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MTID Discussion Paper No. 80

Grain Marketing Parastatals in Asia: Why Do They Have to Change Now?

Shahidur Rashid, Ralph Cummings Jr., and Ashok Gulati

2033 K Street, NW, Washington, DC 20006-1002 USA • Tel.: +1-202-862-5600 • Fax: +1-202-467-4439 • ifpri@cgiar.org
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This study attempts to synthesize, elaborate, and substantiate the key findings of an international workshop, titled *"From Parastatals to Private Trade: Why, When, and How"*, held in New Delhi, India, in December 2003. The workshop was jointly organized by the Centre for Economic and Social Studies (CESS), Hyderabad, India; the Institute of Economic and Social Research (LPEM), University of Indonesia; and the International Food Policy Research Institute (IFPRI); and was attended by about sixty participants from developing and developed countries of Asia, Europe, and North America. The attention was focused on the experiences of India, Indonesia, and the Philippines; but the experiences of Pakistan, Bangladesh, Vietnam, and Africa were also reviewed. We are grateful to Mahendra Dev, Director CESS, and Mohammed Ikhsan, Director LPEM, for their contributions in organizing the workshop; to workshop participants for two days of stimulating discussion; to Derek Byerlee and Paul Dorosh for sharing data and memos on Pakistan; and to Marcelle Thomas for excellent research assistance. Our special thanks to the following individuals for contributing papers in the workshop: Mahendra Dev (India), Bustanul Arifin (Indonesia), Ramon Clarete (Philippines), Abdul Salam and Mian M. Mukhter (Pakistan), Shawkat Ali and Ishrat Jahan (Bangladesh), Dong K. Son and Tran C. Thang (Vietnam), Jim Roumaset of the University of Hawaii, and Jonathan Kydd and Andrew Dorward of the Imperial College, London. Finally, we would like to thank those who offered useful comments on an earlier version of the paper, especially David Dawe, Derek Byerlee, Jim Roumaset, Shree Sompal, Shawkat Ali, and Endah Murningtys. The usual disclaimer applies.

ABSTRACT

Using case studies from six Asian countries, this paper (a) assesses the relevance of underlying rationales for public intervention in foodgrain markets, (b) documents the existing policies and regulations that support operation of grain parastatals, (c) provides estimates of benefits and costs of parastatals, and (d) compares experiences of countries that liberalized (or reduced intervention) with the ones that continue to have significant presence of parastatals. Our results suggest that conditions in the region have improved significantly over the past thirty years; and none of the four commonly agreed rationales—that is, poorly integrated domestic markets, thin and volatile world market, promoting modern technology and the scarcity of foreign exchange reserves—for public intervention in foodgrain markets are now persuasive. Domestic foodgrain markets are integrated, international markets for both wheat and rice are significantly more robust than they were thirty years ago, High-Yielding Varieties (HYV) now cover practically all of the high potential area sown to wheat and rice; and foreign currency reserves have increased dramatically in all countries in recent years.

However, although rationales have lost their significance, many countries continue to practice old policies and provide regulatory supports to parastatals, including monopoly control over international trade, preferential access to transportation, restrictions on movement of foodgrains, and cheap or interest-free credit. Relative to the private sector, the costs of the grain parastatals have been high and are increasing, as special interests and rent- seeking are increasingly dictating their operation. This is being manifested in various forms, such as excessive public stocks in India, vacillating import

policies in Indonesia and Pakistan, questionable government foodgrain import decisions in the Philippines, and politically-determined ceiling and floor prices in India. On the other hand, the experiences of Bangladesh and Vietnam, both of which have implemented extensive reforms over the last fifteen years, suggest that reduced government intervention can promote competition in the domestic markets, reduce subsidies, and release funds for development and anti-poverty programs without jeopardizing price stability. The paper concludes that reforms are overdue and the delay in changing the old ways of doing price stabilization will be increasingly wasteful.

JEL Classifications:

Key Words: Food marketing parastatals, agricultural price policy, rice and wheat markets.

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ACRONYMS

BULOG	Badan Urusan Logistik (Indonesian Food Logistic Agency)
CESS	Center for Economic and Social Studies (India)
CIMMYT	International Maize and Wheat Improvement Center
FAO	Food and Agricultural Organization
FCI	Food Corporation of India
GDP	Gross Domestic Product
HYV	High Yielding Variety
IFS	International Financial Statistics
IMF	International Monetary Fund
IRRI	International Rice Research Institute
LPEM	Institute of Economic and Social Research, University of Indonesia
NFA	National Food Authority
PAD&SC	Pakistan Agricultural Development and Supplies Corporation
PASSCO	Pakistan Agricultural Storage and Services Corporation
PDS	Public Food Distribution System (India)
PFDS	Public Food Distribution System (Bangladesh)
PPP	Purchasing Power Parity
RBI	Reserve Bank of India
SOE	State Owned Enterprises
USAID	United States Agency for International Development
USDA-FAS	United States Department of Agriculture-Foreign Agricultural Services
WDI	World Development Indicators
WTO	World Trade Organization
VINAFOOD	Vietnam Central Food Corporation

GRAIN MARKETING PARASTATALS IN ASIA: WHY DO THEY HAVE TO CHANGE NOW?

Shahidur Rashid[1], Ralph Cummings Jr[2]., and Ashok Gulati[3]

1. THE CONTEXT

The initial economic conditions and the rationales for public intervention in foodgrain markets were remarkably similar across the Asian countries where governments intervened in their grain markets. Agriculture was largely weather-dependent, production variability was high, domestic markets were poorly integrated, international markets were highly volatile, and the countries had severe liquidity constraints to buy from the international market at the time of scarcity. These countries were vulnerable to crop failures, foreign exchange reserves were meager, and national food security depended, apart from "*mother nature",* on the goodwill and relationship with the donor countries. These relationships, however, were not always smooth due to sharp differences in political ideology. Therefore, policy thinking in all of these countries converged towards attaining self-sufficiency, improving food distribution, and managing food security threats arising from weather- related production shocks. This policy thinking coincided with the appearance of the Green Revolution, giving the governments another justification for intervention—that is, mitigating the risks and uncertainties of the

[1] Research Fellow, Markets, Trade and Institutions Division, International Food Policy Research Insitute, Washington D.C. USA.
[2] Visiting Research Fellow, Markets, Trade and Institutions Division, IFPRI, Washington D.C. USA.
[3] Director, Markets, Trade and Institutions Division, International Food Policy Research Insitute, Washington D.C. USA.

new technology. By early 1970s, a food policy paradigm evolved, with governments directly involved in a "*procurement-stocking-distribution*" chain, which was again very similar across the countries.[4]

Nevertheless, the experiences over the years have been mixed. Some countries responded by reducing intervention, while the others held on to the old practices with minimum reforms. The food subsidy bill has decreased in some countries, but increased in others. The government's shares in foodgrain markets have gone up in some countries, but gone down in others. This objective of this paper is to synthesize these diverse experiences and draw implications for further reforms. The next section provides a historical overview of the evolution of policies and institutions for public interventions, which is followed by a section that analyzes changes in the underlying rationales for intervention. Section 4 discusses policy responses to changing rationales; and section 5 evaluates the performances of price stabilization policies over the past three decades. The chapter concludes with a summary of the major issues and a discussion of their implications.

2. FOOD POLICY AND PARASTATALS IN ASIA[5]

While underlying conditions were similar, policy design, implementation approaches, as well as reforms in later years have varied widely across the countries. Policies have been implemented through parastatals in India, Indonesia, and the

[4] Note that Vietnam, which started late and from a communist beginning, is a partial exception.
[5] This section draws heavily from the country case studies presented in a workshop in New Delhi in December 2003.

Philippines; through pure government agency (directorate of food) in Bangladesh; through combination of parastatals and state agencies in Pakistan; and through parastatals without direct involvement in procurement and distribution in Vietnam. The following are brief country-by-country overviews of how parastatals and supporting policies evolved over time.

INDIA

The great Bengal Famine of 1943 triggered the tradition of public intervention in India. The Famine Enquiry Committee Report, as well as other subsequent studies, concluded that the root cause of famine was the failure of markets in responding to supply shortages in Bengal (i.e., lack of spatial integration), rather than the availability of foodgrains in India as a whole, in that particular year. A Fabian socialistic dogma, which viewed traders as parasites in the economic process, pervaded early political leadership. Thus, the central premise for heavy public involvement in foodgrains marketing was to address the perceived inability of private traders to ensure efficient allocation of essential commodities across space and time. Government actions focused on ensuring a steady flow of supplies at "reasonable" prices to consumers through domestic production supplemented by imports whenever production suffered a setback. Until about 1965, consumers were generally assured of a minimum supply, but an assured income to the producers remained an elusive promise.[6]

[6] This concern was based, in part, on the assumption that production responds slowly to price, but price responds swiftly and inexorably to demand or to fluctuations in supplies.

Two major events coincided to prompt a change in policy. First, in 1965-66 and 1966-67 the country experienced two unprecedented consecutive severe droughts that reduced foodgrains production almost twenty percent below the previous best levels. India was in a crisis; only bailed-out by a large volume of U.S. food-aid that severely strained the country's pride. Second, in 1963 the new high-yielding wheat varieties were first grown experimentally in India and by 1966 prospects of the Green Revolution appeared promising. The New Strategy of Agricultural Development, articulated in the Fourth Five Year Plan, marked a bold step beyond previous policies. A deliberate policy of combining high-yielding varieties of seeds with a "package" of complementary inputs in selected but widely distributed water-assured areas was proposed. The availability of scarce foreign exchange to import fertilizer and other inputs to support the program was given priority. Investments in agricultural supply industries were encouraged. Reorganizations of programs in research, extension, and rural credit, which had been initiated earlier, were accelerated and given greater support. However, what marked the most significant departure from the old ways was the seriousness and sincerity with which the policy recommendations were translated into action, the so called "political will".

