ADB INDIA Economic Bulletin

June 2003

Volume I, Number 2

ASIAN DEVELOPMENT BANK

India Resident Mission

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June 2003

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ADB INDIA
Economic Bulletin

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India: Key Economic Indicators

Variables	Unit	Reporting Date	Current	Percentage Change[1]
GDP at Factor Cost (1993-94 prices)	Rs. Billion	FY2002	13,207	4.3
• GDP in Agriculture	Rs. Billion	FY2002	2,926	-3.2
• GDP in Industry	Rs. Billion	FY2002	3,580	6.0
• GDP in Services	Rs. Billion	FY2002	6,701	7.1
Industrial Production—General (1993-94 = 100)	Index	April-May 2003	178.8	5.0
Industrial Production—Manufacturing (1993-94 = 100)	Index	April-May 2003	184.9	5.2
Wholesale Price – All Commodities (1993-94 = 100)	Index	April-June 2003	172.9	5.4
• Primary Articles	Index	April-June 2003	178.0	4.7
• Manufactured Articles	Index	April-June 2003	153.0	5.0
Consumer Price (Industrial Worker) (1982 = 100)	Index	April-June 2003	494.7	4.7
Broad Money (M3)	Rs. Billion	13 June 2003	17,982	12.0
RBI's credit to Commercial Sector	Rs. Billion	13 June 2003	30	1.6
RBI's credit to General Government	Rs. Billion	13 June 2003	1,193	-28.6
Consolidated Fiscal Deficit / GDP	Per cent	FY2002	9.3	-7.0
Domestic Public Debt	Rs. Billion	FY2001	16,077	15.1
Exports	$ Billion	FY2002	53	18.0
Imports	$ Billion	FY2002	65	13.6
Trade Balance / GDP	Per cent	FY2002	-2.4	-14.3
Current Account Balance / GDP	Per cent	FY2002	0.7	305.6
International Reserve	$ Billion	18 July 2003	80.4	42.9
External Debt	$ Billion	December 2002	105	6.5
External Debt to GDP Ratio	Per cent	December 2002	20.6	-0.5
Debt Service Ratio	Per cent	December 2002	13.7	5.4
Foreign Exchange Rate, Spot	(Rs./$)	18 July 2003	46.2	-5.5
Nominal Effective Exchange Rate (1985 = 100)	Index	April 2003	36.7	0.5
Real Effective Exchange Rate (1985 = 100)	Index	April 2003	74.3	1.9

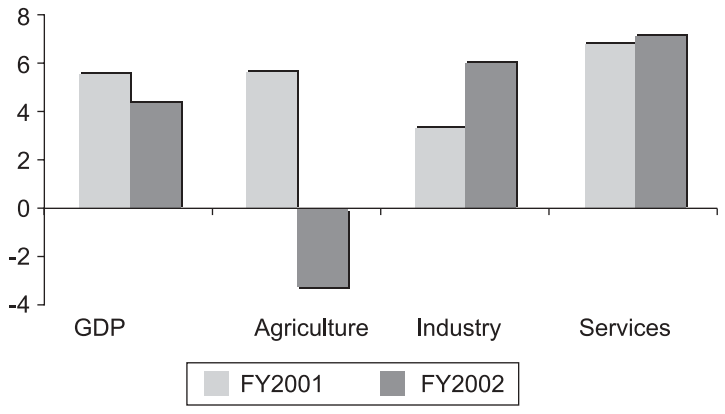
[1] Percentage change over the corresponding reporting date a year ago.

Contents

I. Macroeconomic Scenario

1. Aggregate growth declined to 4.3% in FY2002[1], down from 5.6% during FY2001, mainly on account of a setback in agriculture (Figure 1). Quarterly growth rose from only 2.3% in the third quarter to 4.9% in the fourth quarter of FY2002, led by higher growth of services.

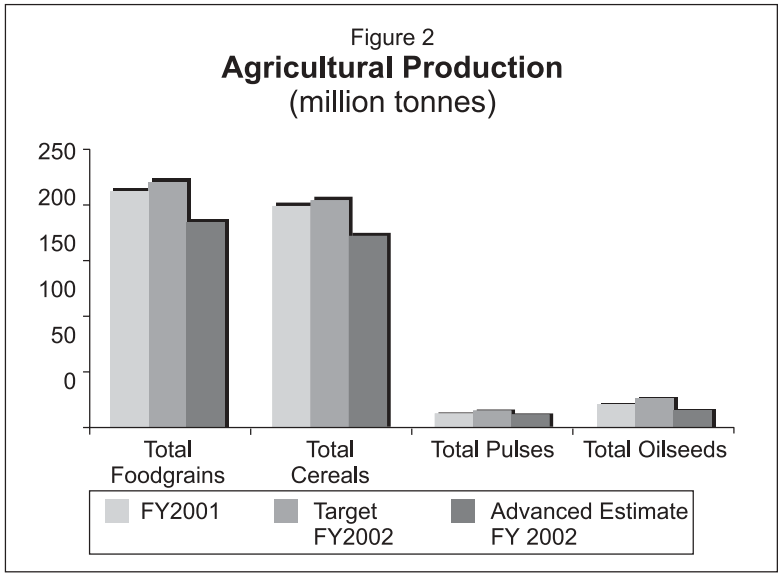
Figure 1
Sectoral Composition of Growth (%)



II. Sectoral Performance

2. On an annual basis the services sector, the largest sector in the economy, maintained a high growth rate of 7.1% in FY2002 compared to 6.8% in FY2001. In agriculture, the weak monsoon led to a 3.2% decline in production. Advance estimates of the Ministry of Agriculture show that production of foodgrains, cereals and pulses (both *kharif* and *rabi* together) was not only lower in FY2002 as against FY2001, but also much below the target (see Figure 2). In the current year, pre-monsoon rains have been below normal and the southwest monsoon was delayed. However, monsoon rains have progressed well. Actual rainfall is estimated to be 6.0% above normal as of 23 July 2003, with only 5 out of 36 metereological subdivisions receiving deficient rainfall. With monsoon rains

Figure 2
Agricultural Production
(million tonnes)



