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Market Reforms in South Asian Agriculture: Will they deliver?

INTRODUCTION

With a population of about 1.3 billion and an overall growth rate of GDP hovering around 5 to 6 per cent per annum, South Asia is finally attracting the attention of global business. If ethnic strife remains under control, it will not be a surprise if this region soon witnesses the landing of 'flying geese' of development. South Asia also attracts the attention of development and agricultural economists for other reasons. It is a region with the largest concentration of workers engaged in agriculture and there is associated poverty. About 400 million people in this region still survive on an income level of a dollar a day, and their main occupation remains agriculture. Thus, unless agriculture prospers, the chances of faster alleviation of poverty seem rather bleak. Further, outside the socialist block, South Asia has been a region that insulated its economy most from the world markets by according high protection to industry, which had ramifications for agriculture.

During the 1970s and 1980s, there was a definite and significant dent in poverty levels in the region, triggered primarily by the onset of the 'Green Revolution'. That was a marvel of agricultural technology, heavily supported by positive incentives to cultivators and improved input delivery mechanisms. Dramatic increases in yields of wheat and rice led to widespread adoption of new seeds, resulting in perceptible gains in foodgrain production. The real prices of wheat and rice declined and poverty levels fell. But this process of growth in foodgrains slowed down during the 1990s, raising doubts about whether the Green Revolution had begun to falter. The pace of poverty reduction also appears to have diminished. This necessitates a deeper study of what has happened to South Asian agriculture during the recent past, and what is likely to happen during the next two decades or so. This has to be analysed against the backdrop of a fundamental change that is under way in much of South Asia, namely a distinct move towards liberalization and globalization. Almost all the countries in the region are going through this phase of liberalization in varying degrees, under structural adjustment programmes or through the locking in of reforms stemming from the Uruguay Round Agreement.

This paper is an attempt to decipher the changes taking place in South Asian agriculture, the reforms that are under way and how they are likely to

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affect the future. Accordingly, the next section provides a background to South Asian agriculture, across major countries of the region as well as against the global economy. That is followed by a description of the nature and dimensions of reforms under way in different South Asian countries. Evidence on what is likely to be the result of such reforms on agriculture is then presented.

SOUTH ASIA IN A GLOBAL CONTEXT

South Asia, comprising Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka, accounts for about 22 per cent of the world population but less than 2 per cent of world GNP and only about 1.2 per cent of world trade. In 1997, the GNP per capita in this region was just US$387 per annum, only a notch higher than that of the low-income countries at US$350. On a purchasing power parity (PPP) basis, however, the per capita GNP of South Asia turns out to be US$1600 per annum (Athukorala, 1999). Measured in PPP, the World Development Indicators suggest that the absolute size of the Indian economy makes it the fourth largest in the world after the USA, China and Japan.

In geographical dimensions, South Asia has only 3.3 per cent of the world's surface area. As against an average of 11 per cent of surface area being arable and under permanent crops in the world as a whole, South Asia has almost half of its area utilized in that way. That is an indicator of high population pressure on land as well as the availability of large amounts of cultivable land.

The structure of South Asian economies is typified by high employment of the workforce in agriculture (a little higher than 60 per cent) but a much lower share of agriculture in GDP (about 25 per cent). Together with low to moderate yield levels, South Asian agriculture also exhibits much lower levels of labour productivity compared with the rest of the world.

India is by far the largest economy in the region, accounting for almost three-quarters (74 per cent) of regional GDP, followed by Pakistan (13 per cent), Bangladesh (9 per cent), Sri Lanka (3 per cent) and Nepal (1 per cent). On a per capita PPP basis for the five major countries in the region, Sri Lanka is most developed, followed by India, Pakistan, Bangladesh and Nepal. Agriculture contributes only 22 per cent to GDP in Sri Lanka, as against 41 per cent in Nepal and 25 per cent in India. More than 90 per cent of the workforce in Nepal is employed in agriculture, as against only one-third in Sri Lanka and about 64 per cent in India. Given such overwhelming weight of the Indian economy in the South Asia region, it is obvious that what happens in India has a strong influence on the whole region. Accordingly, this paper gives proportionately a higher weight to India in its analysis.

