

Production and Producer Policy

Growth in India's production of wheat and rice was robust during the 1970s and 1980s, but has slowed significantly since 1990, and particularly during 2000-2005 (table 1). Earlier gains in wheat and rice output were driven by the adoption of high-yielding varieties (HYVs), expansion of irrigated area, increased cropping intensity, and supportive input and output price policies. Although poor weather played a role in the recent slowdown in production, slowed growth also corresponded with a period of rising input subsidies and output price incentives that should have provided an environment for rising area and yields (see box, Producer Support Estimates). There is now growing concern that other nonprice factors, such as the declining scope for further gains from existing HYVs, deteriorating soils and groundwater supplies, and reduced public investment in irrigation, have contributed to poor performance and must be addressed (Chand, 2005; Landes and Gulati, 2004; Government of India, 2002).

India's low average wheat and rice yields compared with other major world producers suggest that there is significant scope to further boost yields and output. Rice yields are among the lowest for major producers and wheat yields remain near the world (and U.S.) average despite the fact that a relatively high share—about 87 percent—of Indian wheat area is irrigated (Government of India, 2003). Although roughly 90 percent of wheat area and 75 percent of rice area is already planted to HYVs, average wheat yields in major States remain about 25 percent lower than levels achieved in experiment stations, while rice yields are about 50 percent lower (Chand, 2005).

There is still significant scope to boost average yields by improving the poor quality of seed used by most farmers, as well as suboptimal farm-level use of fertilizer, plant protection, and water inputs. But, there is also growing evidence that the system of intensive double-cropping of wheat and rice in the Indo-Gangetic Plain region—where most of India's surplus wheat and rice is produced—now faces constraints associated with depletion of soil

Table 1

Annual growth rates of Indian cereal area, yield, and production¹

Commodity/years	Annual growth rate		
	Area	Yield	Production
	<i>Percent</i>		
Wheat:			
1970-1990	1.7	3.0	4.8
1990-2003	0.6	1.5	2.1
Rice:			
1970-1990	0.6	2.3	2.9
1990-2003	-0.1	0.9	0.8
Wheat and rice:			
1970-1990	1.0	2.6	3.6
1990-2003	0.1	1.2	1.4

¹ Compound annual growth rates between 3-year averages centered on the years indicated.

Source: Computed from USDA Production, Supply, and Distribution Database.

Producer Support Estimates

Producer support estimates (PSEs) for Indian wheat and rice by the International Food Policy Research Institute document the impact of India's price support and input subsidy policies on India's producers (Mullen et al., 2005). The PSEs are composed of market price support and budgetary support. Market price support captures the effect of India's minimum support price (MSP) and trade policies (quantitative restrictions and tariffs) for wheat and rice based on differences between India's farm-gate prices and appropriate international reference prices, taking account of international and domestic marketing costs. Budgetary support accounts for the subsidies for power, fertilizer, and irrigation water, with the total subsidy apportioned to wheat and rice based on shares of farm output.

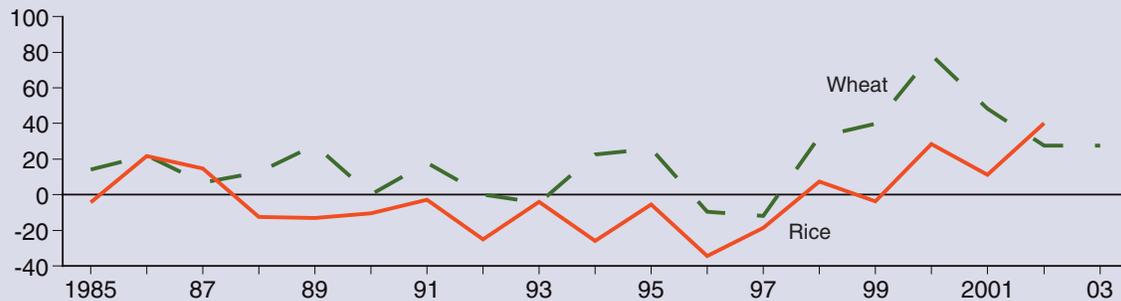
The PSEs exhibit a trend toward increasing support to wheat and rice producers during the 1990s (fig. A). Total support, as a percentage of the value of output, has fluctuated significantly but remained generally positive for wheat and negative for rice until the late 1990s. However, beginning in 1997/98, the percentage PSEs have been positive and trending upward.

