

Benefits of Subsidies: Relative Distribution and Issues of Equity

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INTRODUCTION

The relative distribution of the benefits of a subsidy may be studied with respect to different groups or classes of beneficiaries such as consumers and producers, as also between different classes of consumers (rich/poor, rural/urban or agricultural/non-agricultural), and producers (private/public/cooperative). It is also useful to look at the pattern of regional (inter-State) distribution of the benefits of subsidies.

While this analysis can be done with respect to each individual subsidy, it is often relevant to view some of the subsidies as a group (e.g., all agricultural subsidies) if they cover inter-linked stages from production of inputs to the sale of final output. Input subsidies in agriculture influence input prices of agricultural production and thereby also the output prices. Input subsidies generally remain untargeted because they filter through to a range of final outputs, the benefit of which may be derived by the target as well as the non-target population. The scope of targeting a subsidy on a final good is usually greater. A comprehensive analysis of the incidence of subsidies would require a general equilibrium framework with information on use-intensities of different inputs, and demand and supply functions for different final goods.

In this review, important subsidies in India have been considered, at first, individually in respect of the relative distribution of their benefits from an economic class-wise, location-wise (inter-regional) or rural-urban perspective as may be relevant. Some of these are then considered together as a group. The discussion pertains to subsidies relating to: (i) food, (ii) fertiliser, (iii) power, (iv) irrigation, (v) education and (vi) health.

FOOD SUBSIDIES

The benefits of the food subsidy accruing to the poor depend on:

- the number of poor who actually buy from the public distribution system (PDS);
- the magnitude of benefit derived by the poor through their PDS purchases; and *inter alia*,
- the extent of leakages in the operation of the PDS.

Targeting of the PDS may be looked at in two ways, *viz.*, (i) the proportion of poor beneficiaries in all beneficiaries and (ii) the proportion of poor beneficiaries using the PDS among all poor. The first target ratio (TR1) indicates as to how far the PDS caters to the poor vis-a-vis the non-poor and the second ratio (TR2) indicates the extent to which the poor are covered by the PDS. The obverse of the first ratio ($100 - TR1$) refers to an inclusion error, *i.e.*, coverage of the non-poor who ought to be excluded but are included while that of the second ratio ($100 - TR2$) indicates exclusion error, *i.e.*, the percentage of those who ought to be included but are in fact excluded from the PDS. Estimates of these ratios are provided in a study by Jha (1991) as given in Table 5.1.

For TR1, *i.e.*, the number of poor among all beneficiaries, the coverage of poor is only a little more than 50 per cent for rice, and even less for wheat. For all the PDS commodities, targeting appears to be better in urban areas as compared to the rural areas. For TR2, *i.e.*, the proportion of PDS using poor to all poor, the ratios are relatively lower as compared to TR1. Only about 43 per cent among the poor are PDS users for rice in rural as well as urban areas, whereas for wheat, the coverage of poor by the PDS is even less, being 30 per cent in rural and 37 per cent in urban areas. On the basis of this data set (Table 5.1), Jha (1994, p. 19) observes that the probability of committing exclusion error (range: $30 - 90\% = 100 - TR2$) is higher than that of inclusion error (range: $30 - 60\% = 100 - TR1$). There is an interesting inter-commodity profile for the exclusion error. The number of poor utilising the PDS among all poor is the highest for sugar followed by kerosene indicating that targeting is best for these commodities. However, given that the three foodgrains (rice, wheat and jowar) are substitutes for each other and that there are varying preferences for foodgrains even among the poor in different regions, one ought to consider the cumulative coverage of

the poor by the three foodgrains, adjusting for those who may be consuming more than one foodgrain. Assuming the adjustment to be minor, it is possible that TR2 is in fact the highest in the case of foodgrains.

Table 5.1
Targeting of Public Distribution System

<i>Good</i>	<i>Area</i>	<i>Target Ratio TR1</i>	<i>Target Ratio TR2</i>
Rice	Rural	50.53	42.50
	Urban	55.40	42.84
Wheat	Rural	40.34	29.96
	Urban	47.81	37.34
Jowar	Rural	60.08	8.99
	Urban	66.11	2.18
Edible Oils	Rural	49.61	16.13
	Urban	50.20	26.81
Sugar	Rural	40.63	68.37
	Urban	47.70	74.63
Kerosene	Rural	46.03	50.94
	Urban	49.99	61.91

Source: Jha (1991).

