

Trade-Related Subsidies – Bridging the North-South Divide

An Indian Perspective

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1. Introduction

This paper comprises the background work undertaken by The Energy and Resources Institute (TERI) for the preliminary phase of the project titled “World Trade Organization (WTO) and Subsidies: Bridging the North-South Divide.” The project is an initiative of the International Institute for Sustainable Development (IISD), the Earth Council and the Centre for International Studies at the University of Toronto that aims at closing the wedge between developed and developing countries thinking on the issue of subsidies, especially at the WTO. In particular, it envisages contributing to the debate on subsidy-related aspects in the ongoing Doha Development Round. The initiative (henceforth the Subsidies Initiative) is the next stage in the Van Lennep Programme on subsidies. This paper includes a background survey of subsidy and subsidy-issues in India, particularly in those areas that are important from a developmental viewpoint in the country or have some link with the ongoing WTO negotiations. It intends to provide inputs for the development of the proposal for research and policy formulation capacity on trade-related subsidies in key developing country partner institutions.

The paper begins with a section on conceptual and definitional issues relating to subsidies, and also provides a comprehensive taxonomy of subsidies as suggested by existing literature. It then goes on to discuss the issues of domestic subsidies on inputs and outputs in agriculture and energy sectors, and export subsidies in select industrial sectors (iron and steel and textiles) of India. The sectoral analysis provides the background and rationale for provision of subsidies, the magnitude of prevailing subsidies and its implications for the economy, the society and the environment. Some subsidy-reform scenarios are also identified therein. The paper concludes by identifying the gaps in data and information and identifies the need for further research on subsidy-related issues, particularly in the context of negotiations in the Doha Development Round of the WTO.

2. Definitional issues and taxonomy of subsidies

Rationale for subsidies

Governments provide subsidies for the following reasons:

1. Correcting market failure^a
2. Protecting national production from competition
3. Reducing import dependence
4. Encouraging national employment
5. Ensuring balanced regional development
6. Enabling access to and affordability of basic services or goods by all
7. Stimulation of economic growth.

Issues of definition and taxonomy

Subsidies have a critical bearing on all the three components of sustainable development—economic, social and environmental. For instance, a producer or a consumer subsidy that lowers the price of a fuel to the consumer increases its demand and also enhances overall energy consumption. The positive social effects flow out of enhanced access to energy services and economic benefits from promotion of employment in the domestic industry. The impact on environment may be positive or negative according as the subsidy or support is being provided on more (fossil fuels) or less (renewable or energy efficient technologies) polluting energy sources and technologies.

^a Market failure occurs when private actions contradict the social ends of an efficient allocation of resources.

Given the wide-ranging support measures that are provided by the governments, a clear-cut definition of “subsidy” or support may be difficult to establish. From a purely practical viewpoint, one could make reference to the definition offered by the OECD (Organisation of Economic Cooperation and Development) in that --“Subsidy is a measure that keeps the prices for consumers below market levels, or keeps prices for producers above market levels or that reduces costs for both producers and consumers by giving direct or indirect support.”

Subsidies take different forms. Some take the form of direct impact on price, such as grants and tax exemptions, while others work in a more indirect fashion, such as regulation that tilt the market in favour of a particular good or government-supported research and development. Governments provide subsidies either through the budget or off-the budget, the latter more so on account of political economy of or special interests associated with subsidy and tax policy. Accordingly, the classification of subsidies provided in Earth Council (1997) and OECD (1998) could be integrated and adapted to derive the following taxonomy. As can be seen, the classification is by the type of subsidy, impact on the government budget and its point of impact.

Table 1: Taxonomy of subsidies

Points of impact	Effects on government budget	
	On-budget	Off-budget
Direct subsidies	<ul style="list-style-type: none"> ▪ Grants or payments to consumers or producers 	<ul style="list-style-type: none"> ▪ Grants or payments to consumers or producers
Indirect subsidies		
Output	<ul style="list-style-type: none"> ▪ Deficiency payments ▪ Sales premiums ▪ Preferential sales tax and VAT rates ▪ Tax credits, exemptions and allowances 	<ul style="list-style-type: none"> ▪ Domestic market price support ▪ Price regulation and quantity controls ▪ Government procurement policies ▪ Government brokered sales contracts ▪ Trade-oriented support ▪ Border protection (import and tariffs, quantitative import restrictions, non-tariff barriers)
Raw material and intermediate product inputs	<ul style="list-style-type: none"> ▪ Support to material and energy input (e.g. energy, fertilizers, irrigation water) ▪ Provision of infrastructure and complementary services below long run marginal cost 	<ul style="list-style-type: none"> ▪ Materials and services in kind or below long run marginal cost
Capital and labour input or income or profit earnings	<ul style="list-style-type: none"> ▪ Support to non-material and non-energy inputs (e.g. labour and capital equipment) ▪ Accelerated depreciation allowances ▪ Income tax concessions ▪ Concessional credit, preferential loans, loan or liability guarantees ▪ Debt write-off ▪ Provision of infrastructure and services at less than long run marginal cost ▪ Support to research and development (e.g. on production techniques, safety and environmental protection) or government research and development expenditures 	<ul style="list-style-type: none"> ▪ Concessional credit ▪ Royalty concessions ▪ Low rate of return requirements ▪ Exemptions from certain environmental regulation

Source: Earth Council 1997, OECD 1998

In this paper, we restrict our review to subsidies defined as above. We do not address implicit or indirect subsidies that accrue when external costs^b are not taken into account in the production and consumption decisions of producers and consumers respectively.

WTO and subsidies: some more definitional issues covered (WTO, 2001)

Within the WTO, the Subsidies and Countervailing Measures (SCM) and the Agreement on Agriculture (AoA) are the two main agreements that contain disciplines or provisions pertaining to subsidies.

Within the SCM, a subsidy is deemed to exist if:

- (a)(1) there is a financial contribution by a government or any public body within the territory of a Member (referred to in this Agreement as "government"), i.e. where: (i) a government practice involves a direct transfer of funds (e.g. grants, loans, and equity infusion), potential direct transfers of funds or liabilities (e.g. loan guarantees); (ii) government revenue that is otherwise due is foregone or not collected (e.g. fiscal incentives such as tax credits) ^c; (iii) a government provides goods or services other than general infrastructure, or purchases goods; (iv) a government makes payments to a funding mechanism, or entrusts or directs a private body to carry out one or more of the type of functions illustrated in (i) to (iii) above which would normally be vested in the government and the practice, in no real sense, differs from practices normally followed by governments;
- or
- (a)(2) there is any form of income or price support in the sense of Article XVI of GATT 1994;
- and
- (b) a benefit is thereby conferred.

In its present form, the SCM also introduces the concept of a “specific” subsidy – that is, a subsidy available only to an enterprise, industry, group of enterprises, or a group of industry of a country (or a state etc.) that gives the subsidy. These may well be both domestic or export subsidies.

The SCM not only regulates the actions that countries can take to counter the effects of subsidies, but also permits the dispute settlement procedure of the WTO to seek withdrawal of the subsidy and/or removal of its adverse effects.

The SCM agreement defines three categories of subsidies: prohibited, actionable and non-actionable, and cover both agricultural goods and industrial products, except when the subsidies conform to the AoA.

The AoA distinguishes between support measures that stimulate production and others that do not have any direct implications. Those domestic support measures that have production and trade implications have to be cut back. The cut back targets have been set at different levels for developed and developing countries: starting in 1995, the developed countries have agreed to reduce these figures by 20% over 6 years and developing countries by 13% over 10 years. The least developed countries do not have any subsidy reduction targets.

Under the AoA, measures with minimal trade implications can be used freely – and these are grouped under “green box” measures. They cover government services such as research, disease control, infrastructure and food security. They also include payments made directly to farmers that do not enhance production, namely direct income support towards restructuring of agriculture, and direct payments under regional and

^b External costs imply costs imposed by an activity of one agent that causes loss of welfare to another agent and this loss of welfare is uncompensated.

^c In accordance with the provisions of Article XVI of GATT 1994 (Note to Article XVI) and the provisions of Annexes I through III of this Agreement, the exemption of an exported product from duties or taxes borne by the like product when destined for domestic consumption, or the remission of such duties or taxes in amounts not in excess of those which have accrued, shall not be deemed to be a subsidy.

environmental assistance schemes. Also permissible are specific types of direct payments to farmers to limit production, called the “blue box” measures, some type of government assistance to encourage agricultural and rural development in developing countries etc.

Moreover, the AoA disallows export subsidies on agricultural products unless these subsidies are specified in a Member’s list of commitments. Even when they are listed, the agreement requires that Members reduce the amount of subsidy expenditure and quantities of exports that receive subsidies. The commitment targets are again relatively lax for the developing countries as compared to the developed ones – a cut back in value of 36% over 6 years for developed countries and 24% over 10 years for developing countries starting 1995, and reduction in subsidized quantities by 21% over 6 years and 14% over 10 years for the developed and developing countries respectively.

Impact of subsidies

A subsidy, by its very nature, involves a complex set of changes in economic resource allocations through its effects on costs and/ or prices. By altering production and consumption decisions, subsidies have diverse economic, social and environmental incidence. In fact, it is attainment of select economic, social and environmental goals that underlie the very rationale for subsidies/ support provision by the government. The quantification of costs and benefits of these individual effects, in terms of a common denominator, is often subjective and judgemental. This is especially true for the valuation of social and environmental costs and benefits, which are hard to assess through objective criterion (UNEP/ IEA, 2002).

The *economic impacts* largely manifest in one or more of the following ways (OECD, 1998):

First, the provision of subsidy support creates a financial or fiscal incidence entailing losses or gains through changed relative prices, production and consumption levels and incomes through the entire economy. Often enough, the spill over or the leakage effects cause the target sector to retain only a small part of the initial support. An economy-wide analysis of this nature also indicates implications (positive or negative) for employment, economic growth and incomes for the recipient sector and the economy as a whole. Other factors, namely other government policies as well as autonomous technical and economic changes also reinforce or countervail the effects of a specific subsidy measure.

Next, there is an implication for the government budget, which is a characteristic of the type of support measure. Some support measures – such as direct grants, infrastructure provision and tax concessions – are financed directly by the government, such that their removal has a positive and instantaneous impact on the government budget. The reduction/ removal of off-budget support also impacts the budget, albeit in the long run, as this works through enhancing the efficiency of resource use in the economy, and hence reducing budgetary deficits.

Finally, market price support measures and support to inputs may affect international trade and competitiveness. With support prices, the country implementing the support measure deliberately chooses to maintain domestic prices at levels higher than the world market clearing prices, usually through import restrictions. On the other hand, support towards use of certain inputs works through lowering of costs of downstream input-purchasing activities, thus providing them a competitive edge over other domestic and even international firms. Such support measures are usually justified on grounds of “infant industries”, such as producers of renewable energy equipment that can become viable only after attaining a certain scale of production and reduce external costs. However, protection from import competition may well be extended to mature, or declining industries. Support is also sometimes used to protect industries from adverse effects of high tax rates in a particular tax regime. This is implemented through tax exemptions and concessions. To the farming community, government provides support towards attainment of food security, protection against weather and fluctuations in world prices and preservation of rural society.

Subsidy concerns that mar economic efficiency relate to excessive production and consumption or reduced incentives for conservation and use, undermining producer's incentives to invest in new technology and infrastructure, drain on government finances, and, sometimes, rising import dependence and/ or reduced exportable surpluses.

The *social effects* of subsidies provision include changes in real income distribution and changes in prices and access to specific goods and services.

The distributional effects originate from changed relative prices and accompanied changes in economic and environmental conditions. Changes in income distribution emanate in the form of changes in remuneration to different categories of labour, capital owners or other factor inputs or in the form of one income group spending a larger proportion of their income in paying for support for another income group.

The access and affordability facilitated by market price support measures, for instance, enable consumers to pay artificially low prices for products. For instance, subsidies on modern cooking fuels such as kerosene, LPG (Liquid Petroleum Gas) and natural gas are commonly provided in developing countries and they are aimed at improving poor households' living conditions by making these fuels accessible and affordable, reducing indoor air pollution and drudgery of work for women and children. On the other hand, removal of support on "necessary" goods namely food, energy for cooking and heating etc, may have regressive distributional implications, implying that lower income households pay a larger fraction of their income to pay for support made available to higher income households. The examination of winners and losers from a subsidy regime is a pre-requisite to a full-scale assessment of potential welfare effects.

The *environmental implications* basically stem from three linkages in the economic system (OECD 1998). Linkage 1 is the relationship between the support measure and the volume and composition of output that the economy produces; the level and mix of output are, however, also affected by other technological and economic developments that are exogenous to the changes induced by these support measures. Linkage 2 is the impact of changes in output on actual pollution and waste levels. Finally, Linkage 3 takes into account the assimilative capacity of environment that is affected to assess the final damage done to the environment.

The final impact for a sector or for the macro economy may be positive or negative depending on if the subsidy or support measure encourages production and consumption of polluting or cleaner good/ service. For example, consumer subsidies that lower the price paid for those fuels or the cost of using them, imply that more of these get used, and these can translate into higher airborne emissions of noxious gases. Subsidies on power to agriculture could lead to excessive pumping of underground water and depletion of aquifers. Contrasting with this is the fact that while a subsidy on one form of energy might increase emissions from that particular energy source, the overall impact on the environment may not be always negative. For instance, encouraging the use of oil products (kerosene and LPG) can reduce deforestation in developing countries as poor rural households switch from firewood. This is a primary underlying reason for maintaining subsidies on these fuels in many instances.

Additionally, public funding of research and development on cleaner technologies or subsidized capital for encouraging investment in renewable energy equipment may help to reduce pollution depending on how the subsidies are structured and the prevailing market conditions (UNEP/IEA 2002).

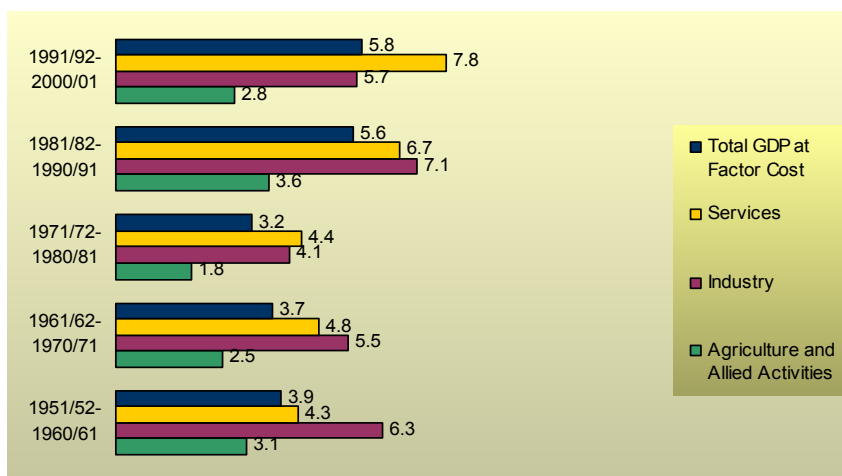
The following section provides the economic context within which the subsidies issues have to be discussed for India. It contains a snapshot of the Indian economic scene, with some focus on trade policy and associated patterns.