An integrated food and agricultural policy emerged. Food management operations of the government consciously attempted to achieve the objectives of (1) increasing production by encouraging adoption of new technology, (2) stabilizing relative prices, and (3) protecting the consumption levels of low-income groups. An Agricultural Prices Commission was established in 1965 and so was the Food Corporation of India

(FCI) to make the price policy effective. Even through the specific duties of the FCI have changed over time, its main objectives have remained the same: (1) providing price support to farmers by procuring foodgrains at a "remunerative price"; (2) distributing foodgrains throughout the country at "fair" prices; and (3) maintaining buffer stocks to ensure national food security. In achieving these objectives FCI was envisioned to operate competitively with private traders. The guiding premise was that, unlike private traders, a public sector agency could act in the social interest. Given its size and financial strength, it was expected to secure for itself a "commanding position in the foodgrains trade**".**

INDONESIA

Traumatic events—the downfall of Sukarno government in the late 1960s– triggered an aggressive public approach to food security in Indonesia. The economy was in shambles characterized by negative growth and run-away inflation. The new government was especially sensitive to social unrest generated by high rice prices that created political instability for the previous government. The fear of failure of domestic rice markets to arbitrage across time and space, weather induced production changes, and volatility in international prices were considered the prime reasons for instability; and the food policies were motivated by concerns for both consumption and production in Indonesia.

A key element of the New Order approach under President Soeharto was heavy investment in the rural economy to increase rice production and sustained efforts to stabilize the price of rice. Government investment strongly supported the agricultural

sector. Improvements in rural infrastructure – irrigation systems, roads, schools, market places, healthcare facilities, communications, electricity, clean water, etc. -- built a foundation for a dynamic rural economy. Packages of technological change in the forms of high-yielding rice varieties, fertilizer, pesticides (followed by integrated plant protection), and technical advice were developed and disseminated throughout the country. Agriculture had clear first priority in the early development plans.

Evolving from its role as the logistics agency for the military, the Food Logistics Agency (Badan Urusan Logistik = BULOG) implemented a price-band on rice. A floor price kept farm-gate prices of rice above production costs. BULOG served as a stabilizing agent by buying rice production not absorbed by the market, especially during the harvest season. A ceiling price policy maintained affordability of lower-income rice consumers, especially in the urban areas; when the price of rice increased sharply during planting seasons, drought, and other similar situations, BULOG sold cheap rice to targeted consumers. BULOG was the sole importer of rice; a "big country" justification – Indonesia being a large country could have a large influence on prices in what was then a thin international rice market – was partly used to support that monopoly role.

PHILIPPINES

The Government of Philippines regulated and intervened in rice and corn markets as far back as the 1960s. In the early years, intervention programs were carried out through two agencies, namely, the Rice and Corn Board (RICOB) and the Rice and Corn Administration (RCA). These agencies were dissolved in 1972 when National Grain Agency (NGA), the predecessor of National Food Authority (NFA), was established to

promote integrated growth and development of grain industry by addressing the key areas of market failures. However, until the early 1980s, price intervention policies, both economy-wide and commodity-specific, created an incentive structure that was significantly biased against agriculture – primarily evidenced by an over- valued peso to protect industry and other economy-wide policies to defend an unsustainable deficit in the balance of payments (David 2003).

In 1981, during a crisis period when rice supply was scarce even in the world market, the domestic supply of white corn (a substitute for rice) was short, and the retail prices of both rice and corn were high, the government decided that it had to implement a price ceiling and rice rationing to defend the ceiling. With an executive order, NGA was transformed to NFA with additional mandates that were designed to protect consumers, promote rice self-sufficiency and to develop post- harvest technology for grain. Besides providing price support, the NFA was tasked to build and operate a network of storage and post harvest facilities throughout the country. Its' mandates included 1) stabilizing year-round rice prices, 2) making rice affordable for the country's population, and 3) ensuring that *palay* (un-milled rice) prices gave rice farmers a reasonable level of income. Today it is both a regulator and corporation engaged in grains trading. As such, it has four functions: 1) trading, 2) regulatory, 3) developmental, and 4) corporate management. The NFA has been the sole importer of rice into the Philippines for over 25 years.

PAKISTAN

Pakistan's tradition of government intervention, in the form of food rationing, was inherited at Independence in 1947; and the objective was to mitigate seasonal price

swings in the major urban centers that resulted from arbitrage failure due to inadequate infrastructure. In the early 1970s, it was recognized that farmers in general and the small farmers in particular neither had adequate storage nor sufficient financial capacity to hold on to their marketable surplus in the hope of getting better prices later. This was the premise for the formation of the Pakistan Agricultural Storage and Services Corporation (PASSCO) in 1973.[7] Funded by the Federal Government and six nationalized banks, the agency was established with a wide charter and a range of activities.

In practice, PASSCO has concentrated on (1) implementation of a support price program for wheat, paddy, gram, potatoes, onions, and oilseeds, (2) price stabilization, (3) construction of storage facilities and development of marketing infrastructure, and (4) promotion of agro-based processing units, such as rice- husking mills, establishment of cold storage, and provision of farm machinery services to farmers. "Atta" (coarsely milled wheat), sugar, and other food commodities were rationed initially. However, over time the system lost its utility, especially in the provision of atta, and suffered from many malpractices of officials of the food department and depot holders, fake ration cards, poor quality of atta, etc. Under a new system begun in 1987, the government supplies wheat from its stocks at uniform issue-prices to designated flourmills, which are required to supply atta through general stores in the market. In the wake of curtailment of coverage of support prices in recent years, PASSCO's role has been limited to the procurement of

[7] PASSCO accounts for only about one-fourth of the wheat procured; Provincial Food Departments (PFDs) procure the other three-quarters. However, their mandates are different. PFDs supply wheat to private flourmills at a fixed price that does not cover all expenses and, thus, involves substantial consumer subsidies. PASSCO supplies wheat to the designated public sector agencies and recovers all its procurement and marketing costs through its sale price. PASSCO also maintains the country's strategic reserve.

wheat regularly and paddy occasionally. Intervention with other crops has been characterized by "adhocism".

BANGLADESH

Like India and Pakistan, the genesis of the food security administrative structure, scope, and objectives, including food control mechanisms, was associated with war-time emergency followed by the great Bengal Famine of 1943. The political perception inherited from the British colonial tradition of the need to control food grain marketing remains firmly embedded even today. This is illustrated by a plethora of regulatory instruments, which, although not enforced or partially enforced, remains in place. However, unlike its neighbors, Bangladesh has not employed a *parastatal* to carry out price stabilization; instead, price support and public distributions are operated through the Department of Food.

At Independence in 1971, Bangladesh was one of the poorest regions in the world and was hit by a famine in 1974. Therefore, protecting consumers and preventing famines were the main policy considerations in the early years. The country was democratic and pro-socialist; there was a large influx of food aid and an associated upsurge in public distribution. However, the public distribution system was characterized by persistent heavy leakage. Progressive reforms have shifted the orientation of public policy from rationing to poverty- alleviation programs. The public system has evolved to achieving multiple objectives: targeted distribution to alleviate poverty, disaster management, and price stabilization.

By the late 1970s, agricultural production started receiving greater attention. Deliberate policies were adopted to strengthen agricultural research, expedite technology diffusion, and to encourage private sector investment in agriculture. Increased public investments in agricultural research and extension in the 1980s and 1990s, together with private sector investments in small-scale irrigation, increased production significantly by making a shift away from highly flood- susceptible deepwater *aman* cultivation in the monsoon season to *boro* cultivation in the dry season, which reduced the length of time between major crops from 12 to 6 months. Substantial investment in infrastructure, some of which was done through food-for-work, improved the structure of roads, bridges, electricity, and telephones.

And perhaps unique among the countries under review, in 1994 Bangladesh liberalized trade policy to permit imports by private traders. This policy reform, subsequently, has become a major component of its stabilization policy.

VIETNAM

Vietnam clearly followed a different path than the other five countries. It initially operated under a communist-inspired state control. However, in the initial phase of unification of North and South Vietnam, agriculture was a major disappointment, making reform imperative. Directive 100 in 1981 permitted cooperatives to contract farm households to produce given amounts on their own plots but any surplus could be sold on the newly liberalized free market (Minot and Goletti 2000). Farmers responded impressively to the new incentives: per capita food production grew from 273 kilograms in 1981 to 304 kilograms in 1985. However, in 1985-86, the fiscal deficit ballooned as a

result of reduced assistance from the Soviet Union and losses from the state-owned-enterprises (SOEs). So in 1986, the government announced its intention to move toward a more market-oriented economy. Resolution 10 of 1988 recognized the farm household as the basic unit of production. Farmers were allowed to buy, own, and sell agricultural inputs such as machines, buffaloes, and tools. Cooperative land was assigned to farming households for 10 to 15 years under different forms of contracts or bidding. Furthermore, farmers were allowed to market 40 percent of contracted output. By 1989, compulsory government purchase of farm products was eliminated and private traders were allowed to purchase directly from farmers. Market-oriented reforms were carried out in other sectors as well. The government eliminated most direct subsidies and price controls, tightened government spending, set interest rates at positive real terms, unified and devalued the exchange rate, and moved toward a more liberalized international trade. The government reduced subsidies to SOEs and exposed them to greater competition.

When Viet Nam began exporting rice, the government restricted the volume of rice exports through the use of export licenses, even as international trade in other commodities was liberalized. A SOE (VINAFOOD) retains the leading position (96 percent of volume) in international trade – which is largely confined to government-to-government transactions in relatively low-quality food-aid rice with a commercial price discount to the prevailing world price to African, Asian, and Middle Eastern markets -- although recently, opportunities in international trade have been extended to the private sector. The Government of Vietnam carries out a regulatory role, issuing ordinances and decrees, but also signs contracts with other governments and private international buyers,

and assigns state-owned enterprises to supply the rice. The Government is playing an increasingly significant role in the development of grades and standards to assist in the improvement of quality.

