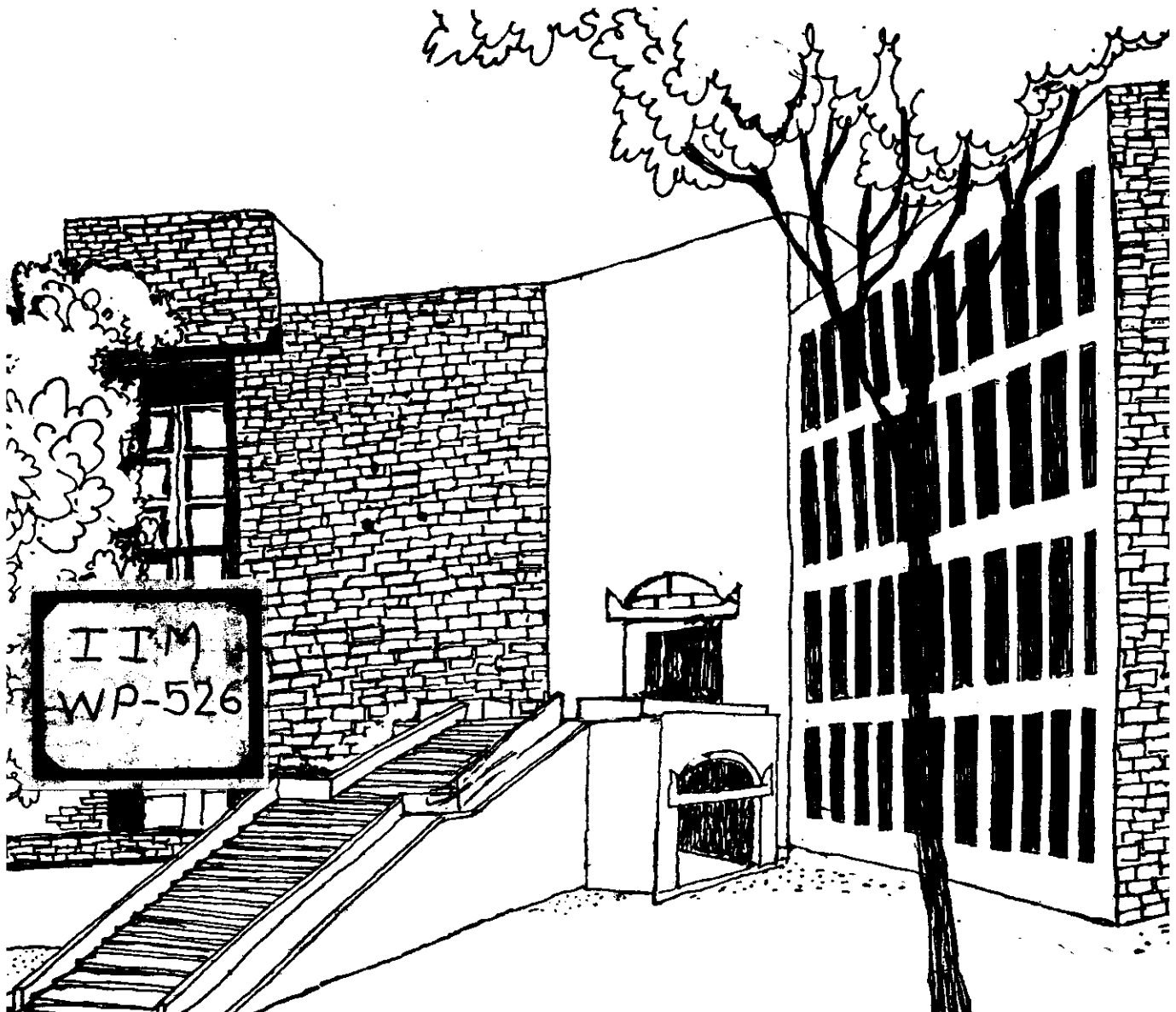


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No. 52  
526

# Working Paper



THE COST OF DOORDARSHAN PROGRAMMES  
FOR WOMEN AND CHILDREN:  
SOME PRELIMINARY ESTIMATES

By

U.K. Srivastava

WP 526

1984  
(526)

W P No. 526

August, 1984

The main objective of the working paper series of the IIMA is to help faculty members to test out their research findings at the pre-publication stage.