3. An overview of India's economy

The economic reforms of the 1990s led India to post its highest decadal GDP growth rate in the past 50 years since gaining independence in the 1950s (Figure 1). In many ways the year 1991/92, when India faced its severest economic crisis and launched a comprehensive package of economic reforms, is considered a watershed year by most economic and political analysts. It ushered in a break from the past policies of a planned economy, state dominance in economic affairs, a host of bottlenecks, restrictions and controls. There was renewed and sustained effort to open up the economy, reduce controls, and vacate space for the private sector to flourish. Emphasis was on opening borders—albeit at times in fits-and-starts – to international competition, investment and an increasing adoption of the market forces.

Notwithstanding the East Asian economic crisis, slower industrial growth rates and substantial hikes in international crude oil prices over the period beginning 1997 and lasting for around 2-3 years, the Indian economy depicted remarkable resilience. On an average, India recorded a higher economic growth of about 7.8% in the latter half of the 1990s as compared to the lower growth rates during the earlier period.

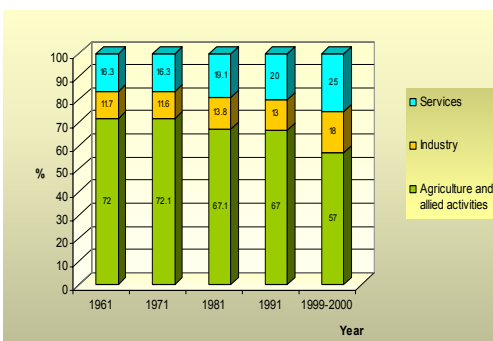
Figure 1 Percentage increase in decadal growth rate of GDP



Source: Economic Survey 2002/03 and Central Statistical Organization Government of India (GOI)

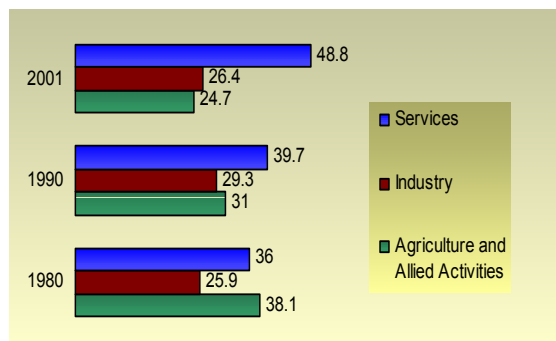
At the time of independence the Indian economic structure was primarily agrarian in character. Over the decades this structure has changed with services now contributing approximately 50% of GDP, with industry and agriculture at approximately 25% each in 2001. However, there is still a very high dependency of the economy on agriculture, and this is compounded by the fact that Indian agriculture is still not insulated from the vagaries of nature. Hence, the agriculture growth rate has shown alarming fluctuations over the years; consecutively impacting the overall growth rate of the economy. In addition, even though the Indian agriculture sector contributes as high as a quarter to India's GDP, it employs a disproportionately high population of 57% as in 1999/00. This figure further underscores the dependency of the Indian economy on its agriculture sector (see Figure 2 & 3).

Figure 2: Movement in sectoral share of GDP%



Source: Economic Survey 2002/03, GOI

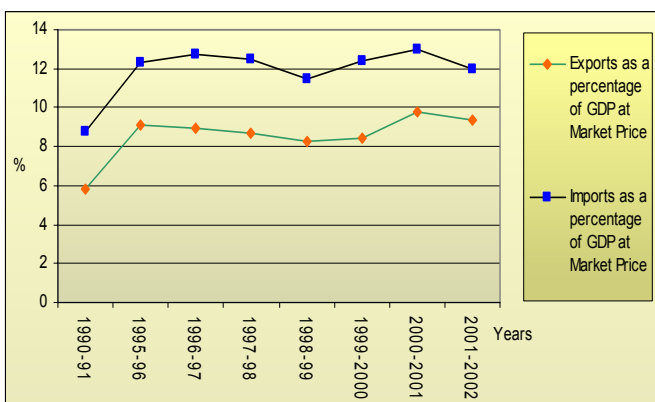
Figure 3: Percentage distribution of workers by occupation



Source: Economic Survey 2002/03, GOI

The opening up of the economy and the de-emphasis on import substitution on the one hand, and policies geared towards providing an impetus to exports on the other, is reflected in the steady increase in India's exports in the 1990s. The buoyant economy has meant that the demand for imports [particularly POL (Petroleum & Oil)] has also shown a concomitant increase. In 2001/02, exports as a percentage of GDP^d increased to 9.4% from 5.8% in 1991. Imports have also shown a similar trend increasing from 8.8% to 12% in the same period (Figure 4).

Figure 4: Exports and imports as a percentage of GDP



Source: Economic Survey 2002/03, GOI

The key export items for India (Economic survey, 2002/2003, GOI) in 2001/02, in terms of percentage share of total exports are – textiles and ready made garments (28%), gems and jewellery (16.7%), engineering goods (15.9%), chemical & related products (13.8%), crude and petroleum related products (4.8%), leather and manufacturers (4.4%), cereals (2.2%) among others. The key imports in 2001/02 were – POL (27.2%), pearls, precious and semi-precious stones, gold and silver (17.8%), capital goods (11.4%), electronic goods (7.4%), chemicals (5.4%) among others. India's main trading partners are USA, UK, Belgium, Germany, Japan, UAE, China, Switzerland, with an increasing proportion of trade from other developing countries in Asia and Africa.

Detailed expositions of some of the sectors, which have high domestic or export subsidy levels, are provided in the sections on – agriculture and output-input subsidies, energy, and select industries.

^d Refers to GDP at market price.

4. Budgetary subsidies in India

Prevailing subsidies issues

Subsidies have been perceived as a powerful welfare-augmenting instrument of fiscal policy in India. In the Indian context, in particular, these are justified on the basis of equity considerations as well as in meeting the minimum needs of the poor or underprivileged or even for protecting/ encouraging growth of nascent industries.

As it stands, in India, subsidies have proliferated to a large number of diverse sectors and economic activities, like electricity, fertilizer, irrigation, infrastructure etc. Comprehensive attempts towards analyses of subsidies in India have been limited and sporadic. While the Government of India publishes the annual estimates of explicit subsidies in a few sectors like food, fertilizers, exports, railways etc, these are often under-estimated and lack full coverage by leaving out the subsidy provision by the state governments.

Over the years there has been propagation of subsidies, with accompanying concern over their actual magnitude, impact and level of targeting. Due to this growing concern, the Budget Speech for 1996/97 promised: “to place before the house a discussion paper on subsidies. This paper would list all the subsidies, visible and hidden, so that there can be an informed debate and a consensus on the overall level of subsidies as a percentage of GDP and their appropriate targeting”. Hence, in May 1997, the Ministry of Finance, Government of India, brought out a discussion paper on Government Subsidies (henceforth Discussion Paper, 1997), which generated a countrywide debate on subsidies. There were concerns raised on the methodology of calculation of these subsidies but this, in no way, underemphasized the fact that subsidies had grown too large in volume, were not meeting the desired objectives and were having a negative impact on the economy (see Vaidyanathan, 1997). There was also a debate on the targeting of subsidies and what should be the criterion of categorization (i.e. merit which deserved to be continued, and non-merit where a progressive reduction in subsidies is required).

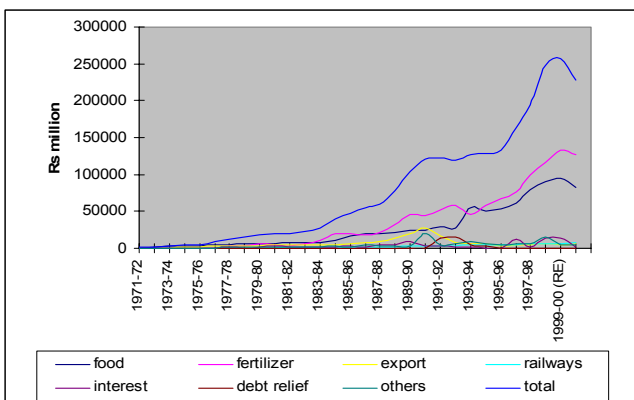
A few studies—Mundle and Rao (1992), Tiwari (1996), Discussion Paper 1997 and later its updated version (Srivastava and Sen, 1997)—have provided somewhat comprehensive estimate for both central and state level budgetary subsidies for India for the year 1994/95. However, with the exception of central government subsidy estimates (see Srivastava and Nath, 2001 that has updated these to 1995/96 and 1996/97, from the earlier Discussion Paper (1997) estimates for 1994/95), the others have not been updated till date. Notably, with focus on fiscal incidence and issues of targeting, the calculation of subsidies level in all of these studies relies on comparison of the domestic cost of supply with the average realisation from the provision of the good or service. Hence, the domestic supply costs constitute the benchmark.

Historical trend in central budgetary subsidies^e

The estimates of budgetary support provided by the Central Government are documented explicitly in the annual budgets. As can be seen, the level of subsidies has been growing over the years (Figure 5). The aggregate subsidies bill increased from Rs. 1,400 million in 1971/72 to Rs 228,000 million in 2000/01. Among these, food and fertilizer subsidies have shown the highest rate of increase, thus raising their share in total subsidies over the years; it stood as high as 90% in 2000/01. Post the 1990s, however, the share of export subsidies has depicted a steady decline (Figure 6).

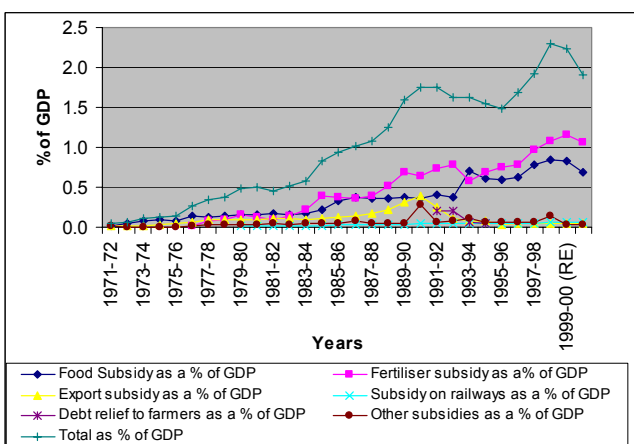
^e See Annexure 1 for detailed table.

Figure 5: Level of explicit budget subsidies – 1971/72 to 00/01



Source: Srivastava and Rao (2002), Economic Survey – various issues.

Figure 6: Food, fertilizer and exports as % of total subsidies–1971/72 to 00/01

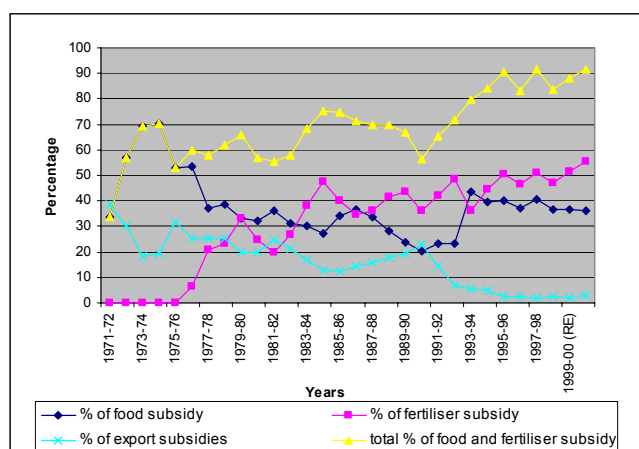


Source: Srivastava and Rao (2002), Economic Survey – various issues

The percentage of subsidies to overall GDP^f has also shown a continuous increase. In 1971/72, the budget subsidies were 0.047% of the GDP. This increased continuously over the last two decades, reaching a level of a little over 2% in the recent years. Commensurate with the aggregate figures, there has been a steady growth in the share of food and fertilizer subsidies as a percentage of overall GDP. In 2000/01, these constituted 1.74% of the GDP (Figure 7).

^f GDP is taken as the GDP at factor cost at 1993/94 prices for the rest of this section.

Figure 7: Subsidies as a % of GDP - 1971/72 to 00/01



Source: Srivastava and Rao (2002), Economic Survey – various issues

There have been sporadic efforts by the government to prune down fertilizer subsidies, but these faced stiff resistance and frequently had to be rolled back. Likewise, attempts at rationalising food subsidies also did not meet with much success, largely due to inherent inefficiencies and rigidities built in the system. There have been reforms introduced in this sector to improve the efficiency and targeting, in particular reforms in the Public Distribution System (PDS), but no sizable reduction in the volume of food subsidies has been achieved thus far.

A discussion on subsidies estimates follows.

Subsidy estimates

The subsidy estimates of the various studies are fairly comparable with each other. Notably, the OECD work on subsidies (OECD, 1998) and the prescribed methodology by the Earth Council (1997), for estimation of on- and off-budget subsidies lists four main categories:

1. Budgetary subsidies, both direct expenditure and tax subsidies.
2. Public provision of goods and services below cost.
3. Capital cost subsidies.
4. Policies that creates transfers through the market mechanism.

The methodology used by the Discussion Paper 1997 as well as the subsequent studies broadly fits the various heads mentioned above and could, thus, be used for an international comparison for the level of subsidies in various countries. The specific estimates of central and state level estimates of budgetary subsidies ensue.

Estimates of central budgetary subsidies

The total estimate of subsidies has been increasing continuously over the years. It was as high as Rs 477,810 million in 1996/97. Table 2 shows the level of social, economic and total subsidies on the basis of various available studies. The estimates are available only for those years where studies have been undertaken.

Table 2: Central budgetary subsidies (Rs. Million)

Year	1987/88	1992/93	1994/95	1995/96	1996/97
Service					
Social	23000	40140	51020	70660	89530
Economic	137650	328150	379870	358750	388270
Total	160650	368290	430890	429410	477810

Source: Srivastava and Nath (2001), Srivastava and Sen (1997), Tiwari (1996) and Mundle and Rao (1991)

The main sectors in the budget where subsidies are concentrated include education, agriculture and allied activities, industries, power and transport. Interestingly, the subsidies provided on economic services are much higher than those for social services, indicating their inequitable targeting subsidies.

Estimates of budgetary subsidies by the states

These estimates are limited only to the year 1994/95 (Srivastava and Sen, 1997), as no other recent study provides an estimate for the states in India. Hence, on the basis of the figures an analysis over time is not possible and only a snapshot can be attempted.

The subsidies provided by the state governments have been calculated for 15 major states of India in the Discussion Paper (1997). The estimates are given below in Table 3.

Table 3: Subsidies aggregated for 15 major states in India (Rs million)

Services	1994-95
Social	466479.4
Economic	471065.0
Total	937544.4

Source: Srivastava and Sen, 1997

At the state level, subsidies to the social and economic services are broadly the same. This is different from the central subsidy figures and indicates that there is more equitable targeting of subsidies in the states on social and economic services.