3. THE UNDERLYING CONDITIONS HAVE CHANGED

If the rationales are evaluated in a "market failure" sense, there are four commonly agreed justifications for intervention in foodgrain markets: (i) weak infrastructure and limited flow of price information (lack of market integration), (ii) risk mitigation for technology diffusion, (iii) thinness and volatility of international market, and (iv) inability to participate in the international market.[8] Using cross-country time series data, this section analyzes how each of these conditions has changed over time.

3.1 INFRASTRUCTURE AND INFORMATION FLOW

When price policies were introduced, transport and communication infrastructure, the key determinants of efficient functioning of domestic markets, was either lacking or limited in all of these countries. Commodity movement was slow, traders had difficulties arbitraging over time and across space, and localized supply shortages were challenges to the policy makers in the region. Major food security threats, including famines, have been localized phenomena and were not directly linked with food availability in a nation as a whole.[9] These unfortunate events resulted from the unavailability or inadequacy of the

[8] See Timmer (1989) for a detail discussion on the rationales for public intervention.
[9] This was tragically demonstrated during the Madras Famine of 1876, Bengal Famine of 1943, as well as more recent Bangladesh famine of 1974.

provision of public goods, such as roads, and because price signals did not get transmitted from deficit to surplus regions. Therefore, price stabilization was argued to be a justified intervention, as it addresses two sources of market failure: *public goods* and *information asymmetry* in the market.

Is this still a valid justification? We have examined data on the key indicators of infrastructure and reviewed studies on the food market integration. The data show that all indicators of infrastructure and access to information have improved significantly over the past three decades (Table 1). Between 1970 and 2000, paved road network has increased more than three times in Pakistan and Bangladesh, more than four times in India, and an amazing nine times in Indonesia. Growth in paved road network has been somewhat slower in the Philippines, where it registered only 27 percent increase between the two time periods.

Indicators of access to information—represented by telephone, radio, and television densities—have improved as well. The ratios of telephone ownership to population in 1970 were one to 1500 in Bangladesh; one to 841 in Indonesia; one to 566 in India; one to 469 in Pakistan; and one to 212 in the Philippines. In 2001, every 5th household in the Philippines, every 6th household in India, Indonesia, and Vietnam; every 10th household in Pakistan; and every 55th households in Bangladesh had access to a telephone.[10] The most remarkable of all improvements is the spread of mobile phone network to remote areas. While densities are still low, the culture of sharing (or using for

[10] All household level calculations are based on the assumption that an average household consists of five members.

a fee) has revolutionized information flow in most of these countries. In India, the number of mobile phones already exceed the number of line phones, and are growing at a rate of 2 million a month as on December, 2004 (GOI, 2004; Mid term review). It is now common for foodgrain traders, even for the smaller ones, to carry a mobile phone and stay in touch with traders in distant locations. Therefore, price information gets transmitted in minutes and traders in various locations are better linked than ever.

Table 1—Indicators of Infrastructure Status

Period/ Indicators	Bangladesh	India	Indonesia	Pakistan	Philippines	Vietnam	All six Countries
Paved Roads (Length in 000 km)							
1970	3.7	334.17	21.1	17.49	13.5	--	78.0
2000	13.9	1,363.00	203.21	65.2	17.1	96.1	293.1
Ground line Telephones (per 1000 people)							
1960s	--	1.450	1.100	1.850	3.600	--	2.000
1970s	0.967	2.700	1.850	3.117	7.717	--	3.270
1980s	1.578	4.370	3.970	5.240	9.500	1.189	4.308
1990s	2.684	16.124	18.970	16.632	23.782	13.835	15.338
2001	4.303	37.523	34.512	23.322	42.381	37.598	29.940
Cellular Phones (per 1000 people)							
1980s			0.045	0.018			0.032
1990s	0.468	1.332	4.306	0.854	19.142	2.277	4.730
2001	3.961	6.262	31.175	5.601	149.576	15.424	35.333
Televisions (per 1,000 people)							
1970	0.12	0.05	0.75	1.51	10.67	23.42	6.09
1980s	2.80	7.32	33.69	14.81	30.06	34.69	20.56
1990s	6.35	57.25	109.00	63.25	98.13	117.47	75.24
2000	6.98	78.03	149.46	130.97	143.79	184.76	115.67
Radios (per 1,000 people)							
1970	12.79	31.05	8.51	49.50	41.04	65.53	34.74
1980s	31.75	61.52	134.21	84.29	75.77	101.03	81.43
1990s	46.52	103.96	151.77	101.13	147.43	106.11	109.49
2000	49.44	120.53	157.19	105.09	161.23	108.67	117.03

Source: Authors' calculations based on data from WDI (2003) CD-ROM. A "s" after the year reflects average for the decade.

The ownership of television and radio has also improved dramatically during the past three decades. In 1970, one in 20,000 people (or about one in 4000 households) in India, one in 8000 people in Bangladesh; one in 1333 people in Indonesia; and one in 663 people in Pakistan had a television set. In the Philippines and Vietnam, the numbers were one in 93 and one in 43, respectively. By the year 2000, again assuming a household size of five, almost every household in Vietnam; every other household in Indonesia, Pakistan, and the Philippines; every third household in India and every twenty-ninth household in Bangladesh had a TV set. The radio ownership has also increased by similar magnitudes in the 1990s.

The improvements in infrastructure and information flow are reflected in recent studies of market integration (Table 2). All of the studies on Indonesia find regional markets to be integrated. Three different studies on the Philippines, using three different methodologies, conclude that provincial markets for rice are well- integrated, although Mendoza and Rosegrant (1995) found corn markets to be poorly integrated. Similarly, analyzing prices in 27 provinces for various time periods, studies have concluded that the Indonesian rice markets are rapidly adjusting and well- integrated. In Bangladesh, performance of rice markets has changed from being severely disintegrated in the 1970s to being integrated in the 1990s.

Table 2—Recent Market Integration Studies in Selected Countries

Country / Study	Geographic Coverage	Time Period	Findings
INDIA			
Gosh, M. (2003)	Wheat markets in Bihar, Haryana, Punjab, Rajsthan, Uttar Pradesh	1984-97	Wheat markets within and across states are spatially integrated;
Kumar and Sharma (2003)	Rice in regional markets in Haryana		Integrated in the long, but not in the long run
Jha et al.(1998)	All India, state to state price transmission analyses	1984-97	Wheat markets are integrated across states
Palaskas and Hariss-White (1993)	Rice in three regional markets in West Bengal	1988-90	Integrated in the long run, but not in the short run
Puri (1997)	All India level analyses of rice and wheat	1985-95	Most markets integrated in the long run, but not the short run
Baulch and Jariath (1997)	Wheat in seven regional markets in Rajasthan	1992-96	Not integrated in the short run
INDONESIA			
Ismat, et al. (1998)	Rice in nine major provinces	1982-93	Rice markets in all major provinces are integrated
Alexander and Wyeth (1994)	Rice in all 27 provinces	1979-90	Except two provinces, all markets are well integrated
Alexander and Wyeth (1995)	Rice in all 27 provinces	1979-90	
Ellis, M. and B. Trotter (1991)	Rice in all 27 Provinces		Competitive and rapidly adjusting
PHILIPPINES			
Silvapulle and Jayasuriya (1994)	Rice in five market locations	1975-89	Regional markets are well integrated
Mendonza and Rosegrant (1995)	Corn markets		
Baulch, B. (1997)	Rice in regional markets	1980-93	All regional markets are integrated
BANGLADESH			
Dawson and Dey (2002)	Rice in 12 regional markets	1992-97	Perfectly integrated
Das et al. (1997)			Integrated in both short and long run
Goletti et al.(1995)	Rice in 64 districts	1989/90-1991/92	Degree of market integration moderate
Ravallion, M. (1987)	Six districts in Bangladesh	1972-75	Lacks integration both in the short and in the long run
PAKISTAN			
Kurosaki, Takashi	Wheat and Basmati rice in the Punjab	1989/90-1991/92	Wheat and rice markets are well integrated spatially right after harvest, but wheat markets are not integrated inter-temporally.
VIETNAM			
Minot and Goletti (2000)	Rice markets in four geographic regions	1989--1999	Regional markets are not integrated

The results of market integration studies on India are mixed; and the only study on Vietnam concludes that rice markets, at least over distances, are not well-integrated. However, in both cases lack of integration is largely attributed to government regulations, particularly the restrictions on movement of foodgrain. In India, transportation by road requires passage through a large number of checkpoints that increase costs and reduce private traders' profitability due to inordinate delays and payment of "speed money" (World Bank 1999).[11] This is consistent with the common finding that Indian foodgrain markets are integrated in long run, but not in the short run. Similarly, in Vietnam, movement restrictions prevented spatial arbitrage from bringing price differences down to the costs of transportation and marketing; and as of late 1996, the procedures to buy and transport rice from the south to the north resembled those of trade with another country (Minot and Goletti 2000).

3.2 RISK MITIGATION AND TECHNOLOGY DIFFUSION

In the 1960s, when these countries embarked on promoting Green Revolution technologies, domestic markets were poorly integrated, insurance and credit markets were either missing or incomplete, and the farmers operated in a highly uncertain production and marketing environment. All these factors greatly enhanced the risks and discouraged farmers from adopting the new technology. Therefore, one of the central

[11] In addition to imposing several restrictions on private trade, Government of India has offered concessions to FCI such as cheap credit and priority in public transportation, which have made FCI a privileged trader in Indian foodgrain markets. Furthermore, pan-seasonal and pan-territorial pricing policy leads to a situation where there are no geographical and inter-temporal price variations in trade that both reduces incentives for private trade and destroys the commercial instinct of the FCI.

rationales for price support policy was to mitigate those risks and help farmers ensure profitability of cultivating their land with modern crop varieties.[12]

Cross-country data show that promoting technology adoption is no longer a persuasive justification for public intervention in foodgrain markets. The High-Yielding Varieties (HYV's) now cover practically all area sown to wheat and a large proportion of area sown to rice (Table 3). Note that Table 3 is constructed to show the percentage of total HYV rice area to total rice area, and does not reflect the true saturation of technology adoption. There are essential requirements, such as irrigation facilities and low probability of flooding, which constrain cultivation of HYV rice but not the traditional varieties.[13] A better indicator would be to take HYV area as percentage of irrigated rice area, but such disaggregated data are not available for all countries. Data from India and Bangladesh suggest that, if irrigation is available, farmers allocate almost hundred percent of their land to modern variety rice. In summation, these numbers suggest that most farmers have mastered the technology and that their land allocation decision (to cultivate HYV or other crops) is dictated by the profitability of crops, not by the unfamiliarity (or familiarity) of the technology. Therefore, promotion of technology adoption is no longer a persuasive argument for intervention, except in a few areas that have lagged behind due to physical or geographic constraints.