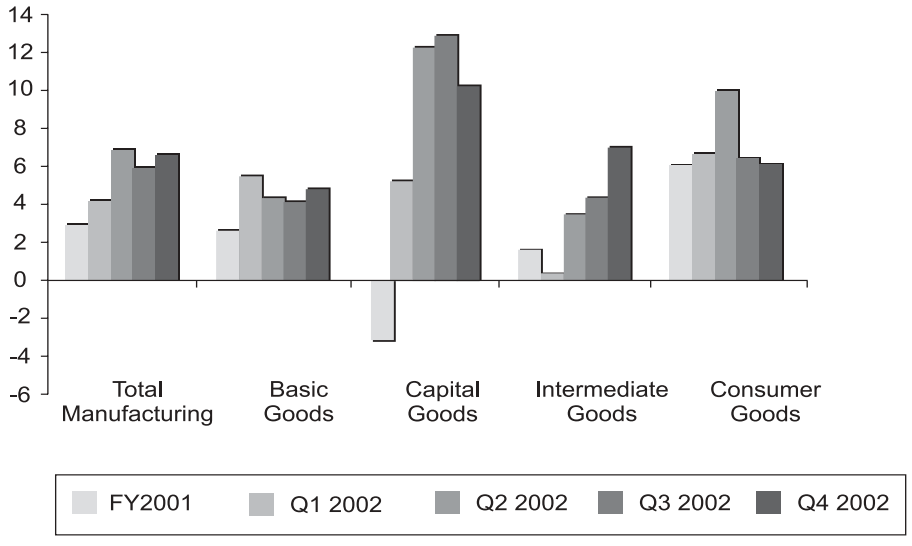
[1] Year ended 31 March 2003.

intensifying, agricultural operations have picked up, and FY2003 is expected to be a normal agricultural year.

3. The industrial sector witnessed robust growth of 6.0% during FY2002, mainly on account of the manufacturing sector. Total manufacturing recorded 6.0% growth for the year as a whole, with strong performance evident across all manufacturing subsectors (Figure 3). While a significant turnaround in capital goods production was evident since the first quarter of FY2002, the recovery in intermediate goods is more recent. In consumer goods there was growth in non-durable consumer goods production, while there was a decline in the production of consumer durables. The growth in the basic goods sector in FY2002 is attributable to about 9.0% growth in cement and finished steel. The growth momentum continued into April-May 2003, registering 5.2% manufacturing growth. Capital goods production continued to grow in April-May 2003, but growth in intermediates declined again. Core infrastructure grew at 5.2% in FY2002, then slowed down during April-May 2003 because of a significant decline in crude oil and cement production. Electricity generation, which grew at a low rate of around 3.1% during FY2002, continued to register low growth in April-May 2003.

4. Disaggregation of the manufacturing sector shows that growth recovery observed in FY2002 has been sustained in early 2003 (April - May) for a number of subsectors (Table 1). Significant among them are basic metals, food products, beverages and tobacco, jute

Figure 3
Manufacturing Growth (%)



and mesta, transport equipment and paper and paper products. Growth also recovered in industries such as rubber and plastics, wood and wood products, and other industries during April-May 2003. However, growth of metal and textile products, including readymade garments, declined in April-May 2003. Also, the decline in cotton textiles, and leather and leather products is especially notable as these are the sectors in which India has had comparative advantage.

5. Improved industrial performance is mainly attributable to strong merchandise export growth, and the construction boom in housing and roads, which have strengthened the demand for basic goods such as cement and steel. Large foreign exchange reserves have also allowed for higher imports of capital goods and intermediates necessary for industrial growth. However, there are certain factors which limit the upturn in the industrial business cycle. Despite the recent softening of interest rates, real interest rates remain high

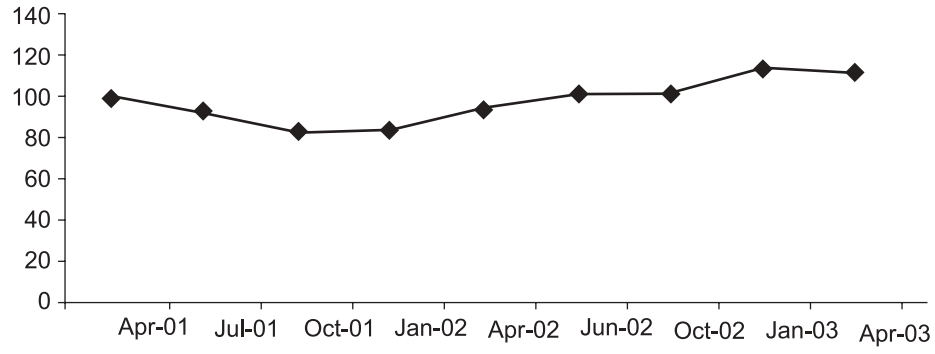
Table 1: Sectoral Performance: Manufacturing (% growth)

Improved Performance				Declining Performance			
Sector	**2001-02**	**2002-03**	**2003-04@**	**Sector**	**2001-02**	**2002-03**	**2003-04@**
Wood & Wood Products	-11.0	-17.8	8.2	Cotton Textiles	-2.2	-2.4	-6.7
Other Industries	8.9	-0.5	19.0	Leather & leather Products	5.3	-2.9	-6.0
Paper & Paper Products	3.0	5.6	8.7	Metal Products	-10.0	6.4	-0.5
Rubber, Plastic etc.	11.1	4.9	10.0	Machinery (except Transport Equipment)	1.3	1.8	-1.5
Jute and Mesta	-5.9	8.4	10.5	Man-made Fibres etc.	4.4	3.8	-18.5
Basic Metal	4.3	9.2	13.8	Chemicals & Allied Products	4.8	4.0	-4.7
Food Products	-1.6	10.7	19.6	Non-metallic Mineral Products	1.1	5.0	4.6
Transport Equipments	6.8	14.9	22.2	Textile Products	2.4	15.6	-9.5
Beverage, Tobacco etc.	12.2	27.3	30.8				
Overall Manufacturing	2.9	6.0	5.2				

Note: @ denotes April-May 2003.

relative to international rates, thereby dampening investment demand. The NCAER Business Confidence Index has shown no improvements since January 2003 (Figure 4).

Figure 4
NCAER's Business Confidence Index



6. Industrial recovery has also been constrained by poor infrastructure, especially the unreliability of quality power supply has contained the recovery. Improvements in power generation capacity do not always lead to efficient production and distribution of electricity. Efficiency entails minimizing transmission and distribution losses, improving corporate governance and, above all, restructuring of public sector state electricity boards (SEBs). The Electricity Act 2003 enacted on 10 June 2003 is a move in that direction. It is based on principles of promoting competition, efficiency, and commercial viability, and providing power to all. The Act includes under its purview delicensing of thermal power generation, liberalization of captive power policy, open access to transmission and distribution network, transparency in subsidy management and constitution of an Appellate Tribunal. As regards reform of SEBs, the Act does not compel states to introduce time bound reform, but provisions like mandatory commitments for reforms to access cheaper central funds will indirectly force the states to initiate reforms in SEBs.