As one would expect, a feature of state-level subsidies in India is that the lowest per capita subsidy is provided by the poorest states and the highest per capita subsidies by the richer states. Hence, subject to certain exceptions there is a clear tendency for per capita subsidies to rise as per capita income rises. This is a clear indication of the regressive nature of subsidies. The main sectors in which the state subsidies are concentrated are education, irrigation, health and family welfare, agriculture, roads and bridges.

Total (central + state) subsidy estimates

An all-India estimate for subsidies can be obtained by putting together subsidy estimates for the centre and states. Since the state-level estimates are limited only to 1994/95, hence the all India estimates are also limited to a snapshot for the year 1994/95.

The all-India estimate of subsidies amounts to Rs 1,368,440 million in 1994/95, constituting 16.3% of the GDP (Table 4).

Table 4: All-India estimates of subsidies (central+ state level)(1994/95) Rs. million

Service	All India	Centre	State	GDP	Share in all India subsidies	
					Centre	State
Social services	517504.2	51024.6	444359.9	-	98.6	858.7
Economic services	850930.7	379865.7	471065.0	-	446.4	553.6
	1368434.			838031		
Total	9	430890.3	937544.6	0	314.9	685.1

Source: Srivastava DK, Tapas K Sen (1997)

The state level subsidies (69%) constituting about two-third of the all-India level of subsidies. Hence, it is imperative that the estimates of state level subsidies are calculated for various years to get a complete all India picture. Moreover, the social sector subsidies amount to 38% and economic sector subsidies account to 62% of the total level of subsidies. This high percentage for economic services highlights the inadequate and excessive targeting of subsidies in India. It also indicates the scope for massive reduction and retargeting of subsidy levels in India.

Interestingly, the states have a higher share than the centre in social and economic services. In social services the states have a much higher share of 90% as compared to the centre. The share of economic services is relatively equitable between the two—with the share for the states at 55% as compared to the 45% for the centre. Hence, while at an aggregate level the states' provide a much higher magnitude of subsidies, they are relatively better focused than the centre as the latter are mainly concentrated in the economic services sector.

A striking feature that emerges from the above analysis is the paucity of updated and comprehensive data on subsidy levels in India. Relying on explicit budget estimates to assess the level of subsidies in India would lead to a gross under-estimation. Until a comprehensive estimate of all India subsidies at the centre, state and sector specific levels, along with an economic, social and environmental impact assessment is undertaken, the complete picture on subsidy levels in India would be missing.

5. Agricultural input subsidies

Agriculture in the Indian economy

Growth of agriculture sector is a pre-requisite to the economic and social development of the Indian economy. Despite rapid rates of growth of industrial and services sectors, agriculture and allied activities continue to be a large contributor to GDP, accounting for as much as 26% in 2001/02 and providing employment to over two thirds of the total workforce, contributing to a little over 30% of value of exports and a significant provider of raw material to a range of industries across the economy (Economic Survey 2002/03). It has close ties with rural livelihoods and food security, given that rural population constitutes 75% of India's aggregate population and around 80% of its poor. Needless to say, the performance of agriculture has a significant bearing on poverty eradication in the country.

The sector has taken remarkable strides since India's independence in 1947. Annual growth rate of about 2.7% for all crops achieved during 1949 to 1995 was considerably higher than the insignificant growth of 0.3% per annum registered during the first half of the century (Ninth Five Year Plan, 1997-2002). Accordingly, food grain production has grown from 50.8 million tonnes in 1950/51 to about 212.0 million tonnes in 2001/02 (Economic Survey 2002/03). The virtual elimination of food imports emerged in the 1960s is a major feat of Indian agriculture. The growth of agriculture post 1947 owes much to conscious and proactive government policy to promote agricultural productivity and overall development. These could be

largely ascribed to measures such as massive public investments in public irrigation and rural electrification, development of research and credit networks, guaranteed support prices for outputs and subsidized inputs.

Critical subsidy-related issues

In striving to achieve food security, the basic principles of rational pricing and sustainable management of natural resources have remained neglected in India. As Vaidyanathan (2000) points out, the magnitude of un-recovered costs on subsidized inputs has been rising at a much faster rate than public investment in the sector. In 1994/95, the total un-recovered costs on account of water, fertilizers and power for agriculture is estimated at a staggering Rs.300,000 million as against total public sector plan outlay on agriculture and rural development (including special area programmes) of Rs. 216,000 million. This is both financially unsustainable and environmentally degrading, raising long run costs of production and contributing to loss of land productivity, pollution of water, and depletion of underground aquifers (Datt and Mehra 2000).

However, on the other hand, there are several related issues and dimensions pertaining to subsidies in the agriculture sector that provide the rationale for their provision. Notably, in India, only a fraction of the actual subsidies reach the farmer. As will be discussed later, a large proportion accrues to the industry supplying the basic inputs or to intermediaries and traders constituting the supply chain. Only a holistic analysis of these aspects would lead to a complete understanding of impacts of subsidies in this sector. We begin with the analysis of irrigation subsidies.

Irrigation subsidies

An important concern in agriculture relates to subsidies on irrigation, which have resulted in overuse of water resources as well as place financial constraints on new investment in agriculture. Irrigation is a state subject as per the Indian Constitution, implying that the responsibility of investment, other expenditures and the recovery from irrigation rests primarily with the state governments.

The irrigation scenario

The average annual public investment in the irrigation sector (that includes major, medium and minor irrigation projects along with command area development) has been estimated at Rs 2,313,870 million (at constant 1996/97 prices) over the period 1950/51 to 1996/97. The recovery of these costs has been far less than the costs incurred, often making further investments in agriculture unsustainable. An estimate of central and state government finances for 1997/98 shows that revenue generated from payments from surface irrigation covered a little over 7% of the revenue expenditure of these schemes (Mehra, Mukherjee and Datt, 2000).

Besides investment, government has been subsidising water supply by not charging fully for the service. The canal irrigation rates are levied on the area irrigated, and differ across states and projects, as well as by crops and seasons. The average rates for irrigation water in most States have been rather low, putting the financial state of the system in a precarious position. Table 5 shows the overall and crop-specific canal water rates, the marginal benefits thereof (in terms of incremental yield), and the working expenses. As is clear from the data, almost all the states, with the exception of the seven in the northeast, have been imposing a charge for canal water, either directly or indirectly. Moreover, canal water rates have not been revised for over two decades in some states, imposing a heavy burden on the state's finances.

Table 5: Canal water rates for irrigation in major states of India

State	Range Rs/ha	Crop specific rates Rs/ha			Water benefits Rs/ha	Gross receipts per ha			Year rates last revised
		Pad dy	Wh eat	Sugarc ane		Rs	As % of bene fits	As % of working expenses	
Andhra Pradesh	99-222	222	n.a.	370	4407	27	0.6	1.1	1986
Bihar	30-158	89	n.a.	158	714	33	4.6	12.1	1983
Gujarat	40-830	110	110	830	3639	13 9	3.8	5.7	1981
Haryana	17-99	74	61	99	3169	70	2.2	16.6	1975
Karnataka	37-556	99	n.a.	556	4528	58	1.3	10.3	1985
Maharashtra	65-1000	n.a.	n.a.	750	1735	90	5.2	35.1	1989
Madhya Pradesh	15-297	59	76	n.a.	5812	14 0	2.4	3.2	1990
Orissa	6-185	40	n.a.	n.a.	1770	66	3.7	46.2	1981
Punjab	14-81	49	29	n.a.	3370	53	1.6	25.3	1974
Rajasthan	20-143	n.a.	74	n.a.	2405	93	3.9	9.7	1982
Tamil Nadu	6-65	49	n.a.	62	4364	9	0.2	2.0	1962
Uttar Pradesh	7-327	143	143	237	1555	11 1	7.1	10.0	1983
West Bengal	74-593	125	n.a.	n.a.	2457	7	0.3	3.6	1977

^a calculated as the incremental yield from irrigated lands compared to unirrigated lands.

Source. GOI 1992 and CWC 1990, 1991, 1995. As cited in Saleth M. 1997

As for the charges for groundwater for irrigation, the basis varies depending upon whether these pertain to state and public tubewells or reflect the charges prevalent in the private water markets. As for the former, the underlying principle is the same as charges for canal water, that is, the charge must cover the costs of operation and maintenance. On the other hand, the charges for water from private wells are set through negotiations between buyers and sellers and are generally reflective of factors such as water availability, cropping patterns, well capacity and type of pumpset (diesel or electric). Charges for groundwater supply are usually set by the hour and sometimes on a seasonal basis. By far, the groundwater rates are the lowest in the states of Andhra Pradesh, Tamil Nadu and Uttar Pradesh ranging between Rs 3 and Rs 6 per hour. They are the highest in Gujarat, at around Rs 25-45 per hour, due to less regulated and more competitive water markets there. As is discussed earlier, the price of electricity influences the attractiveness of extracting and selling groundwater.

Aggregate subsidy provision

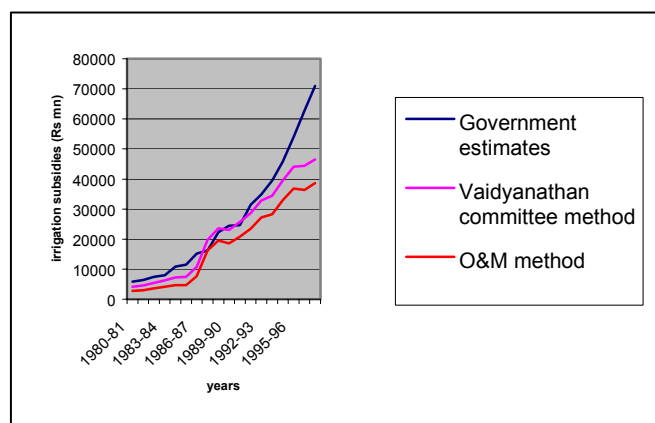
The government does not state the magnitude of subsidies on public irrigation explicitly. The levels have to be extracted from government data sources and there are various methods of estimating these.

The government estimates, commonly calculated from the national account statistics, broadly define irrigation subsidies as the difference between cost of supplying water for irrigation and the revenues received as

payments from the users of irrigation water. This methodology presumes that the loss of the irrigation department is on the account of supplying water at concessional rates. Subsidy, under this approach, is calculated as the “imputed charge on irrigation” and deducting the consumption of fixed capital and depreciation of the government departmental enterprise in agriculture, namely the irrigation department. However, these estimates suffer from various drawbacks regarding the methodology used and leaving out important components such as lumpy capital expenditures, interest on subsidized loans from the central government, depreciation of irrigation assets etc.

Two other approaches in calculating irrigation subsidies, apart from the government estimates, have been presented in the study by Gulati & Narayanan (2003). The first approach derives from Vaidyanathan Committee Report (Government of India, 1992) and the other is O&M (operations and maintenance) approach used by the authors themselves. The Vaidyanathan Committee (Government of India, 1992) on pricing of canal irrigation water had suggested that the irrigation charge should cover all the O&M expenses and 1% of the cumulative capital expenditures (in historical prices). The other takes only the O&M costs as the benchmark and derives subsidies as the difference between the O&M expenses and the gross receipts.

Figure 8: Irrigation subsidies: major, medium and minor irrigation, various estimates (Rs million)



Source: Gulati & Narayanan 2003

The figure above indicates that although the estimates differ considerably, they give a common picture – the continuous increase in irrigations subsidies over the years.

Economic impacts

In none of the Indian states do the canal water rate have a direct link with the cost of producing and supplying the resource, and in fact even much less to its scarcity value. While land productivity and crop prices have shown an increase since the beginning of the green revolution in the 1960s (statistics show that these have nearly doubled), and the cost of constructing new irrigation projects has experienced a 20-fold rise, water rates continue to remain low and outdated (Saleth 1997).

At the aggregate level, taking the allocation of subsidies across sectors (in the non-merit category as defined in Srivastava and Sen (1997)) it is seen that irrigation accounts for the highest share at 23.84% in 1993/94, amounting to Rs 1,24,207 million. This has resulted in accumulation of operation losses, adversely impacting the operating efficiencies of irrigation systems on account of lack of adequate maintenance of canal and drainage works.

The signs of stagnation and slow down in agriculture investment are increasingly coming to fore. Investment in agriculture has remained almost stagnant during the 1980s. This is in sharp contrast to the 1960s and 70s

when the gross fixed capital formation (GFCF) in agriculture grew at the rate of 6.63% in the 1970s as compared to the 80s when it recorded stagnant growth. This stagnation in the gross fixed capital formation had continued even during the 1990s. There was only marginal improvement in the overall GFCF from Rs.11.20 billion in 1991 to Rs.11.70 billion in 1993/94. The main reason for the stagnation in the public sector investment is due to the high growth in input subsidies in the agriculture sector. . Given that there has been an almost 1:1 correspondence between foodgrains production and gross irrigated area, any slackness or slowdown in developing the irrigation potential will adversely affect the growth of crop production.

Environmental and resource use impacts

The key apprehension is that water charges in India are often very low and encourage wasteful and inefficient use of the scarce resource.

Agriculture, with two-thirds of production dependent on irrigation and accounting for 83% of consumptive water use, has had an overriding bearing on the sustainability of the resource. Rapid rural electrification along with subsidized power to agriculture has led to high dependence on underground water sources. The overuse of groundwater, especially in selected districts, is emerging as a grave concern in certain blocks in the States of Gujarat, Punjab, Haryana and Rajasthan. Overuse of groundwater reserves is evident from the progressive lowering of water tables, an increase in the proportion of dry wells and saline water intrusion into fresh water aquifers. In Gujarat, the annual rate of decline of the water table has, on an average, increased from 1 metre per year till 1970 to 2 metres per year since. For Punjab, the annual depletion estimates vary from 1.07 metres per year to something like 14 cms depending on the methodology and time periods covered (Chopra and Bathla 1997).

Inefficient use of surface water is also significant; the average water use efficiency in the existing irrigation projects is estimated at only about 40%. According to one study, (Veeraiah and Madankumar, 1994 as cited in Rao, Dhawan and Gulati, 1999), as much as 44% of the water entering upper Ganges canal, was lost in distributaries and in village water courses. Of the remaining 56% actually entering the field, the farmer wasted another 27% in excessive irrigation and only about 27% was actually consumed by crops. Compared to this, about 60-70% of water diverted in large surface systems is available for plant use in the advanced systems of the west (Repetto, 1986). Injudicious use of canal and ground water along with neglect of drainage results in water logging and salinity. It is estimated that about a fourth of the total canal command area is seriously affected by water logging and salinity (Mudrakartha, 1999). Misuse of this scale can be attributed in no small measure to the distorted pricing structure that provides no incentives for conservation.