[12] In fact, floor price guarantee is a variant of forward-pricing schemes, which promotes farmers' willingness to participate and reduces enforcement problems, such as moral hazard and adverse selection, inherent in instituting futures markets in developing countries. See, Stiglitz (1987) and Islam and Thomas (1996) for a review of these issues.

[13] For example, in flood prone areas of Bangladesh, farmers cultivate deep water *aman* (a long stem traditional variety) that is more resilient to flooding. Therefore, it is perfectly rational for the farmers to cultivate traditional varieties in such circumstances and they will continue to do so irrespective of price support programs.

Table 3—Percentage of Area Sown to Modern Rice and Wheat Varieties

Period	Bangladesh	India	Indonesia	Pakistan	Philippines	Vietnam	All six countries
			(	in percent	)		
RICE							
1960s	1.9	8.2	8.0	--	31.0		12.3
1970s	14.3	33.1	40.9	--	65.6	4.7	31.7
1980s	31.4	56.6	72.2	--	85.8	31.1	55.4
1990s	49.4	61.9	70.8	--	81.7	64.2	65.6
Latest	61.8	71.9	76.7	--	96.3	85.6	78.5
WHEAT							
1970s	7.7	29.5	--	43.0	--	--	26.7
1980s	94.8	67.8	--	80.7	--	--	81.1
1990s	95.7	76.0	--	86.1	--	--	85.9
Latest	100.0	92.0	--	94.0	--	--	95.3

Sources: Authors' calculations based on data from IRRI (2004); FAOSTAT (2004); and CIMMYT (2004).
The numbers reflect averages for the decade for rice

3.3 THINNESS AND VOLATILITY OF GLOBAL FOOD MARKETS

In the 1960s, attaining self-sufficiency in food was one of the central drivers of food and agricultural policies in Asia. The common argument for this policy standing was that the world market was highly volatile and too thin for these countries to bet on their food security. The rice market was particularly volatile. Factors contributing to instability were the geographic concentration of rice production, a thin and fragmented world market with high transactions costs in trading, low domestic price elasticity of demand, and relatively low world stockholdings.[14] The situation, however, has changed over the past two decades on all counts.

[14] Thomas Jayne, "Sources of Instability in the World Rice Market", MSU International Development paper No. 13, Department of Agricultural Economics and Department of Economics, Michigan State University, 1993.

First, global foodgrains markets have matured in terms of traded volume, as percentage of total global production and consumption (Table 4). Wheat and maize markets have always been relatively robust. In 1966, India imported over 10 million tons of wheat, albeit provided as food-aid under PL 480, without large disruptions in the international wheat market. On the other hand, during the 1960s or 70s, Indonesia's 3 million tons of imports in a 7-10 million ton international rice market could have had significant impact on international rice prices. But the international rice market is now approximately 25 million tons annually, production has become more stable due to irrigation and pest control, and new exporters, particularly Vietnam, have become large participants. Bangladesh successfully utilized privatized international trade, albeit with certain favorable circumstances, as a major source of its price stabilization and food security program to adjust to a poor harvest in late 1997 and a massive flood in 1998 (Dorosh 2001). In 1998 Indonesia was able to import over 6 million tons of rice in the wake of the worst drought in recent history with very little impact on the world rice market (Timmer 2002).

Second, although it is still high compared to domestic markets, price volatility in international market has shown significant decline in the past two decades, particularly in the 1990s. In a recent study, Dawe (2004) has demonstrated that the average absolute value of annual rice price change has declined from 24 percent during 1965-1981 to just 11 percent during 1985 and 1998. The author attributes the increased stability to three factors: increased production stability, a deeper world market (both noted above) and the

commercial orientation of several major exporters. These patterns suggest that rice prices are likely to remain relatively stable in the future.

Table 4—Changes in the Trade of Cereals in the World Market

Indicators / Year	Rice	Wheat	Coarse grain
World Trade as Percentage of Production			
1972-1974	3.54	18.65	10.40
1975-1977	3.93	17.81	12.24
1978-1980	4.70	19.51	13.65
1981-1983	4.04	21.70	12.71
1984-1986	3.87	18.43	10.80
1987-1989	3.72	21.28	12.72
1990-1992	3.90	19.25	11.07
1993-1995	5.20	18.68	10.97
1996-1998	6.12	17.42	10.30
1999-2001	6.26	18.63	11.81
2002/2003	7.27	19.40	12.02
World Trade Volume (in Million tons)			
1972-1974	7.79	65.64	65.14
1975-1977	9.53	67.57	82.70
1978-1980	12.35	84.05	100.16
1981-1983	11.71	101.34	93.43
1984-1986	12.25	93.85	88.62
1987-1989	12.29	107.91	97.52
1990-1992	13.82	108.42	92.53
1993-1995	18.93	100.87	90.51
1996-1998	23.73	103.37	92.14
1999-2001	25.08	108.65	103.44
2002/2003	27.50	110.00	104.80

Source: Authors' calculation based on annual time series data from USDA-FAS (2004a)

3.4 ABILITY TO PARTICIPATE IN THE INTERNATIONAL MARKET.

Another justification, which was quite significant in the early years, was that most of these countries had little foreign currency reserve and their food security greatly depended on food- aid flow. The severity of the problem is demonstrated by plotting the value of cereal imports (commercial plus food- aid) as percentage of foreign currency reserves (Figure 1).[15] Notice that, until about early seventies, cereal import values exceeded foreign currency reserve in India and Indonesia, and constituted a high proportion of total reserve in Pakistan and the Philippines. In Bangladesh, cereal import value was higher than foreign currency reserves as late as in 1987. These numbers clearly demonstrate the critical link among foreign currency reserves, food- aid, and food security. Clearly, without food- aid, the countries would have encountered serious food security problems until about late seventies.

The link between foreign currency reserve, food security, and food- aid was clearly manifested in India when it was hit by two consecutive droughts in the mid-sixties. In 1966, the country needed more than ten million tons of food to feed its populations and had about US$ 419 million in reserve. This means that spending entire reserve could buy only 6.76 million tons of wheat at current prices (US$62 per ton). Therefore, when the U.S. called off food assistance under PL 480, the situation turned into a crisis. The leaders of India had to appeal to the US to re-consider food- aid assistance; and the US eventually came forward to bail out the country by supplying more than eight million tons of food- aid. This experience

[15] Foreign currency reserve does not include gold value, SDR's and fund with the IMF. Cereal import includes government import, food aid, and other commercial imports.

severely strained national pride and attaining food self-sufficiency quickly became top priority of the government's policy agenda articulated in the Fourth Five Year Plan.

A review of the trends in foreign currency reserves and import capacity, defined as the export value of goods and services deflated by import price index, indicates that the situation has improved dramatically over the past three decades (Table 5). To better understand the magnitudes of improvement; let us consider Indian case in 2004. During June-July 2004, total foreign currency reserve in India was US$120 billion and rice was selling in the world market at $185 per ton. This implies that, *ceteris paribus*, buying all 25 million tons of rice available in the world market would take less than five percent of Indian foreign currency reserves. This is quite a contrast to the situations of drought years in the mid-sixties! The improvements in other countries are also remarkable. Except Bangladesh, which continues to receive large food- aid, and in Pakistan where import values were high for a couple of years in the 1990s, value of total cereal imports in most of these countries now constitutes only a small fraction of their total foreign currency reserves. This implies that international liquidity is no longer a major constraint and hence can use the world markets to meet their food security objectives more efficiently.

Figure 1—Cereal import values as percentage of foreign exchange reserves, 1965-2001

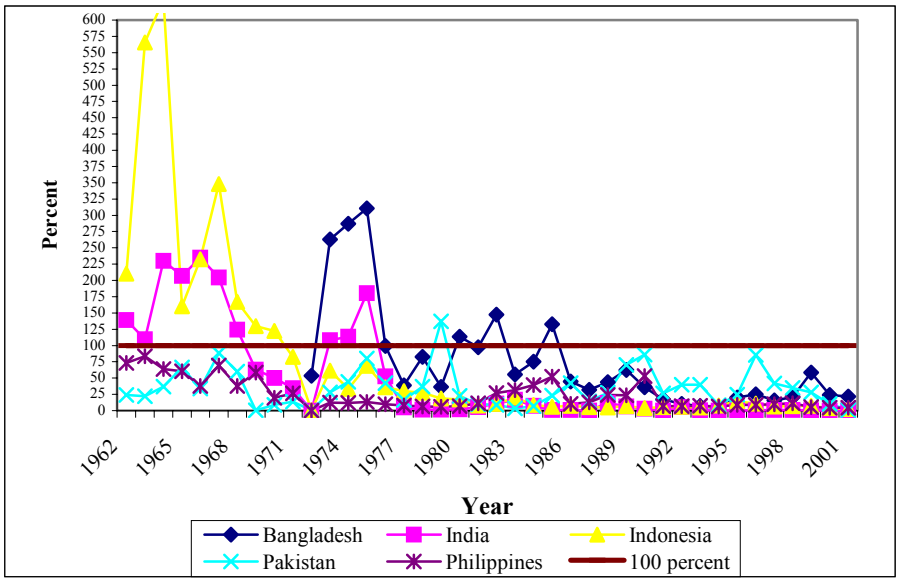

Table 5—Indicators of Ability to Use International Markets to Ensure Food Security (10 year annual average)