South Asia accounts for about 30 per cent of world rice production, 30 per cent also for pulses and 15 per cent for world wheat. In coarse grains, however, its share is much lower: less than 4 per cent of world production. For horticulture (fruits and vegetables), South Asia accounts for about 12 per cent. Edible oil crops account for about 11 per cent and sugar cane about 26 per cent of world production. India is the largest producer of milk in the world, taking

South Asia's world share to about 16 per cent. In fisheries the share is lower at about 6 per cent.

The overall growth in the region during the 1980s and 1990s has hovered between 5 and 6 per cent per annum. There was a peak during 1994–7, when it touched 6.4 per cent, and in India even 7 per cent. This compares very well with many south-east Asian economies during the take-off stage. The growth in agriculture, however, has been much lower, averaging around 2.5 to 3 per cent per annum during the 1980s and the 1990s. But the growth pattern in agriculture has shown wide fluctuations, especially in India (RIS, 1999). This is primarily due to the dependence of Indian agriculture on the monsoon. About 60 per cent of the gross cropped area still remains without any assured irrigation, and only 30 per cent of the area is double cropped. This is one of the major reasons behind low and fluctuating yields in India. It also applies in South Asia generally. The other reason behind relatively low growth in agriculture, perhaps, lies in the policy environment adopted in the past. Most of the countries in the region, like many other developing countries around the world, followed a policy of high protection for manufacturing, which discriminated against agriculture (see Schiff and Valdés, 1992, for Pakistan and Sri Lanka, and Pursell and Gulati, 1995, for India).

An interesting feature of the agricultural growth pattern is that the poultry, fishery and dairy sectors have advanced more quickly than the crop sector. And among the crops horticulture, and other cash crops, exhibit higher growth than foodgrains where, typically, growth has been only marginally higher than the growth rate of population. Cereals, for example, grew at an annual compound rate of 2.8 per cent during 1986–96, pulses by 1.6 per cent, sugarcane by 4 per cent, edible oil crops by 5 per cent, fruits by 4.5 per cent, milk by 3.4 per cent, eggs by 5.4 per cent and fish by 5.2 per cent.

One plausible reason behind the growth pattern within agriculture is the changing pattern in diets. The consumption basket is changing fast in favour of non-grain items, creating a 'market pull' for the development of this segment of agriculture. The expenditure elasticities based on the Food Characteristic Demand System (FCDS) are revealed as extremely low for major grains (rice and wheat) and relatively very high for fruits and vegetables, milk, eggs, meat and fish (Paroda and Kumar, 2000).[1] These are the emerging segments of agriculture, where government intervention has been least. Market incentives have been the major drivers. But in the case of foodgrains, perpetual deficits in the pre-Green Revolution days led the governments of South Asian countries to intervene heavily in the markets. Many of the control mechanisms remain in place despite the situation on the foodgrain front having dramatically changed. There is a high degree of self-sufficiency, with only marginal imports now and then. In fact, in India, as of June 2000, the government was holding foodgrain stocks of more than 40 million tonnes. This is at least 60 per cent more than the government would like to keep to service its public distribution system and to take care of food security in the event of crop failure. But the laws governing foodgrain marketing, including external trade, remain quite restrictive. They discourage the entry of major grain companies and minimize the influence of market forces on farmer's

production decisions. The underlying fear stems from uncertainty regarding the distant future.

Will South Asia remain as comfortable in grains in the medium to long run as it is now? On that experts differ. One view (Rosegrant *et al.*, 1995) is that South Asia will be in deficit in cereals by around 22 million tonnes by 2020 (under the baseline scenario). Similar views are expressed about India by Bhalla *et al.*, (1999). They suggest that, by 2020, under the assumption of reasonable increases in fertilizer and irrigation, with per capita income growth of 3.7 per cent per annum, India would be falling short of cereal demand by as much as 64 million tonnes, which is almost three times the deficit forecast by Rosegrant *et al.* for South Asia as a whole. The proponents of this view cite emerging signs of deceleration in yield levels during the 1990s and, in a well-fed India (with high income growth), supplies could fail to match the surging demand. As a result, India may emerge as a major net importer of grain, making South Asia in deficit by 2020.