III. Fiscal Developments

7. On the fiscal front, there has been a decline of 26% in total revenue receipts of the central government in April-May 2003 compared to the same period in FY2002. Consequently, despite the containment of expenditure growth to 0.2%, the fiscal deficit increased by 13.9%. In view of the fragile fiscal situation, the Fiscal

Responsibility and Budget Management Bill, 2002 (hereafter, FRB), which was passed recently in both Houses of the Indian Parliament is a timely piece of legislation. It aims at effective fiscal management of the central government. The Bill spells out the responsibility of the central government in ensuring fiscal sustainability, inter-generational equity in fiscal management, and long-term macroeconomic stability. It also attempts to remove fiscal impediments in the effective conduct of monetary policy and prudential debt management. These goals are sought to be achieved through rule-based fiscal discipline, including limits on central government borrowings, debt and deficits, and greater transparency in fiscal operations of the central government (see Box 1). Even though a medium-term limit on gross public debt-to-GDP ratio is a broad indicator of national level fiscal rectitude, the FRB does not specify any operational target of this indicator. Instead, the Bill specifies an operational target for the revenue deficit. The Bill also does not specify numerical reference values for other performance indicators.

8. The rules framed in the FRB pertain only to the central government. However, in a federation like India the responsibility of a large consolidated fiscal deficit amounting to 9.3% of GDP in FY2002 rests equally with the state governments. Controlling the fiscal situation of the central government thus addresses only a part of the problem. Fiscal responsibility at the subnational levels is generally achieved in two ways: an autonomous bottom-up approach where each state initiates fiscal reforms; and a top-down approach where each state is subject to an uniform set of rules to ensure a degree of fiscal discipline monitored by a central authority.[2] In a federation like India where most states face large fiscal deficits, a coordinated approach under central surveillance may be the best way forward. Fiscal consolidation at the state level using such a top-down approach is being attempted through the Medium-Term Fiscal Reform Program for states, negotiated between the central government and several state governments. It features incentives for state fiscal reforms through performance-linked transfers from the central government.

IV. Inflation, Money and Financial Market Developments

9. The inflation rate has been rising since January 2003 after a long period of relative stability at around 3.0%. The annual average

[2] G. Kopits, 2001. "Fiscal Rules: Useful Policy Framework or Unnecessary Ornament?" *IMF Working Paper WP/01/145*. Washington D.C.: International Monetary Fund.

Box 1: Fiscal Responsibility and Budget Management Bill 2002

Overall Objectives:

The salient features of the Fiscal Responsibility and Budget Management Bill 2002 include:

- a medium-term fiscal policy in terms of setting a three-year rolling target for prescribed fiscal indicators along with an assessment of fiscal sustainability;
- a fiscal strategy including policies with regard to different fiscal instruments that have budgetary implications and that relating to yearly fiscal priorities of the central government apart from an evaluation of the current fiscal policies;
- a macroeconomic framework assessing the growth prospects of the economy along with the fiscal situation and current account balance.

Instruments:

In a bid to reducing the fiscal deficit and eliminating the revenue deficit by FY2008, the Bill

- entrusts the central government to specify annual targets for reduction of deficits and to seek approval of the Parliament in case the actual exceeds the target;
- restricts the central government to borrow from the Reserve Bank of India (RBI) except in certain circumstances;
- lays out measures for fiscal transparency by minimizing secrecy in the preparation of annual financial statements and demands for grants.

Modalities:

For an effective implementation of the targets of fiscal consolidation, the Bill:

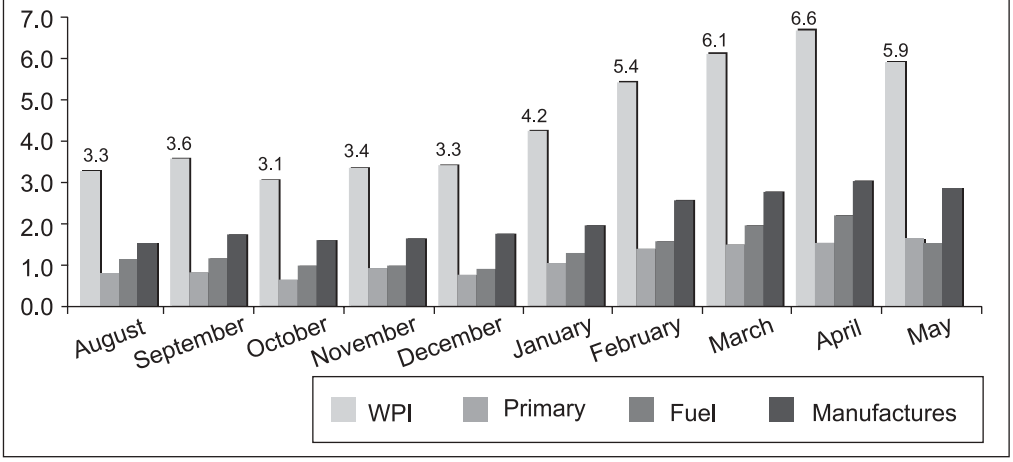
- assigns the Finance Minister of the union government the responsibility to review quarterly trends in fiscal situation in relation to the budget;
- allows the central government to take appropriate measures for increasing revenue or reducing the expenditure in instances of overshooting the targets; and
- makes it binding on the Finance Minister to seek prior approval or explain to Parliament in case of any deviation, spell out its budgetary implications and suggest remedial measures.

wholesale price index (WPI) inflation rate of 5.4% during April-June 2003 was significantly higher as compared to only 1.8% in April-June 2002. The consumer price index for industrial workers (CPI-IW) inflation rate has also been rising since December 2002. The annual CPI inflation rate for April-June 2003 was 4.7% as compared to 4.5% in April-June 2002.

10. An analysis of the commodity contribution to overall inflation (based on WPI) shows that the contribution of fuel has been rising

[3] The contribution of a particular commodity group to overall inflation is measured by the extent to which the overall price level will change if other inflation components remain unchanged. It may also be noted that the total contribution of all the groups is the actual rate of overall inflation.

Figure 5
Contribution to Inflation (%)
(August 2002–May 2003)



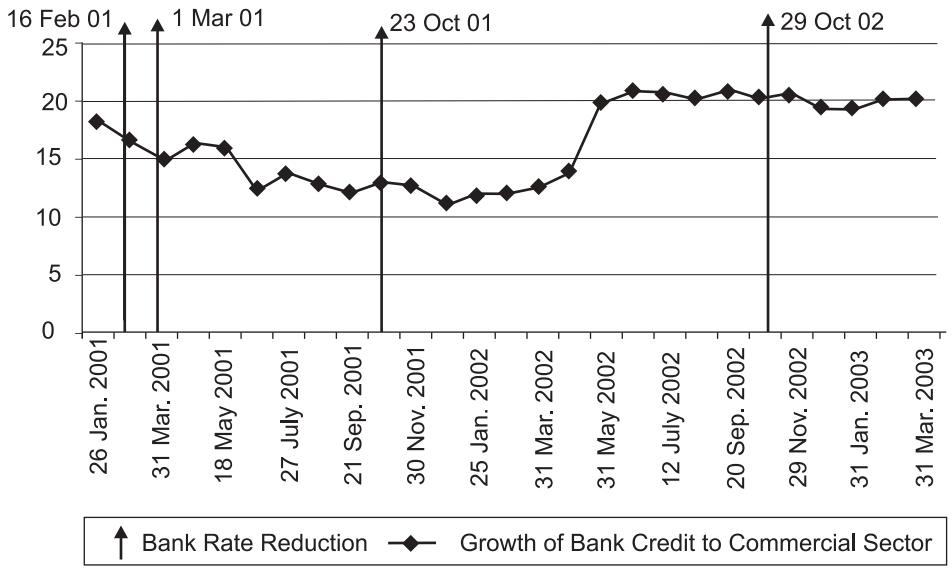
steadily since January 2003 (Figure 5).[3] The contributions of both primary articles and manufacturing increased in January and February, and subsequently stabilized. Of the 2.6 percentage points increase in the overall rate of inflation between December 2002 and May 2003, the contribution of primary articles was 33%, and fuel and manufacturing contributed 25% and 41% respectively. Among primary commodities those principally contributing to the higher current rate of inflation are raw cotton and oilseeds.

