy it might make if trade were liberalized.

Government Intervention in Agriculture

Like most countries, both developed and developing, Pakistan intervenes in its agricultural sector to promote various objectives. The main interventions and their objectives are outlined in this section.

Main Agricultural Policy Interventions

The Government of Pakistan has been the country's sole importer and exporter of wheat, rice, cotton, and fertilizer. It also maintains support/procurement prices. The Cotton Export Corporation (CEC) and the Rice Export Corporation (REC), in carrying out government policy, have generally restricted exports, made profits, and depressed domestic prices. Both the REC (in the case of coarse rice) and the CEC (in the case of cotton) have lost money some years. The Ministry of Food and Agriculture has controlled wheat trade, and, until 1987, the Government maintained a ration system that distributed subsidized flour to consumers. The Government continues to procure and maintain stocks of wheat to stabilize consumer prices. It is now significantly expanding its storage capacity.

The taxing effect of trade policies has been partly offset by subsidies on inputs, particularly fertilizer. The Government has for some years felt that fertilizer subsidies have served their purpose of introducing farmers to modern inputs, and has been attempting to reduce subsidies. Fertilizer users have been subsidized via a system of subsidies and taxes on fertilizer

producers.[1] Fertilizer prices had been fixed by the Government and were the same throughout the country, although recently some fertilizer prices were deregulated. The Government had covered the cost of marketing all fertilizer.

Irrigation has been subsidized both through less than full recovery of operating and maintenance costs and through direct subsidies for the drilling of tube wells. Agricultural credit has been extended both at below-market rates and to small farmers on an interest-free basis. Finally, the Government has employed a differential tariff on electricity to provide yet another subsidy to agriculture. Pesticides also were previously subsidized, but have not been subsidized to any significant extent since the 1980/81 fiscal year (July/June).

Objectives of Interventions

The Government of Pakistan pursued a variety of objectives through these policies. The export corporations were able to generate revenue for the Government in many years by making a profit on their sales. These revenues have become increasingly important, since the Government has run up deficits in an effort to maintain public investments and accelerate development. Controlling important commodity exports also allowed the Government to plan for a balanced flow of foreign exchange over the year when they made their export commitments.[2] Pakistan's rising foreign debt and debt service payments have increased the importance of regulating the flow of foreign exchange.

The textile industry's importance to employment and to export revenue resulted in this industry being supported with cheap cotton as an input. Consumers of other commodities have been subsidized, too. Wheat is the staple, and the Government has felt the need to guarantee the poor a low and stable flour price. It did so directly through the ration system and occasional open-market releases, and, indirectly, through restricted trade, which insulated consumers from world price fluctuations.

At the same time, the Government has striven to assure producers of a reasonable return. For crops like cotton and basmati rice, however, achieving a reasonable return has not been difficult, since advances in cotton yields and strong demand for basmati rice have bolstered net returns. In this context, the Government's policies have appeared more to be recapturing

---

[1] Government of Pakistan, Planning Commission, Seventh Plan, p. 580.

[2] While restricting cotton exports has reduced the amount of foreign exchange earned by unmanufactured cotton, it has lowered and stabilized the price of raw cotton to the textile industry, thereby promoting exports of value-added products like yarn and cloth. Thus within the cotton sector, foreign exchange earnings may have been higher under state trading than without it.

technological gains and previous subsidies than to be upholding producer returns.

Commodity Coverage

Several agricultural proposals in the GATT trade negotiations advocate the use of an aggregate measure of support to gauge government intervention in agriculture and to monitor its reduction under trade liberalization. The producer subsidy equivalent (PSE) is one such aggregate measure, and it is used in this report to analyze government intervention in Pakistan's agricultural sector. The PSE provides an estimate of the income that would be necessary to compensate farmers for removing government policies. PSE's can be positive, indicating that policies subsidize producers, or negative, indicating taxing of producers. Consumer subsidy equivalents (CSE's) provide an analogous measure for consumers.

Pakistani commodities covered in this report include cotton, wheat, basmati rice, and coarse rice. Basmati rice (extra-long grain aromatic rice that sells at premium prices) and coarse rice (medium and short grain rice) are treated as separate commodities because of their very different quality and price. Both PSE's and CSE's were calculated for these commodities, which compose about 45 percent of value added in agriculture. Measured policies include state control of trade, price supports, food rationing, and assistance on inputs. Inputs covered include fertilizer (nitrogen and phosphorus), credit, irrigation, and electricity. PSE's and CSE's were estimated for 1982 through 1986.

Major Pakistani commodities for which PSE's and CSE's are not estimated include sugar, vegetable oils/oilseeds, and poultry. Important policies--the effects of which have not been measured--include exchange rate overvaluation, exempting agricultural income from income taxation, public investment in irrigation and research, and expenditures on agricultural extension services.

Overvaluation of the exchange rate is usually not an issue in the calculation of PSE's for developed countries, because the effects would not be specific to the agricultural sector and because exchange rates tend to float freely. In countries like Pakistan, however, where agriculture-based exports account for more than half of all exports, it can be argued that exchange rate distortions affect mostly agricultural producers (and consumers). Nevertheless, estimates of overvaluation are not included in the PSE's here, partly for the lack of a clearly preferred method of estimation.[3]

---

[3] Recent estimates of overvaluation that became available after calculation of these PSE's reveal overvaluation of about 20 percent in the 1980's. (Report of the National Commission on Agriculture, Ministry of Food and Agriculture, Government of Pakistan, Mar. 1988, p. 50).

While overvaluation has not been included in these PSE estimates, the official exchange rate often must be used to convert reference prices into local currency. Although the rupee was unpegged from the dollar in 1982, it does not float freely. Thus, it seems reasonable to include exchange rate policy in the discussion of factors affecting the level of the PSE. That is, while the rupee is being managed against a basket of currencies, the Government retains control over the rate of exchange and has periodically intervened to accelerate or decelerate its rate of change.[4] Changes in the official exchange rate thus can be considered partly exogenous and partly policy induced.

Exempting agriculture from income taxation represents an indirect transfer of resources to agriculture, but data are not available to estimate this effect. Data limitations also prevented the inclusion of government investments in irrigation and research and expenditures on extension.

Relative Importance of Interventions

PSE's and CSE's shed much light on the magnitude of the effects of the various policies pursued in Pakistan. They summarize the extent of all policies in a given year and over time. They also detail the extent of specific policies in particular years or for particular commodities.