Equity impacts

Under pricing of water—both surface and ground water (through subsidized power)—has also resulted in glaring interpersonal and spatial inequalities in access to the resource, not to mention intergenerational inequity implied by the diminishing reserves. In the case of surface water, under-pricing has caused increasing appropriation of water by farmers located in the upper or head reaches, leaving those at the tail end of the distribution system with sparse supplies. This factor is also believed to be partly responsible for the effective command area becoming smaller than originally envisaged, besides considerably lowering productivity per unit of water used and increasing the use of tube wells in the tail ends with a consequent spurt in groundwater extraction. In 1997/98 only 26% of the villages had access to government canal irrigation and within this also considerable, intra inequalities exist between the head and tail-enders of the canal.

In the case of groundwater, interpersonal inequalities are even more obvious. Resourceful farmers, owning land and having better access to credit, are in a better position to tap groundwater at subsidized rates and sell it at higher rates to poorer groups. For instance, it is noted (Pant 1991, cited in Rao, Dhawan, and Gulati) that prevailing rates in most cases in Eastern India are much higher than the costs of extraction, especially when water is sold by the big farmers to the economically and socially disadvantaged sections of farmers.

Reforms in irrigation

In an environment of scarcity of water, land and financial resources, time and again the need to revise charges and enhance user participation in the management of resources has been expressed.

The irrigation reforms will have to be a balanced set, encompassing rationalized canal water pricing, institutional reforms, involvement and integration of farmers to increase the efficiency, quality and scale of the irrigation services.

Power subsidies to agriculture sector

Overview of power pricing for agriculture

Providing cheap power to the agricultural sector for the purpose of irrigation was a policy in line with promoting green revolution in the country. Though the intention was justified, no prudence was shown in the way it was implemented and, of late, it has become a subject of public debate.

Power subsidies constitute one of the largest shares of input subsidies to Indian agriculture. These have increased manifold over the years. In 1980/81 these were Rs.3.68 billion, which increased by more than 78 times in 2000/01, to Rs 288 billion at current prices. The share of agricultural sector in electricity consumption in India has increased from 3.9% in 1950 to 7.1% in 1965/66 to almost 32% in recent years. This increasing share has not meant a corresponding growth in the share in revenues from the agricultural sector to the State Electricity Boards (SEBs); this being a mere 3.36% in 1999/00. The agricultural tariffs are pitifully low, even in the light of increasing cost of supply of power; and in a few Indian states like Tamil Nadu and Punjab they are provided free of cost to the farmers. In 1999/00 the average agricultural tariffs were only 8% of the average industrial and commercial tariffs. According to many experts, it is this subsidization of agriculture power consumption, which is responsible for the financial mess that the SEBs are presently in.

However, as will be evident from the discussion below, high agricultural subsidies do not necessarily imply that all of it reaches the farmer. Operating inefficiencies in generation, transmission and distribution activities and inaccuracies in measurement of agricultural consumption due to diversion for non-agricultural use, pilferage and theft etc. constitute leakages in the subsidy provision chain. Hence, the official estimates of agricultural subsidies are often stated to be an overestimate of the actual levels.

Social impact

Farmers are charged flat rates on the basis of the horsepower of pumpsets rather than the actual amount of power consumed. Under this method of pricing, the marginal cost of one additional unit of electricity is zero to the farmers. It is also noted that it is typically the large farmers who own pump sets and for them the average price of electricity decreases with consumption for electricity. From equity perspective, notably, the crops that need higher input of water and the better-off class of farmers corner a high proportion of agricultural subsidies.

This is precisely the point that emerges from a recent World Bank (2002) study in the states of Andhra Pradesh and Haryana. The study exposes the fact that electricity subsidies do not reach the small and marginal farmers since most of them lack access to electricity and rely heavily on rainfall for irrigation. In Haryana, the report cites, farmers owning electric pumps have net incomes a third higher than the average for the state's farmers and four times those of the farmers relying exclusively on rain fed cultivation. Thus subsidies have clearly failed to reach the intended beneficiaries.

In the state of Karnataka, similar evidences of inequitable distribution of agricultural power subsidies emerge (Howes & Murgai, 2003). Household survey data from the National Sample Survey (NSS), 54th and 55th

rounds are used to relate irrigation status and poverty in order to estimate the incidence of agricultural power subsidies in rural Karnataka. The survey clearly delineated the fact that direct benefits of electricity subsidies accrue mainly to large and medium farmers. On the aggregate it was found that 80% of the benefits of subsidized electricity accrue to farmers who own more than 2 hectares and have access to irrigation. They constitute only 11% of the total rural population. Therefore, the subsidy provided to farmers who own pumpsets turned out to be highly regressive in terms of its impact.

Environmental impact

Subsidized power to the farmers has led to a change in cropping pattern (Rao, 1997). Farmers have switched over from traditional wheat to water-intensive paddy. Un-metered power supply has promoted excess use of water resource, thereby affecting the water table. This supply of power at very low tariffs and inappropriate pricing mechanism (e.g. flat rate) and in some cases free of cost has led to their over-usage, in particular in the extraction of groundwater resources. In Punjab, several blocks suffer from groundwater use that is more than 85% of the utilizable recharge.

Reforming power and irrigation prices: an illustration (Datt & Mehra, 2000)

A simple mathematical exercise was done at TERI to assess the effect of pricing reforms in the agricultural power and canal irrigation charges on the level of subsidy reduction in the Gujarat, Punjab and Uttar Pradesh. Alternative scenarios of lowering of subsidies (over and above the corrected tariffs) were considered, taking into account two alternative cases of—elastic and inelastic—demand responses to price changes. In case of irrigation, an All-India aggregated scenario has also been worked out.

The reforms considered are by no means dramatic revisions but are linked to the ongoing process of policy changes that are discussed above. For example, the maximum price revision merely refers to prices that would cover at least the operation and maintenance costs and at the most a minuscule fraction of capital costs of the service. These also reflect the underlying notion of farmers' willingness to pay "more" for power, provided the supply side inefficiencies are weeded out. In case of power consumption by agriculture, the reported sales data have been corrected for, based on connected load and average utilisation levels.

Revision of canal irrigation rates

At least three to four alternative scenarios of canal water price revision were considered. These comprise revision to recover 25%, 50%, and full recovery of the O&M costs of the irrigation systems, and an additional case of full recovery of O&M plus 1% of the capital costs, as per the suggestions of the Vaidyanathan Committee. Since the irrigated area under water intensive crops, namely sugarcane and rice, is more likely to be responsive to rising water prices, the analysis was restricted to only this fraction being elastic to change in water rates. On a broader spectrum, the lowering subsidy burden from reforms considered in canal water rates are modest, when compared with those for the power sector. For Gujarat, these range from around Rs 1,900 to over 2,200 million for a revision that would cover at 25% of the O&M costs to as high as over Rs 10,000 million in case all of O&M and 1% of interest on capital is charged.

The order of magnitude reduction for Punjab is lower, both on account of lower costs of supply and a higher rate of cost recovery. These ranged from somewhere around Rs 500 million to a little over Rs 4,100 million under the alternative scenarios. The results for Uttar Pradesh are similar to those for Gujarat.

Indicative results at the All India level show that a reduction of Rs 27,000 million to as high as Rs 100,000 million is feasible, for modest to high recovery of canal irrigation costs.

Power tariff reforms

In suggesting power tariff reforms four alternative cases are analysed. These refer to unit tariff revision from the prevailing to 50 paise, 75 paise, Re 1 and finally to full recovery of the O&M (including fuel) costs of power supply, as reported by the individual SEBs.

In the case of Gujarat, the analysis shows that a revision to just 50 paise/kWh brings down the level of subsidy by about Rs 2,500 million in case of inelastic demand to as much as Rs 3,750 million in case when demand is elastic to price change. In percent terms, this constitutes a reduction in the range of 9-13.5% of the subsidy in the base case. Understandably, the subsidy bill reduces much more, by Rs 5,000-7,250 million and Rs 7,500-over 10,000 million in case of further revision in the tariffs to 75 paise/kWh and Re 1/kWh respectively. These amount to as high as 18-26% and 27-38% reduction over the base case.

Similar order of magnitude reductions in subsidy in will accrue in case of Punjab and Uttar Pradesh as well. In case of Punjab the elastic case was not considered since, under the prevailing pricing regime in Punjab, electricity is supplied free to the agriculture sector, making it difficult to justify the farmers' response to any positive price level. A unit tariff revision to 50 paise, 75 paise and Rs 1 reduced the subsidy bill by Rs 2,160 million, Rs 3,240 million and Rs 4,320 million respectively for Punjab. In case of tariff revision to cover the full O&M costs, this reduction was estimated to be Rs 8,080 million for Punjab and Rs 3,635 million for Uttar Pradesh.

In order that the pricing reforms do not impose an undue financial burden on the farmer, the authors suggest a policy package that balances these price reforms with re-ploughing of the extra revenue that is generated (from reduced subsidies) into options that would benefit the cultivators, directly or indirectly. These include a range of technical and financing options that cover up-gradation of the T&D systems, incentives for encouraging more efficient irrigation systems such as drip and sprinkler irrigation, pump-set retrofitting, support and encouragement to WUA, to name a few. While the final choice of undertaking the price revisions rests with the policymakers, it is proposed that in the short to medium term (3-5 years) pricing reforms should be phased in so as to cover at least the O&M costs.

Fertilizer subsidies

Overview of fertilizer sector in India

India is the fourth largest consumer of fertilizer in the world and is experiencing a steady increase in its consumption over the years. In nutrient equivalent terms, the consumption of chemical fertilizers has increased from 5.5 million tonnes in 1980/81 to 17.36 million tonnes in 2001/02, amounting to per hectare fertilizer application level to 90.12 kg.

Level of subsidies

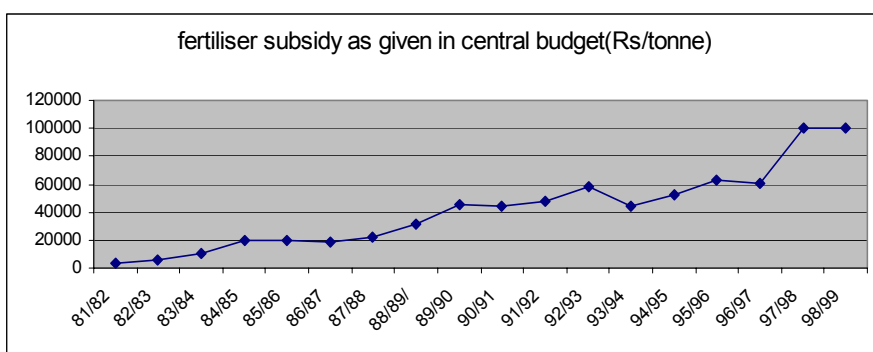
In India there are three main recipients of fertilizer subsidies—urea, di-ammonium phosphate (DAP) and muriate of potash (MOP). However, at present only urea is under the Retention Price Scheme (RPS) of the Central Government, which is the key scheme that guides the production and use of fertilizers. The main objective of the RSP was to insulate farmers from the rising trend in fertilizer prices, while ensuring adequate supplies of fertilizer to feed into the green revolution strategy for agricultural development in India. Simultaneously, the scheme also ensured a reasonable return on investment to the indigenous manufacturers using various feedstocks.

The total subsidies on fertilizer in India constitute flat rate concessions on imported and indigenous fertilizers on one hand, and those incurred on urea under the overall ambit of the RPS. At present, the average subsidy amounts to Rs 4100/tonne for urea, while the base rates of concessions have been fixed at Rs 3700/tonne

for indigenous DAP, Rs 1550/tonne for imported DAP and Rs 3150/tonne for MOP. The rate of concession on Single Super Phosphate (SSP) applicable from April 2001 is Rs 700/tonne.

Accordingly, in 2001/02, the level of fertilizer subsidies amounted to Rs. 128,080 million constituting around 1.01% of the GDP of India. Rising from a mere Rs 5050 million in 1980/81 the level of subsidies increased by over 25 times in nominal terms over this period. As a percentage of GDP, the subsidy provision rose from 0.26% in 1981/82 to 0.92% in 1990/91, prior to the onset of economic reforms. Thereafter, the share came down to 0.47% in 1996/97, on account of some price rationalisation. But in 1997/98 and 1998/99 the fertilizer bill shot up again in response to dismantling of concessional prices of naphtha and fuel oil/LSHS that form feedstock for fertilizer production (Gulati 1999a) raising it to 0.75% of GDP in 1999/2000 and nearly 1% now. Figure 9 below shows the increasing fertilizer subsidy as given in the central budget.

Figure 9: Fertilizer subsidy as given in the central budget



Subsidy implications for economy, environment and equity

It is important to understand and analyse the implications and effectiveness of the increasing fertilizer subsidy, both in terms of budgetary burden as well as in-terms of its effect on the environment and equity considerations.

The key concerns pertain to financial burden on the government, decontrol of prices of phosphatic and potassic fertilizer and the relatively lower price of nitrogenous fertilizer (vis-a-vis P & K) having tipped the scale in favour of increased consumption of N, thus the ratio of N-P-K that was 6.02:2.43:1 in 1990/91 having gone up to 10:2.9:1. This has had negative impact on crop productivity (Gulati, 1999a & 1999b) and environment,⁸ and distribution of gains— across farmers, fertilizer industry and consumers—from these subsidies. For this, it would be necessary to understand as to whom this subsidy is accruing to so as to aim at efficient targeting of the subsidy. Moreover, fertilizer subsidy is closely linked to considerations of food security; therefore, any attempt to reduce fertilizer subsidy may have immediate implications on food subsidy, unless food prices are increased. What is, therefore, needed is a holistic approach that enables efficient and equitable use of the fertilizer subsidy and can also lead to lower burden on the government exchequer.

To estimate the actual share of subsidy that falls in each category, Gulati (1999b) estimated the nominal protection coefficients (NPC) of fertilizers where, NPC is defined as the ratio of domestic price (urea) that the farmer pays to the price that he would have paid if there were free trade in fertilizers across the borders.

⁸ The main concern about fertilizers is the concentration of nitrogen (N) compounds in the environment. The use of nitrogenous fertilizers far exceeds the optimum 4:2:1 NPK ratio. It currently stands at 10:2.9:1. Between 1997/98 and 1998/99 alone, the consumption of N grew by 1.4 million tonnes (TERI 1999). Studies (see Handa 1997 cited in TERI, MoEF 1995) have shown that in some parts of the country, the nitrate content of dugwells is higher than the 100 mg/ litre limit laid down by the WHO.

The free trade price is approximated by the farm gate price of imported fertilizers. The difference between this price and the domestic price that the farmers pay is the farmer's share of the total fertilizer subsidy.

Similarly, for the fertilizer producers, the subsidy is the difference between price that they are getting under the administered price system and the price that they would have got under the free trade system. Under this conceptual framework, one can presume that in a free market situation the domestic prices of these fertilizers would have been equal to the import parity price level, although one has to recognize that the sudden entry of India into the world market may influence the price levels.

In India there are two main beneficiaries of fertilizer subsidies in India – farmers and the fertilizer industry. Hence, to see the actual impact of these subsidy levels in India it is important to ascertain what proportion of these subsidies go to the above beneficiaries. This would be important in formulating any reform agenda for fertilizer subsidies.