11. After growing at 15% in FY2002, money supply (M3) growth slowed down to 12.02% as of 13 June 2003. The lowering of M3 growth is largely on account of the significant drop in growth of time deposits with banks. This is despite the fact that the RBI has been easing its monetary policy stance since 2001.

12. In the monetary and credit policy announced for 2003-04, the RBI has reduced the cash reserve ratio from 4.75% to 4.5% and the bank rate from 6.25% to 6.0%. Despite these measures, the existing prime lending rate remains high at 10.5-11%, given an inflation rate of around 5.0%. The reduction of the bank rate is aimed at easing the flow of credit and boosting domestic investment. However, recent data do not demonstrate any robust inverse relationship between bank rate and commercial credit flow (Figure 6). Credit growth to the commercial sector has been constrained partly because of the high real interest rates and partly because of credit rationing for non-prime borrowers by highly risk averse commercial banks.

Figure 6

Changes in the Bank Rate and Growth of Bank Credit to Commercial Sector (%)

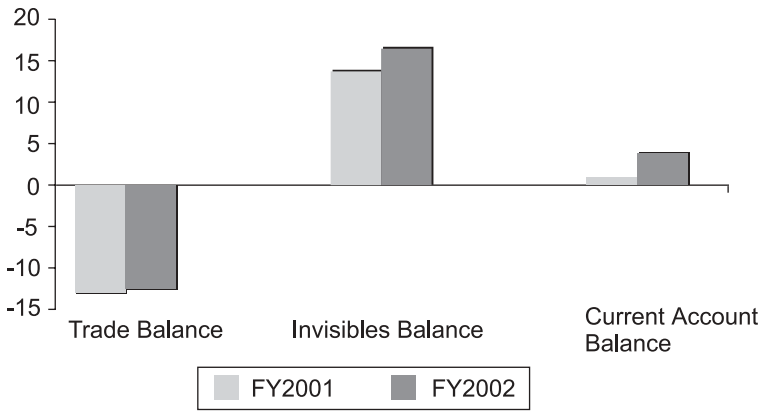


V. Balance of Payments and Foreign Exchange Management

13. On the external front, high merchandise export growth was maintained during all quarters of FY2002, averaging an 18.0% increase over the corresponding period in FY2001. Similarly, import growth was also buoyant at 13.6% during FY2002. However, with export growth exceeding import growth, the trade deficit declined in FY2002, albeit marginally (Figure 7). The current account surplus

Figure 7

Balance on Current Account
($ billion)



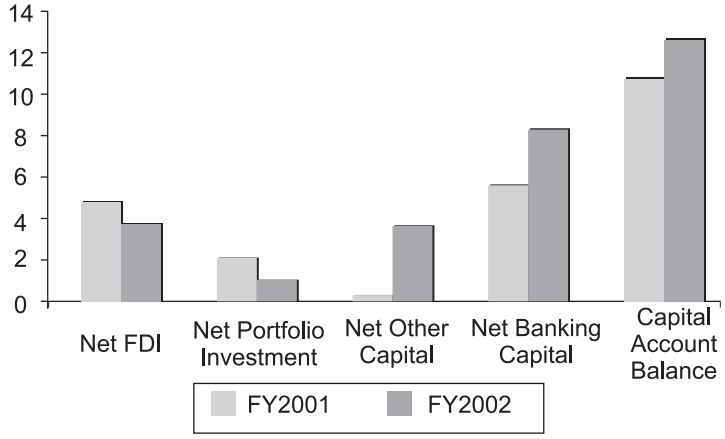
increased to $3.7 billion during FY2002 compared to $ 0.8 billion in FY2001, implying a significant increase of the surplus in invisibles. India's earnings on the invisibles account predominantly comprise of private transfers in the form of remittances and exports of software services.

14. Exports of software and IT-enabled services, which accounted for 17% of total world export of software and IT-enabled services in 2001, recorded a robust growth of 27.1% during FY2002. However, software services exports face the structural challenge of a skewed composition, dominated by low value-adding services. Reorganizing the export basket towards value-adding segments is difficult because these software services are mostly confined to firms in advanced countries, and characterized by high entry barriers. In addition, the attempts to ban "business process outsourcing" in some states in the USA could constrain the growth of software exports. A stronger effort to diversify the software export market is therefore necessary to retain high growth in this sector.

15. The improved external accounts position provides India with the advantage of being able to approach the forthcoming WTO Ministerial meeting at Cancun on firmer ground and with improved bargaining strength. India will want to focus negotiations on core market access issues and carry forward the gains that were achieved in the Doha Development Round. In a bid to negotiate on various multilateral issues at the forthcoming meeting, India is forging alliances with like-minded countries and attempting to form a strategic coalition of developing countries. Apart from implementation issues, negotiations relating to market access in agriculture, industrial goods and services are key to India. In agriculture, India will negotiate to phase out trade distorting subsidies in developed countries. It will also negotiate to operationalize special and differential treatment for developing countries to protect farmers against any sudden surges in agricultural imports. In services, India's negotiating interest under GATS lies primarily in liberalizing cross-border movement of professionals, and in service providers being allowed to sell their services across borders electronically. India is opposed to the inclusion of the so-called Singapore Issues such as investment and competition policy, transparency of government procurement, and trade facilitation in the Cancun agenda.

16. On the capital account, net inflows increased by about 29% during FY2002, which is primarily explained by a surge in "other" capital and banking capital inflows. In contrast, net foreign investment

Figure 8
Selected Inflows on Capital Account
($ billion)



inflows declined by $2.1 billion in FY2002 compared to FY2001. This is the result of a drop in net FDI inflows from $4.7 billion in FY2001 to $3.6 billion in FY2002 as well as a decline in net portfolio investment by foreign institutional investors from around $2.0 billion in FY2001 to less than $1.0 billion in FY2002 (Figure 8). The fall in FDI inflows would have been sharper but for the revision of India's FDI data to include equity capital, reinvested earnings and other capital in line with international convention. Data for April 2003 shows a continuing decline in FDI, though there is some revival of portfolio investment. The current account surplus and net capital inflows have increased foreign exchange reserves to over $80 billion as of 18 July 2003.