These estimates have been contested, especially on the demand side. The alternative view on the likely demand for foodgrains in the countries of South Asia reveals no alarming picture even by 2030. Paroda and Kumar (2000), for example, by using FCDS to derive expenditure elasticities, show that the demand for foodgrains in South Asia is likely to increase by only 1.2 per cent per annum during 1995–2030. To meet the demand for cereals, South Asia needs to raise its yield levels (of cereals as a group) from 1.74 tonnes in 1994–6 to 2.67 tonnes by 2029–30. This is certainly within the potential reach of South Asia, despite increasing pressures on land and water, provided some priority is given to investments in agriculture and to raising the level of incentives. The record of the past three decades, and the fact that full potential of the Green Revolution is not yet exhausted in the region, make it probable that South Asia will remain more or less self-sufficient in grains during the next two to three decades. By that time, newer technologies could come on to the horizon to shift the production frontier outwards.

In the case of India, in the forseeable future (say by 2010), the probability is that marginal surpluses of grains will emerge (see Gulati and Dev, 1996). The preliminary indications are already there in terms of bulging foodgrain stocks. If their grain exports were not subsidized by the EU and the USA, India would already be exporting marginal quantities (say at least 3 to 5 million tonnes of grains annually).

TOWARDS REFORMS AND IMPROVED MARKET INCENTIVES

Most of South Asia is undergoing a process of economic reforms. Sri Lanka has been a forerunner, having initiated reforms in 1977; Pakistan and Bangladesh followed in the late 1980s, and India and Nepal began in the early 1990s. The political consensus favouring reforms in South Asia was formed in three distinct phases: first, the emergence of circumstances that called for reforms; second, a broad agreement among political parties to initiate reforms; and third, agreement on the basic content of the reform package (Shand, 1999).

Although reforms in South Asia were occurring before 1991, the really wide-ranging process was initiated only then, when India became engaged (Williamson, 1999). Political instability can affect the reform process at any stage, especially when reforms are still in a nascent state. And South Asia has been under constant flux as far as political stability is concerned, be it the case of India, Pakistan, Bangladesh or Nepal.

In most cases, reforms have been triggered by worsening fiscal situations spilling over to inflation and balance of payments problems. The reform package adopted by all these countries is also similar: contain fiscal deficits, ease exchange rates, at least on current account, free external trade from restrictions, and bring down tariff levels gradually over time. This is more or less in line with the standard reform package often suggested by the IMF/World Bank.

Interestingly, despite these reforms, the fiscal deficits in most countries remain high, although there have been significant changes in exchange rate regimes and trade policies. For example, during the 1991–7 period, on average, the central government budget deficit was in the range of –6 to –7 per cent of GDP for South Asia as a whole (Bangladesh –4.1 per cent, India –6.6 per cent, Nepal –6.4 per cent, Pakistan –6.9 per cent, and Sri Lanka –8.7 per cent) (RIS, 1999, p. 39). This resulted in high rates of inflation of around 10 per cent (based on consumer prices) during 1991–7, except in Bangladesh, where it was contained at about 4 per cent. In India, too, inflation was brought down in subsequent years. Although higher inflation rates put pressure on exchange rates, forcing depreciation of domestic currencies, South Asia has survived the East Asian-type crisis in exchange rates. The credit for this, perhaps, goes to the gradualist approach adopted by South Asian countries, especially India, with respect to their foreign exchange regimes. India, for example, allowed convertibility of domestic currency on current account but not on capital account. As a result, the depreciation of domestic currencies has been gradual and has been absorbed into the system without any major shocks.