Table 6 below gives an estimate of fertilizer subsidy going to farmers and the fertilizer industry by comparing estimates generated through import parity route with those in the budget and uses the methodology defined above.

Table 6: Farmers' share in the overall provision of fertilizer subsidies

Particulars	TE 83-84	TE 86-87	TE 89-90	TE 92-93	TE 95-96	TE 98-99	TE 99-00	TE 00-01	1999-2000	2000-01	Average of triennium averages
Per tonne subsidy going to farmers on import parity basis											
Urea (Rs/tonne)	258	590	700	2002	3669	3033	1936	1800	1098	2269	
DAP (Rs/tonne)	-347	243	93	231	-562	1701	2441	2201	2330	1128	
MOP (Rs/tonne)	438	512	1037	1212	786	2639	3516	3857	4042	3855	
Total Subsidy on (N+P+K) (Rs Million)	1654	8424	17616	37772	69779	87029	75317	75209	61218	81266	
Fertilizer subsidy as given in the budget (Rs Million)	6740	19160	33187	49950	54587	96973	115860	124970	132440	126510	
Share of budgetary subsidies going to farmers (%)	24.54	43.97	53.08	75.62	127.83	89.75	65.01	60.18	46.22	64.24	67.5

Source: Gulati and Narayanan, 2003

If the percentage is more than 100% it implies that the domestic industry is being taxed, as the domestic prices are too low compared to prevailing international prices and vice-versa.

The table indicates that overall for the entire period of 1981/82 to 2000/01, the share of farmers in fertilizer subsidy was 67.50% while that of the industry was 32.50%, with overall marginal and medium fluctuations. Closer scrutiny, however, indicates that in the 1980s, fertilizer industry in India was highly subsidized, to the tune of almost three-fifths of the government budget of fertilizer subsidy. During the 1990s this level of subsidization of the fertilizer industry dipped. However, in the late 1990s, with the significant drop in import

parity prices, notably of urea, the situation is now similar to that in the 1980s and in 1999/00 and 2000/01, the fertilizer industries share in total subsidies is substantial.

Following the recommendation of the Joint Parliamentary Committee report in 1992, prices of phosphatic and potassic fertilizers were decontrolled and price of urea was reduced by 10%. As a result the decontrolled prices of P and K shot up by 100%. All this led to huge distortions in the NPK ratio with a tilt towards increased consumption of N. The government tried to control this distortion by offering flat rate subsidy of Rs.1000/tonne on DAP and MOP in 1992 and also by decanalising MOP imports, however the NPK ratio did not improve and from 6.02:2.43:1 in the pre reform period, the NPK ratio went up to 9.6:2.9:1 in 1993/94 against the desired ratio of 4:2:1. This tilt in favour of N has led to excessive application with adverse environmental effects. In areas where productivity is low, farmers often tend to compensate by using high doses of cheap nitrogen fertilizers rather than managing fertilizers and other inputs more efficiently. Rates of nitrogen application under a few important crops like rice and wheat had reached a very high level, crossing 200kg/ha in several areas of Punjab and Haryana. It is important to mention in this context that a large part of nitrogen will remain unutilized in the soil, leaching will eventually contribute to the ground water pollution. Therefore it is necessary to implement proper management of fertilizer utilisation through both effective pricing as well as widespread extension work.

Table 7: Share of subsidy to the urea manufactures (Rs/tonne)

	RPS	Import price	Tax/subsidy
1991/92	4332	3426.36	906
1992/93	4929	3273.31	1656
1993/94	5098	3791.84	1306
1994/95	5297	5626.39	-329
1995/96	5369	7700	-2331
1996/97	5584	7308.36	-1724
1997/98	6826	5855.25	971
1998/99	7513	5855.25	1658

Table 8: Share of subsidy to the farmers (Rs/tonne)

^a sales tax of 2% was added to the price (refer fertilizer statistics, 1997/98)

	Farm gate price	Domestic price	Tax/subsidy
1991/92	4332.92	3960	372.92
1992/93	4834	3312	1522
1993/94	5006.36	3312	1694.36
1994/95	4931.37	3984	947.37
1995/96	7256.39	3984	3272.39
1996/97	8219.58	4188	4031.58
1997/98	7877.57	4800	3077.57
1998/99	7687.57	4800	2887.57

Quoting the example of urea, Gulati (1999b) reiterates this point by considering the retention prices paid to urea plants in the range of Rs 4,000/tonne to more than Rs 11,000/tonne. Comparing these with the import prices (if India were to purchase urea from the world market) of around Rs 6,500/tonne, then any retention price over this level will be an implicit subsidy that would accrue to the domestic producer of urea and not accrue to the farmer. Therefore, he states that in the process of removing the subsidy on urea the entire financial burden cannot be put on the farmer.

Evidently, the provision of the subsidy on fertilizers has largely failed to sub-serve the objectives of both equity and efficiency. Moreover, the adverse impacts on environmental resources such as soils and water are

increasingly coming to fore. While the benefits in terms of productivity gains have been quite large, these appear to have petered off. A comparison of relative costs and benefits would certainly be revealing.

Reforms in fertilizer pricing

The Indian fertilizer industry is not efficient at world market prices. Hence, any analysis to see the impact of reforms in fertilizer subsidies would have to consider the impact on both the Indian farmers and the fertilizer industry. An attempt had been made in a recent study to quantify these impacts (Gulati & Narayanan, 2003). The authors have tried to evaluate the effects of phasing out of fertilizer subsidies both for the fertilizer industry and the farmers/food grain production.

The urea manufacturing industry in India constitutes a major chunk of the installed capacity in the fertilizer industry, it being more than 50% of the total fertilizer production in October 2000. Also currently in India only Urea is under the RPS. Consequently the authors have analysed the urea industry to study the impact of phasing out of fertilizer subsidies (through decanalizing of imports of urea, decontrol/rationalization of feedstock prices; and the abolishment of fertilizer subsidies in its present capacity) on the fertilizer industry. After accounting for the distortion in costs of feedstock prices, inefficiencies in the fertilizer industry, which would be reduced through enhanced competition and other similar considerations they find that a substantial portion of the Urea industry would be wiped out. On the basis of various domestic and international forecasts the authors take Rs 7200/tonne (\$180 @ Rs 40=1\$ in 1996/97) as the benchmark import parity prices that would be prevailing for Urea for India. On the basis of this benchmark the authors estimate that almost 32% of the urea production in India would be wiped out unless they reduce costs, and are able to compete internationally.

Hence, a one shot abolition in subsidies would have a significant impact on the urea industry and have a major impact on income and employment levels for those in the industry. Subsidy levels would have to be retained at least in the short run, with a gradual phasing out agenda so as to allow the urea industry to increase its efficiency/competitive levels.

Various studies have pointed out that, non-price factors like irrigation and technology are key drivers for fertilizer demand. Hence, there is a strong possibility of a scenario, that if the deregulation of urea prices are accompanied by decanalization of urea imports, increase in procurement prices, increase in agriculture investment, and optimal use of fertilizers, there would be a minimal/neutral change in foodgrain production as a consequence of phasing out of fertilizer subsidies.

6. Agriculture procurement pricing and food subsidies

Rationale for agricultural input subsidization

The rationale of the twin policy of minimum support and procurement prices was primarily to institute price mechanisms that would serve to cushion consumers and producers from imminent price shocks arising from supply inconsistencies. Given that India is an agrarian economy with a substantial proportion of farming community dependent on agriculture for subsistence, the procurement pricing and Minimum Support Price (MSP) schemes were aimed to act as 'safety-nets' for those engaged in the agricultural sector in the country.

Level of price support and subsidy on food

Whenever agricultural production led to a steep excess of total supply against demand, there arose the danger of price fall that could have adverse impacts on the farmers' income levels. So as to cushion this effect, the government has instituted the MSPs, which secures prices at levels that, besides covering the farmer's cost of

cultivation, also provide adequate profit margin to the farmer. Farmers are allowed to choose between selling their produce to the government at the MSP or in the open market, depending on what is more beneficial for them.

Simultaneously, the government has adopted an open-ended procurement policy with no bounds on procurement levels. Under this procurement scheme, the government buys whatever is offered to it for sale at the 'going' MSP. Rice and wheat are two major crops for which government has played a pronounced role in procurement. The annual wheat procurement over the period 1995/96 to 2002/03 has ranged between 12- over 20 million tonnes, while that of rice between 10 to a little over 21 million tonnes. The payment to growers as the MSP for the chief crops is tabulated below.

Table 9: FCI's economic cost of rice and wheat (Rs./quintal)

	1999/00	2000/01	2001/02	2002/03	2003/04 (BE)
Rice					
A. Acquisition cost	887.30	1014.04	1052.66	1072.69	-
(i) Pooled cost of grain	831.24	930.41	961.16	981.01	-
(ii) Procurement incidentals	56.06	83.63	91.50	91.68	-
B. Distribution cost	187.50	166.43	151.61	133.68	-
Economic cost (A+B)	1074.80	1180.47	1204.27	1206.37	1248
Wheat					
A. Acquisition cost	685.51	716.60	739.13	757.64	-
(i) Pooled cost of grain	518.08	580.66	571.93	585.76	-
(ii) Procurement incidentals	117.06	135.94	167.20	171.88	-
(iii) Carry over charges to State governments	50.37	-	-	-	-
B. Distribution cost	202.00	141.66	132.17	121.52	-
Economic cost (A+B)	887.51	858.26	871.30	879.16	921

Source: Food Bulletin, Department of Food and Public Distribution as quoted in Economic Survey 2002/03

While this measure protected the farmer, there was also the mechanism of procurement prices that has served to protect consumers against sharply rising prices arising from crop failures leading to supply shortages and subsequent price rise. For example, in the case of commodities such as cotton and sugarcane that are demanded by manufacturers of textiles, sugar and guar respectively, supply inconsistencies could lead to very high prices. At this point, the government, through the procurement pricing mechanism, secures the price at reasonable levels so as to sustain the interests of the consumer to consume the particular commodity.

Additionally, the food subsidy in India consists of three components^b (ERC, 2000): (i) consumer subsidy, which is the subsidy incurred on the supply of foodgrains through Public distribution system (PDS) at below the FCI's economic costs; (ii) buffer stock operation costs, that includes the costs related to maintaining a minimum level of buffer stocks as dictated by the national food security requirements; (iii) producer subsidy, which is the costs incurred in holding in excess of buffer stocks and PDS considerations, which is a direct

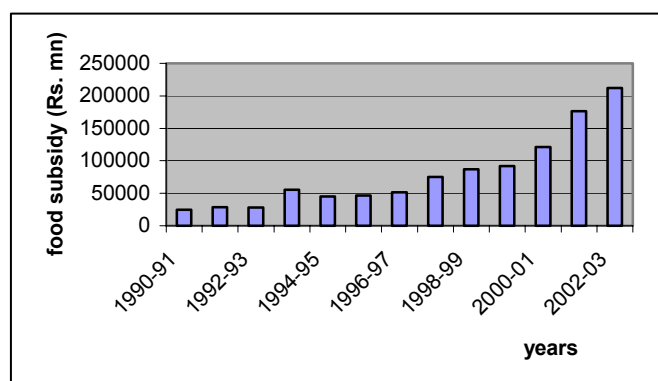
^b Note that this method of presenting subsidies is in contrast to method of determining subsidies as the difference between world trade prices and the PDS sales prices.

offshoot of the ensuing surpluses due to the price support based procurement operations, and (iv) inefficiencies of the FCI, which are the costs in excess of the permissible limits in its various operations. This due to the present fixed cost reimbursement arrangement of the government translates into higher costs to the consumer and the government.

The PDS has evolved as an instrument of government’s poverty eradication programme and is intended as a safety net for the poor. PDS, with a network of 474,000 Fair Price Shops and working under the joint responsibility of the Central and State governments, is the largest distribution network of its type in the world. Wheat and rice, procured by the central government, are issued by it at a uniform price to the various states/ Union Territories, for distribution under the PDS.

The aggregate volume of food subsidies in India stood at Rs. 212,000 million in 2002/03, which constitutes 5.2% of the total budget expenditure of the Central government. As the figure below shows these subsidies have been increasing continuously over the years.

Figure 10: Food subsidy of the central government



Source: Virmani & Rajeev, 2002

The concern here is that continued escalation in the MSP and the associated holding and carrying costs of the FCI, without a commensurate increase in the issue price have caused the subsidy bill to increase from Rs 66,000 million in 1996/97 to Rs 212,000 million in 2002/03. This includes both the consumer (mainly food) subsidy, which is incurred on the supply of foodgrains through the PDS at below FCI’s economic costs (shown in Table 9 above), and the producer subsidy, which is the offshoot of the price support based on procurement operations of the government.

Despite the high level of input subsidies and their consequent inefficiencies, a recent study indicates that the Indian agriculture overall suffers from net taxation (Gulati and Narayanan, 2003), thus turning the previous argument on its head.

Gulati & Narayanan (2003) calculates the total Aggregate Measure of Support (AMS) on the basis of the WTO methodology for Indian agriculture, i.e. they take the border price as the benchmark for subsidy calculation. The total product specific AMS is a large negative sum for India. The procurement and support prices are below the world market and free trade prices and restrictive trade and marketing policies are inbuilt in the Indian agriculture sector. There is thus an implicit tax on the agriculture sector. As mentioned above non-product specific input subsidiesⁱ are positive but they are below the de-minimis. Hence the overall AMS for India is negative, and there are no reduction commitments for India. Estimates in India’s trade policy review (WTO 1998) compute using the WTO methodology for AMS, indicates that during 1995/96, AMS for

ⁱ Also these input subsidies do give accurate estimates, as they also include the large inefficiency costs of the various input suppliers.

19 products is negative, at -30.5%. Also India's product specific AMS totalled negative US \$ 29518 million, being -38.47% of the value of production. India's non-product specific AMS was positive 7.52% of the total value of production, but this was less than the 10% de-minimus level. Table 10 gives the AMS for selected agricultural commodities over the years (it uses a slightly different methodology than that of WTO, but the estimates are broadly comparable).

Table 10: Aggregate measure of support for selected commodities with fixed reference prices (importable hypothesis)

Years	Product		Aggregate measure of support
	specific AMS	Non product specific AMS	
1987	-33.23	4.22	-29.02
1988	-24.73	5.19	-19.54
1989	-29.79	5.02	-24.77
1990	-32.83	6.19	-26.64
1991	-27.6	5.87	-21.73
1992	-57.5	7.52	-49.99
1993	-46.6	6.82	-39.77
1994	-51.06	5.67	-45.39
1995	-38.58	6.81	-31.77
1996	-39.32	7.89	-31.43
1997	-40.68	7.49	-33.19
1998	-33.18	6.86	-26.32
1999	-39.75	6	-33.76
2000	-32.78	7.16	-25.62

All figures as percent of the value of production of commodities covered
Source: Gulati & Narayanan, 2003

As can be seen, in spite of positive non-product based AMS, the overall AMS for Indian agriculture has remained negative over the years and points towards high level of implicit taxation of Indian agriculture. Also, apart from a few exceptions and schemes, the India farmer does not get any export subsidies.