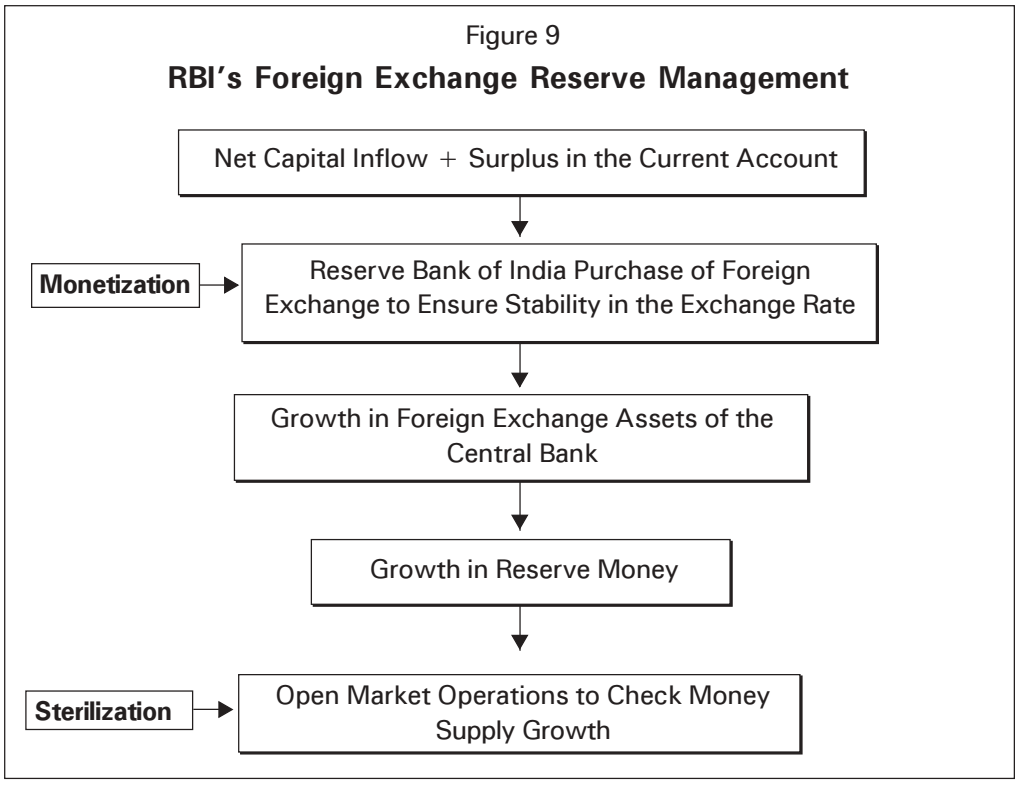
17. In view of India's burgeoning foreign exchange reserves, IMF has selected India as a member of its financial transactions plan (FTP), under which the country contributes to IMF's liquidity to help other countries tide over balance of payments problems. India is also interested in contributing to the Asian Bond Fund recently established by a group of Asian countries with surplus reserves. Its purpose is to speed up the development of a regional bond market that would help reduce Asia's reliance on capital from outside the region. These developments signal India's growing strength in the external sector. However, prudent management of large foreign exchange reserves has now emerged as a critical macroeconomic policy challenge.

18. Large reserves are certainly important for growth but management of reserves is equally important to contain the

appreciation of the exchange rate and its adverse impact on exports. A monetary authority can intervene through monetization and sterilization to accomplish this. The Reserve Bank of India intervenes at both these levels to manage the exchange rate along with money supply. This is explained in Figure 9. However, when the RBI uses open market operations to sterilize the addition to money stock arising from foreign exchange purchases, the increase in the supply of bonds tends to pull up interest rates, and attract further foreign capital inflows. Thus, the initial impact of the central bank's intervention on the nominal exchange rate may be partially or fully offset. This phenomenon is usually tested by estimating the so-called *offset coefficient*, i.e., change in net foreign exchange assets for a unit change in net domestic assets of the central bank. Preliminary ADB-INRM estimates indicate an offset coefficient of (–)0.7, implying significant offsetting. Moreover, with continuing sterilization, the proportion of net domestic assets in reserve money has declined significantly, considerably reducing the central banks maneuverability in controlling the money supply.

Figure 9

RBI's Foreign Exchange Reserve Management



VI. Short-Term Outlook

19. The short-term outlook for the economy remains the same as projected in the March issue of *ADB India Economic Bulletin*

(Table 2). GDP is expected to grow at 6% in FY2003. Some forecasters who had earlier projected a lower growth have now revised their growth projections to about 6%. The expected growth recovery is mainly attributable to a good monsoon, continuing build up of foreign exchange reserves, and relative price stability. These factors are sustaining the upswing in the business cycle. Inflation should remain at around 5% – 6% during FY2003 and FY2004. The current account balance is expected to increase further with exports growing faster than imports.

Table 2: Short-Term Projections of Major Economic Indicators: India (%)

Indicators	FY2003	FY2004
Real GDP Growth	6.0	6.3
Inflation	5.8	5.0
Gross Domestic Investment/GDP	24.0	25.0
Gross Domestic Saving/GDP	24.1	25.2
Money Supply (M3) Growth	16.0	16.0
Consolidated Fiscal Balance[a]/ GDP	-9.5	-9.0
Export Growth	15.1	16.6
Import Growth	11.8	12.2
Current Account/ GDP	0.1	0.2
External Debt/GDP	18.0	16.0

Note: [a] This includes the combined fiscal deficit of the central government and all state governments.

20. There has been widespread apprehension that the outbreak of Severe Acute Respiratory Syndrome (SARS), which has now fortunately subsided, will adversely impact growth in the region. No rigorous analysis of the economic impact of SARS in India is available. Most assessments are speculative. However, it is unlikely that SARS will have a major impact on the Indian economy because India is a SARS-free country. Reports suggest that SARS may have adversely affected Indian exports to the South-East Asian countries and People's Republic of China (PRC). For example, it is reported that steel exports to PRC have slackened; that Indian mango exports lost the market in SARS affected South-East Asia and PRC; and that processed diamond exports from India were adversely affected by SARS because a significant proportion of the diamonds processed in India are exported to the United States through jewellery-designing centers such as Hong Kong and Singapore. There is some indication that the loss of exports to or via SARS affected countries may have been offset by diversion of other trade to India. On balance, SARS is unlikely to have had a major net impact on India's export growth. The export councils expect that the export growth momentum will be sustained

in FY2003 even after factoring in the effect of SARS. Consequently the SARS outbreak will only have a limited impact on India's overall growth rate. Estimates show that for every 1 percentage point decline in exports to the SARS-affected region, overall growth would decline by 0.01 percentage point.