Notes: TR1: Number of poor* beneficiaries/Number of all beneficiaries of PDS (per cent).
TR2: Number of poor beneficiaries of PDS/Number of all poor (per cent).
* Lowest 40 per cent of population in terms of total expenditure.

Many studies have taken note of a distinct urban bias in the PDS. The system appears to be geared towards operating in metropolitan and urban areas although there was some effort in the early 1980s for locating shops in rural areas. The issue is not just of having more shops in rural areas but also their effectiveness in terms of actual supply of essential goods particularly in the backward, remote and inaccessible areas. The average accessibility of ration shops in rural areas (Table 5.2), measured in terms of crowding in ration shops and their distance from residences is less than 60 per cent of the accessibility in urban areas (Howes and Jha, 1992) despite giving a 75 per cent relative weight to distance which is more important in rural areas.

Table 5.2
Urban Bias in PDS (Rural/Urban Ratios)

State	Per Capita PDS Consumption		Per Capita Subsidy	Accessibility of Ration Shops (1978)	
	(1978)	(1986-87)	(1986-87)	$\alpha = .25$	$\alpha = .75$
Andhra Pradesh	.107	1.349	1.68	.147	.596
Assam	.048	.585	.93	.100	.424
Bihar	.024	.220	.65	.121	.353
Gujarat	.274	1.621	1.19	.138	.626
Haryana	.076	.276	1.15	.144	.502
Himachal Pradesh	.053	2.731	.98	.113	.496
Jammu & Kashmir	.160	.377	.39	.040	.343
Karnataka	.130	.637	1.41	.138	.559
Kerala	1.103	1.199	1.04	.510	.901
Madhya Pradesh	.015	.588	.80	.083	.404
Maharashtra	.292	.877	.64	.129	.791
Orissa	.065	.237	.36	.048	.157
Punjab	.015	.330	.55	.287	1.089
Rajasthan	.120	3.080	1.67	.131	.542
Tamil Nadu	.192	1.057	.64	.308	1.136
Tripura	.355	1.175	1.03	.082	.492
Uttar Pradesh	.015	.518	.24	.093	.332
West Bengal	.170	.320	.43	.138	.528
All India	.201	.697	.79	.133	.563

Source: Howes and Jha (1992), p. 1027.

- Notes:
- a. If the ratio exceeds 1 there is a rural bias, if it falls short of 1 there is an urban bias and if it equals 1 there is no bias.
 - b. α is the relative weight given to crowding in ration shops as compared to average distance of these shops from residences. Crowding seems to be similar in both rural and urban areas whereas distances are much longer in the former.
 - c. While per capita consumption figures relate to foodgrains, subsidy relates to all subsidised items under PDS.

The main conclusions in relation to the targeting of PDS may be stated as:

- i. the overall coverage of the poor through the PDS is quite low;
- ii. targeting is better in urban areas;
- iii. poor are relatively better targeted for sugar and kerosene, than rice or wheat individually. For jowar, the poor utilise the PDS least among

all commodities partly due to its consumption being restricted to some areas; and

- iv. the probability of exclusion error is higher than that of inclusion error.

It is important not only to look at the number of poor covered by the PDS, but also at the magnitude of the benefit derived by the poor. Jha (1994, p. 24) writes that the "per capita subsidy to the poorest consumers is much below the average. The aggregate subsidy is only about Rs. 2.50 per capita per month – a meagre 5 per cent of the mean expenditure of a person in the poorest decile".

An estimate of the fraction of total expenditure on PDS that reaches the bottom 20 per cent of the households was made by Parikh (1993). He defines targeting effectiveness as the product of two fractions, *viz.*, (i) the fraction of quantity distributed through PDS that reaches the consumers and (ii) the fraction of quantity that reaches the target group. Using the average of 1986 and 1987 data for amounts distributed through the PDS and the expenditure data from the 42nd round of NSS, Parikh (1993, p. 13) estimated that for every rupee spent on cereal distribution through PDS, less than 20 paise reach the poor, except in Kerala where 26 paise reach the poor. The leakages out of the system are considered to be substantial (roughly 1/3rd of the supply). In the context of the operation of PDS, Reddy and Selvaraju (1992, p. 10) observe that (i) the disparity between the rich and the poor has been widening and (ii) the disparity between poor in the rural sector and the poor in the urban sector has also been widening.