The estimates of market price support and budgetary support indicate that rising input subsidies have contributed to higher producer support for wheat and rice since 1990, but the more significant changes in market price support have been due to the rise in domestic producer prices relative to world reference prices (fig. B). Market price support was often negative for wheat and, particularly, rice during the 1980s and early 1990s, meaning that domestic farm prices were often below world prices (adjusted for transport and marketing costs). Beginning in the late 1990s, however, the combination of higher domestic prices and trend- or below-trend world prices, led to increased market price support and total support, particularly for wheat.

Figure A

Percentage producer support estimates for wheat and rice in India¹

Percent of farm value



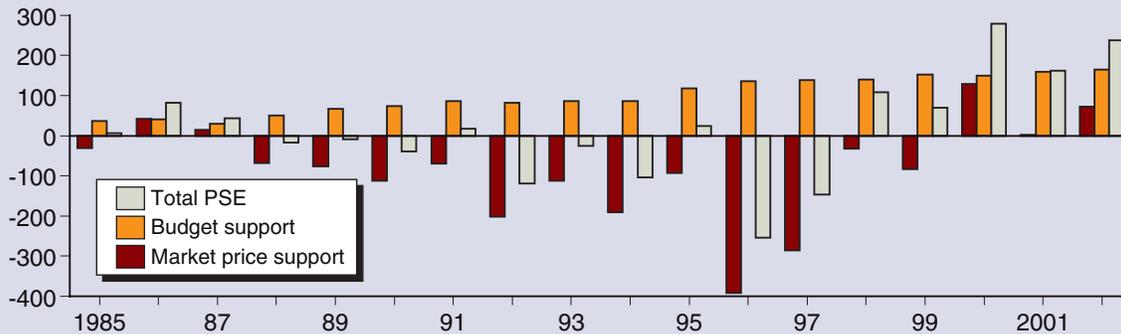
¹Total producer support estimate as a percentage of output valued at international reference prices.

Source: Mullen et al., 2005.

Figure B

Producer support estimates for rice and wheat in India

Billion 1993/94 rupees



Source: Mullen et al., 2005.

and water resources and pest problems that may continue to slow yield growth and result in shifts to other crops (RWC-CIMMYT, 2003).

Sustaining adequate growth in wheat and rice output to meet domestic demand is likely to be increasingly dependent on public and private investments to strengthen research, education, delivery of quality inputs, and development and use of water resources. But, while private investment in agriculture has increased modestly in recent years, public investment has declined, falling from the equivalent of 10 percent of agricultural output in 1981-83 to just 5 percent in 1998-2000 (Landes and Gulati, 2004).¹ Total public and private investment in agriculture amounted to about 16 percent of agricultural output in 2000-03, below the 29-percent investment/output ratio for the remainder of the Indian economy. Public investment has been weakened, in part, by budgetary pressures stemming from the large increase in expenditures on the “food grain” subsidy (the cost of food grain price support and procurement, storage, and public distribution), and input subsidies on fertilizer, water, and power. Incentives for private investment are reduced by policies that constrain private agricultural markets, regulate movement and storage of essential commodities, and impose relatively high taxes on processed foods (Landes and Gulati, 2004).

Producer Price Policy

Producer price policy has played an important role in supporting the growth of India’s wheat and rice output since the 1970s. Price policy for wheat and rice is implemented through minimum support prices (MSPs) for fair-to-average quality (FAQ) grain that are revised annually and defended by Indian Government purchases in surplus areas during harvest. For wheat, the MSP is paid directly to farmers in the primary markets where they sell their grain. For rice, about half of total procurement is purchased in primary markets in the form of unmilled rice (paddy) at the MSP and about half is purchased as milled rice through a statutory, fixed-price levy imposed on rice millers in some States. Under the levy, millers are obligated to deliver a share of the rice they process to the government at a fixed, below-market price. The levy shares vary from State to State (from a low of 10 percent to a high of 75 percent) and, particularly in States with high levies, the system results in an actual farm price below the rice MSP under most market conditions. Grain procured in price-support operations is stored by the Food Corporation of India (FCI), a parastatal, which either makes the grain available to State governments for subsidized distribution, holds it in storage, or, when conditions permit, allocates surplus grain for export.