Period	Bangladesh	India	Indonesia	Pakistan	Philippines	Vietnam	All six countries
Foreign Exchange Reserves (million US$)							
1960s		422	59	188	100	--	192
1970s	241	2,938	1,859	322	1,429	--	1,358
1980s	463	4,171	4,735	747	1,059	--	2,235
1990s	1,892	19,598	16,628	1,297	7,630	2,292	8,223
2001-2003	1,843	69,954	30,848	7,468	13,213	4,668	21,332
Share of Cereal Import Value to Foreign Exchange Reserves (in percent)							
1960s	--	151.26	285.21	37.81	56.02	--	132.58
1970s	142.72	49.91	37.56	42.08	10.17	--	56.49
1980s	72.64	6.32	8.21	29.22	28.54	--	28.99
1990s	20.21	0.96	7.31	33.97	7.59	0.05	11.68
2001	21.47	0.00	2.64	0.98	4.49	0.03	4.94
Import Capacity (Index: 1995=100)							
1970	24.33	19.31	6.55	52.39	23.36		25.2
1975-80	13.81	29.18	37.93	38.39	30.34		29.9
1980s	26.69	46.43	51.80	48.61	49.10	27.46	41.7
1990s	97.04	107.04	101.52	97.41	105.84	87.76	99.4
2001	168.22	179.29	119.41	104.76	144.90		143.3

Sources: World Development Indicators (2003) CD-ROM; IMF-IFS (2004).
Note: A "S" After the year reflects average for the decade.

4. BUT THE OLD WAYS CONTINUE IN MOST COUNTRIES

The previous section has demonstrated that the key rationales for public intervention have lost significance over the past thirty years. Policies have changed too, but changes have varied across countries. This section attempts to evaluate these mixed experiences. We focus on two aspects of policies: (i) policies designed to facilitate parastatals' operations and (ii) the changes in the size and scale of their operations.

4.1 POLICIES TO FACILITATE PUBLIC INTERVENTION PROGRAMS

Historically, a range of government regulations has supported parastatals or other government agencies involved in the food intervention programs. Monopoly controls in international trade, restrictions on movements of foodgrain by the private sector, concessional credit and preferential access to transportation for the parastatals, and limits on private storage have been extensively used in all of the countries. A summary is presented in Table 6 and economic arguments and current practices for each of the regulations are discussed below.

4.1.1 Monopoly in International Trade

There are two arguments that have been commonly cited to justify governments' monopoly control over international trade of foodgrain: (i) to keep a control over scarce foreign currency reserves, and (ii) to take advantage of scale economies. The first argument is that, since the foreign exchange reserve was limited, and food import accounted for major share of its use, there had to be a mechanism to monitor and regulate its usages. Therefore, it was assumed that by taking administrative decision for import, instead of business decision, governments would be in a better position to optimally spend the countries' scarce foreign

currency reserves. The second argument goes like this. Since governments were large buyers, and there were many sellers in the international markets, they would have higher bargaining power (some degree of *monopsonistic* power) to negotiate lower import prices. By contrast, if private traders were allowed to import, they would have no bargaining power (price takers) and hence would have to pay higher prices. This would, the assumption goes, not only increase domestic prices, but would also drain out precious foreign currency reserves.

Since the foreign exchange reserves have improved dramatically, the first argument is no longer persuasive. Regarding the second argument, the reality has been quite contrary to the central assumptions. The empirical evidence suggests that, instead of enjoying scale economy, the policy has actually served as an easy avenue of rent-seeking by the bureaucrats and politicians who were entrusted to make import decisions. For example, analysis of historical data of wheat import in India suggests that, in most of the years, government has actually paid higher import prices.[16] Another empirical example comes from Bangladesh, where both government and the private sectors imported foodgrain to address crisis following the 1998 flood. Although the size of government import was much larger than private sector (the size of each consignment of public import was about 82,000 tons compared to 300-400 tons by the private sector), government paid substantially higher prices and took much longer time to complete the transactions.[17] Our country case studies suggest that similar evidence is available from other countries as well, particularly in the Philippine and Indonesia both of which have practiced monopoly control for many years.

[16] In India, there are reports that some bureaucrats have been implicated for "rent seeking" in grain imports.
[17] These numbers are based on Annex 4 of Ali and Jahan (2003), who provide transaction details obtained from three major banks in the country.

Nevertheless, despite mounting evidence, many countries continue to exercise trade control, partially or fully, over foodgrain markets in Asia. The parastatals (or government agencies) control imports of rice and corn in the Philippines, export of rice in Vietnam, and import of wheat in Pakistan and India. The last two decades have also witnessed vacillating import policies in both Indonesia and Pakistan. In 1987-88, Pakistan freed wheat import but quickly reversed its policy on the ground that private sector was importing sub-standard wheat. Since then, government has regularly imported wheat, involving large subsidies, to feed its public distribution schemes that have mainly benefited the flourmills and have been reported in local media to have bred corruption in the Food Departments. Total subsidy on government export and import was as high as US$ 190 million in 1995/96, equivalent to about 68 percent of total food subsidy bills. Similarly, in Indonesia, rice import restriction was lifted in 1998, but resulted in larger volume of import and with this, increased calls (including from BULOG) for increased protection. The government instituted a temporary ban on imports and allowed only a group of especially- licensed importers to import rice (USDA-FAS 2004b).

Table 6—Regulatory Framework to Facilitate Parastatals' Operation

Regulations / Restrictions	India	Indonesia	Philippines	Bangladesh	Pakistan	Vietnam
Monopoly in Export						
Year introduced.	1965	Never had large surplus	Never had large surplus	Never had large surplus	1974	1989
Still enforced?	No, but quota on export	n.a		n.a	Private sector export allowed since 1987	Yes
Monopoly in import						
Year introduced.	1965	1967	1972	1972	1948	1975
Still enforced?	Yes	Officially withdrew in 1998, but re-instituted again	Yes	No, lifted in 1992-93	Private import was freed 1987, but was quickly reversed	Yes
Movement restriction						
Year introduced	1941 (during British rule)	1967	n.a	1941 (during British rule)	1941 (during British rule)	1975
Still enforced?	Yes, partially	Yes, partially	No	No, lifted in 1989	Lifted in 2001, but being enforced in 2004	Yes
Credit concession						
Year introduced?	1973-74	1979	1972	1948 (During East Pakistan)	1948	1989
Still enforced?	Yes, although interest rate was revised in 1994.	No, reformed in 1998. But has credit guarantee from the central bank	Yes, occasionally	No, reformed in 1992	Yes	Yes
Preferential access to transportation						
Year introduced?	1965	n.a	n.a	Preferential access to Rail and waterways	No	n.a
Still enforced?	Yes Preferential access to railways	n.a	n.a	Reformed in 1997	n.a	n.a

Note: Compiled and provided by the country collaborators using various government documents and circulars.

4.1.2 Movement Restrictions

In the Indian sub-continent, the policy of movement restriction dates back to colonial rule in early 1940s, when it was enforced with dual objectives of preventing hoarding and building stocks for distribution in major urban centers. The objectives, however, changed when price support policies were adopted in the 1960s. The idea now was to bring the prices down to the support price level in surplus areas so that governments could procure sufficient supply for their buffer stocking and public distribution operations. In India, researchers often used a term, known as "bottle up", which became very popular in the 1970s and 1980s when government frequently enforced movement restrictions in the surplus states.

The policy of restricting foodgrain movements by private sector is still partially enforced in India and Indonesia; and frequently enforced in Pakistan and Vietnam. Pakistan officially lifted movement restrictions in 2001, but in 2004 restriction on wheat movement was being enforced in the state of Punjab to facilitate public procurement of wheat. Similarly, movement restriction in India was officially withdrawn in 1977, but kept re-appearing until the 1990s. Even today, India enforces movement restrictions in selected states on the ground of preventing smuggling to neighboring countries. In Vietnam, as of late 1996, rice trade between north and south resembled that of trade between two separate countries (Minot and Goletti 2000). Why is this policy so popular and keeps re-appearing? Presumably, it does aid public procurement. However, it also creates lucrative rents for an influential group of stakeholders, involving food officials, law enforcement agencies, and politicians. Historically, the policy has never been

conducive to resource allocation and market development. The Indian experience clearly suggests that the policy has hindered private trade, bred corruption, and contributed to poor integration of markets.[18]

4.1.3 Concessional Credit Facilities

Governments have to commit financial resources for implementing floor and ceiling price policies. Food logistic agencies need a line of credit to purchase grain, domestically or internationally, and to store it until prices go high enough to justify market injection. There are three important economic consequences of this policy. First, parastatals require large volumes of credit (often 20 to 30 percent of total agricultural credit) and hence can reduce credit availability to other sectors. This was indeed the case in India during he early to mid-nineties when credit extended to FCI accounted for 75 to 94 percent of total trade credit (RBI 2001). Second, it discourages private traders whose transaction costs become higher relative to parastatals'. Finally, Timmer (1989) argues that when prices become stable, credit demand becomes unstable; and the instability can impose significant adjustment costs to the rest of the economy whether the food logistic agency is increasing or decreasing its use of credit.[19]

Our country case studies indicate that all countries have provided, at one point or the other, concessional credit to their food marketing agencies and many countries

[18] The policy was counter-productive even in the early years in India. After the central government gave power to the provinces to control movement, every province, every district, every *taluk* (smallest administrative unit) in eastern India had become a food republic unto itself, destroying the trade machinery for the distribution of foodgrain (Chopra 1981).