Aggregate Effects

Overall, control of trade was the most important intervention. To producers, the absolute value of Pakistan's implicit taxation was about an order of magnitude greater than the subsidy due to the next most important policy, the fertilizer subsidy (table 1),

Table 1--Pakistan: Total PSE's

Item	Unit	1982	1983	1984	1985	1986	1982-86 average
Producer value	Mil. rs.	40,176	41,318	45,940	52,157	-60,762	48,071
Policy tranfers to producers							
Support prices, state control of trade	Mil. rs.	-11,257	-13,672	15,628	-7,460	-22,714	-14,146
Fertilizer assistance	Mil. rs.	1,514	963	908	1,732	1,295	1,283
Credit assistance	Mil. rs.	235	336	477	569	627	449
Electricity assistance	Mil. rs.	683	714	739	808	963	782
Irrigation assistance	Mil. rs.	497	543	617	760	841	652
Total policy transfers	Mil. rs.	-8,327	-11,116	-12,887	-3,590	-18,988	-10,982
PSE (per unit value)	Percent	-21	-27	-28	-7	-31	-23

rs = rupees.

[4] For example, from February 1985 to March 1986 the Government held the rupee almost constant in terms of U.S. dollars, allowing it to depreciate with the dollar against other major currencies.

and about five times as great as all input subsidies combined. Overall, there was a taxing effect on producers of 20 to 30 percent of the value of production. Annual variation in the PSE stemmed from changes in the world price, exchange rate, and, in some cases, domestic prices. The aggregate PSE increased both in absolute value and percent--that is, it became more taxing--every year except 1985 (figure 1). In that year, border prices[5] of cotton, wheat, and rice fell significantly, reducing the taxing effect of the Government's policies.

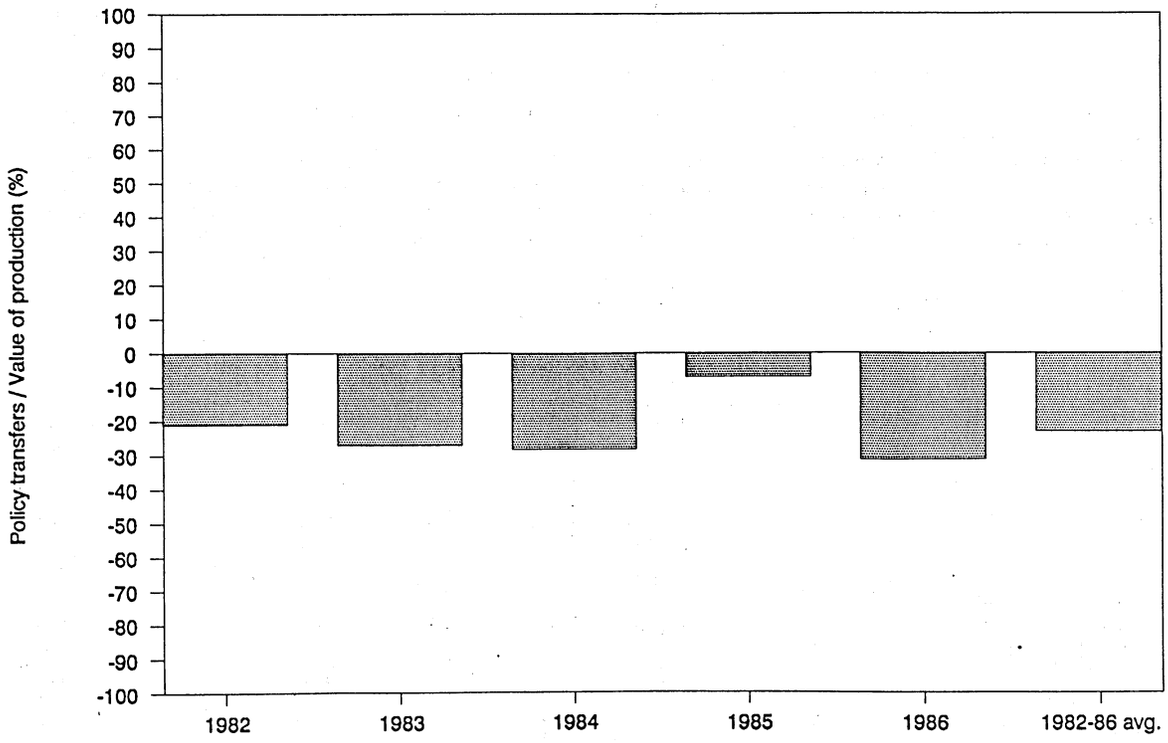
Control of trade was also the intervention with the greatest effect on consumers (table 2). The aggregate subsidy to consumers[6] due to export restriction was about three times as large as that due to the (wheat) rationing system. The total subsidy was about 15 to 20 percent of the value of consumption. The annual pattern of the CSE's mirrored that of the PSE's: the percentage of the aggregate CSE rose every year except 1985.

Effects by Commodity

For each commodity except coarse rice, small input subsidies to producers were more than offset by the taxing effect of policies that influenced output prices, primarily control of trade.

Figure 1

Pakistan: Total PSE's for cotton, wheat, basmati rice, and coarse rice



[5] For cotton, an adjusted world reference price was used; for wheat, the import unit value was used; for rice, the export unit value was used.

[6] "Consumers" of cotton are the manufacturers.

Export restriction was most important for cotton and basmati rice, two high-value exports. The overall effect of cotton policies on producer revenue varied between a positive PSE (subsidy) of 1 percent and a negative PSE (tax) of 37 percent of the value of production, averaging -23 percent (table 3). The PSE's for basmati rice ranged between -57 and -95 percent, averaging -74 percent (table 4). Control of trade was also most important in the case of wheat, where producers were taxed between 6 and 33 percent, averaging -19 percent in 1982-86 (table 5). (See also figure 2.)

Coarse rice is a commodity that Pakistan recently has had difficulty exporting competitively. The effect of trade control switched from a tax to a small subsidy in the 1980's as the Government pushed up exports. Fertilizer and other input subsidies plus subsidies from trade control result in overall subsidies on coarse rice of 0 to 25 percent, with 11 percent as the average (table 6).