Therefore, from the perspective of reforms, it is important that both input and output reforms are jointly undertaken. Output price reforms are a prerequisite for input subsidy pruning. An analysis also has to be undertaken to estimate what proportion of the subsidies actually accrues to the farmers and what goes to the consumer (in the form of low food prices), inefficiencies of the various input supplying agencies and to the industry. These issues along with the implications on economic efficiency, environmental and social impacts will be studied in detail in the various sub-sections that follow.

Socio-economic implications of agricultural subsidies/ price support

Price support has largely been deemed as a successful pro-poor scheme in India on account of the monetary benefits it endowed the farmer with as also the price-cushions it provided to the consumers. These policies have played an important role in securing the livelihoods of small and marginal farmers who operate about 59.4% and 18.8% respectively of the total operational farm holdings in India (YVSI-SAI, 2001).

It is believed that the price support for agriculture has paid rich dividends, with the oft-quoted example being: the increase in the average annual production of food-grains from a level of 87.8 million tonnes during the triennium ending 1968/69, to 200.41 million tonnes during the triennium ending 1999/2000. Guaranteed prices have, to a large extent, ensured stability in the supplies of foodgrains by maintaining the incentive levels of the farmers in cultivating essential food and cash crops through the procurement pricing mechanism. Also,

during this period, increases in production were accompanied by higher rates of productivity in terms of yield per hectare. This was widely attributed to the incentive schemes, which were given in tandem with administered and guaranteed prices scheme.

In the last two decades, however, it is being felt that such administered prices, which disregard the inter-play of market forces, have distortionary implications for the macro economy. Clubbed under the broader rubric of subsidies, price support is largely viewed as a burden to the national exchequer with serious implications on the fiscal side. Support policies are markedly known to have the effect of negative taxation of the farmers with cross-subsidisation, which is a network of price support schemes along with input subsidies (notably fertilizer, seeds, electricity, and farm equipment), leading more to inefficiencies as compared to actual gains.

Thus price support policies in India continue to be an important subject of debate with either lobby justifying different ways to the somewhat common mean of augmenting net welfare gains. The following are some of the concerns arising from procurement and price support policies.

Direct impacts on cropping pattern

The rise in the MSP way above the cost of production in some of the efficient agricultural states such as Punjab, Haryana and Uttar Pradesh, have created incentives for farmers to divert more land for the production of rice and wheat and away from crops such as coarse grains, cotton and oilseeds. One example that substantiates the role of price policies, particularly MSPs, in determining cropping patterns, is sugarcane cultivation in the states of Uttar Pradesh, Maharashtra and Tamil Nadu. The announcement of lower statutory MSPs for sugarcane led to fall in the production from 254 million tonnes in the year 1991/92 to 231 million tonnes in the year 1992/93 with significant shrinkage in the sugarcane cultivation area from 3.84 million hectares to 3.62 million hectares (CACP Reports, 1997). Similar trends were evinced in jute and mesta cultivation wherein MSPs played key roles in the production, particularly the acreage decisions for crop cultivation.

Impact on food-grain stocks and attendant costs

Procurement has resulted in the FCI being saddled with huge stocks of food-grains, which are well above the stipulated buffer stocks norms. The optimal level of buffer stocks refers to a level that stabilizes prices at least-cost, with occasional recourse to imports. This unduly high level has added to costs of food subsidies, especially buffer subsidies that account for over 20% of the food subsidy bill. The carrying cost of these surplus stocks is also posing a huge financial burden (Economic Survey, 2002/03).

Impacts on food-grains demand & welfare effects

The objective of the PDS is to provide food grains to the poor at subsidized prices. As mentioned earlier, it constitutes almost half a million fair price shops, distributing annually commodities worth more than Rs. 300,000 million to about 160 million families (Virmani & Rajeev, 2002). However the PDS has not been able to meet its objectives efficiently. There are large-scale leakages from the PDS – about 31% and 36% in the case of rice and wheat respectively, 23% in the case of sugar and 55 % in the case of edible oil (NCAER, 2001). Apart from these leakages there is a strong urban bias and a very small proportion of these foodgrains actually reach the indented beneficiaries – the poor.

For those who are not covered by the PDS, the prevailing administered prices are sometimes beyond the affordability of the consumers (particularly the poorer sections of the society). They do not demand enough for lack of adequate purchasing power. This has had important distributional and poverty impacts. According to a detailed general equilibrium analysis done by Kumar, Darbha & Parikh (2002), a 10% increase in procurement prices of wheat and rice leads to 15 million tones of additional stock accumulation, 0.1 million

hectare of less irrigation due to falling investments and lowering of GDP by 0.33 per cent per year on account of depressed demands (Parikh & Radhakrishnan, 2002).

Impacts on farmer welfare – rent-capturing by intermediaries

Studies by YVST-SAI (2001) in the Penpahad and Nalgonda districts of Andhra Pradesh show that farmers, notably the small and marginal, face several hurdles in realizing the MSPs offered by the government. The study showed the loopholes in the agricultural marketing scenario and brought to light collusion among market yard officials, middlemen and other intermediaries who absorb the price gains from price support schemes even before it reaches the farmers. These collusions and inefficiencies have been a setback to the MSP scheme as these prevent the achievement of the targeted welfare goals of the price support and procurement schemes.

Way forward with agricultural output pricing reforms

Reforms are already underway in the PDS. Since the early 1990s various reforms have been attempted. In 1992, the revamped PDS was introduced and in 1997, the targeted PDS. These reforms have increased the efficiency of the PDS but loopholes, inefficiencies and inadequate targeting still exist. The operating efficiency can be enhanced further by introducing innovative schemes such as food stamps, food credit cards etc.

At the same time, there should be an economic rationale in the increase of MSP and efforts should be made to reduce the various distortions in the Indian agricultural system. The FCI needs urgent reforms and a strong step in this direction could be ending its monopoly with the entry of private operators in its field of operations. These and other measures are important in pruning the food subsidy bill, reducing leakages and increase the targeting to the intended beneficiaries—the poor.

7. Energy

Overview of energy pricing policy

The Indian energy sector has traditionally seen high and varied level of subsidies. The premise being that this would enhance accessibility and affordability to all sectors in the economy. However, this pricing of energy sources has always been a contentious issue in the wake of balancing economic rationale and popular demand for low prices.

The Indian government has taken steps towards removing price controls on oil and coal and lowering subsidies to energy generally (IEA, 2002). Coal prices were decontrolled in the year 2000 and hence direct subsidies either to the consumers or producers are non-existent now. However, due to subsidies on rail transportation, delivered coal prices remain below the market prices. With the dismantling of the Administered Pricing Mechanism (APM) in April 2002, subsidies on all oil products were removed barring Liquid Petroleum Gas (LPG) and kerosene, mainly used by the households. Supply of electricity is highly subsidized and forms the lion's share of the total subsidies allocated to the energy sector. The amount of subsidies to this sector has increased in leaps and bounds over the years though its justification and impact have been an issue of debate lately.

Power subsidies

The Indian power sector

India has presently (in January 2003) an installed generating capacity of nearly 107 GWⁱ. This includes thermal (coal, gas, liquid fuel), hydro, nuclear and wind. Out of the total installed capacity, 90% of it is owned by the public sector (60% under state governments and 30% under central government) and the balance about 10% by private sector. The annual electricity generation in utilities is presently about 500 BU. There is a shortfall in the availability of power in India—7.5% in energy and 12.6% in peaking power.

The power sector comprises three distinct activities: generation, transmission and distribution. The vertically integrated nature of these activities, coupled with lumpiness in investment and declining costs over long range of output has meant that the electric supply industry (ESI) in India has evolved as a statutory monopoly (Rao, 1997). In addition, power development is the concurrent responsibility of the centre and the states as given in the Indian constitution. Given this market structure, subsidies to consumers have been an inherent part of power supply policy since electricity generates externalities and is an essential input for both consumption and production purposes.

The rationale behind power subsidies has failed to keep pace with the changing scenario over time. Power subsidies that were granted to the agricultural and domestic sectors (at the cost of the industrial and commercial sectors) were aimed at increasing productivity and enhancing the standard of living respectively, failed to fulfil their objectives. Over time, they have bloated in volume, causing severe price distortions and mammoth financial losses to the State Electricity Boards SEBs^k.

Unit cost of power supply

There has been a progressive increase in the unit cost of power supply^l from 108.6 paise^m/Kwh in 1990/91 to 327 paise per unit in 2000/01, an average annual growth rate of about 11.7%. As per Annual Report (AR) 2001/02 estimates; this is likely to increase to nearly 350 paise per unit. This escalation has been primarily due to the rise in establishment and administration expenses, interest payment liability and the cost of power purchase over the years.

Average tariff

The average tariff represents the tariff charged by the utilities to the ultimate consumers. It has increased steadily from 81.80 paise/Kwh in 1990/91 to 240.34 paise/Kwh in 2001/02 (AR, 2001/02) at an average annual rate of 10.2%. The electricity tariffs vary across states from as high as 367.34 paise/Kwh in Assam during 2001/02 to 137.94 paise/Kwh in Jammu & Kashmir. In absolute terms, the average tariff has always been way below the corresponding cost of supply and the gap has widened over the years from 4 paise/Kwh

^j Monthly review of power sector performance January 2003. CEA.

^k The State Electricity Boards (SEBs) generate, transmit and distribute electricity in co-ordination with private/centrally owned generating companies or any other relevant agency. The state governments are the sole owners of these SEBs in their respective states. The SEBs were established in various states pursuant to a mandate contained in the Electricity Supply (Act), 1948. The structure of the SEBs is changing as part of the reform program. The generation, transmission and distribution functions have been unbundled in a number of states and the entities have been corporatized. Private utilities form the smallest part of the power sector, however, private sector participation is now gaining acceptance.

^l The cost components include the cost of fuel, cost of power purchase, O&M expenditure, establishment and administration cost, interest payment liability and depreciation.

^m 100 paise= 1 Rupee.
48 Rupees= 1 USD.

in 1975/76 to 29 paise/Kwh in 1995/96 to 101 paise/Kwh in 2001. Tariffs as a percentage of unit cost of supply have declined from 75% in 1990/91 to 68.6% during 2001/02.

The power tariff in India varies across consumer categories. The agricultural and domestic sectors pay a tariff that is well below the overall average tariff while the commercial users, industry and railway traction pay a rate exceeding the average tariff. In effect, commercial, industrial and railways subsidize the domestic and agricultural sector.

Electricity prices are the lowest for agricultural consumption and over time, the difference between the average cost and price charged has widened considerably. In 1996/97, as compared to an average tariff of 165 paise/Kwh, the price charged for agricultural consumption was less than 25 paise/Kwh and for domestic consumption it was 105.7 paise/Kwh. This situation has improved marginally after some states have been able to implement the consensus decision taken by the Chief Ministers of the various states to levy at least 50 paise/Kwh. During the year 2000/01, the agricultural sector was charged a tariff of 35.4 paise/Kwh while domestic users paid at the rate of 183.13 paise/Kwh, which is still significantly below the average tariff of 226.26 paise/Kwh. A matter of serious concern is the provision by the states of un-metered electricity to its farmers. Charges are not on the basis of actual power consumption; but a lump-sum is levied on the installed capacity of the irrigation pumps. This makes the marginal cost of electricity to the farmers zero, while the marginal cost of supply to the farmers is actually higher than other sectors. This flat rate pricing of power has severe distributional aspect. It implies that the cost of power per unit of output for big farmers decline as their output increases due to increasing returns to scale. For small and marginal farmers the same cost increases, since their output is limited and they cannot take advantage of increasing returns.

Estimating subsidies

Official estimates of subsidies and cross-subsidies are based on the formula:

$$(UC-AR_i)q_i.....(1)$$

where UC is the unit cost of power supply for the SEB as a whole, AR_i is the average revenue obtained from sector I and q_i is the quantity sold to sector i. (Rao, 1997).

If equation (1) is positive, then it implies a subsidy received by the ith sector while a negative figure measures cross subsidy from the ith sector. (Table 11)

The accuracy of this particular method in estimating subsidies and cross subsidies has been questioned. The correct accounting estimates of subsidies and cross subsidies should ideally be based on the formula:

$$(AC_i - AR_i) q_i.....(2)$$

where AC_i is the average cost of providing electricity to consumers in sector i which should be based on opportunity cost rather than historical cost as presently done (Rao, 1997). Making the distinction between unit cost of supply to all the sectors as a whole vis-à-vis average cost of supply to a sector is essential. This is because unit costs of electricity for agricultural and domestic users are higher while those for the industrial and commercial users are lower than the average unit costs; hence subsidies for the former two sectors are actually underestimated in the estimates.

Table 11: Subsidy for agriculture and domestic sector and uncovered subsidies (Rs. Million)

Year	Subsidy to agricultural consumers	Subsidy to domestic consumers	Subsidy on inter-state sales	Cross subsidy	Subvention received from State	Net Subsidy	Surplus from other sectors	Uncovered subsidy
1996/97(actual)	155852	43860.1	2387.5	202099.6	66306	135793.6	77743.3	58050.3
1997/98 (actual)	177066	52584.3	4571.3	234222.3	63647.5	170574.8	90108.7	80466.1
1998/99(actual)	206938.7	63324.8	4558.8	274822.3	103515.6	171306.8	83452.6	87854.2
1999/00(prov)	225086.1	81211.1	3735.6	310032.8	112645.3	197387.5	53070.6	144316.9
2000/01(RE)	246991.8	100360.7	3446	350798.5	74653.3	276145.2	57472.3	218572.9
2001/02(AP)	281232.7	122385.1	3598.1	407215.9	83396.2	323819.7	57435.5	266384.2

Source: AR, 2001/02

In addition few state governments have paid subsidy in cash during the year in which the subsidy was due. Generally the subsidy claims were adjusted against the amounts to be paid by the SEBs by the way of electricity duty, interest on government debt and loan repayments. Also the conversion of loans in the SEB capital structure into equity is increasingly being resorted to. As a result of this move, the transactions of the SEBs with the state government are not explicitly available in the state budget documents.

Uncovered subsidies and cross-subsidization

Differential pricing policy has resulted in the process of subsidization and cross-subsidization within the sectors consuming electricity. Table 11 summarizes the level of uncovered subsidies for the past five years after adjusting the surplus generated from other sectors and subvention provided by the states. It is evident that absolute subsidies to both the agricultural and domestic sectors have shown an upward trend over the years, resulting in gross subsidies escalating at an average annual rate of nearly 11.5%. Subventions received from the state governments have however increased at a slower pace of 3.9% per annum. With the government support clearly not being sufficient to maintain subsidies, the SEBs have relied heavily on the policy of cross-subsidization. It is observed that this particular option is also narrowing down over time since surplus from other sector, which was as high as Rs 90110 million in 1997/98 has tapered off to Rs 57440 million during 2001/02. Cross-subsidy as a percentage of subsidy to agricultural and domestic sectors have declined from 41.7% in 1992/93 to about 13.5% during 2001/02.