Over the years, the reform package has expanded in size and depth. It has encompassed several elements, ranging from privatization of public sector enterprises to cutting down of subsidies with a view to reining in fiscal deficits. The role of the private sector in infrastructure development has increased. Trade and exchange rate policy regimes have been liberalized. In agriculture, the first attempt has been to contain subsidies, especially on fertilizers.

In India, for example, in the first year of reform (1991–2), urea prices were raised by 30 per cent. In the following year, on the recommendations of a Joint Parliamentary Committee, phosphate (P) and potassium (K) fertilizers were freed from controls and urea prices were reduced by 10 per cent. Prices of P and K went up by more than 100 per cent, creating a major imbalance in the use of nitrogen N, P and K. To contain the rising prices of P and K fertilizers, imports of DAP were opened to the private sector with a flat rate subsidy of Rs1000/tonne announced on P and K in September 1991. However, since the price of imported DAP was lower than the cost of domestic fertilizers, imports hit the existing production plants adversely. About eight out of 11 plants came to a grinding halt. To revive them, higher flat rate subsidies were announced on

P in 1994, more on domestically produced DAP (Rs3000/tonne) than on imported DAP (Rs1500/tonne). The administered price of urea was, however, raised by 20 per cent in June 1994, and then again by 10 per cent in February 1997. Between 1994 and 1997, there was a lull of urea prices, presumably owing to political instability. In the year 2000, urea prices were further raised by 15 per cent, but urea production remains under the so-called retention price scheme in which each plant receives a different price from the government, based on its cost of production, subject to some norms of efficiency. India today produces about 20 million tonnes of urea, the marginal cost of which is about Rs11 000 to 12 000/tonne while the import parity price falls between Rs5000 and 6000/tonne. It is a matter of intense debate whether the fertilizer subsidy is a subsidy to agriculture or to the high-cost fertilizer industry (Gulati and Narayanan, 2000). The reforms in the subsidy, therefore, are closely linked with the reforms in the industry, and India has still to go a long way in that direction. In the meantime, the fertilizer subsidy touched a figure of about US$3 billion in the year 1999–2000. Containing it has been a politically hard nut to crack.

The more interesting changes in agriculture that have swept South Asia have come from the trade policy side. In fact the reforms in trade policies for agriculture, as for non-agricultural commodities, have begun to lock in as a result of the commitments made under the Uruguay Round Agreement (URA). It is interesting to see how different South Asian countries have committed themselves in the URA to carry out agricultural trade policy reforms, what progress they have made between Marrakesh and Seattle, and what impact reforms are likely to have on the future of agriculture in the region.

Sri Lanka, perhaps, has been more liberal than any other country in South Asia in terms of binding agricultural tariffs under the URA. It followed a simple rule and bound its agricultural commodities at a flat 50 per cent duty. Pakistan bound them in the range of 100 to 150 per cent, while Bangladesh bound most agricultural tariff lines at 200 per cent (except 13 six-digit HSC items, at 50 per cent) (Athukorala, 1999). India, however, appears to have been most protectionist in the region in terms of URA bindings, most of which fell in the range of 100, 150 and 300 per cent. There were some agricultural commodities which were committed at zero (such as rice and skimmed milk powder) or very low tariff rates in the pre-Uruguay Round of GATT. Nepal, Bhutan and the Maldives are not yet members of World Trade Organization (WTO), but they have already adopted a policy of almost free trade at low tariff levels. In Nepal, for example, most of the goods are freely importable. Items attracting high duties are basically passenger vehicles, firearms, liquor and tobacco (Pigato *et al.*, 1997). Thus, overall, the bound tariffs of India, Bangladesh and Pakistan, which form the bulk of South Asia, seem to be some of the highest in the world. India also invoked the balance of payments clause to retain quantitative restrictions on imports.[2]

Does that mean that South Asian agriculture is the most protected in the world? Not necessarily so. To understand this better, one needs to look at the actual tariffs vis-à-vis the bound tariffs. Take the case of India, which appears to be the most protectionist economy in South Asia, and presumably in the world. In the early years of the reform process in India, the government set up

a Tax Reform Committee with a view to overhauling the tax structure, including import duties. This committee (GOI, 1993) had recommended that agricultural commodities should basically attract three rates of import duties. First, essential agricultural commodities like wheat and rice should be imported at zero duty; second, commodities like oilseeds and pulses should attract 10 per cent duty; and third, non-essential agricultural products like almonds and cashew nuts should be imported at 50 per cent duty. This tariff structure, recommended by such a very important committee even before the URA was signed, is widely at variance with the duty rates that India bound itself to in the URA. Does that imply a U-turn in the thinking of the government, or was there something more than that?