In recent years, some attempts have been made to improve the targeting of the PDS. In June, 1992, a Revamped Public Distribution Scheme (RPDS) was started. It caters to remote tribal, hill and arid area populations that have poor infrastructure. Apart from rice and wheat, additional items like tea, soap, pulses and iodised salt are made available through RPDS in these areas. During 1995-96, this scheme covered 1775 blocks. Other special schemes under the PDS designed for improving its targeting relate to supply of subsidised foodgrains to SC/ST/OBC hostels (since October, 1994), a foodgrains-based employment generation scheme and mid-day meals scheme (since 15 August, 1995). At the State level some distinction between categories of PDS users has been brought about. In Andhra Pradesh a distinction is made through the issue of white and pink cards. Pink card holders were supplied rice at Rs. 2.00 per kilogram (the price has since been raised). In Karnataka, saffron and tricolour cards were introduced. The

tricolour card holders were supplied wheat and rice at prices lower than that for the general category of PDS users. In most other States, however, no distinction is being made between poor and non-poor users of the PDS. In a recent study, Parikh, Dreze and Srinivasan (1996) estimate that regional targeting increases the amount of grain reaching the poor from 25 to 30 per cent.

In the new scheme for PDS announced in January 1997, a distinction between people below and above the poverty line has been proposed, with the proposal of supplying foodgrains (wheat and rice) to the former category at half the rates applicable to the latter subject to quantity restrictions. This may augment the effective reach of the PDS, but will need to be carefully monitored since it opens up possibilities of additional leakages between poor and non-poor categories, also between PDS users and the open market. The incentive to divert the PDS supply to the open market is much greater when the price-differential (between open market and PDS below poverty rate) is larger.

In India, the possibility of administering the food subsidies through a food coupon system has never really been examined even on an experimental basis. It can, however, prove to be a cost-minimising and reach-maximising option as compared to the present leakage-prone, cost-enhancing and mistargeted PDS system.

FERTILISER SUBSIDIES

The direct beneficiaries of the fertiliser subsidies could be divided into two groups, *viz.*, users (i.e., farmers) and the fertiliser industry. The division of the subsidy benefit between these two groups can be worked out by considering the retail price of fertiliser that would prevail in the absence of any government intervention and the existence of free imports. This notional 'free market price' may be defined as P_f . Although it is not possible to estimate this price directly, often the farm gate import price has been taken as a proxy for it. Defining retention price, as P^* , the statutorily fixed retail price as P_r and assuming $P^* > P_f > P_r$, and the quantity of fertilisers purchased as Q , with Q_d as its domestically produced component we can write the total fertiliser subsidy, S , as,

$$S = (P^* - P_f) Q_d + (P_f - P_r) Q$$

The first term represents subsidy to the fertiliser industry and the second term represents subsidy to the consumers of fertilisers. An interesting problem relating to the first term is common to all subsidies linked with retention prices, viz., that there is no incentive to minimise costs. Worse still, profits may be disguised as costs. In either case, subsidies are unduly large.

Using a moving average of import prices, Gulati (1990) estimated that 48 per cent of the fertiliser subsidy went to the farmers and 52 per cent to the industry during the period (1981-82 to 1989-90). In a similar exercise, Mazumdar (1993) has decomposed the fertiliser subsidy between these two groups, over the period 1981-82 to 1989-90 (Table 5.3). His results indicate that the share of subsidy to the farm sector has been rising over the years. His results also bring out the volatility in the distribution of the fertiliser subsidy between farmers and the industry due to the fluctuations in international prices when year-wise data are used. A longer term perspective indicates that the share of farmers in the fertiliser subsidy during the eighties was about 50 per cent.

In addition to a share in the explicit fertiliser subsidy obtained by the domestic units producing fertilisers, the feedstock industry also obtains an implicit subsidy due to the administered prices of petroleum products. The major feedstocks for this industry are Naphtha, Fuel Oil and Natural Gas. The price differential in the case of Naphtha and Fuel Oil between fertiliser - producing and other users in terms of price and concessional excise duty has been quite substantial. The differential price advantage is not so clearcut in the case of natural gas although the excise duty for its use in fertiliser industry is nil.

Table 5.3
Distribution of Fertiliser Subsidy Between Farmers and Industry

<i>Year</i>	<i>Farm Sector</i>	<i>Total Fertiliser Subsidy</i>	<i>Share of Farm Sector Subsidy to Total Fertiliser Subsidy</i>
	(1)	(2)	(3)
1981-82	301	375	80.3
1982-83	269	604	44.5
1983-84	645	1048	61.7
1984-85	1777	1927	92.2
1985-86	883	1922	45.9
1986-87	810	1897	42.7
1987-88	940	2164	43.4
1988-89	1638	3250	50.4
1989-90	3108	4600	67.6

Source: Mazumdar (1993), p. 104.