These variations in support were affected mostly by changes in the official exchange rate and world prices, and, to some extent, by changes in domestic prices. A 21-percent depreciation of the

Table 2--Pakistan: Total CSE's

Item	Unit	1982	1983	1984	1985	1986	1982-86 average
Consumer value	Mil. rs.	37,625	44,636	44,052	46,500	51,852	44,933
Policy tranfers to consumers							
Control of trade	Mil. rs.	4,301	5,309	6,817	2,012	9,139	5,516
Ration distribution	Mil. rs.	1,375	1,572	1,533	2,544	2,448	1,894
Total policy transfers	Mil. rs.	5,676	6,880	8,350	4,556	11,587	7,410
CSE (per unit value)	Percent	15	15	19	10	22	16

rs = rupees

Table 3--Pakistan: Cotton PSE's

Item	Unit	1982	1983	1984	1985	1986	1982-86 average
Production	1000 MT	2,470	1,428	3,022	3,630	3,880	2,886
Producer price	Rs/MT.	4,758	7,401	5,099	5,028	5,313	5,520
Producer value	Mil. rs.	11,753	10,568	15,410	18,253	20,616	15,320
Policy transfers to producers							
Support prices, state control of trade	Mil. rs.	-4,323	-1,997	-5,758	-564	-8,161	-4,161
Fertilizer assistance	Mil. rs.	207	63	316	324	40	190
Credit assistance	Mil. rs.	51	81	101	114	120	93
Electricity assistance	Mil. rs.	150	151	157	194	227	176
Irrigation assistance	Mil. rs.	115	113	151	178	187	149
Total policy transfers	Mil. rs.	-3,800	-1,589	-5,033	246	-7,588	-3,553
PSE (per unit value)	Percent	-32	-15	-33	-1	-37	-23
PSE (per unit quantity)	Rs/MT	-1,538	-1,113	-1,665	68	-1,956	-1,231
PSE (per unit quantity)	$/MT	-121	-83	-110	-4	-114	-82

MT = metric ton.

rupee against the dollar in 1982/83, the year following Pakistan's move to a new exchange rate system, significantly affected the PSE's. The annual average depreciation over the period studied was 15 percent. Border price changes were important to wheat and coarse rice in 1983; basmati rice in 1984 and 1986; and to cotton, wheat, and coarse rice in 1985. Domestic price changes were important to cotton and coarse rice in 1983 when production of these crops dropped.

Some factors influencing the level of the PSE's can be characterized as exogenous; some are policy related. Border prices should be considered exogenous in general. Because Pakistan virtually sets the world price of basmati rice, however, changes in its price are largely due to changes in policy.

Table 4--Pakistan: Basmati rice PSE's

Item	Unit	1982	1983	1984	1985	1986	1982-86 average
Production	1000 MT	1,010	965	958	847	881	932
Producer price	Rs/MT	4,484	4,776	4,724	5,803	6,138	5,185
Producer value	Mil. rs.	4,529	4,609	4,526	4,915	5,408	4,797
Policy transfers to producers							
Support prices, state control of trade	Mil. rs.	-2,817	-2,759	-4,232	-3,669	-5,286	-3,753
Fertilizer assistance	Mil. rs.	52	24	71	74	18	48
Credit assistance	Mil. rs.	15	24	30	34	31	27
Electricity assistance	Mil. rs.	42	44	44	53	51	47
Irrigation assistance	Mil. rs.	33	32	42	48	42	39
Total policy transfers	Mil. rs.	-2,675	-2,634	-4,044	-3,460	-5,145	-3,591
PSE (per unit value)	Percent	-59	-57	-89	-70	-95	-74
PSE (per unit quantity)	Rs/MT	-2,648	-2,730	-4,221	-4,085	-5,840	-3,905
PSE (per unit quantity)	$/MT	-210	-195	-267	-214	-299	-237

MT = metric ton.

Table 5--Pakistan: Wheat PSE's

Item	Unit	1982	1983	1984	1985	1986	1982-86 average
Production	1000 MT	11,304	12,414	10,882	11,703	13,922	12,045
Producer price	Rs/MT	1,657	1,681	1,901	2,069	2,020	1,866
Producer value	Mil. rs	18,728	20,865	20,682	24,217	28,126	22,524
Policy transfers to producers							
Support prices, state control of trade	Mil. rs.	-4,118	-8,637	-5,908	-3,944	-9,512	-6,424
Fertilizer assistance	Mil. rs.	1,162	846	374	1,187	1,227	959
Credit assistance	Mil. rs.	132	171	271	339	383	259
Electricity assistance	Mil. rs.	391	414	429	443	531	442
Irrigation assistance	Mil. rs.	272	319	320	425	486	364
Total policy transfers	Mil. rs.	-2,162	-6,887	-4,514	-1,550	-6,886	-4,400
PSE (per unit value)	Percent	-12	-33	-22	-6	-24	-19
PSE (per unit quantity)	Rs/MT	-191	-555	-415	-132	-495	-358
PSE (per unit quantity)	$/MT	-15	-41	-27	-8	-29	-24

MT = metric ton.

Domestic prices held at levels other than the world prices are the result of policy, although the domestic price changes mentioned above were due to weather-related production shortfalls. Finally, Pakistan's exchange rate is now floating, but not freely, so part of the effect of its changes can be considered exogenous and part policy related.