21. The hospitality sector is another area where SARS may have some mixed impact. Tourist inflows to Asia were severely affected and this led to a decline in revenue per available room in hotels in the Asian region in the first half of FY2003. This regional impact was also felt in India. On the other hand, the SARS scare diverted Indian tourists from Singapore, Hong Kong, Malaysia and Indonesia to domestic destinations. Almost 30% of the Indian tourist traffic was estimated to have so shifted to Uttaranchal, Himachal Pradesh, Kerala, Sikkim and Goa according to industry estimates.

22. Overall it is assessed that SARS will not have a sufficiently strong impact to require any revision of the 6.0% growth forecast for FY2003. On balance, the small net impact is expected to be positive.

Special Feature

Indian Agriculture - The Unresolved Issues

Vijay Shankar Vyas

Professor Vijay Shankar Vyas has held senior academic and advisory positions both in India and abroad. He was a member of the Agricultural Prices Commission of the Government of India; Director, Indian Institute of Management, Ahmedabad; Senior Advisor in Agriculture and Rural Development in the World Bank, Washington D.C.; Team Leader of the Second Asian Agricultural Survey, Asian Development Bank, Manila; Scholar-in-Residence, EDRC, Asian Development Bank, Manila; and Chairman of the Governing Board, Institute of Development Studies (IDS), Jaipur. Professor Vyas has been a member and chairman of several commissions and committees in India and abroad. Currently, he is a member of the Economic Advisory Council to the Prime Minister of India; Member, Central Board of Directors of the Reserve Bank of India; Member, Board of Directors of NABARD; Member of the Rajasthan State Planning Board; and Professor Emeritus in IDS, Jaipur. He has been honored in India and abroad for his academic, civic and policy related activities.

Introduction

1. Indian agriculture had a creditable record in terms of growth in output before the deceleration of rate of growth in the 1990s. Starting from the mid-1960s, in a period of two decades, a severely food-deficit country could achieve food self-sufficiency and was poised to emerge as an important exporter of foodgrains. The performance in non-foodgrain crops was not as impressive, though most of these 'commercial crops' also recorded substantial increase in production. Throughout this period, the rate of growth in agricultural production, particularly foodgrains production, surpassed the rate of growth in population.

2. The performance of Indian agriculture was all the more remarkable as the increase in production was mainly due to increase in productivity, expressed in terms of yield per hectare. There was only marginal increase in the net sown area. Secondly, because of the rise in productivity, coupled with more realistic price policies, the real prices of foodgrains did not increase. In a country where a large section of the population spends a substantial amount of its consumption expenditure on food, it was an effective way of helping the poor. The third remarkable feature of agricultural development was a rise in productivity in the agriculturally backward regions, especially in eastern India. For example, the rate of growth in the production of rice in West Bengal in the 1980s was comparable to that in wheat production in Punjab, the most dynamic agricultural region. Regions which were considered agriculturally backward were also brought into the orbit of growth.

3. It needs to be appreciated that the growth in agricultural output was achieved in the face of severe structural handicaps. The agrarian structure in India was, and continues to be, dominated by small holdings. They accounted for nearly three-fourths of all holdings and covered about one-third of the cultivated area. The bulk of the peasantry was illiterate and resource-poor. Physical infrastructure in the rural areas — roads, electric power, means of communication — was grossly inadequate. The farming community was served by an unsympathetic and inefficient bureaucracy. It is instructive to recall how, with these handicaps, Indian agriculture could turn the corner.

4. The success in agricultural production, especially foodgrain production, could be accounted for by the convergence of several factors. Most important among these were the following:

- There was substantial increase in the area under irrigation— irrigated area, as a proportion of net sown area, increased from 22.1% in 1970-71 to 33.6% in 1990-91.

- A size-neutral technology, revolving round High Yielding Varieties (HYVs) of seeds, chemical fertilizers and water management, was popularized especially in the areas of assured water supply. In these areas agricultural producers, irrespective of the size of their holdings, participated in what has come to be known as the 'Green Revolution'.
- Reforms in the supportive systems of research, extension, marketing and credit were instituted. Research and extension systems were overhauled. A system of regulated markets was strengthened to protect small producers from the machinations of unscrupulous traders. A remarkable coverage of the rural population by formal credit institutions was witnessed during this period, especially after Bank Nationalization in 1969.
- An integrated system of Minimum Support Prices (MSP), public procurement, buffer stocks, and Public Distribution System (PDS) for foodgrains was put in place from the mid-1960s onwards. MSP, which was based mainly on variable cost of production, provided an element of insurance to the producers of foodgrains in the face of large increase in production, while the government purchased the surplus production at MSP to build buffer stocks and to ensure supplies to PDS, the latter meant for the vulnerable sections of the population.

These measures were largely responsible for increasing the productivity and keeping real prices of foodgrains low. It should be appreciated that the above-mentioned 'policies' were instituted in a food-deficit situation and in an inward looking economy. In that context these measures proved quite effective in achieving the main objective set for agricultural policies, namely food self-sufficiency.

5. While the performance was quite satisfactory in terms of aggregate production, some of the glaring weaknesses of Indian agriculture could not be rectified. With the passage of time, the situation in this regard got aggravated. The weaknesses included:

- degradation of the natural resource base of land and water;
- low value production, especially in the dry areas;
- declining productivity of the 'modern' inputs; and,
- decay of self-help institutions.

6. A brief discussion on the nature and magnitude of these problems, their impact on growth and equity in the rural areas and possible approaches to address these problems will be useful. In this discussion, the relevance of the initial condition, viz., the small farm dominated agrarian structure, is kept in the forefront.

Degradation of Natural Resource Base

7. Irrespective of the stage of development, agriculture claims a large proportion of usable land, and an even larger proportion of usable water. With nearly 47% of the surface area as arable area, India is one of the most intensively cultivated countries in Asia, especially when it is recognized that a large part of the country comprises arid and hilly regions, not suitable for cultivation. The proportion of cultivated area to the total surface area has remained more or less constant in recent years. This stability in the area under cultivation hides two opposing tendencies. On the one hand, the area put to non-agricultural use, mainly for housing and industrial purposes, is increasing; on the other hand, the area classified as 'culturable waste' is declining. Unfortunately, because of the absence of an effective land use policy, expansion in the land used for non - agricultural purposes is not taking place on the uncultivable wasteland. At the same time, agriculture is expanding on such wasteland, i.e. land not particularly suited for agriculture. Indian agriculture has to contend with a progressively less fertile land base.