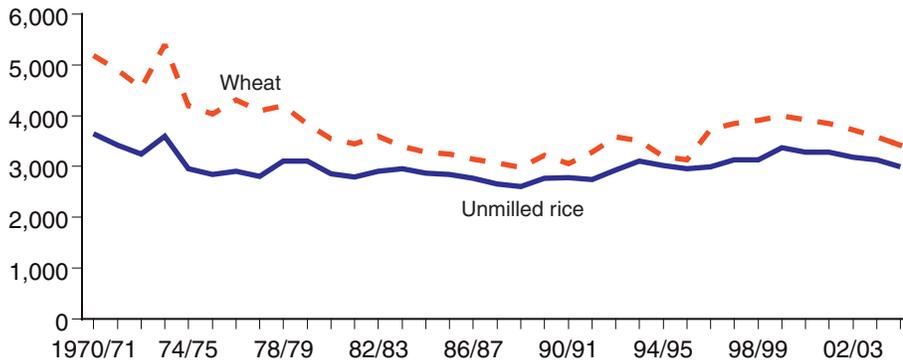
During the 1970s and 1980s, wheat and rice MSPs trended downward in real terms. MSP policy still afforded adequate producer incentives because of steady yield gains, and the benefits of rising yields were transferred to cereal consumers in the form of declining real consumer prices, both through government programs and the open market. Beginning in the early 1990s, however, several factors have led to an upward trend in real MSPs for wheat and rice (fig. 1).

¹ Investment includes onfarm investments and off-farm investment in research and farm-related infrastructure, such as rural markets and roads.

Figure 1

Real minimum support prices (MSPs) for wheat and unmilled rice in India

1993/94 rupees per ton



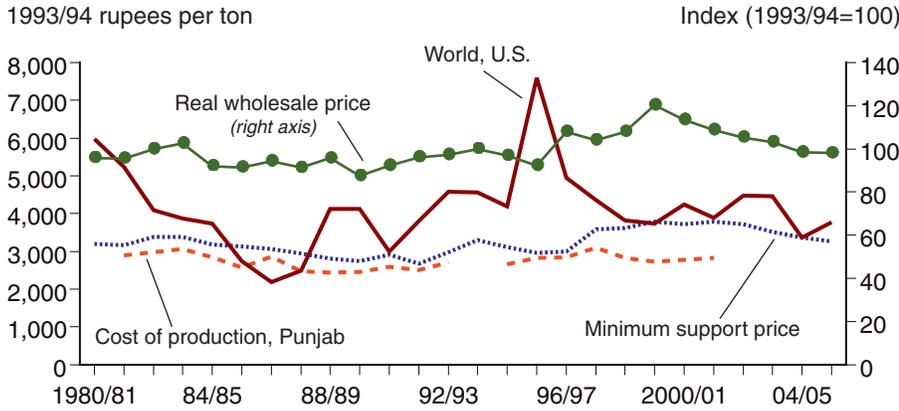
Source: Government of India, Economic Survey; Bansil.