Figure 2

Pakistan: PSE's by commodity

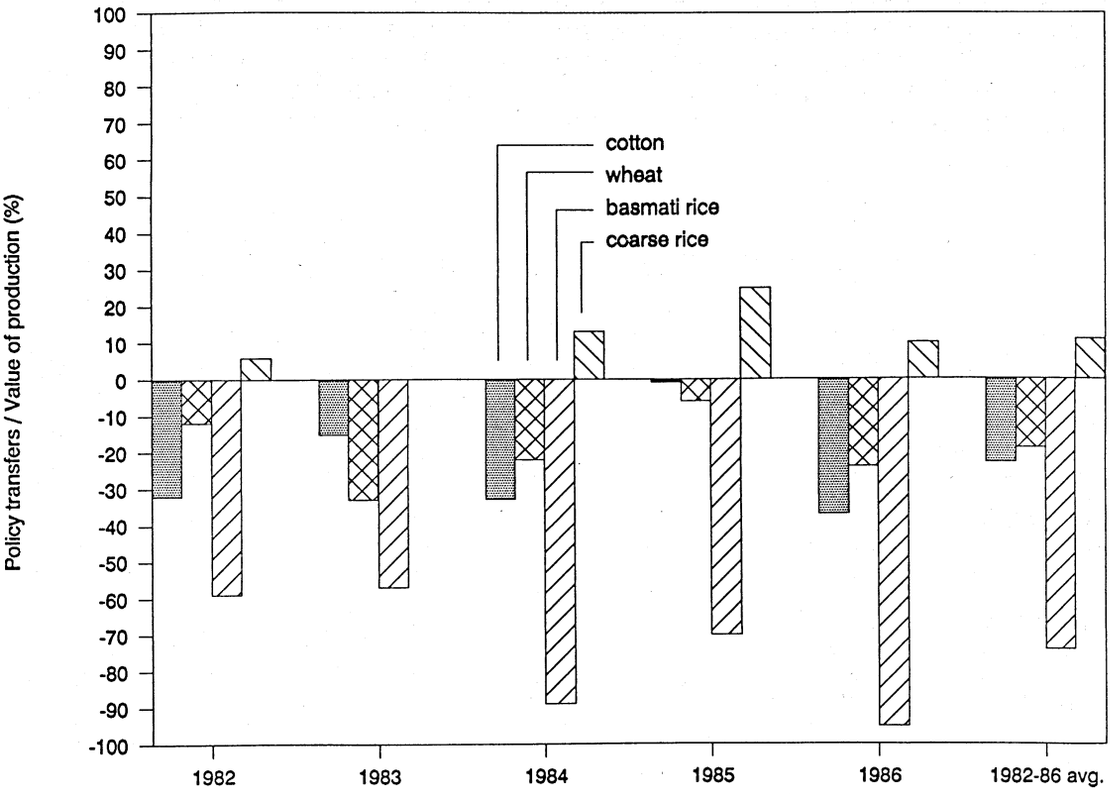


Table 6--Pakistan: Coarse rice PSE's

Item	Unit	1982	1983	1984	1985	1986	1982-86 average
Production	1000 MT	2,435	2,374	2,357	2,072	2,642	2,376
Producer price	Rs/MT	2,122	2,222	2,258	2,303	2,503	2,281
Producer value	Mil. rs.	5,166	5,276	5,321	4,772	6,612	5,429
Policy transfers to producers							
Support prices, state control of trade	Mil. rs.	1	-279	269	718	246	191
Fertilizer assistance	Mil. rs.	94	30	148	147	10	86
Credit assistance	Mil. rs.	37	60	74	83	93	69
Electricity assistance	Mil. rs.	101	105	108	118	155	118
Irrigation assistance	Mil. rs.	77	78	104	108	127	99
Total policy transfers	Mil. rs.	310	-6	704	1,174	630	562
PSE (per unit value)	Percent	6	-0	13	25	10	11
PSE (per unit quantity)	Rs/MT	127	-3	299	567	238	246
PSE (per unit quantity)	$/MT	24	-0	46	73	37	36

MT = metric ton.

Control of trade was the only CSE policy measured for cotton and rice, while for wheat the effect of rationing was also measured. The CSE for cotton averaged 38 percent. Whereas wholesale cotton prices were quite stable from 1982 through 1986 (except in 1983 the year of the major crop shortfall), the level of the CSE varied substantially, revealing the domestic price-stabilizing effect of the CEC's operations (table 7). Basmati rice consumers received similar benefits via the REC--a subsidy of about 40 percent and quite stable domestic prices (table 8). Coarse rice consumers were implicitly taxed, more than 20 percent on average, by the REC's efforts to promote exports (table 9).

Table 7--Pakistan: Cotton CSE's

Item	Unit	1982	1983	1984	1985	1986	1982-86 average
Consumption	1000 MT	553	442	493	510	579	511
Consumer price	Rs/MT	12,677	18,898	14,595	12,360	13,900	14,486
Consumer value	Mil. rs.	6,761	8,351	7,193	6,301	8,045	7,330
Policy transfers to consumers							
Control of trade	Mil. rs.	3,348	2,327	2,733	1,252	4,163	2,765
Ration distribution	Mil. rs.						
Total policy transfers	Mil. rs.	3,348	2,327	2,733	1,252	4,163	2,765
CSE (per unit value)	Percent	50	28	38	20	52	38
CSE (per unit quantity)	Rs/MT	6,277	5,266	5,546	2,455	7,193	5,407
CSE (per unit quantity)	$/MT	492	391	366	152	419	362

Table 8--Pakistan: Basmati rice CSE's

Item	Unit	1982	1983	1984	1985	1986	1982-86 average
Consumption	1000 MT	634	897	747	619	721	724
Consumer price	Rs/MT	6,350	6,494	6,546	7,512	7,753	6,931
Consumer value	Mil. rs.	4,026	5,826	4,890	4,650	5,590	4,996
Policy transfers to consumers							
Control of trade	Mil. rs.	1,029	1,633	2,492	2,119	3,710	2,196
Ration distribution	Mil. rs.						
Total policy transfers	Mil. rs.	1,029	1,633	2,492	2,119	3,710	2,196
CSE (per unit value)	Percent	26	28	51	46	66	44
CSE (per unit quantity)	Rs/MT	1,623	1,821	3,336	3,423	5,145	3,035

Table 9--Pakistan: Coarse rice CSE's

Item	Unit	1982	1983	1984	1985	1986	1982-86 average
Consumption	1000 MT	1,337	1,795	1,419	1,140	1,788	1,496
Consumer price	Rs/MT	3,485	3,748	3,782	3,813	3,779	3,722
Consumer value	Mil. rs.	4,659	6,728	5,367	4,347	6,758	5,572
Policy transfers to consumers							
Control of trade	Mil. rs.	-1,048	-1,451	-1,389	-1,341	-1,233	1,293
Ration distribution	Mil. rs.						
Total policy transfers	Mil. rs.	-1,048	-1,451	-1,389	-1,341	-1,233	1,293
CSE (per unit value)	Percent	-22	-22	-26	-31	-18	-23
CSE (per unit quantity)	Rs/MT	-784	-808	-979	-1176	-690	864

Consumers of wheat and flour were subsidized about 14 percent of the value of consumption by the Government's policies in 1982-86 (table 10). This effect was, on average, equally divided between the effect of trade control and the effect of rationing, although there were substantial annual variations in these proportions. On average, trade controls lowered the domestic open market retail price of wheat by 7 percent relative to the import parity price. The practice of subsidized ration shop sales of wheat flour led to an additional subsidy for ration shop customers averaging 7 percent relative to the open market retail price.

Contribution to Policy Objectives

Among the Government's multiple and interacting objectives, development is important. Development is promoted most by wheat and cotton policies. That is, restricted exports and low domestic prices for cotton have fostered employment and income in the textile industry. Development of the nonagricultural sector in general has been assisted by the Government's cheap food policy, which holds down labor costs. More generally, resources transferred from cotton, rice, and wheat producers may have accelerated Pakistan's transition to an economy that is no longer based primarily on agriculture.