INDIAN INSTITUTE OF MANAGEMENT  
AHMEDABAD-380015  
INDIA

THE COST OF DOORDARSHAN PROGRAMMES FOR WOMEN AND CHILDREN : SOME  
PRELIMINARY ESTIMATES

U.K. Srivastava\*

There has been a growing realization that children and women have been relatively neglected in the developmental process.<sup>1</sup> This in spite of the fact that, according to the 1981 census, children (upto 14 years) constitute about 40 percent of the total population, and women constitute 48.32 percent of the adult population. Further, there is lack of adequate communication support to make developmental programmes for women and children more effective. This concern has been more articulately voiced by the Mainstream in a series of articles.<sup>2</sup>

Nowhere is this apathy more felt than in the Doordarshan programmes for women and children. While 70 percent of the population would be covered by Doordarshan by the end of 1984 (Appendix 1), only 1065.4 hours of transmission were set aside for women and children (see Appendix <sup>2 and 3</sup> ~~2~~) of a total transmission of 20,595 hours. If programmes for school children are also included, the figure would go up to 1649.6 hours.

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Paper presented at the Seminar on "Media Utilization for the Development of Women and Children" organized by the Indian Council for Communication Training and Research at the India International Centre, September 11-12, 1984. The author is grateful to Dr. Binod C. Agarwal of the Space Applications Centre, Ahmedabad for creating an interest in the problem. The author would also like to express his gratitude to Mr. B.K. Khurana, Director, Audience Research Unit, Doordarshan, New Delhi, for sharing the data and his valuable experience. Thanks are due to Miss Asha R. Sharma for research help.

\* Professor, Indian Institute of Management, Ahmedabad.

<sup>1</sup> An Analysis of the Situation of Children in India, United Nations Children's Fund, Regional Office for South Central Asia, New Delhi, 1984; C. Gopalan, "Development and Deprivation: The Indian Experience," Economic and Political Weekly, 18(51), December 17, 1983, pp. 2163-7.

<sup>2</sup> See Mainstream, (April 14, April 21, April 28, and May 5, 1984)

The Mainstream articles on Working Group on Software Plan for Doordarshan have cited the recommendations that time devoted to the telecast for the women and children may be substantially increased. The question is then is: What is the cost of communication support through Doordarshan for these kind of programmes? This paper will, therefore, look into the total cost function of the Doordarshan programmes, average cost of production, transmission, and reception of the programmes per capita for the two groups. Before presenting the framework and empirical estimates, we will estimate the effective reach of the programmes to the target groups and highlight some of the felt needs in relation to the programmes for women and children.

#### I TARGET POPULATION IN VIEWING AREA AND EFFECTIVE REACH OF DOORDARSHAN

Television was introduced on an experimental basis in New Delhi on 15 August 1959. Subsequently many centres came into existence in quite succession between 1972 and 1975. The major spurt was witnessed on the eve of the Ninth Asian Games in November 1982 when 20 Low Power Transmitters were set up in state capitals and important towns. The expansion has now reached a peak with one transmitter coming up everyday. It is expected that by November 1984 approximately 70 percent of the population will be covered by TV.

We find from Table 1 that the target population<sup>covered</sup> has increased from 689.412 lakhs in 1976 to 1334.565 lakhs at the end of 1983. At the end of the current financial year (1984-85), this figure is expected to go up to 3485.9 lakhs. The effective reach is, however, conditioned by availability of TV sets and sets actually tuned in at a given point of time adjusted for linguistic compatibility of the programmes. The effective viewing audience of women and children for any programme has increased from 12.99 lakhs in 1976 to 57.27 lakhs in 1983. It is projected to reach 77.72 lakhs by the end of 1984 (Table 2). We have assumed that, on an average, 73 percent of sets are tuned in at a given point of time.<sup>3</sup> Reducing this average by 10 percent for language

<sup>3</sup> "Viewership Measurements and Reactions to Advertisements," Directorate General, Doordarshan, New Delhi, 1981.