8. The other worrisome feature is soil erosion and soil deterioration over large areas by wind and water. To that should be added human induced degradation, especially on common property resources. By now, nearly half the land has been affected, more or less severely, by soil erosion, water logging, salinity and formation of gullies and ravines. Efforts to rejuvenate such degraded lands are grossly inadequate.[4]

9. Sometimes, the blame for the progressive deterioration of agricultural land is put on small and marginal farmers. It is suggested that because of their large families in relation to the land they own, their larger dependence on natural resources, and higher discounting of future income, they put the land to more intensive use than warranted, thus contributing to land degradation. These propositions are not borne out by facts. The contrary seems to be true. Small farmers are pushed to marginalized land. They do not degrade their meager holdings; in fact, they take greater care of their land. The real culprits are: absence of a rational land use policy and paltry investment in rejuvenation of degraded lands. Inadequate forest cover and imbalanced use of water have further aggravated the problem of land degradation.

[4] For details, see V. S. Vyas, 2002. "Changing Contours of Indian Agriculture" in Rakesh Mohan (ed.), *Facets of the Indian Economy*. Delhi: Oxford University Press.

10. Apart from its claim on land, agriculture makes a prodigious claim on water. In India, nearly 83% drawal of fresh water is claimed by agriculture. The problems pertaining to water surface are at different levels. In the first place, only a part of the usable water is actually used. Out of the average rainfall of 1170 mm, in view of its large variability over space, it is not a very helpful indicator–more than 50% of the precipitation takes place in about 15 days, and that too in less than 100 hours altogether — in a year. Naturally, evapo-transpiration losses are huge. This suggests *in situ* collection of water by small rain harvesting structures and/or larger storage devices.

11. The cost of irrigation has risen 2 to 3 times in different regions in the last few decades, partly because of lapses in project planning and implementation, also because the more convenient sites have been already exploited. The high cost of irrigation results in a low rate of return from new irrigation projects, and this acts as a disincentive for investment in irrigation. The problem of inadequate expansion of irrigation facilities is further compounded by gross inefficiency in conveyance of surface water. Inadequate drainage and injudicious irrigation exacerbate the problems of surface irrigation. There is hardly any irrigation system in the country which could mobilize resources from the users to correct these deficiencies.

12. At yet another level, there is worrisome inefficiency as well as inequity in relation to ground water exploitation. The main problem is the withdrawal of far more ground water than its recharge. Every year, large areas are brought under the 'dark zone'. An important reason for imbalanced drawal of water is the highly subsidized electric tariff for lifting water. This has encouraged tubewell owners to 'mine' the water, which in turn is resulting in lowering of water tables on the one hand and water logging and soil salinity on the other. Further, there are the aspects of the ownership and usage rights in ground water which favor some at the cost of others.

13. As in the case of rejuvenation of degraded land, for conservation and proper utilization of water, both policy reforms and institutional reforms have to be pursued simultaneously. While cost recovery by fixing appropriate water rates is important, institutional reforms, e.g. clarity in ownership and usage rights and participation of users in the management of water resources, are also essential for ensuring judicious use of water.

Low Value of Production

14. An important and disturbing feature of Indian agriculture is that the per hectare value added in crop production is low. This is true of most of the crops and crop mixes. Researches have shown that the bulk of the farmers (with the exception of those who are growing high value crops like sugarcane, vegetables and horticultural crops) will continue to have meager incomes even if the intensity of cropping on these farms is increased. In an earlier exercise the author and his colleagues had shown that even if the rate of growth in agriculture approximates 4% per year — a realistic assumption to make — and growth in productivity is uniformly shared by all the size groups of holdings, the impact of such growth on poverty reduction among agriculturists will not be substantial so long as the present cropping pattern prevails. [5]

15. On an average, it will require 2 to 3 hectares to enable any farm household to obtain an income above the poverty line, if the cropping pattern is not changed and crop production is the only source of income for the household. It should be remembered that three-fourths of the operational holdings in the country are below 2ha. Further, the proportion of the area devoted to low value food crops is much higher in the small holdings; the small farmers in dry areas are worse off in this respect as they have to contend simultaneously with the disadvantages of both small holdings and aridity.

16. The message is clear. A majority of agricultural holdings in India are non-viable. Even a sizeable improvement in the yields of the crops they grow is not likely to lift the farmers above the poverty line. The other alternative of redistribution of land — in the present context, more a hypothetical than a practical proposition — may lead to a marginal increase in the size of holdings of small farmers but is not likely to make a sizeable impact on the production or the poverty level if the present enterprise mix and cropping pattern continue.

17. The urgency of introducing high value agriculture, especially in small and marginal holdings, is obvious. It will not only raise the incomes of the producers but will also raise the wage incomes, due to the higher labor intensity of these crops and enterprises. Strategy to achieve this objective should have the following elements: it would

[5] See Ifzal Ali, B.M. Desai, R. Radhakrishna and V.S. Vyas. 1981. "Indian Agriculture at 2000: Strategy for Equity". *Economic & Political Weekly*. Vol. 16. Annual Number. March.

involve a larger share of irrigation on small holdings to enable the raising of high value crops, a shift in enterprise mix involving a larger share of dairying, poultry and fishery and, institutional reforms in credit and marketing to enable the small farmers to take advantage of the new opportunities. Two things go in favor of the strategy of small farm centered diversification. In the first place, we do have an institutional structure — of research institutions, extension agencies, credit outlets and organized markets — to support the production and marketing of high value crops and other agricultural products which can be pressed to serve the small farm sector. More importantly, the demand for such crops and agricultural products is much stronger and therefore, growers have a ready market. In fact, the demand for cereals and other low value products is declining while the demand for fruits, vegetables, milk and other animal husbandry products is growing.

18. All over the country, agricultural producers on their own are introducing changes in their cropping pattern and enterprise mix. If the changes are not swift enough, the reasons lie in some of the faulty policies, e.g., high and progressive rise in MSP of foodgrains declining public investment, especially in irrigation, and weakening of the supportive institutions. It is clear that without a much faster pace of diversification of Indian agriculture the problem of rural poverty cannot be tackled.

Deterioration in Cost-Benefit Ratio

19. A remarkable change has taken place in the input structure in agriculture. Till the early 1950s, agricultural inputs mainly comprised owned or leased land, family labor (with a few paid laborers during the peak season), owned or hired bullock power, owned seeds and organic manure from owned livestock. This picture changed dramatically in the mid–1960s, i.e. with the introduction of High Yielding Varieties. The total value of non-land non-labor inputs was estimated at Rs.18,500 million in 1960-61; it rose to Rs.40,890 million in 1971-72. Since then the value of, mainly purchased, inputs has increased at a rapid rate. The input survey of 1992-93, placed the share of inputs at 34% of the output, as compared to 23% in 1970-71. The trend seems to have further accelerated in recent years.