Net profits from the rice and cotton trading corporations help reduce the Government's budget deficit. Export earnings from rice and from cotton and cotton products help the balance of payments. This is particularly important since Pakistan has been slow to diversify its exports.[7] The consumer subsidy on wheat was the most important action taken for equity reasons, with the ration system attempting to provide cheap staple food to low-income consumers. Input subsidies also have an equity aspect, since they partly compensate producers for the taxing effect of other sector-specific or economy-wide policies. Consumers of

Table 10--Pakistan: Wheat CSE's

Item	Unit	1982	1983	1984	1985	1986	1982-86 average
Consumption	1000 MT	11,521	12,000	12,312	12,754	13,200	12,357
Consumer price	Rs/MT	1,925	1,978	2,161	2,446	2,383	2,179
Consumer value	Mil. rs.	22,179	23,731	26,602	31,202	31,459	27,034
Policy transfers to consumers							
Control of trade	Mil. rs.	972	2,799	2,981	-17	2,500	1,847
Ration distribution	Mil. rs.	1,375	1,572	1,533	2,544	2,448	1,894
Total policy transfers	Mil. rs.	2,348	4,371	4,515	2,527	4,947	3,742
CSE (per unit value)	Percent	11	18	17	8	16	14
CSE (per unit quantity)	Rs/MT	204	364	367	198	375	303
CSE (per unit quantity)	$/MT	16	27	24	12	22	20

[7] While a discussion of export diversification is beyond the scope of this report, it may be that subsidies to the textile industry have been one reason for the slow pace.

basmati rice, who presumably do not have "low" incomes, also received considerable subsidies.

Effects of the Choice of Base Period

Some proposals before the GATT Negotiating Group in Agriculture, particularly those of the United States and the Cairns Group, have mentioned using an aggregate measure of support like the PSE to monitor implementation of trade liberalization. If changes in Pakistan's policies were to be made on the basis of a one-year base period, the choice of year would have a large effect on the amount of intervention reduction required. In the two most recent years for which calculations have been completed, 1985 and 1986, the PSE varied from its lowest value (-7 percent) to its highest value, (31 percent) (see table 1). Moreover, this wide variation primarily reflects changes in reference prices, not changes in policy.

Pakistan's Position Toward the Uruguay Round

Pakistan is an important actor in several world commodity markets, among them cotton, rice, and wheat. It has substantially increased the quantity and quality of its cotton output in the past 5 years, so it will likely remain a major exporter. Pakistan also has a near monopoly on exports of basmati rice, which go primarily to the Middle East. Exports of coarse rice, while generating foreign exchange, often incur losses for the REC, although these are offset by profits on basmati rice. Pakistan is marginally self-sufficient in wheat, its staple food, periodically importing substantial amounts.

At present, Pakistan's reported posture toward the negotiations in the current GATT round is based largely on its traditional exports of textiles and cotton. This is not surprising, because the textile industry has long formed the core of the manufacturing sector and is a major employer. Moreover, cotton and cotton products account for about one-third of all Pakistan's exports.

In April, 1988, Pakistan put forward a proposal to the negotiating group on textiles and clothing. It calls for the phasing out of the Multi-Fiber Agreement (MFA) and a transition to the GATT system. It suggests this take place in four stages. While some interests have linked progress in textiles to progress in other areas, Pakistan prefers that negotiations on textiles and clothing proceed independently from negotiations on other topics.

Liberalization Possibilities

Several proposals before the GATT advocate reducing support to agriculture and liberalizing agricultural trade. The results of such a liberalization depend on how it is accomplished. This

section describes some of the uncertainties that face policymakers and analysts involved in the current negotiations and explores the implications for Pakistan of three paths that liberalization might take.

Unknowns in the Liberalization Process

Analyzing potential reductions in support to agriculture presents particular problems for the analyst of a developing country like Pakistan. For one, the overall level of producer support for the measured commodities is negative, so it is not clear what a "reduction" in support means. Does it mean that only elements of the PSE that are positive (like input subsidies) would have to be reduced? Or should it be interpreted to mean that the amount of taxation would have to be reduced? Would the Government be free to choose the commodities in which to make changes, or would changes be required in all?

What other concerns might Pakistani policymakers have about the liberalizing environment? If there are significant (domestic) gainers and losers in the process, will there be foreign aid available to ease the pain of adjustment? Will there be increased market access for nonagricultural products? What will other key traders in Pakistan's major imports and exports be doing?

The agricultural trade negotiations in the Uruguay Round might result in either of at least two quite different resolutions. On the one hand, there is the possibility that sweeping reforms might arise through grand compromise among nations to meet the overall objective of reduction in support. The proposals of the United States and the Cairns Group take this approach. Such a grand compromise is possible because it would give national governments a degree of political leverage at home to implement the agreed-upon changes: the changes could be characterized as stemming from external factors to some extent beyond the Government's control. On the other hand, precedent favors marginal changes based on national interests, the approach that seems to be favored by the EC and Japan.

Three Liberalization Scenarios

Despite much analysis, discussion, and the many proposals before the Uruguay Round, it is not clear at this time what path agricultural trade liberalization might take. In this context it is valuable to examine different scenarios. Three are selected here: 1) reduction in support only when aggregate support to agricultural producers is positive, 2) reduction of positive support for each commodity or policy where it occurs, and 3) complete liberalization, involving elimination of all instances of positive and negative support.

Reducing Positive Aggregate Support

In this scenario, the effects of all measured policies on all included commodities would be summed for each country. By agreement of the GATT members, only those countries whose total PSE was positive would reduce support. If calculations like those shown in tables 1 through 5 were used to evaluate Pakistan's level of support, Pakistan would not need to change any of its agricultural policies, because its aggregate PSE is negative. If world prices for its export commodities rose as a result of the reduction of support in other countries, Pakistan would reap the benefits of the liberalization at little or no cost.

Reducing All Instances of Positive Support

In this scenario, the effect of each measured policy on each commodity would be considered separately in each country. In each case where there was positive support, it would have to be reduced or eliminated[8], by agreement of the GATT members. Some of the Government of Pakistan's existing policies are consonant with such a scenario. The Government has eliminated or is committed to eliminating some of its major input subsidies. In the case of fertilizer and pesticides, the subsidies were provided to promote the introduction of productive inputs into the farming system. Farmers have shown their appreciation of the importance of these inputs by their continual increases in application. Now the Government believes that distorting subsidies should be removed so farmers will apply the appropriate level of the input.[9] In addition, research has developed higher yielding varieties of several crops. The provision of such technology partly compensates farmers for the removal of input subsidies and in the long run may assure them of higher profitability.

The Government also recognizes the desirability of recovering irrigation operations and maintenance costs but does not seem strongly committed to doing so.[10] The agricultural sector's use of electrical power remains subsidized. Although the Government's philosophy is to remove price distortions in the agricultural sector, the pace at which it does so remains gradual partly because input subsidies promote other objectives like keeping the price of food and industrial raw materials low.

---

[8] The purpose of examining this scenario is to point out the areas in which policy change would occur and the nature of its effects. In this context, the distinction between reduction and elimination of subsidies is unimportant.