TABLE 1 : COVERAGE OF DOORDARSHAN PROGRAMMES

Year	No. of transmitters	Area in sq.k.m.	Population covered(in lakhs)		Estimated population in Target Audience viewing area (in lakhs)			
			Urban	Rural	Total (4+5)	Children	Women	Total (7+8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1976	9	143,450	418.23	581.03	999.26	399.704	289.708	689.412
1977	14	153,200	538.57	842.71	1381.28	552.512	400.464	952.976
1978	16	175,800	546.77	933.47	1480.24	592.096	429.155	1021.251
1979	18	231,100	595.66	1086.61	1682.27	672.908	487.728	1160.636
1980	18	231,100	595.66	1086.61	1682.27	672.908	487.728	1160.636
1981	19	237,400	626.31	1100.43	1726.74	690.696	500.621	1191.317
1982	41	232,450	693.32	1191.79	1885.11	754.044	546.536	1300.58
1983	43	286,750	726.73	1207.64	1934.37	773.748	560.817	1334.565
1984*	180	N.A	N.A	N.A	5052.6	2021.040	1464.860	3485.900

Source: Basic Information, Audience Research Unit, Directorate General, Doordarshan, New Delhi, July 1984.

- Notes:
- 1) Data have been updated by us wherever possible.
  - 2) \* Projected
  - 3) N.A = Not Available

TABLE 2 : ESTIMATED NUMBER OF TELEVISION SETS, SETS ACTUALLY TUNED-IN AND NUMBER OF VIEWERS FROM WOMEN AND CHILDREN POPULATION

Year	Number of television sets		Number of tuned-in sets	Number of tuned-in sets after adjustment of language incapability	Estimated Children Viewers	Women	Total (columns 9+10)			
	Domestic	Misc. Commercial						Total (columns 2+3+4)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1976	4,68,803	4,578	5,845	4,79,226	3,49,834	3,14,851	18,89,106	7,55,642	5,44,062	12,99,704
1977	4,68,803	4,576	5,845	4,79,226	3,49,834	3,14,851	18,89,106	7,55,642	5,44,062	12,99,704
1978	6,66,032	4,903	5,680	6,76,615	4,93,928	4,44,536	26,67,216	10,66,886	7,68,158	18,35,044
1979	N.A	M.A	N.A	8,99,123	6,56,359	5,90,724	35,44,344	14,17,737	10,20,771	24,38,508
1980	N.A	N.A	N.A	11,51,311	8,40,457	7,56,412	45,38,472	18,15,388	13,07,080	31,22,468
1981	N.A	N.A	N.A	15,47,918	11,29,980	10,16,982	61,01,982	24,40,756	17,57,345	41,98,101
1982	N.A	N.A	N.A	20,95,537	15,29,742	13,76,768	82,60,608	33,04,243	23,79,055	56,83,298
1983	20,84,354	16,640	10,732	21,11,726	15,41,559	13,87,404	83,24,424	33,29,769	23,97,434	57,27,203
1984	N.A	N.A	N.A	28,65,726*20,91,979	18,82,781	1,12,96,686	45,18,674	32,53,446	77,72,120	

Sources: 1) Compiled from various issues of India, A Reference Annual, compiled by the Research and Reference Division, Ministry of Information and Broadcasting, Publications Division, Government of India.  
 2) TV Audience Survey, Viewership Measurement and Reactions to Advertisements, A Report by Directorate General, Doordarshan, New Delhi, 1981.

Notes: 1) NA = Not Available  
 2) \* Projected

incompatibility, we have taken that only 63 percent of the sets are tuned in at a given time. It is on this basis that figures in Table 2 have been computed.

## II RELEVANT TV PROGRAMMES FOR WOMEN AND CHILDREN

From the highlights of the Working Group report in Mainstream,<sup>4</sup> we summarize the felt needs with regard to programmes for women and children.