[19] To further elaborate this point, he writes, "when credit demand rise (say after a good harvest), interest rates rise or government loans are rationed, budgets of other agencies are cut, investment project delayed, or the deficit is financed by increasing the money supply, with attendant potential for inflation. On the other hand, when loan is unexpectedly repaid, money and purchasing power is withdrawn from the economy, with potential recessionary impact.

continue the policy (Table 6). The FCI has enjoyed preferential credit access since 1973/74. The interest rate on FCI credit was about seven percentage points lower than market rate until 1982/83 and 5-6 percentage points thereafter. Indonesia had similar policy until 1998. BULOG had access to an unlimited line of credit at heavily subsidized interest rates in the early years and at commercial rates, but guaranteed by the Bank of Indonesia, since 1998 (Timmer 2002). In 1998, the VINAFOOD received interest- free loan, roughly about US$150 million, from its government's export promotion fund to purchase and export rice.

4.1.4 Other Restrictions

Parastatals (or government agencies) have also been supported by other restrictions / public facilities in the Indian subcontinent. Two of the common practices have been restrictions on storage and preferential access to transportation, both of which continue to be enforced in India. Restrictions on private storage originated from a common perception that traders are speculators who make abnormal profits by "hoarding" and artificially increasing prices. A direct policy outcome of such perception was the promulgation of the "Essential Commodities Act" in India and "Anti-hoarding Act" in Bangladesh, which, although not strictly enforced, is still in existence. In addition, public food agencies in both countries had enjoyed preferential access to railway transportation for years. While Bangladesh reformed this policy in the late 1990s, the FCI in India continue to enjoy it. In fact, the private traders get only sixth preference if they want to transport their grain through Indian railways (Deininger and Deininger 2001).

4.2 CHANGES IN THE SIZE AND SCALE OF OPERATION OF FOOD MARKETING AGENCIES

This subsection attempts to describe how the scale of operation and size of parastatals have changed since their formation. Evidence is mixed. Compared to the early years of the Green Revolution, parastatals' (government's) market shares, measured by the percentage of procurement to total production, have increased significantly in India, modestly in Bangladesh, and declined in the Philippines and Pakistan (Table 7). The most striking example is India, where public procurement of rice and wheat has increased from about ten percent of production in the seventies to more than 25 percent and 22 percent, respectively, in recent years.

While public procurement has declined in Indonesia, the Philippines, and Pakistan, total public distributions have actually increased, as governments in these countries imported larger volumes of foodgrain to feed their public distribution programs. For example in the Philippines, although rice equivalent paddy procurement by the NFA was less than three percent of market of production in the 1990s, public distribution accounted for more than ten percent of total food supply.[20] This is very different from the 1970s when procurement (6.13 percent) was larger than distribution (4.69 percent). The same is also true for Indonesia, where procurement as percentage of production (4.51 percent) was more than double the BULOG's distribution as percentage of total supply of rice (11.83 percent). In Pakistan, not only has total distribution increased, public procurement as percentage of total production (by provincial food agencies and

[20] The total supply of food, taken from FAOSTAT, includes food for human consumption only; and is defined as the sum of total production, net import, and change in domestic stock.

PASSCO) continue to be large, ranging between 23 to 35 percent of total wheat supply over the past three decades (Table 7).

Table 7—Degree of Public Intervention

Period/ Indicators	Bangladesh[1]	India	Indonesia[2]	Pakistan	Philippines[3]
			(in percent)		
Procurement as percentage of total production (milled rice)					
Rice					
1970s	1.52	9.82	3.54	--	6.13
1980s	1.82	14.01	6.80	--	5.28
1990s	3.31	16.88	4.51	--	2.53
2001-2003	3.11	25.26	--	--	2.68
Wheat					
1970s	2.60	18.33	--	--	5.18
1980s	9.06	19.53	--	29.69	1.16
1990s	4.68	20.88	--	24.39	0.25
2001-2003	5.28	22.32	--	20.50	--
Distribution as percentage of total supply					
Rice					
1970s	4.33	9.46	10.82	--	4.69
1980s	3.83	14.65	9.11	--	8.35
1990s	3.31	13.42	6.67	--	10.50
2001-2002	3.47	15.45	11.83	--	12.71
Wheat					
1970s	81.24	26.41	95.66	--	1.67
1980s	66.14	19.73	102.37	27.04	0.89
1990s	39.65	17.62	97.30	35.31	3.82
2001-2002	19.85	19.56	92.60	22.66	7.94

Sources: Ahmed, Haggblade, and Chowdhury (2000) and Food Planning and Monitoring unit for Bangladesh; NFA website for the Philippines; Rashid and Gulati (2003) for India; Timmer (1996: Appendix) and Arefin (2003) for Indonesia; FAOSTAT (2004) CD-ROM for supply and production statistics.

Notes: [1]The distribution figures in Bangladesh include food aid, which is the main source of supporting social safety net programs.

[2]Since domestic production is miniscule, the distribution of wheat in Indonesia is calculated as total wheat import as percentage of total supply.

[3]The Philippines figures under wheat are for white maize.

[4] Total supply of food, taken from FAOSTAT, includes only the food available for human consumption; and is defined as the sum of production, net import, and change in domestic stock.

Another way to assess changes in the size of public price stabilization efforts is to examine total number of employees, but unfortunately such time series data are not available for all countries. However, the data that we have available suggest that total number of employees in food logistic agencies has increased in India and decreased in Bangladesh. In India, FCI started its operation with only 3904 employees in 1965, which increased to about 29,000 by 1970, more than 50,000 by 1980, and about 65,000 in the 1990s.[21] In addition, Indian food policy has also created a large group of stakeholders that include about half a million ration shops, 219 million ration cards, and more than 6000 state marketing and regulatory agencies (including "*mandi* boards") directly involved with public food management programs (Rashid and Gulati 2003).

In Indonesia, BULOG's total staff strength reached about by the 1990s. The size has important implications for *BULOG*, especially after it has been transformed into a state-owned-enterprise (STE) in 1998 to operate on commercial principles. Furthermore, given it past record of inefficiencies which was estimated to be US$ 2 billion during 1993-98, downsizing and re-structuring is perhaps unavoidable for BULOG to be a sustainable STE in the near future.

By contrast, the size of the government agency responsible for price stabilization has declined by 30 percent in Bangladesh. On the average, the Directorate of Food employed 11,598 employees in the eighties, which gradually has declined after reforms to 8170 during 2001-02. With the downsizing, the efficiency of the food department has improved too. For example, the system loss (storage and transit losses) has declined from

[21] The numbers for 1965-1980s are from Chopra (1981); World Bank (1999) reported 65,000 regular employees and 175,000 casual workers. However, according to FCI's statistics on its website, it now has about 55,000 regular employees.

being as high as three percent of distribution in the eighties to about one and a half percent in the 1990s (Ahmed et al. 2003) and the public distribution system, in combination with private import, contributed effectively in managing 1998 flood (del Ninno, et al. 2001).

4.3 THE BOTTOM LINE QUESTIONS

The bottom line questions are: why are some policies, particularly monopoly control and movement restrictions, so popular and keep re-appearing, and what persuades governments to continue to provide regulatory supports to food logistic agencies? Policy-makers and bureaucrats, by nature, are risk-adverse. Some would argue that the policies have worked – although, not necessarily very well. They will change only when a conclusive case is made that alternatives work better. However, both monopoly controls over international trade and restrictions on foodgrain movements encourage corruption. When parastatals are given monopoly status, it provides corrupt food officials and politicians an opportunity to receive large commissions for arranging government-to-government contract. In the absence of highly sophisticated audit system the corruption can go undetected, even when purchase prices are set way above what are warranted by the actual quality of grain imported. In addition to the transfer of resources from taxpayers to corrupt officials, such incentives create massive waste associated with excess and rotting grain in public warehouses (Roumaset 2000 and 2003).

In the case of movement restrictions, incentives for rent- seeking are even higher, especially in countries where public procurement is large and foodgrain production varies greatly across regions. In addition to subsidizing food officials, the policy creates lucrative rents for law enforcement officials who guard the checkpoints, for politicians

from surplus regions who collect higher taxes, and even for the politicians and food officials from deficit regions who can gain by bringing subsidized grains and selling them at higher prices. Benefits to special interests are some of the reasons why, despite overwhelming evidence of its inefficiency, the policy keeps re-appearing.[22]

5. BENEFITS AND COSTS

Admittedly it is difficult to separate the contribution of price stabilization policies from the overall government commitment as expressed in all policies and investments. Similarly it is difficult to separate the contributions of policies and investments from the contributions of the institutions implementing the policies and investments. These problems notwithstanding, we will attempt to draw inferences about benefits based on (a) price stability and (b) performance of the agricultural sector ; compare the operational costs of parastatals in countries that liberalized (or reduced intervention) with countries that continue to have significant parastatals' presence; and finally draw implications for reforms.

5.1 BENEFITS OF PRICE POLICIES

5.1.1 Price Stabilization

If the commonly used measure of price stability—that is the coefficient of variation—in domestic markets is compared with that in the international markets, all

[22] Indian experiences clearly suggest that movement restrictions have hindered private trade, bred corruption, and contributed to poor integration of markets It was counter-productive even in the early years in India. After the central government gave power to the provinces to control movement, every province, every district, every *taluk* (smallest administrative unit) in eastern India had become a food republic unto itself, destroying the trade machinery for the distribution of foodgrain (Chopra 1981).

countries reviewed in this paper appear have done well in case of food prices.[23] This is a common finding in existing literature and some studies have attempted to link the price stability with other economic and political indicators. For highlighting the impacts of price stability, some authors have concluded that "the countries most successful at price stabilization have also been among the fastest growing economies in the world" (Timmer 1992); and that where food prices have not been stabilized successfully and food security remains questionable, political stability and economic growth have been threatened (Pinkney 1993). Since these studies are based on cross-country empirics, a plausible interpretation of the conclusions is that price stability can have positive impacts, irrespective of the *level* at which prices are stabilized.