A sector-wise distribution of fertiliser subsidy (Parikh and Suryanarayana 1989, p. 50) indicates that the public sector units get about 49.1 per cent of the fertiliser subsidy accruing to the producers which is higher than their share in fertiliser production (42.3 per cent) by 6.8 percentage points. This indicates the extent to which fertiliser subsidy may be protecting production inefficiency in the public sector units. The share of fertiliser subsidy of the units in the cooperative, joint and private sectors are respectively 17.5 per cent, 16.8 per cent and 16.6 per cent, which are less than their corresponding shares in fertiliser production by roughly two percentage points in each case.

ELECTRICITY SUBSIDIES

Consumers of electricity in the agricultural and domestic sectors are partially subsidised by other users of electricity, especially the commercial and industrial sectors. Further, an overwhelming part of the electricity subsidy accrues to the agricultural users of electricity. Subsidy to this sector as a percentage of total electricity subsidy in the four years during 1992-93 to 1995-96 was 79.0, 78.6, 77.3, and 76.2 per cent, respectively.

The inter-State distribution of per capita electricity subsidy accruing to the agricultural user has been summarised in Table 5.4. The general pattern is that in the richer States, the per capita subsidy is much larger than the poorer States. If we focus on the 1995-96 data, the average per capita subsidy for the low income States was Rs. 70, whereas the corresponding amount for the high income States was Rs. 395, the latter being almost 5.6 times the former. There are, however, large within-group differences also. For example, among the low income States, the per capita electricity subsidy ranges from as low as Rs. 1.30 to as high as Rs. 180.80. The range of variation is also quite large among the middle income States.

IRRIGATION

Irrigation subsidies directly benefit the farmers. Some observations can be made in the context of the distribution of this benefit between different segments of the rural population. Total on-farm benefits due to irrigation (subsidies) depend on the area under irrigated farming and incremental income due to irrigation.

Table 5.4
Inter-State Distribution of Per Capita Effective Electricity
Subsidy for Agricultural Consumers

<i>State</i>	<i>1992-93</i>	<i>1993-94</i>	<i>1994-95</i>	<i>1995-96</i>
High Income States	298.9	340.0	372.3	394.5
Delhi	87.0	97.0	121.0	128.0
Gujarat	376.9	432.3	491.4	502.1
Haryana	350.4	411.5	351.3	359.8
Maharashtra	206.1	225.4	258.8	282.5
Punjab	473.9	533.8	639.0	700.1
Middle Income States	101.5	124.9	143.1	162.9
Andhra Pradesh	145.2	181.4	201.0	243.1
Karnataka	161.5	208.8	238.0	248.8
Kerala	7.0	8.4	10.6	12.7
Tamil Nadu	173.6	201.0	236.3	275.0
West Bengal	20.4	25.0	29.7	35.1
Low Income States	38.5	56.9	57.9	69.6
Assam	1.2	3.3	4.3	5.2
Bihar	12.0	31.9	34.7	43.1
Himachal Pradesh	2.2	2.4	1.8	2.0
Jammu & Kashmir	47.7	89.0	82.2	100.3
Madhya Pradesh	85.1	140.2	161.4	180.8
Meghalaya	0.7	0.7	1.3	1.3
Orissa	7.4	14.2	16.7	19.9
Rajasthan	101.4	132.7	147.2	175.8
Uttar Pradesh	88.8	97.4	105.2	98.3
Total*	123.6	149.3	163.1	179.7

Source: Computed from data given in the Annual Report on the *Working of State Electricity Boards and Electricity Departments*, Planning Commission, Government of India, 1995.

Note: * Total of High, Middle and Low Income States.

The most disadvantaged class in rural population, viz., landless labour, quite clearly gets zero direct benefit out of irrigation subsidy as it does not have any land. However, they may benefit indirectly if increased irrigation leads to improvement in farm income and results in additional employment generation (and/or higher wages) on the farm. On the other hand, if the

farmers start using labour saving devices in the wake of higher incomes, the interest of landless labour would be harmed.