### Use Television for Women's Equality

#### Solutions suggested

1. Positive portrayal of women as an integral part of all Doordarshan's programmes.
2. Drop commercial films which exploit womanhood and portray vulgarity.
3. Project the image of woman as one who is caring and willing to share in household, child-care, and contraceptive responsibilities.
4. Doordarshan policy-makers, programming and production staff to have regular orientation to needs of this segment of the population.
5. Programme Advisory, Monitoring and Purchase Selection Committees should be constituted for all major programmes including films, imported programmes, and advertisements.
6. Women's programmes should be telecast twice a week.
7. Regular educational programmes for women.
8. Children's programmes should project values of equality and or breaking sex stereotypes.
9. Analyse and evaluate the week's programme with audience critics, newspapers, women's organizations, and young film-makers.

### Use Television in Fostering the Development of Desirable Values and Habits Among Children

#### Solutions suggested

1. Programme production should be based on research.
2. Programmes should not be perceived as entertaining.

<sup>4</sup> See Mainstream, op. cit.

3. More programmes for disadvantaged children in rural and urban areas.
4. Animation films must be simple and realistic which contain clear visual portrayals of programme messages.
5. Improvement of programmes.
6. Selection of producers and training/imparted to them should be systematic and not haphazard.
7. Increasing the time span of programmes for children to 15-20 percent of total transmission time.
8. Separate unit and studio should be set up within Doordarshan centres.
9. Individuals from the fields of media and child development should review programmes periodically for better effectiveness.

If the above recommendations are implemented it will mean considerable changes in the content and time. The group has recommended that programmes for women be telecast twice a week. Suppose each of these telecasts is of half an hour duration, it will mean that in a year 624 hours of transmission will be for women. If the present annual duration of programmes were to remain the same, it will mean that 3.03 percent of the total programmes duration will be for women.

Similarly for children's programmes, the group has recommended an increase in the programme duration such that 15-20 percent of total transmission time be devoted for children's programmes. This will imply that annually 3089 (15 percent) hours of transmission programme will be for children.

### III CONCEPTUAL FRAMEWORK AND DATA USED FOR ESTIMATION OF COST FUNCTIONS

#### a) Framework of Cost Function for Production and Transmission of Programmes

The focus of this paper is on computing the total cost for a given number of transmission hours.<sup>5</sup> Let us represent this as

<sup>5</sup> For other useful studies in the area, see Dean T. Jamison, Steven J. Kloos and Stuart J. Walls, The Costs of Educational Media: Guidelines for Planning and Evaluation (London: Sage Publications, 1978); B.D. Dhawan, Economics of Television in India (New Delhi: Sultan Chand, 1974).



Total cost = TC = TC(h)

where TC(h) is the total cost of transmission for h number of transmission hours.

The average cost per hour of transmission can be computed from total cost as follows :

$$\text{Average cost} = AC(h) = TC(h)/h$$

This average cost can be converted into average cost per hour of transmission per viewer as follows :

$$AC(h)/N$$

where N is number of women and children in the effective viewing audience.

Total cost consists of two parts: fixed and variable. It can be written in a linear form as follows:

$$TC(h) = F + V_h$$

$$\text{where } F = f_1 + f_2 + f_3$$

$f_1$  = annualized cost of the satellite, master control at Hasan, and ground segment.

$f_2$  = annualized cost of studios + transmitters + machinery and equipments.

$f_3$  = annual cost of Directions and Administration + Listeners Research

$V_h$  = variable cost per hour of programme transmission

h = hours of programme transmission per year.

The need for annualizing the capital cost represented by  $f_1$  and  $f_2$  arises from the fact that these costs are incurred once to acquire goods and services which have useful life time that extends beyond the time of purchase. For example, in the case of  $f_1$ , the cost of satellite cover has been incurred once but it has a life time of seven years. Similarly, we assume that the life time of studios is 20 years and transmitters and that machinery and equipments ( $f_2$ ) have a life time of ten years.

Since the life of these assets is long, it is important to annualize these expenditures on capital equipment. The process of annualization takes into account two factors: 1) First, the life time of equipment (it comes to reason that if the life is  $n$  years,  $1/n$  amount should be charged every year as annual depreciation cost). 2, Second, the social discount rate. Social discount rate represents the value judgement concerning the cost to society for tying up the capital and foregoing any other use for that capital.