[9] Seventh Plan, p. 580.

[10] Seventh Plan, pp. 483-484.

Pakistan's small subsidy to coarse rice producers would also be subject to reduction in this scenario.[11] As other subsidizing countries reduced support, it is likely that the world price of coarse rice would rise. It would take only a small increase in the border price to reduce Pakistan's positive PSE for coarse rice to zero and to make its exports competitive. There would no longer be a tax on coarse rice consumers and the change might cost the Government nothing. The Government might not need to change its policy of state-dominated trading in coarse rice.[12]

Complete Liberalization

Under a third possible scenario, complete liberalization, all countries would remove all policies that have either a positive or negative effect on producer revenue in all agricultural commodities. In the proposals before the GATT, these changes would take place over a period of several years. To understand the situation that Pakistani policymakers would face if the Government agreed to such a liberalization, one needs to examine the components of the four PSE's.

Price Effects

Pakistan's PSE's have two major components. The first component is a "price wedge" that measures the combined effect of control of trade and price supports by estimating the gap between the domestic producer prices and an appropriate world reference price, adjusted for transport and handling costs. For Pakistan, the price wedge comprises about 80 percent of the total effect of policies.[13] The second component is the input subsidies. The overall PSE is negative because of the price wedge, and three of the four measured commodities have negative PSE's (table 11).

To assess the effect of a complete liberalization on commodity prices in Pakistan, it is necessary to first consider what would happen if Pakistan removed all market price intervention but

---

[11] Allowing for margins of error, one might evaluate the average PSE as zero. The object of the exposition here, again, is to point out the areas of policy change.

[12] This paragraph is oversimplified, having ignored the problem of "overshoot." That is, under the partial liberalization described, all countries would have to change their policies to lower their support to rice producers. Since Pakistan's PSE was initially very small, it is likely that the result of this initial round of policy changes would be higher world prices and a negative PSE for coarse rice in Pakistan. The Government might then be able to "reinstitute" its policies as long as the PSE remained nonpositive.

[13] Because the two components have opposite signs, the arithmetic total is replaced by the total absolute value as the base for the shares.

world prices did not change. The price wedge calculations imply that, in this case, the producer price of seed cotton would rise by 27 percent; wheat, by 63 percent;[14] basmati rice, by 78 percent;[15] and the producer price of coarse rice would fall by 4 percent[16] (table 12). If Pakistan removed its policy interventions as part of a complete liberalization, domestic prices would equalize with border prices. Because many developed countries provide significant positive support to grains and cotton, it is likely that border prices for these commodities would rise after liberalization. If so, the increase in domestic prices would be even larger than in the case where only Pakistan removed its market price interventions.

Table 11--Pakistan: Shares of PSE's due to price wedge and input subsidies*

Item	1982	1983	1984	1985	1986	1982-86 average
			Percent			
Cotton:						
Price wedge	89	83	89	41	93	87
Input subsidies	11	17	11	59	7	13
Wheat:						
Price wedge	68	83	81	62	78	76
Input subsidies	32	17	19	38	22	24
Basmati rice:						
Price wedge	95	96	96	95	97	96
Input subsidies	5	4	4	5	3	4
Coarse rice:						
Price wedge	0	51	38	61	39	34
Input subsidies	100	49	62	39	61	66
Total						
Price wedge	79	84	85	66	86	82
Input subsidies	21	16	15	34	14	18

* Because the two components usually have opposite signs, the arithmetic total is replaced by the total absolute value as the base for the shares.

[14] Because not all wheat is marketed, the percent of the value of production must be divided by the percent marketed to estimate the percent price change.

[15] The figure stated does not take into account Pakistan's near monopoly on basmati rice exports. If Pakistan's liberalization of trade in basmati rice resulted in competition among exporting firms, the export price would decline and the price increase would be smaller.

[16] The PSE and CSE figures used here are based on the 1982-86 averages.

To estimate the consequences of reducing each of Pakistan's PSE's to zero, the indirect effect of removing input subsidies would also need to be taken into account. In this case, the increases in producer net revenues for the first three crops would be reduced by higher input costs; the drop in producer net revenues for coarse rice would be enlarged by the amount of the input subsidies.

To examine the effect of liberalization on consumer prices, similar logic can be used. In the absence of world price changes, eliminating all market price interventions in Pakistan

Table 12--Pakistan: Summary of PSE's

Item	Unit	1982	1983	1984	1985	1986	1982-86 average
Cotton:							
Support prices, & state control of trade	Mil. rs.	-4,323	-1,997	-5,758	-564	-8,161	-4,161
	Percent	-37	-19	-37	-3	-40	-27
Input subsidies	Mil. rs.	523	408	725	810	573	608
	Percent	4	4	5	4	3	4
Total policy transfers	Mil. rs.	-3,800	-1,589	-5,033	246	-7,588	-3,553
	Percent	-32	-15	-33	1	37	-23
Wheat:							
Support prices, & state control of trade	Mil. rs.	-4,118	-8,637	-5,908	-3,944	-9,512	-6,424
	Percent	-22	-41	-29	-16	-34	-29
Input subsidies	Mil. rs.	1,956	1,750	1,393	2,395	2,626	2,024
	Percent	10	8	7	10	9	9
Total policy transfers	Mil. rs.	-2,162	-6,887	-4,514	-1,550	-6,886	-4,400
	Percent	-12	-33	-22	-6	-24	-19
Basmati rice:							
Support prices, & state control of trade	Mil. rs.	-2,817	-2,759	-4,232	-3,669	-5,286	-3,753
	Percent	-62	-60	-93	-75	-98	-78
Input subsidies	Mil. rs.	142	124	188	209	142	161
	Percent	3	3	4	4	3	3
Total policy transfers	Mil. rs.	-2,675	-2,634	-4,044	-3,460	-5,145	-3,591
	Percent	-59	-57	-89	-70	-95	-74
Coarse rice:							
Support prices, & state control of trade	Mil. rs.	1	-279	269	718	246	191
	Percent	0	-5	5	15	4	4
Input subsidies	Mil. rs.	308	273	435	456	384	371
	Percent	6	5	8	10	6	7
Total policy transfers	Mil. rs.	310	-6	704	1,174	6	7
	Percent	6	-0	13	25	10	11
Total:							
Support prices, & state control of trade	Mil. rs.	-11,257	-13,672	-15,628	-7,460	-22,714	-14,146
	Percent	-28	-33	-34	-14	-37	-29
Input subsidies	Mil. rs.	2,930	2,556	2,741	3,870	3,726	3,164
	Percent	7	6	6	7	6	7
Total policy transfers	Mil. rs.	-8,327	-11,116	-12,887	-3,590	-18,988	-10,982
	Percent	-21	-27	-28	-7	-31	-23

Note: Cotton accounted for 13 percent of agricultural gross domestic product in 1986/87, wheat: 18 percent, basmati rice: 3 percent, and coarse rice: 4 percent.

would lead to retail (wholesale in cotton) price increases of 38, 44, and 14 percent in cotton, basmati rice, and wheat, respectively (see tables 7, 8, and 10). Coarse rice prices would fall by 23 percent (see table 9). Under liberalization, however, world (border) prices would probably rise, so the price increases for the first three commodities would be even larger, and the decrease for coarse rice would be smaller.