In some studies [Dhawan (1988, p. 215), Shah (1993)], it has been contended that the allocation of public irrigation is neutral between farm classes. Using some case studies of Maharashtra, Tamil Nadu, Punjab and Uttar Pradesh, Dhawan (p. 228) arrives at the general conclusion that "the on-farm benefit from a unit of irrigated area need not rise with the size of a farm holding. In other words, the small farmers can gain, acre for acre, as much benefits from irrigation as do the large farmers". This conclusion is applicable where the small farmers are able to appropriately increase the use of accompanying factors (like chemical fertilisers). In those cases (e.g., Uttar Pradesh and Maharashtra) where an increase in fertiliser use does not accompany additional irrigation, the advantages of irrigation tend to be positively associated with farm size. In such a situation the marginal and smaller farmers would appropriate a less than proportionate share in the irrigation-related benefits including subsidies. Water has a very high marginal productivity when used in conjunction with HYV seeds, chemical fertilisers, power and other related inputs. It is the richer farmers who may derive relatively larger benefits because of their capacity to use these allied inputs.

AGRICULTURAL SUBSIDIES CONSIDERED AS A GROUP

The major input subsidies in the agricultural sector relate to fertiliser feedstock, fertilisers, irrigation, power and agricultural credit, and the output subsidy relates to foodgrains. Using a general equilibrium approach Parikh and Suryanarayana (1989, 1992) have studied the equity and efficiency aspects of agricultural subsidies. On the basis of simulations of their general equilibrium model, they (1992, p. 23) contend.

- i. fertiliser subsidy in the form of cheap fertiliser for the farmer does increase the welfare of the poor;
- ii. withdrawal of fertiliser subsidy increases growth, but the rural poor remain worse off even after 10 years of such growth (such withdrawal, should therefore be accompanied by programmes such as rural employment schemes which may be a superior policy than continuing with the subsidy); and
- iii. withdrawal of fertiliser subsidy, accompanied by additional irrigation, especially if targeted, may also be a superior policy option.

Ratha and Sarma (1992) also utilise a general equilibrium framework to analyse this question. They conclude that (i) abolition of fertiliser subsidies aimed only at a reduction of budget deficit is not desirable; (ii) when wages are not protected, fertiliser subsidy is better than food subsidy and that wage indexation would reverse this result; and (iii) investment in irrigation promotes income distribution and growth objectives better than price subsidies.

In Indian agriculture, inputs are subsidised and output prices are supported. Taking a comprehensive view, it has been argued (e.g., Gulati and Sharma, 1995) that Indian agriculture is not net subsidised. For this purpose an aggregate measure of support (AMS) is estimated either on a product specific basis or for all agricultural production. On the basis of both of these calculations, Gulati and Sharma conclude that Indian agriculture is negatively subsidised, i.e., it is net taxed. This is primarily the result of keeping farm prices below the corresponding international prices. In the Gulati and Sharma study, four major input subsidies were estimated over the period from 1980-81 to 1992-93. These subsidies relate to: irrigation, electricity, fertiliser and credit. It is indicated that input subsidies have increased at a rate of 12.61 per cent per annum at constant 1981-82 prices (9.11 per cent per annum by an alternative method). It is argued by the authors that these input subsidies have outlived their objectives and have become unsustainable. The agricultural sector would be served better if resources are released for higher investment, terms of trade are improved in favour of agriculture, and subsidies, which are short-sighted measures, are effectively curtailed.

A high growth in input subsidies has been accompanied by a stagnation in investment in agriculture during the 1980s. In fact, public sector investment in agriculture has declined significantly during this period. Further, subsidies on irrigation through electricity and canal water causes distortions in the cropping pattern in favour of water-intensive crops (e.g., paddy in Punjab and sugar in Maharashtra). This also has serious implications for inter-class and inter-regional parity. Another serious fallout of input subsidies in agriculture pertains to environmental degradation. Excessive irrigation causes salinity and waterlogging in some areas and overdraft and depletion of ground water in others. Similarly, overuse of nitrogenous fertilisers has damaged the quality of soil. Further, residual and unutilised nitrogen eventually contributes to ground water pollution.

SUBSIDIES IN EDUCATION

An important policy option within the government aided educational sector relates to the relative support to the major subsectors within general education -- primary or elementary, secondary, higher education and others. It is generally acknowledged in the literature that where levels of literacy are low and that of poverty high, primary or elementary education ought to be the focus of government attention in terms of government expenditure and even more so in terms of subsidies. This may be the most efficient policy if the social rate of return from elementary education are taken to be the highest in a society like ours. This policy would also be equitable as it would benefit the poor most, and would also allow the poor to become eligible for whatever subsidies were available at the higher levels of education. In the case of a resource-constrained government, the general prescription thus is to subsidise primary/elementary education and recover costs incurred in the provision of higher education to the extent possible. It needs, however, to be borne in mind that even substantially higher recovery rates per student would not guarantee a lower absolute amount of subsidy in higher education as compared to primary education; there can be large differences in the per pupil cost of providing education at these levels. On the other hand, the number of pupils is likely to be much larger in the case of primary/elementary education than at other levels. We have estimated and looked at the pattern of the per capita subsidies going to the above mentioned subsectors within education from the States.