Our reading of what has happened in India over agricultural tariffs is that the government wanted to play safe, given its overriding concerns for food security. It had gone in for very high tariff bindings just to give it enough space for manoeuvring negotiations in the years to come. This was presumably also necessitated by the fact that there was huge subsidization of agriculture in several developed nations, especially the exporting countries. Large export subsidies, or even domestic support through 'decoupled' income payments, in those countries were severely distorting world markets. It was thought, therefore, that a sufficient buffer was needed to counter the potential deluge of subsidized imports of agricultural commodities that might undermine the livelihood of millions of small and marginal farmers in India. It is, perhaps, this interpretation of the world agricultural situation that prompted India to bind high tariffs on farm commodities.

In fact the actual rates of import duties have been much lower. In 1999, for example, out of the 673 agricultural tariff lines bound at the 6-digit level of the Harmonized System of Classification, the actual rates for 401 lines were lower than their bound rates by as much as 75 percentage points or more. For another 155 tariff lines, the actual rates were below the bound rates by 50 to 75 percentage points, and so on (Gulati *et al.*, 1999). Major commodities like wheat were being imported in 1998–9 at zero import duty despite the bound rate at 100 per cent. Similarly, sugar imports were attracting zero duty, though the bound rate was 150 per cent, and edible oils were being imported at 15 per cent duty as against their binding of 300 per cent. There have been some increases in these duty rates since world prices touched rock bottom in 1999–2000, but it is precisely to safeguard against such wide fluctuations in world prices that India seems to have bargained for higher bound duties. The situation in other South Asian countries is not very different. The applied tariffs are much below their bindings.

On the export front, the opening up of agriculture has been slow, and full of stops and starts, especially in India. When India's reforms began in 1991, major agricultural commodities like rice, wheat, coarse cereals, oilseeds/edible oils, cotton and sugar were subjected to stringent export controls, including minimum export prices, export quotas or even complete export bans. Even within the domestic economy, they were subjected to several marketing controls such as levies, movement controls from one state to another (sometimes even from one district to another within the same state), stocking limits on

traders, denials of institutional credit to traders for stocking of agricultural produce, more or less a general ban on futures trading, and so on. Rice millers had to pay a levy to the government to the tune of 75 per cent: in effect, that percentage of the rice milled had to be given to the government compulsorily at government-determined prices. The arrangement still exists in Punjab, Haryana and some other states of India in varying degrees. On sugar mills the levy was high, at 40 per cent, and molasses were almost completely controlled.

Exports of common rice were begun in the year 1995–6. Almost from nowhere, India emerged as the world's second largest exporter, supplying 5.1 million tonnes in that year. Although that high level could not be maintained, on average, rice exports have remained at around 3 million tonnes. Exports of wheat were begun in 1996, but led to spiralling of domestic prices, which prompted the Indian government to ban exports of wheat and wheat products, and simultaneously to allow imports of wheat at zero import duty. A similar thing happened in the case of onions, where exports led to high prices, forcing the government to ban shipments. All these disturbances in policy making suggest one basic thing: that in countries ridden with a large mass of poverty, it is a challenge for any policy maker to improve incentives of producers by removing all controls on exports and domestic marketing of agricultural commodities and also to care for poorer consumers.