Because the Government would have relinquished its control of trade under complete liberalization, the economy might be subject to increased instability of domestic agricultural prices. It is possible that world prices would become more stable after liberalization if, as many believe, current policies "export instability." However, Pakistan's stabilizing policies may have already produced domestic prices that are more stable than world prices would be after liberalization.

If domestic prices became more unstable, price instability would be particularly important for the staple, wheat, and the primary raw material, cotton. The demand for wheat is price inelastic.[17] Thus consumers, especially those with low incomes, would be subject to significant fluctuations in their incomes. Cotton processing industries would also be subject to increased price variation. Many entrepreneurs in this sector are apparently quite small and might be vulnerable. Rice is neither the staple food nor the principal export crop. Nevertheless, production and consumption of coarse rice are substantial, and demand is also inelastic, so more unstable prices are not a trivial concern. In general, producers might also have to endure greater price instability, although only about half of Pakistan's wheat production is marketed. Few farms seem to practice monoculture,[18] and shifts in area allocated to various crops might occur if there were significant differences in price variability across crops.

Output Effects

A major price increase for wheat might lead to a substantial increase in production. Although limited water availability and the late planting of wheat that is multiple cropped with cotton or basmati rice are major constraints to increased wheat production, there is still substantial scope for increasing

---

[17] Hamid, Naved and others estimate the own-price elasticity of demand for wheat at - .25. (The Wheat Economy of Pakistan: Setting and Prospects. International Food Policy Research Institute, 1987, p. 111.)

[18] Pakistan, Agricultural Census Organization, Census of Agriculture, preliminary report, 1980, p. 2ff.

cropping intensity and average yields.[19] Moreover, at recent prices, wheat does not seem to be very profitable;[20] but a major increase in the producer price of wheat would counteract recent increases in fertilizer prices, making higher applications more economical. On the other hand, about half the wheat crop is not marketed, and production by subsistence farmers may not be affected by an increase in the wheat price.

Coarse rice is now primarily grown in the Sind province, while the Punjab is the main region in which cotton and basmati rice are produced. In the 1980's many rice growers in the Punjab switched from coarse rice to basmati rice, due partly to improved price incentives the Government provided to maintain production and exports. Total rice area and yield, however, have stagnated. One would expect production increases in cotton and basmati rice as a result of price increases. Returns to basmati and coarse rice production seem to be low,[21] so producer price increases would likely encourage more fertilizer use in the short run and greater plantings in the long run.[22]

Cotton is generally acknowledged to be Pakistan's most profitable major crop. As a result, cotton has usually dominated the cropping systems in which it is grown.[23] Pakistan's average cotton yield is about the same as the average of yields in major cotton-producing countries, but growing conditions in Pakistan are highly favorable. Thus, an increase in the price of cotton

---

[19] A yield gap of at least 30 percent is reported between average yields and "feasible economic yields...applying known technology." (Byerlee, Derek and others, 1986. Increasing Wheat Productivity in the Context of Pakistan's Irrigated Cropping Systems: A View from the Farmers' Field. Pakistan Agricultural Research Council/International Maize and Wheat Improvement Center, Paper No. 86-7, p. 40). The Agricultural Prices Commission reported a larger gap between progressive and average farmers' yields (60-70 percent) in 1984 (Hamid, Naved and others, p. 50).

[20] Byerlee, Derek and others, 1986, p. 38.

[21] Gross returns for basmati and coarse rice are similar in the Punjab, as the yield of basmati is lower but the producer price is proportionately higher. Byerlee, Derek and others, 1984. Wheat in the Rice-Based Farming System of the Punjab: Implications for Research and Extension. Agricultural Economics Research Unit, National Agricultural Research Center, p. 42.

[22] Tweeten, Luther, 1986. Supply Response in Pakistan. Agricultural Policy Analysis Project, U.S. Agency for International Development, p. 28.

[23] That is, the constraints cotton places on the cultivation of other crops (primarily wheat) are often significant, but the reverse is rarely found.

is likely to continue to lead to increases in area and yield, as farmers continue to search for the highest yielding and most profitable technology. Increased variability in cotton prices, however, might result in lower output from the processing industry, as owners diversified their investments or their suppliers.

Consumption Effects

Because the demand for the staple wheat is inelastic, a substantial increase in price would lead to only a moderate decrease in consumption. However, wheat consumers would have to spend a much larger share of their income on wheat. If demand by poor consumers is more inelastic than for those better off, then this problem would be even worse for the poor. By contrast, basmati rice is more of a luxury good: consumers would adjust their consumption more if its price increased.

Coarse rice falls midway between wheat and basmati rice on the scale measuring staple and luxury food. If its price fell, consumption would increase somewhat. Since it is a secondary cereal, however, the change in the quantity consumed would be considerably smaller than in wheat.

An increase in cotton prices might cause more raw cotton to be exported if processors reduced their purchases, or it might lead to lower processors' profits. If less yarn and thread were produced and exported, there would be corresponding declines in textile industry employment and in foreign exchange earnings from cotton products. However, there might also be gains in other industries as investment was redistributed.

Constraints to Liberalization

While liberalization should generally result in efficiency gains, the substantial changes in policies that it would require could not be made without addressing various problems and issues. Some of these are discussed in this section.

Importance of Trade Regime

Control of trade in cotton, wheat, and basmati rice forms the core of Pakistan's agricultural interventions in the commodities studied here. If Pakistan had to substantially reduce its total intervention, this core would present the most difficult problems.

Taxation of these sectors is very important to the Government. Export control produces Government revenue, a balanced flow of foreign exchange, transfers of resources from agriculture to nonagriculture, and employment protection (especially important in the absence of diversified exports). It has also moderated food prices to consumers, which in turn has meant some additional export competitiveness. It is not hard to understand, then, why allowing the private sector to participate freely in the

international trading of major commodities has been discussed but has been implemented slowly. Subsidies to the agricultural sector are largely seen as distorting in Pakistan's current deregulatory climate, but tax policies still appear to be seen as economic and developmental necessities.