- MSPs are based largely on costs of production—as estimated by India’s Commission on Agricultural Costs and Prices (CACP)—using a “full cost” measure that includes the costs of variable inputs, the rental value of land, the imputed value of family labor, and a 10-percent return to management. Devaluation of the rupee in the early 1990s helped push up the costs of traded inputs. In addition, production cost hikes have likely been compounded as MSP benefits are reflected in the costs of land, labor, and management. Basing MSPs on production costs allowed MSPs to become increasingly disconnected from market conditions as India transitioned from deficits to surpluses.
- When India began to eliminate quantitative restrictions on cereal exports in the second half of the 1990s, producers initially benefited from relatively high world prices. When world prices fell back toward trend in the late 1990s, there was pressure to compensate producers for the impact of lower world prices by increasing MSPs more than indicated by the CACP estimates of changes in production costs.
- The political environment for cereals policy changed in the 1990s, when India entered an era of coalition governments and the farm lobby became more influential. During 1995/96-2001/02, just before and during the accumulation of surpluses, the Government set MSPs above the recommendations of the Commission on Agricultural Costs and Prices (based on production costs) in 4 of 7 years for rice and 5 of 7 years for wheat (Parikh et al., 2003).
- The MSP mechanism is one of the few policy levers available to Indian policymakers in the food grain sector and there is a tendency to try to use it to achieve multiple policy goals, including price stabilization and income support.

During the late 1990s, the MSPs set for wheat and rice in India fell out of step with domestic and world market conditions. Breaking the historical pattern, wheat and rice MSPs strengthened relative to both world and domestic prices and moved above domestic market clearing levels (figs. 2, 3). This trend benefited the relatively small share of producers in surplus areas who received the MSPs, but higher market prices had adverse impacts

Figure 2

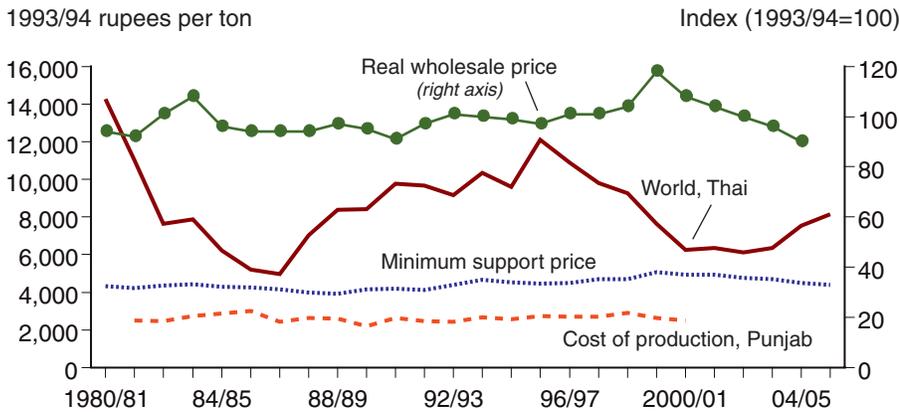
Wheat prices and production costs in India



Sources: Government of India, Ministry of Finance, Economic Survey; Government of India, Ministry of Agriculture, Commission on Agricultural Costs and Prices; ERS data.

Figure 3

Rice prices and production costs in India



Sources: Government of India, Ministry of Finance, Economic Survey; Government of India, Ministry of Agriculture, Commission on Agricultural Costs and Prices; ERS data.

on consumers. By maintaining high prices, the Government became responsible for the storage and transport of most of the marketed surplus of wheat and rice in the country—which some observers termed a “de facto nationalization” of grain trade. Further, because high-quality grain tended to be purchased at above the MSP by private traders, and government agencies were often obliged to buy grain below the FAQ standard, most government-owned grain was of medium or low quality. This resulted in rising budgetary costs for procurement, storage, and storage losses, together with reduced incentives for private investment in grain storage and handling. The policy of maintaining high wheat and rice prices—along with subsidies on water and fertilizer—has also contributed to emergent problems with soil and water-resource depletion associated with the intensive wheat-rice cropping system in northern India.

Since 2001, following the accumulation of large surplus stocks, there have been relatively small nominal annual increases in wheat and rice MSPs. In

real terms, wheat and rice MSPs have declined by 14 percent and 11 percent, although, because of appreciation of the rupee against the dollar, MSPs have continued to rise in dollar terms. MSPs for rice and, particularly, wheat have also tended to decline relative to both MSPs and market prices for competing crops of oilseeds, pulses, and sugarcane. As a consequence, there has been slower growth in wheat and rice output, including both area and yield, slowed growth in government procurement of wheat and rice in price support operations, and real declines in domestic wholesale prices.