In our sample of countries, an aggregate analysis would probably yield the same conclusion, that is, all countries have been able to stabilize prices and achieve significant agricultural growth over the past few decades. There is no denying that the stability of prices—no matter at what level they are stabilized—can mitigate risks and give farmers some degree of certainty in allocating their land in favor of the crops for which prices are guaranteed. However, analyzing the levels of stability can offer further insights as to whether the stability has been achieved efficiently. If the *international parity* is taken as the benchmark, our case studies indicate that the countries have stabilized prices at various levels. For example, compared to world rice prices, the Philippine has maintained its domestic prices above, India has almost always kept it below, and

[23] Note that Vietnam has not pursued price stabilization in conventional sense. The food logistic agency (VINAFOOD) neither procures from the farmers nor distributes to the consumers; its role is restricted mainly to rice export within the limit of government-set quota. In the Philippines, price stabilization experiences have been mixed.

Indonesia has stabilized around the world prices. The policies for wheat have also been different in India and Pakistan, the two main wheat growing countries in our sample. In India, wheat prices were supported above international prices until 1989 (since when??), below international prices during 1990-1998, and above international prices during 1999-2002. By contrast Pakistan has always maintained wheat prices below international prices; and to make this stabilization policy effective, the government has heavily taxed agriculture over the past three decades.[24]

Does stabilizing at various levels matter in term of growth and public spending? A rigorous analysis-based answer to this question is beyond the scope of the study. However, available studies from two countries in our sample, Indonesia and Bangladesh, suggest that stabilizing around the international parity does have high pay off in the initial years. In Indonesia, where domestic prices of rice were maintained around world prices until about early-1990s, Timmer (1997) has demonstrated that price stability did contribute to the country's growth rates. In particular, his econometric estimates suggest that stabilized rice prices raised the growth rate of Indonesia by about 16 percent during 1969-74, 14 percent during 1974-79, and 4 percent during 1989-91 over what they would have been otherwise. In Bangladesh, where major reforms have been implemented to bring domestic prices to international parity, there has been reduction in food subsidy bills and, compared to earlier periods, price variability has declined in the 1990s (Ahmed et. al. 2000; and del Ninno et. al. 2001).

[24] The information on varying policies come from Gulati and Narayanan (2003) for India; Clarete (2003) for the Philippines; Schiff and Valdes (1992) and Salam and Mukhter (2003) for Pakistan; and Timmer (1997) for Indonesia.

5.1.2 Performance of Agricultural Sector

In Asian countries, most of which have practiced price stabilization during the past thirty years or so, the performance of agricultural sector has been remarkable. Compared to pre-Green Revolution years, cereal production has more than doubled (even quadrupled in many cases), poverty has declined in both relative and absolute terms, and many countries in the region are now enjoying overall economic growth and prosperity (Table 8). Rice production has increased from 99 million tons in the 1960s to about 260 million tons during 2000-03; proportion of undernourished people has declined by about 40 percent; and per capita income in Purchasing Power Parity (PPP) has more than tripled. Successes are spectacular when measured by poverty reduction in Indonesia and India; and by rice production in Indonesia and wheat production in India and Bangladesh. In just two decades, proportions of undernourished people have declined from 26 percent to six percent in Indonesia, from 38 percent to 21 percent in India; total wheat production has increased from 12.55 million tons in the 1960s to more than 68 million tons in 2000/01 in India, and from mere 50,000 tons in the 1960s to 1.6 million tons in the 2000/01 in Bangladesh.

These are remarkable successes, but price policy was not the only driving force in achieving them. Arguably, price policy was a catalyst to the main force of agricultural growth, that is, rapid diffusion of new technology. However, although technology was the major force behind the success, one has to acknowledge that things would probably have been different in the absence of price policies, and complementary investment in agriculture. In 1967, with first time large- scale adoption of HYVs, India harvested 17 million tons of wheat, which was five million tons more than previous best of 12 million

tons. The challenge of such a big harvest was bigger than anybody had ever anticipated. Neither the farmers nor the government was equipped with infrastructure to deal with such a big blessing of technology. Many schools in rural Punjab were closed down to store the grain and, while students were on holidays, policy makers confronted hard work of dealing with the new situation. What would have happened in the absence of such a policy to ensure the floor price? There is no counter- factual to answer the question, but one can certainly imagine that prices would have collapsed, farmers would have lost incentives, and technology diffusion would have slowed down, if not stopped altogether.

5.1.3 Disaster Mitigation

None of the countries in Asia has had a major food security crisis since they adopted integrated food and agricultural policies. For example, there has been no famine or major food security crisis in India since the great Bengal famine of 1943—although there have been several episodes of major droughts and other natural disasters. Similarly, despite being hit by several devastating floods, Bangladesh has not had famine or major food security crisis since the country adopted integrated food and agricultural polices after the 1974 famine. The most striking example is the 1998 flood in Bangladesh, which did not have the devastating effect that many predicted.

Table 7—Changes in the cereal production, nutritional status, and income

Period/ Indicators	Bangladesh	India	Indonesia	Pakistan	Philippines	Vietnam	All six Countries
Production Growth Rates							
Rice[1]							
1951-66	2.0	2.4	2.6	4.3	2.5	4.8	18.6
1966-77	2.8	5.1	5.0	7.3	5.3	2.1	27.6
1977-88	1.7	2.7	5.4	0.7	1.9	4.4	16.8
1988-00	4.1	1.5	1.8	3.4	2.7	5.6	19.1
Wheat[2]							
1951-66	3.2	3.2	n.a	2.2	n.a	n.a	8.6
1966-77	7.8	7.8	n.a	6.2	n.a	n.a	24.0
1977-88	4.3	4.3	n.a	3.3	n.a	n.a	11.9
1988-00	3.5	3.5	n.a	3.2	n.a	n.a	10.2
Cereal Production (in million metric tons)[3]							
Rice (Paddy)							
1960s	15.70	54.00	13.78	2.23	4.26	9.14	99.11
1970s	17.75	67.63	22.73	4.03	6.17	10.80	129.11
1980s	22.71	90.76	38.34	4.93	8.51	15.56	180.81
1990s	28.17	121.03	48.68	6.04	10.29	25.22	239.43
2000-03	33.16	126.43	50.58	6.69	11.76	30.37	258.99
Wheat							
1960s	0.05	12.55	n.a	4.67	1.49	n.a	4.69
1970s	0.21	27.33	n.a	8.03	2.57	n.a	9.54
1980s	1.12	44.20	n.a	12.31	3.83	n.a	15.37
1990s	1.35	62.52	n.a	16.53	4.38	n.a	21.20
2000-03	1.62	68.39	n.a	18.24	4.37	n.a	23.16
Proportion of Undernourished population (%)[4]							
1979-81	42	38	26	31	27	33	33
1990-92	35	25	9	26	26	27	25
1995-97	38	21	6	19	23	21	21
1999-01	32	21	6	19	22	19	20
GDP Per Capita, PPP (current international $)[5]							
1970s	418	618	580	495	1802	--	783
1980s	768	1172	1312	1029	2716	940	1323
1990s	1245	2163	2634	1649	3436	1485	2102
2001	1610	2840	2940	1890	3840	2070	2532

Notes: [1] IRRI, calculated and provided by David Dawe.
[2] CIMMYT, 1998/99 World Wheat Facts and Trends, (online), *Growth of Wheat Production (%/year).*
[3] Calculated from FAOSTAT annual data
[4] FAO, The State of Food Insecurity, 1999 and 2003.
[5] The World Bank, World Development Indicator, 2003

5.1.4 The Bottom Line

These success stories, although people might argue to what extent they can be attributed to price policies, are in sharp contrast with what many economists had predicted in the 1960s. Forty years ago, many development experts were writing off Asia.[25] The region was termed a "development basket case". Famine 1975 (Paddock and Paddock (1967), "lifeboat ethics" (Hardin 1978), and "triage" (Ehrlich 1961) were the labels commonly applied to the countries of the region. The progress has been remarkable; and we would like to argue that the price policies and the parastatals that implemented major components of them do deserve some credit, if not all. .

5.2 COSTS OF OPERATION

5.2.1 Countries with Significant Parastatals Presence

In addition to direct operational costs, food-marketing parastatals impose various forms of implicit costs to the society, which include: costs due to policy distortions, costs of providing regulatory supports, and costs of special interests and rent-seeking. The country case studies suggest that the food-marketing parastatals are becoming increasingly expensive; their costs are higher than those of the private sector; the margin of costs between parastatals and private sector are widening; and the operations of parastatals are increasingly being dictated by special interests.

This evidence is obvious in all major Asian countries that have significant parastatals presence and seem to echo some of the very problems that the opponents of

[25] Ironically, they were betting on Africa.

price stabilization policies had predicted through their theoretical models. In India, government's subsidy bills for buffer stocking have increased from US$160 million in 1992 to an estimated US$1.6 billion dollars in 2002; in Indonesia, total costs of inefficiency in BULOG are estimated at US$2.0 billion over a five year period, starting in 1993; in the Philippine, average annual losses to the society due to National Food Authority's (NFA) interventions are estimated at more than US$ 414 million dollars during 1996- to 1998 time period. In Pakistan, food subsidy bills fluctuated between US$ 49 million and US$ 245 million during 1990-2003. To put the size of the subsidies in perspective, wheat subsidies in Punjab have exceeded total expenditure by the department of agriculture.