LIKELY IMPACTS OF REFORM ON SOUTH ASIAN AGRICULTURE

Exchange rate liberalization alone has made transparent the relative incentive structure across different sectors within the economy. In much of South Asia, overvalued exchange rates and much higher protection to the manufacturing sector than to agriculture had meant 'implicit taxation' of agriculture. Under administered exchange rates, this remained largely hidden. But now, with exchange rate liberalization, and consequent depreciation of domestic currencies, the degree of the implicit tax is glaring. In India, for example, in 1991–2, grain production fell short of effective demand, necessitating import of about 3 million tonnes of wheat. The import parity price of wheat was Rs5000/tonne as against the domestic support price of Rs2250. This led the Indian government to raise the wheat support price to Rs2750 in 1992–3 and then to Rs3300/tonne in 1993–4, an increase of almost 50 per cent in two years. Similar jumps occurred in wheat support prices in 1997–8, when there was scarcity of wheat at home and the import price was higher than the domestic support price. Rice support prices also followed a similar pattern, though to a smaller extent. Although this correction in the support prices of rice and wheat led to a fierce debate in the country, since there were fears for the impact on the poor, it did help to transfer incomes to surplus farmers. That appears to have resulted in positive private sector investments in agriculture and contributed to maintaining the rates of growth in agriculture.

The other impact on agriculture is likely to come from the reduction in the tariff walls for manufacturing. Pursell and Gulati's (1995) work on India and that of Schiff and Valdés (1992) on Sri Lanka and Pakistan clearly reveal that

protection accorded to manufacturing sectors has been much higher than for agriculture. In fact, agriculture has been 'disprotected' through trade policy. Reduction in manufacturing protection and elimination of 'disprotection' of agriculture, either by freeing exports of agricultural commodities or raising their support prices to at least export parity levels, should logically improve the agricultural terms of trade. In theory, this improvement in incentives in favour of agriculture should invite the attention of private investors, including processors, and thereby lead to higher growth of South Asian agriculture.

The trade policy reforms, both of industry and of agriculture, seem to have set in motion this process of improvement in relative incentives for agriculture, but the ultimate results of higher growth and widespread prosperity in rural areas is yet to be seen. There are a number of reasons underlying this delay. First, the world markets for many agricultural commodities remain highly distorted by the huge subsidization practised by some exporting countries. The slump in world prices during 1997–2000 has shaken the faith of many South Asian economies in import liberalization of agriculture. The prices of edible oils, which were hovering around $700/tonne in late 1996, tumbled to about $350/tonne by early 2000. India was flooded with imports in excess of 4 million tonnes, almost half of her annual consumption requirement. This led to widespread opposition to imports at low import duty (15 per cent) by the domestic oilseeds-processing industry, forcing the government to raise duty to 25 per cent on refined oils. Similarly, wheat prices in world markets tumbled from about $200/tonne to about $100 over the same period. When wheat imports started appearing in large quantities at zero import duty, despite bumper harvests at home, there was a kneejerk reaction and the government clamped on a 50 per cent duty. The problem is compounded when exporting countries first give high domestic support to their agriculture, which generates surpluses, and then those surpluses are 'dumped' in the world markets with export subsidies. So unless distortions by major players, namely the USA and EU, in world agricultural trade are contained, faith in liberalization of agriculture will remain very fragile.

The unfortunate situation is emphasized by attempts that have been made to see how South Asian agriculture would fair as the bindings under URA become operative around the world. Sharma *et al.* (1999), for example, show that the impact of agricultural reforms alone would be in the range of US$1.2 billion to US $3.3 billion under the baseline scenario, which is about 0.4 per cent to 1 per cent of the GDP. These are the highest percentage gains of any other region of the world, with the exception of East Asia. But, as Schiff and Valdés (1992) have shown that the greater impact on agriculture in developing countries is likely to come from the correction of tariff protection in manufacturing, one should expect even bigger gains to South Asian agriculture.