Table 5.5 clearly shows that, on an average, subsidies to elementary education form about half of the total subsidies on general education. However, this is not true for all individual States. The share of elementary education is the lowest in the high income States and the highest in the low income States (Goa, Punjab and West Bengal actually give higher subsidies to secondary education than primary education). A negative correlation between the level of per capita income and the share of subsidies to elementary education is thus discernible. The simple correlation coefficients of per capita income with per capita subsidies on elementary and secondary education are 0.31 and 0.67 respectively.

There is some degree of direct relationship between the per capita income and per capita subsidies on general education as a whole. This is true even if we exclude Goa, which is in the nature of an outlier. This is probably a result of greater availability of resources as the per capita SDP rises (and not necessarily a greater concern for education) as the ratio of subsidies on

general education to GDP (not reported) show. The averages of this ratio for the high, middle and low income States are 3.45, 3.94 and 4.02 per cent (weighted average for all 15 States: 3.47 per cent) respectively. Given that the level of literacy and other indicators of educational achievement do exhibit a direct relationship with the level of per capita GDP in general, there seems to be a recognition of the need for greater public intervention (in the form of government expenditure/subsidies) in the area of education in the low income States as compared to other States.

Table 5.5
Per Capita Subsidies in General Education

<i>State</i>	<i>Total</i>	<i>Elementary</i>	<i>Secondary</i>	<i>University</i>	<i>Others</i>
(Rupees)					
High Income States					
Goa	657.16	202.09	344.14	94.82	16.11
Gujarat	299.60	167.61	101.09	27.31	3.60
Haryana	246.99	112.25	92.80	38.98	2.96
Maharashtra	290.94	137.22	115.63	31.64	6.45
Punjab	306.82	102.98	156.31	43.37	4.15
Middle Income States					
Andhra Pradesh	194.02	85.67	60.26	44.31	3.77
Karnataka	253.96	136.56	75.88	37.70	3.82
Kerala	357.78	176.33	108.26	69.21	3.98
Tamil Nadu	285.81	140.23	105.34	29.88	10.38
West Bengal	218.92	77.78	107.61	28.62	4.90
Low Income States					
Bihar	171.24	110.38	36.48	20.28	4.11
Madhya Pradesh	171.31	108.04	40.02	20.92	2.32
Orissa	203.18	118.68	51.22	29.41	3.87
Rajasthan	256.86	139.87	89.57	21.35	6.06
Uttar Pradesh	152.13	75.72	55.89	18.56	1.96
Average	223.80	112.71	77.54	29.21	4.34

A major problem with the assessment of public policy with respect to subsidising education relates to the difficulty of analysing their incidence. The developmental impact of the subsidies can differ widely, however, depending on the distribution of subsidies between teachers and students, and within different categories of students. A subsidy merely to support the salaries of

teachers unconnected with any indicator of their productivity (as is given in several States), for example, may not have the requisite developmental impact at all. In fact, such subsidies may cause leakages from the system and end up in completely unintended hands. Similarly, general subsidies to all students may not have as much impact as selective subsidies based on criteria related to need.

Since almost the entire expenditure on education is in the form of a subsidy, patterns reflected on the basis of expenditure also reflect corresponding patterns for subsidies. Important features pertaining to distribution of benefits of educational subsidies have been highlighted in a few studies. For example, Tilak (1996) notes that there is a high degree of disparity in the benefits accruing to girls vis-a-vis boys. The number of boys who receive partial or total exemption from payment of tuition fees is more than the number of girls. Also, a smaller proportion of girl students receive scholarships than boys in rural areas, and the amount of average scholarship is also less for a girl student. The percentage of students exempted from fees wholly or partially in primary education was also higher for urban rather than rural areas. In Dasgupta and Tilak (1983), a study of the benefits of public expenditure on education by income groups for rural and urban areas of Andhra Pradesh was made. It was found that expenditure of elementary and secondary education was relatively higher for the lower income groups while that on higher education was a monotonically increasing function of income. While this pattern appeared to be similar for rural and urban areas, public expenditure on higher education in rural areas favoured the richer classes relatively more.