The discount rate represents an interest rate which must be paid for the use of capital. Both these factors can be put together as follows:

$$a(r, n) = r(1 + r)^n / (1 + r)^n - 1$$

where,  $r$  represents the social discount rate

$n$  represents the economic life of the capital equipment.

This expression can be called the annualization factor. For illustrative purposes we are giving in Table 3 the values of annualization factor by taking  $r$  equal to zero and  $n$  going from 1 - 20, and varying the values of  $r = 7.5$  percent, 10 percent and 15 percent. It can be seen that when  $r = 0$  the annualized value of the capital asset is  $1/n$  only.

We can illustrate the use of Table 3 for annualizing the value table asset by taking a case where capital cost is Rs. one lakh and the asset has 20 years life. We further take social discount rate (proxy for cost of capital) at 10 percent. From the Table 3 we find that the annualization factor for  $r = 10$  percent and  $n = 20$ , is .131. Therefore, the annualized cost of the asset in this case is

$$1,00,000 \times .117 = 11,700 \text{ per year for 20 years.}$$

Variable costs change with change in the hours of transmission. Since, we have assumed a linear form of cost function, variable costs change proportionately with hours of transmission.

TABLE 3 : VALUES OF THE ANNUALIZATION FACTOR  $a(r, n)$ 

n	0	n = 7.5%	10%	15%
1	1.000	1.075	1.100	1.150
2	.500	.557	.576	.615
3	.333	.385	.402	.430
4	.250	.299	.315	.350
5	.200	.247	.264	.290
6	.167	.213	.230	.264
7	.143	.189	.205	.240
8	.125	.171	.187	.223
9	.111	.157	.174	.210
10	.100	.146	.163	.199
11	.091	.137	.154	.191
12	.083	.129	.147	.184
13	.077	.123	.141	.179
14	.071	.118	.136	.175
15	.067	.113	.131	.171
20	.050	.090	.117	.160

Source: J. Price Gittinger (Ed), Compounding and Discounting Tables for Project Evaluation, EDI Teaching Material Series, Reprinted in India by Industrial Development Bank of India, 1981.

b) Framework of Total Cost Function for Production, Transmission and Reception of Programmes

To account for the cost of reception, the above cost function was modified as follows: In computing Fixed Cost (F) we added a fourth component ( $f_4$ ) which is the annualized cost of total investment in television sets. The revised F is denoted by F' and accordingly the total cost function TC(h) is also denoted by TC'(h). The procedure for other derived costs is same.

c) Data Used

Empirical data for most of the fixed and variable costs for 1976-77 and 1984-85 were derived from the Demand for Grants and the Annual Reports of the Ministry of Information and broadcasting, Government of India, New Delhi, and presented in ~~Appendix 3 (Tables 1, 2 and 3)~~ <sup>Appendix 4, 5 and 6</sup>. The details are given below.

Annualized Cost of the Satellite ( $f_1$ )

The presently operating satellite INSAT 1B was launched in August 1983. The cost of the multipurpose satellite was Rs. 122.9 crores.<sup>6</sup> It has three functions: i) telecommunications, ii) meteorological earth observations and data relay, and iii) direct TV broadcasting to augment community sets in rural areas and networking of terrestrial TV transmitters and regional and national networking of radio transmitters.

In the absence of a better basis, we allocated one third cost for each function. Therefore, the cost of the space segment for coverage of Doordarshan telecasts came to Rs. 40.76 lakhs. This cost was annualized by assuming that i) the life of the satellite is seven years, and ii) the cost of the capital is 10 percent.

<sup>6</sup> Government of India, INSAT - The Indian National Satellite System, (New Delhi : INSAT Coordination Committee, January 1984), p. 5.

Annualized Costs of Studios, Transmitters,  
Machinery and Equipments (F<sub>2</sub>)

Data on actual expenditure on these items were collected from the Demand for Grants of the I & B Ministry. The data were annualized by assuming that, i) the life of studios is 20 years, and that of transmitters and machinery and equipments is 10 years, ii) the cost of the capital is assumed to be 10 percent.