This clearly suggests that urgent policy initiatives need be taken to rationalize the tariffs to close down the gap between the cost of supply and the average tariff.

Economic impact of power subsidies

The State Electricity Boards are plagued by huge financial losses. Their commercial losses, which include subsidies for the period 1996/97 to 2001/02, show a staggering increase from Rs 46,740 million to Rs 24,8370 million (annual rate of increase of about 32%). In addition revenue arrears have worsened over the years and being 40.4% of the total revenues during the year 1999/2000. Outstanding dues by the SEBs to major Central Undertakings in February 2002 was a Rs 34,1353 million; contributing to their deteriorating financial position.

The SEBs have failed to generate profits that in turn could have been invested in improving generation, transmission and distribution efficiency. On the contrary, SEBs and financial losses have become synonymous. Escalating subsidies and government subventions have eroded the state resources over the years.

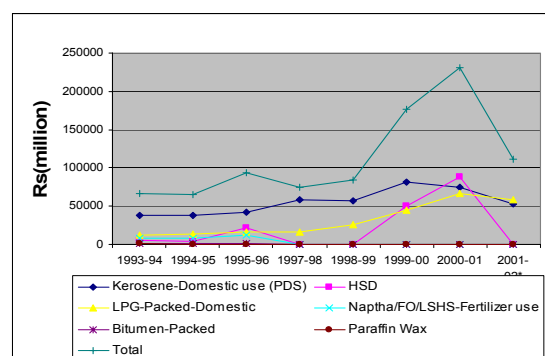
Subsidies on major petroleum products

Continuing subsidies on LPG (first introduced in early 1960s) for domestic consumption and kerosene distributed through the PDS are justified on distributive criterion.

LPG consumption in India has grown at an average annual rate of nearly 10% during the decade of 90s, while that of kerosene has grown slowly at the rate of 2.7%. Correspondingly, subsidies on LPG and kerosene have grown at an annual rate of 21% and 4% respectively during the same time period.

With the dismantling of the APM since April 1, 2002, these subsidies now come from the central budget instead of the Oil Pool Account. LPG subsidies to the exchequer were Rs 58,300 million and that on kerosene were Rs 53,100 million in 2001/02 (see Figure 11).

Figure 11: Subsidies on major petroleum products



2001/02*=provisional

Source: Basic Statistics on Indian Petroleum and Natural Gas 2001/02.

Incidence of LPG/kerosene subsidies

In the wake of burgeoning subsidies on petroleum products, question arises regarding the effectiveness of these subsidies in reaching the intended consumers.

World Bank (2002) reports that in India, a great majority of the rural households do not have access to LPG. Further kerosene is rationed (2 - 10 litres per month) and hence its use is restricted to lighting and not cooking.

A 1994 survey of 2800 urban and suburban households in Hyderabad conducted by the Bank exposed the fact that 63% of LPG subsidy went to the richest 40% of the population and only 17% reached the poorest 40%. This negates the purpose of subsidies since for the rich households, LPG purchase represents a fraction of their total expenditure and hence it does not affect their fuel choice but simply translates into higher consumption of other commodities.

With respect to kerosene, its supply rather than its price is more of a problem. A large proportion of kerosene meant for PDS is either diverted to the open market or smuggled to neighbouring countries. Low price of kerosene provides incentive for adulterated diesel/petrol that aggravates the vehicular emission problem. The challenge is to monitor kerosene supply to the PDS and effective targeting of these subsidies.

Energy subsidy reforms

- **Which section of consumers to subsidize:** all relevant case studies have shown beyond doubts that the benefits of subsidies barely reach the intended target groups. While pro-poor subsidies are justified, those going to all sections of consumers in a particular sector require check.
- **What to subsidize:** Clearly, the incentive for subsidising kerosene, LPG and electricity has long outlived its purpose. Rolling back of LPG subsidies have faced public wrath and successive governments have failed to take tough stands fearing unpopularity. The lobby of wealthy farmers has managed to obtain electricity free of charge or at nominal cost.
- **Nature of subsidies:** The rationale of subsidies lies in enabling consumers to afford the threshold level of basic amenities (typically merit goods). But the design of energy subsidies in India has led to over consumption across certain sections of consumers due to uncompetitive prices. Ideally, one can think of setting life line rates in the electricity sector that would encompass a vast section of poor population or subsidize smaller LPG cylinders that ensures the minimum required consumption for the maximum number of people in the deserving category.
- **How much to subsidize:** “Decision on the size of subsidies should follow some general principles. Subsidies should provide an incentive to extend service to households that would not otherwise get it. They should stimulate new business without being an end in themselves. They should provide a benefit to the rural and poor populations, but should not create disincentive to provide energy service after the equipment is installed in households” (Barnes and Jonathan, 2000)
- **Ensuing power sector reforms:** The commissions of Andhra Pradesh, Delhi, Haryana, and Himachal Pradesh have issued tariff orders in 2001/02 and the Commissions of Madhya Pradesh, Haryana, Uttar Pradesh, Gujarat, Punjab, Maharashtra, Karnataka, Rajasthan, West Bengal, and Rajasthan issued tariff orders in 2002/03 (till January 2002/03). A number of commissions have instituted measures to allocate revenue requirement in an economically efficient manner by reducing the extent of cross subsidies. This has primarily been achieved by increasing the LT (low-tension) tariff to a greater extent as compared to the HT (high-tension) tariff. Also, a number of commissions have initiated an increase in the tariff of agricultural consumers despite it being a highly politicized issue. In addition privatisation and corporatization of the SEBs in some states is being undertaken (e.g. Uttar Pradesh, Orissa, Delhi). The track record of these measures has been mixed and further and more effective efforts are urgently needed.

To summarize, each subsidy mechanism has its strengths and weaknesses. Over the years, the amount of energy subsidies in India has bloated, taken a heavy toll on the government’s resources, created price distortions and led to over-utilization of certain resources due to under-pricing. Dismantling energy subsidies is now on the national energy policy agenda and the ball has been set rolling with an attempt to rationalize power subsidies. One cannot expect subsidies to perish completely, but effective targeting of the beneficiary group(s) might actually add to national welfare.

8. Select export subsidy schemes in India

As with other countries, India has had a long history of offering a host of export incentives to exporters to promote the country’s exports. These have been in the form of direct and indirect export subsidies, export credit, export insurance and guarantee, various forms of export promotion and marketing assistance, export processing and economic zones. The various schemes were meant either for specific industries or end-users. These schemes have been even more prevalent and important in the past in light of the anti-export bias that existed in the country due to India’s import-substitution policy. The prevalent system of indirect taxes and the infrastructure bottlenecks and institutional deficiencies further compounded the anti-export bias.

Over the years the exporters have made increasing use of these schemes. However, their actual effectiveness is not clear and needs further analysis. The Trade Policy Review of India, 2002 points out that the share of

exports qualifying for these schemes as a share of total exports have risen steadily from around 37% in 1997/98 to 71% in 1999/00. However, this has not led to a commensurate increase in India's exports with the share in GDP having fluctuated in the range of 8.6-8.2% during the period. The duty foregone as a result of these schemes also rose from Rs. 89 billion in 1997/98 to around Rs 173 billion in 2001 (from 22% of customs revenue to around 35%). A study by (Panagariya, 2000) points out that the experience of India does not give evidence that export subsidies lead to export expansion. He asserts that, in fact, these are a costly instrument of export-diversification. Hence, there is a compelling need to further examine the effectiveness of these various schemes and their overall impact on exports.

Presented below is a brief preview of the various direct and indirect export subsidies present in India. Some of the major export promotion schemes are:

Duty Exemption scheme

This scheme enables duty free imports of inputs required for export promotion. An *Advance licence*⁹ is issued under the duty exemption scheme.

Duty Remission scheme

This scheme enables post-export replenishment/ remission of duty on inputs used in export product. This scheme consists of:

- a. ***Duty free replenishment certificate (DFRC)*** – which permits duty free replenishment of inputs used in the export product. This scheme was introduced in April 2000.
- b. ***Duty entitlements pass book scheme (DEPB)*** – this permits drawback of import charges on inputs used in the export product. Its earlier version, called the ***Passbook scheme*** introduced in 1995, lapsed in 1997. For the period 1997-2002 the DEPB scheme was introduced in two forms, pre- and post-export. In 2000, the pre-export scheme was discontinued and the post-export variety continues (Hoda and Ahuja, 2003).

Duty Drawback scheme

This scheme provides for refund of duties of customs and central excise on basic inputs like raw materials, components, intermediaries and packing material used in various stages of manufacture/production. No relief is provided for duties on capital goods, fuels and consumables. Other taxes such as sales tax and octroi are also not taken into account. The excise duties on the finished export product are also reimbursed under the drawback scheme, and there are separate provisions for the rebate of these duties. Drawback rates are notified either on a general basis (all industry rates) or for individual exporters (brand rates). The rates are calculated on the basis of broad averages of consumption of inputs, duties and taxes paid, quantity of wastage and f.o.b. prices of export products. According to authorities, the all-industry rates neutralize around 70-80% of the total duty paid on the inputs (Trade Policy Review of India, 2002). Duty foregone from drawback has risen from Rs 36.6 billion in 1997/98 to Rs 43.2 billion in 2000/01.

The Export Promotion Capital Goods (EPCG) scheme

This scheme was first introduced on April 1, 1990 and, since then, has been amended from time to time. It allows for the import of capital goods at concessional custom duty. This scheme allows import of capital goods for pre-production and post-production (including CKD/SKD thereof as well as composition of

⁹ An Advance license is issued to allow duty free imports of inputs, which are physically incorporated in the export product (making normal allowance for wastage). In addition fuel, oil, energy catalysts etc., which are consumed in the course of obtaining the export product, are also allowed under the scheme. Duty free import of mandatory spares up to 10% of the c.i.f. (cost+insurance+freight) value of the license which are required to be exported/supplied with the resultant product, can also be allowed under the license.

software systems) at 5% customs duty. This is subject to an export obligation equivalent to 8 times of duty saved on the capital goods imported under the above scheme and is to be fulfilled over a period of 8 years, reckoned from the date of issuance of the licence.

Establishment of Export Oriented Units (EOUs), Electronic Hardware Technology Parks (EHTPs) Software Technology Parks (STPs)^o, and the Special Economic Zones (SEZs)^p

These are also eligible for the above-mentioned schemes in addition to other exemptions and benefits. They are entitled to import without payment of duties on all types of goods, including capital goods required by them for carrying out their activities. The units are allowed to buy their requirements of capital goods and other materials from the Domestic Tariff Area free of internal taxes. They are in addition entitled to various exemptions and reimbursements from central sales tax, exemptions from central excise duty etc.

Export Credit schemes

Export credit on preferential terms has been a long-standing export incentive programme in India. Export credit is provided either in rupees or in one of the convertible foreign currencies. The credit in rupees is provided at concessional rates (maximum ceiling rate that commercial banks can charge on export credit in rupee terms) of interest announced by the Reserve Bank of India (RBI). These concessional rates are provided to mitigate the high cost of credit in India due to the prevailing high real rates of interest. The credit in foreign currency is provided at internationally competitive rates. The RBI has announced in its mid-term review on monetary and credit policy in October 2002 to liberalize interest rates on rupees export credit in two phases. There are also strong indications that the preferential export credit denominated in foreign currency would also be phased out in the future.

Transport subsidies for agriculture

The Government of India through the Ministry of Commerce and Industry offers inland transport subsidies for promoting exports of certain identified agricultural products and processed foods (in particular horticulture products) from the Northeastern region of India. The benefits are available for ultimate exports for a period of 5 years ending 2007. This scheme is offered under the Export Development Fund of the Ministry of Commerce and Industry.

Income tax exemption scheme

The Ministry of Finance, Government of India offers tax exemptions on profits obtained from exports. There are various incentives, which are provided both to the exporters and in addition to units in the SEZs (100 % deduction of profits for newly established units for a period of 10 years). However these are subject to revision annually and hence different incentives and rates apply over the years. The Government of India has announced a gradual phasing-out of these income tax benefits given to the exporters. It is envisaged, that the income tax benefits would be phased-out with effect from 1st April 2004.

^o Units undertaking to export their entire production of goods and services except permissible sales in the *DTA* (*Domestic Tariff Area i.e. areas within India which are outside the above units*), may be set up under the EOUs, EHTP of STP scheme for manufacturing of goods, including repair, re-making, re-conditioning, re-engineering and rendering of services.

^p *Special Economic Zone (SEZ)* is a specifically delineated duty free enclave and is deemed to be foreign territory for the purposes of trade operations and duties and tariffs. Goods and services going into the SEZ area from DTA are treated as exports and goods coming from the SEZ area into DTA are treated as if these are being imported. SEZ units are allowed to set-up units for the manufacture of goods and rendering of services.

The efficacy of these various schemes have to be examined in detailed and a detailed cost-benefit analysis including its trade distortion effects has to be undertaken. This would also be important in the analysing the WTO compatibility of these schemes and what changes are to be made, so as to avoid countervailing measures and anti-dumping duties on India. In India, as part of liberalization and overall reforms, there have been efforts towards pruning and rationalization of these various schemes. A paper for the Planning Commission of India, (Virmani, 2002) argues that it is necessary to eliminate end-use and other export related exemptions and incentives that have been accumulated in an ad-hoc manner over the past several decades. Besides reducing complexity, litigation and incentives for evasion and corruption the study asserts that there would be the additional benefit of facilitating the elimination of various anomalies. The study makes recommendation for phasing out the prevalent incentives/ exemptions and points out that no new end-use exemptions should be given.

Following this general discussion on export subsidies, the paper now analyzes export subsidies in select industrial sectors in India – Iron and steel, because of emergence of dispute on the subsidies issues in the WTO, and textiles and clothing on account of its large share in India's export basket.

9. Iron and steel

Background to the Indian iron and steel industry

India is the tenth largest steel producer in the world. The finished steel production in India rose from 1.1 million tonnes in 1951 to 29.27 million tonnes in 2000/01. Steel exports have shown a fluctuating trend over the years, starting from the very first year of when India began to export steel in 1964. In 1997/98 the total iron and steel exports were 3.036 million tonnes, which due to unfavourable external conditions dropped to 2.57 million tonnes in 2000/01. However, in value terms there has been a steady increase from Rs. 29370 million in 1997/98 to Rs. 46720 million in 2000/01. This is reflected in the fact that there has been an upward movement in the value chain of the steel export basket, and consequently higher value of exports. The primary export markets for India are the European Union, United States of America (USA), Canada, China, and Japan amongst a few others (world steel in figures, 2003). Iron and steel imports form a very small share, mainly in the high value segment. In 1997/98 the total import stood at 2.637 million tonnes, which increased marginally to 3.399 million tonnes in 2000/01. In value terms there have been marginal fluctuations around the Rs. 35,000 million mark (except 1998/99 when it dipped to Rs 29,390 million).