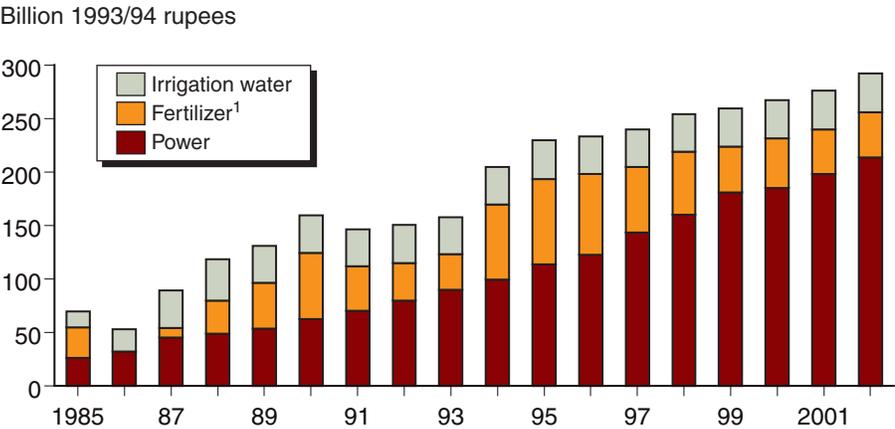
Input Policies

The major input policies affecting India’s wheat and rice sectors are subsidies on fertilizer, power, and irrigation water, together with public investments in surface, and to a lesser extent, ground water irrigation. Together, the subsidies on fertilizer, power, and water have grown about 6 percent annually in real terms since 1990, reaching nearly 500 billion rupees (Rs) (about \$10 billion), equivalent to about 11 percent of total agricultural output, in 2002/03 (fig. 4). The cost of providing free or subsidized (depending on the State) electricity for agriculture accounts for more than two-thirds of total input subsidies, as well as most of the growth since 1990.² Irrigation is a key factor in boosting crop yields, but it is widely acknowledged that the subsidies for irrigation have played a role in promoting the inefficient use of water and the overpumping of groundwater.

Fertilizer subsidies are provided to farmers in the form of reduced prices for domestic and imported fertilizers, and to the fertilizer industry in the form of preferential prices to offset the losses of higher cost plants. The portion of the fertilizer subsidy going to Indian farmers amounted to about Rs70 billion (\$1.4 billion) in 2002/03, and has tended to decline since the mid-1990s. Subsidies on irrigation water were about Rs60 billion (\$1.2 billion) in 2002/03 and have also shown little growth.

² In Indian agriculture, electricity is used primarily for ground water irrigation sets.

Figure 4
Major input subsidies in India



¹Includes only portion of fertilizer subsidy that goes to farmers rather than to fertilizer manufacturers.

Source: Government of India, Ministry of Finance, Economic Survey.

Reform of policies in the power sector is seen as the key to containing subsidy costs and allowing public resources to be shifted toward productive investments in irrigation, research, and market infrastructure. Moreover, the power subsidies tend to mostly benefit larger farmers, who own more pump sets (Gulati and Narayanan, 2003). Decisions on power sector reform lie primarily with State Governments, which complicates reaching an agreement to withdraw or reduce the power subsidies, which are popular among rural voters.

Production credit is also a key input in the rice and wheat sectors. Although there is a large network of commercial, cooperative, and “regional rural” banks extending institutional credit for agriculture, total institutional credit as a share of farm output has not been increasing, indicating that there has been little improvement in credit availability (Government of India, Ministry of Finance, Economic Survey). Available evidence suggests that a large share of farmers, particularly smaller farmers, remain dependent on noninstitutional credit supplied by moneylenders, landlords, and traders at high interest rates relative to institutional credit (Rao and Jeromi, 2006). Institutional credit to agriculture, considered a priority sector, is typically extended at prime commercial lending rates. However, official debt relief, which was on the order of 2 percent of total credit extended in 2005/06, is periodically extended to farmers.