20. The fastest growth has taken place in the inputs which are heavily susidized, i.e. chemical fertilizers, electricity and diesel oil. Repair and maintenance of machinery is also taking a good 8% of

the total input costs. An interesting feature of prevailing input use is that small farmers are also using purchased inputs to a substantial extent. In the case of fertilizers and irrigation per hectare the expenditure (accrued or imputed) is higher on the small farms compared to medium and large farms.

21. The progressively rising expenditure on inputs is not reflected in a commensurate rise in output. Indices of the use of fertilizers, power and farm machinery out-pace the increase in the index of agricultural production, especially during the last decade. Careful studies in Total Factor Productivity (TFR), which cover only part of the 1950s, suggest that TFR in Indian agriculture is low, and at least one study suggests a slight deterioration in spite of a spate of good monsoons during this period. Studies have shown that research, extension, rural infrastructure and investment in human capital have yielded encouraging results.[6] A disturbing feature is that the low input-output ratio persists in spite of the high level of subsidies on inputs such as fertilizers, electric power, and irrigation water. The low incremental results are not because of a technological plateau having been reached in the use of inputs. An explanation has to be sought elsewhere.

22. The main reasons are injudicious and imbalanced use of the inputs. Highly subsidized inputs, instead of raising productivity, are encouraging their wasteful use. Pricing policies, service delivery systems and public investment, on the other hand, are responsible for acting as hurdles in the path of exploiting the complementarities among different inputs. Inept price policies are illustrated by ad-hocism in the pricing of fertilizers which has resulted in an inappropriate mix of fertilizers on farms. The delivery system is biased in favor of 'progressive' regions and large farmers who, in some instances, might have reached the technical frontiers. Recent slackness in public investment in irrigation, power and rural infrastructure in general, might have contributed to the diminished efficiency of modern inputs. In sum, Indian agriculture is progressively becoming a high cost agriculture.

23. Lessons from the current, unhappy experience have to be underlined. In the first place, a rethinking on investment priorities is suggested to exploit the full potential of 'modern' inputs. In other words, more investment in infrastructure, research and extension

[6] Mark W. Rosegrant and Peter B.R. Hazell. 2000. *Transforming the Rural Asian Economy: The Unfinished Revolution*, New York: Oxford University Press (for the Asian Development Bank), pp.149-155.

and in human capital will result in higher contribution from these inputs, compared to huge amounts earmarked for input subsidies. It is also important to review the current pricing policies and the functioning of the delivery systems to restore the low cost, efficient operation which characterized Indian agriculture in the earlier decades, from the 1960s to the 1980s.

Sharp Erosion of Self-Help Institutions

24. One of the most serious handicaps facing Indian farmers is the erosion of self-help institutions, formal as well as informal. There is increasing dependence on an inefficient, urban biased and centralized bureaucracy. This is reflected in the deterioration of a whole set of self-help institutions, whether these are informal institutions to cope with natural disasters like droughts, or arrangements to protect common property resources. More formal institutions such as cooperatives are in disarray. In a large and diverse country like India, some exceptions can always be found, but the general scene is one of decay of these institutions. Decline in the self-help institutions can be illustrated by the sorry state of affairs in the cooperative sector.

25. Since independence, policy interventions have favored cooperative institutions, particularly for the delivery of credit. Partly because of the state support, but mainly because of the efforts made by some outstanding cooperators, the movement made remarkable progress in the (former) Punjab, Bombay and Madras states. Even then, the progress was mainly confined to credit delivery and not deposit mobilization. No substantial progress was made on the marketing side, except for a few commodities like cotton, sugarcane and milk, and that too in limited areas. Entry of the nationalized banks in the area of rural credit and setting up of large state-owned and state-supported Commodity Corporations have strengthened the role of the state in credit delivery and output marketing.

26. State sponsorship of credit and marketing institutions has, as should be expected, strengthened the role of bureaucracy in these essentially commercial institutions. In the context of the competitive politics prevalent in India, this has also meant entry of partisan politics into the management of these institutions. The major casualty has been the people's own initiative. In the minds of common people, the distinction between *Sarkari* (official) and *Sahakari* (cooperative) institutions is getting obliterated. While virtually demolishing the initiative of the people, bureaucratic interference has not ensured even efficient running of these institutions. Policies for strengthening

the delivery systems have to grapple with the twin realities of growing sophistication in marketing and credit related operations on the one hand, and the need for transparency and accountability on the other. There is deterioration in the functioning of self-help organizations on both these counts. The challenge is to ensure genuine people's participation and, at the same time the economic viability of the institutions designed to serve Indian agriculture.[7]

Aggravating Factors

27. Indian agriculture has been suffering from some of these deficiencies for long. However, the 1990s saw aggravation of these handicaps mainly because of two developments. One regressive move was the slackening of public investment in agriculture. Gross capital formation in agriculture increased barely at the rate of 1.36% per annum during 1991-2000. The share of the public sector in gross capital formation came down steadily from 53.63% in 1980-81 to 26.43% in 1999-2000. It was hoped that private investment would fill the gap. However, the experience of the 1990s has conclusively proved that private capital formation in agriculture at our stage of development is complementary to public capital formation, and not a substitute.

28. Along with the shortfall in public investment, the situation got worsened with distortions in agricultural policies, particularly those on input subsidies and output prices. Such distortions were reflected in extension in the coverage of administered prices; almost total reliance on 'cost plus' principle in determining agricultural prices; obliteration of the difference between Minimum Support Prices and Procurement Prices; delinking of trade policy from the price policy; growing amount and increasing dysfunctionality of input subsidies; weakening of the institution responsible for advice on price policies, i.e. Commission on Agricultural Costs and Prices, and the one mainly responsible for implementing the policies, i.e. the Food Corporation of India. Looking at the disappointing results, rethinking on some of these issues has started and some corrective measures have been initiated. For example, public investment in agriculture has been stepped up, a high powered group has examined the lacunae in the agricultural price policy, public distribution of foodgrains, and disposal of accumulated stocks.

[7] For detailed discussion on deficiencies in rural credit system and measures suggested to improve its functioning, see *Report of the Expert Committee on Rural Credit*, National Bank for Agriculture and Rural Development (NABARD), Mumbai, 2002.

Summing Up

29. A more consistent and focused approach is needed to correct some of the anomalies noted above.

30. The development strategy in the coming years should aim at

- protecting the land and water base of agriculture;
- emphasizing increase in 'value added' per hectare rather than increase in physical output, particularly in small holdings;
- assigning high priority to improvements in the productivity of inputs, especially purchased inputs;
- introducing reforms in the supportive institutions of research, extension, credit and marketing to make them autonomous, efficient and demand driven.

31. It will be a gross simplification if we were to assume that these objectives can be attained merely through an appropriate set of policies, interpreted in the narrow sense of market reforms. Public investment in rural infrastructure, human resource development and research and extension have to be stepped up. And, the critical role of institutional reforms by both the state and civil society need to be recognized.

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