The world steel industry at present is characterized by excess capacity and poor demand. This has led to increasing protectionism and large scale dumping in the international markets. This is reflected in the fact that over the years, Indian exports have been subject to various anti-dumping and countervailing duty investigations primarily from the EC and the USA.

Reforms in this sector

Pre reforms, the iron and steel industry was beset with a number of controls and regulations. A case-in-point is that pre-liberalization there was only one integrated steel plant in the private sector in the country – The Tata Iron and Steel Company Limited (TISCO). Post 1991, the Indian iron and steel sector has witnessed deregulation and decontrol and various policy measures have been taken to improve the competitiveness and efficiency of this sector, along with a larger share of production coming from the private sector.

A few of the significant measures undertaken are:

- Removal of the iron and steel industry from the list of companies reserved for the public sector.
- Deregulation of price and the distribution of iron and steel.
- Inclusion of iron and steel in the list of high priority industries for automatic approval for equity investments up to 74%.
- Lowering of import duty on capital goods and raw materials.

Iron and steel industry in the public sector

Post independence, the growth in the steel sector was primarily concentrated in the public sector. Over the years this has been reversed with the private sector gaining prominence. The private sector's share in the production of steel was 68% in 2000/01 as compared to 32% for the public sector units. Steel industry is a cyclical industry with over-capacity internationally. The low steel prices and sluggish demand in the past few years (apart from the recent upturn), and the inherent inefficiencies and low productivity in the public sector units have meant that a large part of them are sick. They are being propped up by various government subsidies and schemes, which could be categorized as subsidies accruing to this sector. A case in point could be the Steel Authority of India Limited (SAIL), the largest public sector unit, involved in steel production in India⁹. Over the past few years SAIL has suffered high net losses. In 2000/01 SAIL reported a post tax net loss of Rs. 7286.6 million (it could be questioned that this could be a large part due to the social services – employment, community development – it gives being in the public sector). Hence, a major rehabilitation programme was announced for SAIL, by the government of India. This involved waiving of loans advanced by the government, provision of interest subsidies, and loan guarantees. These were interpreted as subsidies, and led to countervailing duties (CVDs) being imposed by US on the export of steel by SAIL. This has been discussed in detail below.

Cases against India pertaining to use of subsidies

Iron and steel exports have faced several CVDs against them. The various export incentive schemes, when applied to the iron and steel industry have been countervailed against by the main importers of iron and steel from India i.e. the EC and the USA.

A. CVD imposed by EC

In July 1998 stainless steel bars exported from India; which constituted a trade volume of \$25 million and constituting 10% of domestic EC consumption had CVD imposed on them (CSCM, G/SCM/N/47/EEC, March 1999). In 1999 other steel exports from India (flat rolled steel and stainless steel wire of diameters of both less than or greater than 1mm) were also subjected to CVD. At the time of the imposition of the CVD flat rolled steel constituted 132 million euros in trade volume terms and constituted 4% of total domestic imports (CSCM, G/SCM/N/52/EEC, September 1999). Price undertakings as part of final measures on flat rolled steel were imposed on three Indian companies: Essar Steel, SAIL and TISCO (CSCM, G/SCM/N/62/EEC, November 2000).

B. CVD imposed by the US

As in the case for the EC, steel exports from India have faced several CVD from the US. In 1998 CVD against iron metal castings were initiated (CSCM, G/SCM/N/47/USA, March 1999. CSCM, G/SCM/N/62/USA, September 2000. CSCM, G/SCM/N/75/USA, September 2001). In 1999 CVD were imposed on certain cut-to-length carbon-quality steel plate. This, in fact, led to the issue going to the dispute settlements body of the WTO, and is the only dispute involving India under the SCM agreement (CSCM, G/SCM/N/52/USA, October 1999). A detailed overview of this dispute has been given in the next section.

⁹ In this context it must be noted that SAIL is one of the best-managed public sector steel unit in the country.

C. Dispute involving India under the SCM Agreement

So far India has only been involved in one subsidies-related dispute that has reached the WTO's dispute settlement body. The dispute concerns the impositions by the US of anti-dumping and countervailing^r duties on the imports of certain cut-to-length carbon steel imports from India (WT/DS206/R, 28 June 2002). The sole Indian respondent was SAIL. The dumping portion of the investigation was conducted by US Commerce Department (USDOC) under the US anti-dumping statute and related USDOC regulations. India did not agree to the US impositions. It was of the opinion the US Commerce Department had failed to consider information submitted by SAIL and imposed an unfair anti-dumping duty. After initial consultations between India and the US failed, this conflict reached the dispute settlement body of the WTO.

"The United States and India consulted on 21 November 2000, but failed to settle the dispute. On 7 June 2001, India requested the Dispute Settlement Body (DSB) to establish a panel pursuant to Article XXIII:2 of the GATT 1994, Articles 4 and 6 of the DSU and Article 17 of the AD Agreement. At its meeting on 24 July 2001, the DSB established a panel in accordance with Article 6 of the DSU to examine the matter referred to the DSB by India in document WT/DS206/2. At that meeting, the parties to the dispute also agreed that the panel should have standard terms of reference. The terms of reference are, therefore, the following: *"To examine, in the light of the relevant provisions of the covered Agreements cited by India in documents WT/DS206/2, the matter referred by India to the DSB in that document, and to make such findings as will assist the DSB in making the recommendations or in giving the rulings provided for in those Agreements"*. (Extract from the Panel report on the dispute.)

On 28 June, 2002 the WTO's panel of the Dispute Settlement Body gave its ruling. It ruled in favour of India in its dispute over the US anti-dumping duties on steel.

"In light of the findings above, we conclude that the United States acted inconsistently with Article 6.8 and paragraph 3 of Annex II of the AD Agreement in refusing to take into account US sales price information submitted by SAIL without a legally sufficient justification and making its determination regarding the dumping margin for SAIL entirely on the basis of facts available in the anti-dumping investigation at issue in this dispute".

According to the panel report, the US "acted inconsistently" with WTO rules "in refusing to take into account US sales price information submitted by SAIL without a legally sufficient justification"; and hence ruled against it.

The iron and steel industry has seen a lot of activity with regards to CVD being imposed and conflicts among the main exporters and importers. Hence this sector would play an important role in the international arena on subsidy related issues.

10. Textiles and clothing

Background to textiles sector in India

India is the world's largest textile producer after China. The textiles and clothing sector is one of India's largest export earners contributing to about 28% of its total exports value in 2002. The primary destinations of India's exports have been the USA, Germany, France, Italy, Japan and other Asian countries. The principal rivals for India are China, Pakistan and Turkey. In 2000/01 this sector accounted for about 14% of India's industrial production. Next to agriculture, it is the largest employer providing direct employment to the tune of about 35 million in 2000/01. It provides employment to a large number of the weaker sections of the society in both rural and urban areas. The largest shares in the exports of this sector are of cotton textiles

^r The investigations were initiated on 8th March 1999.

(29.32%) and readymade garments (46.06%) with cotton ready-made garments dominating this sub-sector. Jute, silk and coir manufactures from a minuscule proportion of the total share. Import of textiles is minimal hovering at around just 1% of total imports over the last few years.

Traditionally, the textile and clothing industry in India had benefited from various types of support and reservations. The production of textiles and clothing had been reserved for the small-scale sector and special benefits were afforded to them. However, over the years this policy led to these units not reaping economies of scale and hence facing a reduction in competitiveness. This has had a major impact on the international competitiveness, and the sector now suffers from obsolescence and rising costs. In the last few years major reforms are taking place in this sector and presently a large proportion of this sector has been de-reserved.

Structure of the textiles sector

The Indian textile sector can be divided into two categories:

1. The organized mill sector.
2. Decentralized sector, which includes power loom and handloom units.

The decentralized sector benefits from various tax exemptions, and energy and water subsidies, which ensure that the fabrics produced in these sectors are price competitive relative to those of the organized mill sector. The handloom sector receives support both from the central and state governments in the form of cheaper credit facilities, support for product development and improvement of infrastructure, marketing assistances and transport subsidies, apart from other subsidy schemes. These support schemes are discussed later in this section.

The Indian textile industry and exports are predominantly cotton based. Cotton is one of the important crops of India and accounts for more than 75% of the total fibre consumption in the spinning mills and for more than 58% of the total fibre consumption in the textile sector (Trade Policy Review, 2002). Both input subsidies (power, irrigation, fertilizers etc.) and output subsidies (minimum support prices) accrue to cotton product, and through the production chain has an impact on the final textiles and clothing product. The purpose of this government intervention is to offer farmers, remunerative prices and also the producers, a reasonable and adequate quantity of cotton. This leads to non-optimal pricing for the final product, and variation among the different sub-groups of producers and consumers.

Prevalent subsidies

The last four to five years has seen tremendous changes in the textile sector. As mentioned above a whole host of reforms have been undertaken to improve the competitiveness of this sector and to increase India's share in world trade. In this light the most significant development is the New Textile Policy (NTP) of 2000, which has its aim – preparing the industry to meet the challenges of integration with the world textile market and modernization and investments. As part of this policy various schemes and packages have been announced, some of which could be construed as providing subsidies in various forms.

The prominent schemes that involve subsidies are:

Textile Upgradation Fund Scheme (TUFS)

This scheme was launched in 1999 and aims at providing impetus to the modernization of the textile and jute industry. This scheme provides for a 5% interest reimbursement on loans from financial institutions to textile and jute units for modernization or technological improvement. In addition to encouraging the Small Scale units (especially the powerloom sector) in taking the benefits of TUFS, an option to either avail 12% upfront credit linked capital subsidy or the existing 5% interest reimbursement has also been provided. Till December 2001, a sum of Rs. 31670 million had been disbursed through this scheme.

Support price operation by the Cotton Corporation of India (CCI)

To protect the interest of the cotton producers, the Government announces support price operations for the producers of Kapas (seed cotton). The CCI purchases the Kapas without any quantity limits whenever the market price falls to the announced Minimum Support Price level. If any loss is incurred due to this operation; the Government incurs it. The exception to this scheme is the western Indian state of Maharashtra where a variant to this scheme is in operation.

Deen Dayal Hathkargha Protsaban Yojana

This scheme is in operation since 2000 and aims at catering to the needs of the handloom sector both at the micro and macro level. Under this scheme assistance is given for basic inputs like looms and accessories, loans for working capital, product development, infrastructure, institutional support, training to weavers, supply of equipment and market support etc. A special component to provide transport subsidy to the North-Eastern states of India and the state of Jammu and Kashmir, has also been incorporated in this scheme. It is envisaged that during the period 2002-07 a budget provision of Rs. 4000 million would be provided for this scheme.

In addition the handloom industry also benefits from “**non-plan subsidies**”. However these have decreased substantially from the 1997/98 level of Rs. 635 million to the present level of Rs.10 million (Trade Policy Review, 2002)

The various export promotion schemes of the Government of India, also apply to the textile sector. In addition tariff concessions are also available to garment exporters. Under this scheme certain classified inputs can be imported duty free. However, the value of goods imported under this scheme was relatively insignificant in 2000/01 (Trade Policy Review, 2001), being only to the tune of Rs.160 million.

Countervailing duty action

In the period 1998 to 2003 the textile exports from India have faced Countervailing Duty Action (CVD) from the European Community (EC). In May 1998 (CSCM. G/SCM/N/47/EEC, 1 March 1999), EC imposed CVD on polyester textured yarn imports from India. During that period the trade volume was US\$ 40 million and it constituted 5% of the European domestic consumption. This order was later revoked in June 1999 (G/SCM/N/52/EEC, 1 September 1999). However, later new investigations were ordered in November 2001 and they remain in force till date (according to last notification, 12 March 2003) (G/SCM/N/93/EEC, 12 March 2003). In another case CVD were initiated against cotton type bed linen in December 2002 and till the latest notification the case is pending.

The textile sector is of tremendous importance to India. Various socio-economic groups are dependent on it for their livelihood. Hence any adverse changes in the fortunes of this sector would have tremendous repercussions on a large section of India's population with severe social and economic impacts. The various policies and support measures announced for this sector should be thus interpreted as integral for its survival in the post-Agreement on Textiles and Clothing phase. They are a necessary component of the overall reforms undergoing in this sector and should not necessarily be considered as trade distorting measures. However, there are various measures, like the minimum support prices and reservation for the small-scale sector, that are inefficient and need to be phased out. That the various price supports and subsidies are not trade distorting is indicated by the fact that between 1998-2003 only two export items have faced CVD from the EC.

11. Conclusions

The paper provides a survey of prevailing domestic and export subsidies in the Indian context, with focus on the level of support, rationale for their provision, and impacts in economic, social and environmental domains. The underlying intent is to identify research gaps from a new perspective – the perspective of how subsidy-related issues are being viewed and addressed in the ongoing work programme and negotiations at the WTO. With the attention of WTO having increasingly expanded from border trade barriers to matters of domestic regulation and policy, questions of sovereignty of national policy regimes and independence of the institutional mechanisms and jurisprudence within the WTO machinery remain to be addressed.

The key insights that this background survey highlights are as follows.

- Strikingly, it is brought out by the above analysis that there is grave paucity of updated and comprehensive data on subsidy levels in India. Therefore, unless a holistic analysis of subsidies at the centre-, state- and sector-specific levels, along with economic, social and environmental impacts is undertaken, the complete picture on subsidy-issues would be missing.
- Evidently, what is even more scant is the analysis of implications of domestic or foreign subsidy provision on the volume of trade or the impacts on the terms-of-trade of the trading countries. While select studies do analyse the terms-of-trade implications of domestic policies of trading countries, the extent to which one could ascribe an impact to a particular level or form of subsidy remains unclear, to say the least. The impacts on equity and environment are even more far-fetched.
- Interestingly, while some reforms scenarios exist, these need to be revisited in light of availability of more comprehensive information in social, environmental and economic realms. The scenarios may also be driven by the trade reforms agenda of the country.
- On definitional aspects, the methodologies for calculation of domestic budgetary and off-budget subsidies do not have a common ground with methods of subsidy calculation from a WTO perspective. There is impending need for identification and understanding of definitional aspects and delineation of levels of subsidies based on alternative methods of calculation, depending upon the requirement to which these have to be put to.
- Based on the existing literature, in a developing country context subsidy provision aims to attend to specific social and economic goals. For example, there are electricity subsidies for rural electrification, subsidized irrigation to enhance access to surface irrigation to small and marginal farmers, agricultural price support to insulate producers and consumers from adverse effects of price fluctuations. However, on the other hand these provision lead to distortions in production and consumption patterns. Hence strategies towards subsidy reforms have to be based on the trade-off between welfare gains from subsidies against losses from their provision.

In sum, as countries undertake commitments to liberalize trade in various spheres, concerns of subsidies in terms of their impacts on international trade flows would become ever more contentious. The evolution of a subsidy policy review mechanism within the WTO regime will have to begin by taking into account the above considerations.

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