HEALTH SUBSIDIES

The recovery rates in the health sector both for the Centre (3.33 per cent) and the States (1.55 per cent) are very low, and the pattern of government expenditure on health can be taken to reflect generally the pattern of health subsidies also.

According to our own estimates for 1993-94, subsidies on health were predominantly allocated to the non-rural sector, the share of which in total subsidies was 75.9 per cent of total health subsidies. In the Centre, the share of non-rural subsidies was 98 per cent while, for the States, this share was 73 per cent. In the total health subsidies, the States account for about 88.6 per cent. However, it is worth noting that even though health expenditures are

classified as rural and non-rural, the corresponding figures should not be taken as servicing exclusively rural population and urban population respectively because a considerable proportion of rural population is served by hospitals and other facilities located in urban areas.

The relative urban bias in health expenditures, as per budgetary allocations, has been noted in other studies also. According to a study by Reddy and Selvaraju (1994), considering all levels of government together, 33.04 per cent of health care expenditure was allocated to the rural sector, and 66.96 per cent to the urban sector. For the Centre alone, the relative ratios were 29 per cent for rural and 71 per cent for the urban sector. The rural per capita expenditure was Rs. 25.90 as against Rs. 151.56 for the urban sector. For the States also, the expenditure profile is clearly in favour of the urban areas which get 66.21 per cent of total expenditure on health.

The distribution of resources between type of expenditure (curative, preventive and others) indicates that the highest priority was accorded to curative expenditure both by the States and the Central government. The share of preventive health care expenditure has however shown an increase over the years as indicated in Table 5.6. The greater emphasis on curative health care expenditure often reflects a bias towards the better-off people whereas preventive health care expenditure with much larger externalities would clearly be of greater help to the economically weaker sections of the society.

Deolalikar and Vashishtha (1992) carried out a study on the utilisation of government and private health services in India based on all-India market information survey (MISH) by NCAER in which a medical module was included in 1990. They find that health infrastructure, government health expenditure and the general standard of living in a community all serve to reduce the real cost of health care for consumers. They find that own price elasticity of demand for public health centres (PHCs) is quite small (-0.2). From this, they conclude that substantial revenue increases could be realised from raising user charges at the PHCs. Further, the middle and high income groups rely on PHCs to a much greater extent than the poor. As such, increased user charges at PHCs would also have favourable distributional effects. In this study, significant negative cross-price elasticities have also been reported. An increase in user charges at PHCs will shift demand to use of government hospital, and that in user charges at government hospitals, to private hospital/nursing homes. Conversely, increased user fees at private hospitals/nursing homes would shift demand towards government hospitals and PHCs.

TABLE 5.6
Structure of Health Care Expenditure by Purpose and by Level of Government:
1974-75 to 1990-91

<i>Level of Government\Purpose</i>	(Percentage)				
	<i>Direction¹ and Administration</i>	<i>Curative²</i>	<i>Preventive³</i>	<i>Miscellaneous⁴</i>	<i>Total</i>
1974-75					
a. Central government	4.79	57.43	19.65	18.13	100.00
b. State governments	6.45	64.72	22.91	5.91	100.00
c. Union territory governments	8.01	82.73	3.49	5.76	100.00
d. All governments (a + b + c)	6.35	64.46	22.34	6.86	100.00
1982-83					
a. Central government	3.02	55.00	22.85	19.13	100.00
b. State governments	5.03	60.45	27.18	7.34	100.00
c. Union territory governments	3.18	75.26	10.94	10.61	100.00
d. All governments (a + b + c)	4.82	60.26	26.51	8.42	100.00
1990-91					
a. Central government	2.66	62.58	25.54	10.22	100.00
b. State governments	5.12	59.19	27.14	8.55	100.00
c. Union territory governments	4.63	86.12	6.76	2.48	100.00
d. All governments (a + b + c)	4.88	60.25	26.33	8.53	100.00

Source: Reddy & Selvaraju (1994).