A few studies in India and Pakistan have compared unit cost of operation of the parastatals with that of private sectors. The findings are striking. Despite concessional credit and transportation, per unit trading cost of wheat by FCI is estimated to be more than twice as much as private traders costs (Chand 2002). For rice, FCI's cost is about 20 percent higher than the private traders. Not only have the unit costs of FCI operation been larger than private traders, some studies suggest that the gap between the two has been widening in recent years (Jha and Srinivasan 2003). In Pakistan, return on sales of PASSCO was estimated at 2.12 percent, much lower than average return on sales of 10 percent or more in comparable private firms (Farouqee et al. 1995). For the provincial agency, the Punjab Agricultural Development and Supplies Corporation (PAD&SC), the estimated return on sales was negative 7.92 percent, suggesting that it was operating at large losses that were covered by public subsidies. The recent trend in costs of

procurement is even more alarming. Procurement costs per ton by PASSCO have almost doubled in nominal terms since 1996 and the Punjab Food Department has incurred even higher costs.[26]

Evidence of special interest groups' influence on food logistic agencies has also surfaced frequently. For instance, many recent reports indicate that the politicians and farmers in the surplus states heavily influence the minimum support prices in India (Dev et al.2003). The inherent interests are simple: higher support prices mean more secured markets for farmers, larger procurement for the parastatals, and higher tax revenues for the politicians in the states. Guaranteed markets make farmers happy, especially the larger ones, and the happier the farmers the greater are the chances for politicians to get re-elected at least in surplus states. A simple comparison of price series and land allocation data will better illustrate how support prices have been influenced. Between 1996/97 and 2000/01, the government's support prices for wheat and rice in India grew by about 25 and 10 percent faster than their respective wholesale prices; and the farmers in the surplus states responded to these increases by allocating more land to rice and wheat during the same period. For example, although area under rice increased by about 4 percent at the national level, it increased by 27 percent in Haryana, 21 percent in Punjab, and about 15 percent in AP during 1995/96-2000/01. In case of wheat, land allocation has increased by about 10 percent at the national level, 26 percent in the state of Andhra Pradesh, 17 percent in Haryana, 16 percent in Madhya Pradesh, 50 percent in

[26] PASSCO's procurement costs increased from Rs. 1217.59 per metric ton in 1996/97 to Rs. 2430.96 per metric ton in 2002-03; and PFD's costs increased from Rs. 919.60 to Rs. 2350.00 during the same period (Salam and Mukhter 2003). In real terms, the rate of increase has been even higher, as the inflation rates in the mid-nineties were larger than in recent years.

Maharashtra, and five percent each in the states of Punjab and Uttar Pradesh.[27] This type of policy action clearly defies the very notion of "floor prices" and distorts the incentive structure in agriculture, and in fact slows down the natural process of diversification away from cereals to high value agriculture.

Similar stories are also common in other countries. In the Philippines, the NFA has used its monopoly power to import food grain, even at times when the country had enough stock to meet its food security demand. Special interest groups succeeded in reversing liberalization policies, such as re-instituting monopoly control over international trade in both Indonesia and Pakistan, and re-instituting movement restriction in Pakistan.

5.2.2 Experiences of Reduced Intervention and Liberalization

The experiences of trade liberalization, carried out under structural adjustment programs, also support the contention that reduced intervention can contribute to efficiency gains and market development. Countries in Asia, particularly Bangladesh, that have pursued this route have been able to allocate more resources to development and anti-poverty projects, increase competition in domestic markets, maintain price stability, and enhance overall social welfare. In Bangladesh, the share of public food in anti-poverty and development programs has increased from as low as 32 percent during pre-reform period (1971/72—1991/92) to as high as 85 percent during post-reform period (1992/93 to 2002/03); private sector participation in international trade has resulted in

[27] The price figures are from the High Level Committee report of the GOI (2003); and land allocation figures are authors' calculation based on the GOI publication, Agricultural Statistics at a Glance (2001).

reducing the government's costs by an estimated US$190 million per year; and more importantly, despite distributing larger proportion of food to the poor, annual food subsidy bills have declined from US$122 million in the eighties to about US$65.4 million in the nineties (Ali and Jahan 2003; Ahmed et al. 2000). In Vietnam, where *parastatals* had absolute control over production and distribution of agricultural products until 1981, market liberalization has greatly contributed to increasing production, enhancing technology adoption, and improving overall social welfare. Rice production grew at a rate of 5.6 percent between 1988 and 1995, transforming Vietnam from being a chronic food deficit country to a leading exporter of rice in Asia (Goletti and Minot 1997, and Minot and Goletti 1998).

Not only did liberalization reduce subsidies and saved public resources, it contributed to strengthening private markets too. Private marketing has strengthened perceptively in both Bangladesh and Vietnam. In Bangladesh, the number of traders has risen by ten-fold between the 1970s and 1990s. The number of millers doubled from 6,155 in the 1960s, to 11,592 in the 1970s, then increased more than fourfold by the 1990s to nearly 51,000. The liberalization of rice and wheat imports in the early 1990s, the removal of the import tariff on rice, and instructions to expedite clearance of price sector foodgrains imports in early 1998 have provided clear signals to the private sector of government support for the marketing trade. As a result, wholesale markets for both rice and wheat are spatially integrated, with over 80 percent of price changes transmitted between pairs of markets within two weeks (del Ninno et al.2001).

In Vietnam, the number of private traders increased at an amazing rate after liberalization. Tens of thousands of traders handle millions of tons of rice every year, channeling it from surplus farmers to urban consumers, rural rice-deficit areas, and exporters. The channels are numerous and differ from one area to another. Although monopoly status of VINAFOOD and export quota is argued to be mechanisms to ensure adequate domestic supply and price stability, the country does not have price stabilization in conventional sense. In particular, the SOEs (or other public agencies) neither procure any significant amount from the farmers nor do they respond to seasonal and spatial price swings (Son et. al. 2003). Having made this observation, Vietnam's impending entry into the World Trade Organization is likely to motivate reexamination of some of its policies, specifically the rice export quota.

5.3 SO WHAT?

The evidence presented in this section suggests that the costs of public agricultural price stabilization—in terms of direct costs and rent- seeking—have been high and are increasing. The price stabilization mechanisms, which were initially cost effective, have become cost-ineffective and outlived their usefulness. The reformers have demonstrated that there is much to gain—in terms of saving public resources and enhancing market development--by reducing public intervention in foodgrain markets.

It is time to learn from the reformers and recognize the fact that public funds have alternative uses. The returns to some alternative investments are high – perhaps much higher than the returns to public price stabilization as currently practiced (Roumasset 2003). Recent studies on India and China suggest that rural public investments that are

most effective in increasing agricultural productivity are agricultural research and development, roads, and education; rural public investments that are the most effective in decreasing poverty are roads, agricultural research, education, rural development, soil and water conservation, health, and irrigation in India and education, agricultural research and development, roads, electricity, telephones, irrigation, and poverty loans in China (Fan et al. 2000; Fan et al. 2002). That is, agricultural research, roads, and education, rank among the top three public investments in terms of their returns—no matter whether evaluated against increasing agricultural productivity or decreasing poverty.

There are other areas where public funds can be justifiably used. Two issues are of particular importance. First, even if markets can be relied on for efficient allocation of resources, given the level of poverty, the need for social safety net will remain, although they do not have to be implemented as part of the "procurement-stocking distribution" framework. Second, given high level agricultural subsidies by industrial countries, and relatively higher variability in world price, complete government withdrawal will not be a politically feasible reform option. A compromise might be to enforce a reasonable price band that allows arbitrage opportunities and encourages private sector participation in the grain market. However, this will require a shift from the existing paradigm to a new set of policies and institutions. How such a shift can be made is beyond the scope of this paper, but is addressed elsewhere.[28]

[28] Since each country has different characteristics and policy environment, this issue of "how" is taken up in the country papers as well as in the concluding chapter of the book manuscript.

6. SUMMARY AND IMPLICATIONS

Drawing from the country case studies, this paper has attempted to synthesize diverse experiences of grain market intervention policies in selected Asian countries. The main focus has been on: (a) providing a critical overview of the evolution of food and price policies and the parastatals agencies entrusted to implement those policies, (b) assessing the underlying rationales justifying government interventions in grain markets, (c) documenting policy responses to changing conditions, and (d) comparing experiences of countries that liberalized (or reduced government intervention) with the ones that continue to have significant parastatals' presence.

Five major conclusions emerge from the synthesis. First, the four commonly agreed rationales—that is, poorly integrated domestic markets, promoting technology, thin and volatile world market, and international liquidity constraints—for public intervention in foodgrain markets are no longer convincing. Second, although rationales have lost their significance, many countries continue to practice old set of policies and provide regulatory supports to the parastatals, including monopoly control over international trade, preferential access to transportation, restrictions on movement of foodgrain, and cheap or interest- free credit. Third, the costs of price stabilization especially as implemented by parastatals have been high and are increasing relative to those of the private sector. Available estimates of food subsidies and the costs of system inefficiencies are staggering in all countries that continue to have significant parastatals' presence. Fourth, the food-marketing parastatals are being increasingly dictated by special interest and rent- seeking groups. This is manifested in trade policy reversals in

Indonesia and Pakistan, government's foodgrain import decisions in the Philippines, and manipulation of ceiling and floor prices in India. Finally, liberalization of foodgrain markets appears to have beneficial impacts on the economy. In Vietnam and Bangladesh, both of which have implemented extensive reforms over the last fifteen years, food subsidies have declined, private markets have strengthened perceptively, number of private traders has increased many folds, and more public resources are now available for alternative public investments, notably in poverty alleviation programs.

In summation, we conclude that times have changed: policies and public agencies that may have been appropriate thirty years ago are not optimal today. Private institutions have strengthened significantly and should now be entrusted for many of the functions that parastatals, or other government agencies, have traditionally performed. This will release public funds for alternative investments that have higher returns—most likely higher than the returns to public price stabilization as currently practiced. Recent studies have demonstrated that returns to public investments—such as agricultural research, roads, and education—ranks very high, in terms of increased agricultural productivity or decreased poverty. The early reformers have demonstrated that reduction of government control can promote competition in the domestic markets, reduce subsidies, and release funds for development and anti-poverty programs—all without jeopardizing price stability or food security. Thus, changing the old ways of attaining food security and price stability is perhaps overdue; and holding on to the old practices can only mean holding back from reaping the benefits that changing current policies have to offer.

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