Development Issues

Certain conditions related to a country's level of development limit the reasonable options of the policymaker in a less developed country (LDC). Agriculture is typically a significant part of the economy, so agricultural commodities, like cotton and rice in Pakistan, suggest themselves as revenue sources. Policies that tax agriculture extract resources needed to achieve overall economic objectives,[24] like building infrastructure. The indirect taxes collected on traded agricultural and other products, moreover, are easier to implement than direct forms of taxes like the income tax. Furthermore, such indirect taxes can often remain less visible.

Concern for lower income populations often motivates policymakers to stabilize or subsidize prices of food (for example, wheat and flour), or both. The poor in LDC's spend a very significant share of their income on food, so price instability and food price inflation are serious issues for them. Cheap food also helps a developing country like Pakistan make or keep its nonagricultural exports (like cotton yarn and cloth) competitive.

As countries develop, taxing of agriculture often switches to subsidizing of agriculture.[25] This is a gradual change that reflects agriculture's decreasing share of the national economy and the increasing ability of consumers and taxpayers to subsidize a small sector. However, one would not expect to see PSE's in a country like Pakistan change in a consistent trend toward subsidy in only 5 years. In reality, the effect of agricultural policies toward the commodities studied changed in the opposite direction. From 1982 to 1986, the net taxing effect of Pakistan's agricultural policies increased, both in nominal and real terms.[26] The Government may have perceived its policy options as limited. In the absence of any significant diversification of industrial production and exports, and despite substantial increases in real income, the same agricultural

---

[24] Seventh Plan, p. 567.

[25] U.S. Department of Agriculture, Economic Research Service, Estimates of Producer and Consumer Subsidy Equivalents: Government Intervention in Agriculture, 1982-86, Staff Report No. AGES880127, April 1988.

[26] This was not the case in 1985, when low world prices, especially for cotton, made the PSE for each commodity more positive (or less negative).

commodities have been relied upon to provide revenue and to generate employment.[27]

Difficulty of Changing the Policy Mix

At any given time a country's set of policies is a compromise (often a complex one) reflecting what is feasible. Some policies in the mix are linked to each other through their effects on particular sectors or subsectors. Policies in existence for long periods may preclude certain alternatives if resources are shifted or if knowledge is lost as a result of the policy. Recent changes in wheat policy are good examples of maneuvers within the boundaries of political feasibility. The wheat rationing system was abolished in 1987 because, for all of its outlay, it was not reaching the target group. However, the Government retained substantial control over wheat marketing (including maintenance of larger stocks), because food prices are still an important issue. Some observers believe that the Government may incur higher costs under the new system.[28]

Revenue sources are another Government problem that reflects the limits of feasibility. In its search for income sources other than the export corporations, the Government has several times raised the issue of an agricultural income tax. After much debate, however, it remains politically unpopular. If an agricultural income tax were feasible, the Government would find it easier to loosen its control of trade.

Pakistan's fertilizer policies illustrate restrictive policy linkages. The Government has been attempting to reduce fertilizer subsidies to increase the efficiency of fertilizer use. This objective for the agricultural sector could not be pursued freely, however, because of policy linkages to fertilizer production. The fertilizer subsidy program has included both domestic prices of fertilizer fixed below border prices and subsidies to fertilizer producers. The latter include a subsidy on natural gas, an important input in producing nitrogenous fertilizer. When the Government deregulated nitrogenous fertilizer prices recently, it also felt compelled to increase

---

[27] The Report of the National Commission on Agriculture sees exports of cotton and cotton products and rice remaining the major agricultural exports even at the end of the century (p. 116), although it does recommend a "major transformation" of the livestock sector and more attention to high-value products like fruits, vegetables, and oilseeds (p. 90). The Seventh Plan shows these same items (cotton products and rice) as the main exports in the next 5 years (p. 150).

[28] Alderman, H., M.G. Chaudry, and M. Garcia, Household Food Security in Pakistan with Reference to the Ration Shop System, final report to U.S. Agency for International Development, July 1987 (revised October 1987), p. 87.

the subsidy on natural gas. Thus, the budgetary burden was reduced less than it might have been.

Intersectoral Exchanges

A convincing reason for a developing country like Pakistan to change its agricultural trade policies might be to make gains in nonagricultural sectors. The textile industry is the most logical area for Pakistan, both because it is the stated interest of the Government and because it is an area in which the country could easily gain. The industry has substantial idle capacity, so expansion of exports would initially require little capital investment. Additional production and exports would mean increased employment, a high-priority objective for all developing countries, especially countries with high rates of population growth.

A gain for Pakistan in the textile area might come from changes in the Multi-Fiber Agreement, which now limits access to developed country markets. Regardless of the origin of the gain, one can imagine a scenario in which trade in both raw cotton and textiles would be liberalized. Under such a scenario, Pakistan would realize certain benefits, but there would be certain tradeoffs to consider.

For example, benefits from liberalization might include increased foreign exchange earnings, as more value-added cotton products were produced and exported. Employment might increase as textile mills raised production. If "liberalization" meant free trade in raw cotton, farmers might receive higher prices and there may also be increased exports of raw cotton. Finally, less distorted prices might mean more investment in previously less assisted industries, leading to greater diversification of production and exports.

On the other hand, freer trade might mean that the Government would have to give up some control over the composition and timing of its foreign exchange earnings. In the absence of tariffs,[29] moreover, the Government would not be able to draw resources out of agriculture by controlling exports. However, it might be able to shift the incidence of such taxation to manufactured exports (such as textiles). Finally, Pakistani textile manufacturers might have to modernize or take other steps to reduce their cost in order to take advantage of the increased export opportunities.

---

[29] Tariffs bound in the GATT might in fact be part of a final agreement, either as a phaseout of agricultural support or as an acknowledgment of particular hardships that developing countries would otherwise face.

Other Possibilities

Because a complete liberalization might impose substantial hardships on many developing countries, it is unlikely that these countries would agree to liberalization in the form described above, even if implementation were spread over many years. One possibility is that some form(s) of exemption would be included in the GATT agreement, perhaps allowing for less complete or delayed implementation of policy changes. Tariffs might be substituted for other forms of intervention. Some proposals before the GATT include provisions for such variations, which the GATT terms "special and differential treatment."

☆ U.S. Government Printing Office : 1990 - 261-455/20297

UNITED STATES DEPARTMENT OF AGRICULTURE
ECONOMIC RESEARCH SERVICE
1301 NEW YORK AVENUE, NW.
WASHINGTON, DC 20005-4788