- Notes: 1. Includes Direction and Administration under (a) Medical, (b) Public Health and (c) Family Welfare.
2. Includes expenditure on Medical Relief, Employees State Insurance, Central Government Health Scheme, Medical Education Training, Research, Other System of Medicine-Ayurveda, Homeopathy, Sidda, Unani, etc. - under Medical.
3. Includes expenditure on (a) Prevention and control of diseases, prevention of food adulteration, drug control, minimum needs programme under Public Health and (b) Family Planning Services, maternity and child health, Compensation and Other Services and Supplies under Family Welfare.
4. Includes expenditure on (a) International cooperation, medical stores department, department of drugs, school health scheme, other health schemes and tribal area, sub-plan under Medical, (b) Training, health statistics and research, public health laboratories, health transport, international cooperation under public health and (c) Transport selected area programme, mass education, training, research and statistics, research and evaluation, awards tribal area sub-plan and international cooperation under Family Welfare.

INTER-REGIONAL DISTRIBUTION OF STATE-LEVEL SUBSIDIES: SOCIAL AND ECONOMIC SERVICES

An idea as to inter-regional distribution of subsidy benefits can be obtained by looking into distribution of per capita subsidies across States. As far as subsidies given by the States are concerned, it has clearly been brought out that residents of the poorer States also get relatively low per capita subsidies. This general pattern holds for subsidies in social as well as economic services. The inter-State pattern of per capita subsidies was discussed in Chapter 3. It was noted that there is a positive relationship between per capita income of a State and per capita subsidies. As the State subsidies accrue more to people living in the richer regions, it is at least an indirect indication that benefits of the large volume of State subsidies accrue more to the richer sections of the society.

DISTRIBUTIONAL IMPACT OF SUBSIDIES CONSIDERED AS A WHOLE

While the distributional pattern of the benefits of individual subsidies, or that of a particular group, was considered in the previous sections, some remarks about the overall distributional impact, considering the subsidy-regime as a whole, are also in order. This is not a straightforward exercise because of the myriad forms that these subsidies take and the variety of mechanisms through which they are given.

The estimates of implicit and explicit subsidies together indicate that the quantitatively important subsidies relate to agriculture, irrigation, fertilisers, rural development, education, health, food, power, industry and transport sectors, taking the Centre and the States together. Of these, practically all the subsidies on agriculture, irrigation and fertilisers, and a substantial portion of the subsidies on rural development, power and food are meant for the farmers. But, as discussed earlier, in order to ascertain that they are net recipients of benefits, account should be taken of both input subsidies and output prices. In this wider context, Indian agriculture has been shown to be net taxed rather than net subsidised. Most of the subsidies in the area of industry and transport, and a part of the subsidies in the areas of food and power largely benefit the public enterprises. Only the subsidies on education, health, a part of those on rural development, the consumer subsidy within food subsidies, and some parts of the subsidies on power and transport can be presumed to be subsidies to the consumers of these services. On their overall distributional pattern, some observations can be made.

First, many of the subsidies on agriculture have a bias towards the surplus farmers, who usually fall in the category of at least medium farmers. Subsidies through procurement prices clearly fall into this category. Further, the consumption of fertilisers, irrigation water and power is also greater in this category of farmers. The other subsidies in agriculture could be assumed to be in proportion to holdings, while those on rural development may have a pro-poor bias. On balance, the subsidies in agriculture do appear to be somewhat regressive. The subsidies under social welfare schemes (excluding the direct transfer payments) may mitigate this regressivity to some extent.

The consumer subsidy component of the food subsidies may have a pro-poor bias on the whole due to partial operation of the self-selection mechanism resulting from the non-monetary costs involved and the indifferent quality of supplies. A similar mechanism operates with publicly supplied health and family welfare services, making the subsidies in this area somewhat progressive. The distribution of education subsidies is likely to be regressive due to (a) less than half of these being in elementary education, (b) lack of means testing and (c) leakages from the system.

As already noted, much of the subsidies going to industries actually benefit the public enterprises. These normally benefit either the employees or the consumers. Given that the bulk of the consumers are either other public enterprises or the private industrial sector, almost all the subsidies probably end up as either wages for the employees or private profits. In either case, the distribution is likely to be regressive. The same reasoning is probably applicable to power subsidies and a part of the transport subsidies as well. The transport subsidies available for the consumers, however, may have a more progressive distribution.

Keeping in mind the weights of the major subsidies considered above, the overall distribution could thus well be rather regressive. This is not to say that therefore these subsidies could straightaway be dispensed with. The economic effects of these subsidies need to be carefully considered before such a judgement is passed. For example, it may be necessary to continue subsidies to agriculture to maintain self-sufficiency in foodgrains. It is also necessary to keep in mind the fact that there may be other imperfections which may not be amenable to policy measures, and that subsidies may be a way of countering them. However, careful review and rationalisation of the subsidies is certainly called for.