For important commodities, Sharma *et al.* (1999) show that South Asia could reduce its deficits of wheat, which would be limited to Pakistan and Bangladesh. India would wipe out her wheat deficit by 2000. In the case of rice, South Asia would remain a net exporter, with Bangladesh and India increasing their exports by about 500 000 tonnes compared with the baseline scenario. It is interesting to see that the rice-exporting potential of India has

probably been underestimated in this study. India has already emerged as an important rice exporter, with an average of about 2.5 to 3 million tonnes per annum during 1995–2000. For edible oils, South Asia's imports are likely to increase. In fact, this region is going to be the largest importer of edible oils for human consumption.

Gulati and Kelley (1999) also provide some estimates for India. There is a possibility of India emerging as a net exporter of grains (about 3 to 5 million tonnes) in the medium term under a unilateral agricultural trade liberalization scenario. India would remain a net importer of edible oils under trade liberalization (zero tariffs). In other commodities, cotton producers could be major gainers through exports.

It is worth stressing that the existing empirical analysis of the probable impact of liberalization on South Asian agriculture reveals that incentives for cultivators in the region are likely to improve. This is conditional on distortions in world markets being contained and, in fact, reduced over time. For this to happen, South Asia will have to engage itself more in multilateral negotiations and perhaps align itself with the Cairns Groups to ensure that export subsidies are eliminated in America and Europe as soon as possible, and also that domestic support for agriculture in these areas is reduced over time. Unless this is ensured, the potential for gaining markets will remain a distant dream.

It would also be useful if the regime of tariff quotas adopted by some South Asian countries could be replaced by transparent tariffs on an *ad valorem* basis. It would be good for South Asian countries to follow Sri Lanka and have a tariff binding of all agricultural products at 50 per cent. And this is what should be demanded in multilateral negotiations as the peak tariff at 10-digit HSC level for any agricultural commodity in any country. It would open up attractive markets for many South Asian agro-products, including rice in East Asian economies, improving incentives for the farmers of South Asia.

Even when the incentives for agriculture improve, in South Asian agriculture large investments are still required, both in the public and private sectors, to ensure an appropriate supply response. This calls for major institutional changes in the way water (irrigation) and power supplies are managed, while roads and infrastructure for rural markets are also matters of concern. Experiments involving user participation in the management of these facilities would be a step in the right direction.

Domestic reform of markets must precede, or at least go hand in hand, with external action to ensure that the benefits of international trade liberalization percolate down to the culativators. This calls for abolition of all restrictive marketing practices in agriculture, whether restrictions on the movement of agricultural commodities across the country, stocking limits on traders or bans on futures, and so on. It is a big agenda for the policy makers of South Asia since it involves significant changes in the existing institutional framework, including the operation of many parastatals.

Finally, given the mass of poverty in Asia, trade liberalization in agriculture will require a very fine calibration between the opening of exports and protection of the poor. The job would be made easier if an appropriate income policy (safety net) could be devised for the poor and needy. Hitherto, many of the

South Asian countries have been following price policy to achieve equity ends, which has led to pervasive inefficiency in the system and reduced supply response. This has to alter if regional agriculture is to emerge as an efficient system within the global context. Use of price (trade) policy to achieve efficiency and income policy to pursue equity objectives requires a major restructuring of existing policies. That will remain a challenge to South Asian policy makers for many years to come.

NOTES

[1]In India, for example, the authors' estimates reveal that the expenditure elasticity for rice is –0.016, for wheat –0.109, for coarse grains –0.147, for vegetables 0.673, for fruit 0.702, for milk 0.589, for meat, fish and eggs 0.892. A similar pattern is common to all South Asian countries (Paroda and Kumar, 2000).

[2]India's stand on quantitative restrictions (QRs) was challenged by the USA, EU, Canada, Australia, New Zealand and Switzerland (and Japan as third party) through a dispute settlement process. India reached mutual agreements with all but the USA on the schedule for removing QRs. The USA filed the dispute and a panel was constituted in November 1997 to examine the allegation that India's continued QR regime was not consistent with obligations under the WTO agreement. In August 1999, the Appellate Body of WTO announced that India should announce a time schedule for removal of QRs in consultation with the USA. In December, 1999, India reached an agreement to remove QRs within two years. Half of them were removed in 2000 and the other half should go by April 2001.

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