Annual Cost of Direction and Administration  
and Listners Research (F<sub>3</sub>)

The Demand for Grants of the I & B Ministry presents these data under two categories: (i. Direction and Administration, ii. Listners Research). Since, this expenditure does not represent any asset with lifetime more than one year and does not vary in proportion to hours of transmission, we have taken this as a part of the fixed cost in the year it was spent.

Variable Cost (V)

We have included three components in the variable cost: i) cost of operation and maintenance, ii) programme services, and iii) commercial services. Data on individual components of variable cost were collected from the demand for grants of the I & B Ministry.

Hours of Programming (h)

Efforts were made to get accurate data on actual transmission by Doordarshan from 1976-77 onwards. While we could only get data for one month (April 1983), we could get information about the present programming schedule. We converted the April 1983 data (see Annexure II, tables ~~1 and 2~~ <sup>See Appendix 2 and 3</sup>) to an annual figure which was used as an estimate for total transmission hours for 1983-84. On the basis of the recent programming schedule given in Appendix 7, we have estimated the number of hours of programming in the current year (1984-85).

Additional Data for Including the Cost of Reception of Telecasts

For estimating the total cost function, we require data on investment incurred in TV sets. An estimate was made by multiplying the total number of television sets with an average per set cost of Rs. 6,000. This figure was annualized by making two assumptions: i) a television set has a life of 10 years, and ii) the cost of capital ( $r$ ) is 10 percent. The annualized fixed cost estimates were used as an additional component of the fixed cost ( $f_4$ ) in deriving the total cost function.

RESULTS OF COST ANALYSIS

a) Total and Average Cost of Production and Transmission

An effort was made to compute the cost function for the period 1976-77 to 1984-85. The data are given in Table 4. The cost function could be computed only for 1983-84 and 1984-85 since the figure for total transmission time was not available. These are as follows:

$$1983-84 : TC(h) = 14,78,06,000 + 12,073 h \\ \text{where } h = 20,595 \text{ hours}$$

$$1984-85 : TC(h) = 24,32,06,000 + 15,061 h \\ \text{where } h = 21,850 \text{ hours.}$$

Accordingly the average cost per hour,  $AC(h)$  was estimated as:

$$1983-84 : AC(h) = \text{Rs. } 19,249$$

$$1984-85 : AC(h) = \text{Rs. } 26,519$$

From Table 2 the number of women and children viewers was 57,27,203 in 1983-84 and 77,72,120 in 1984-85. When we divide the average cost per hour by these figures we find the average cost per hour per viewer comes to 0.003 paise or 1 paise per hour for 3 viewers. We can further estimate the cost of total programme for women and children by multiplying the average cost per hour per viewer by the number of hours of transmission. Since transmission time for women's and children's programmes totalled 1649.6 hours, the figure is Rs. 4.95 per person.

TABLE 4 : COMPONENTWISE COST ESTIMATES AND AVERAGE COST OF PROGRAMME PER HOUR AND PER VIEWER (TARGET GROUP)

Financial Year	Fixed Cost (F) (Rs. in '000)				Variable cost (V) (Rs. '000)	Annual hours of transmission (Nos.)	Variable cost per hour of transmission (V <sub>h</sub> ) (Rs.)	Average cost per hour AC(h) (Rs)	No. of viewers from target group (N)	AC(h)/N (Rs)
	Annualized f <sub>1</sub>	Annualized f <sub>2</sub>	f <sub>3</sub>	Total (columns 2+3+4)						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1976-77	-	1,19,90	31,56	1,51,54	7,54,50	NA	@	@	12,99,704	@
1977-78	-	1,84,96	42,32	2,27,28	8,65,34	NA	@	@	12,99,704	@
1978-79	-	2,11,75	46,37	2,58,12	9,34,95	NA	@	@	10,35,044	@
1979-80	-	2,46,00	43,35	2,89,35	10,30,09	NA	@	@	24,38,508	@
1980-81	-	2,88,81	44,43	3,33,24	12,01,61	NA	@	@	31,22,460	@
1981-82	-	4,27,53	52,40	4,79,93	15,29,65	NA	@	@	41,98,101	@
1982-83	-	6,61,89	91,05	7,52,94	20,57,78	NA	@	@	56,83,290	@
1983-84	0,36	13,53,07	1,24,91	14,78,06	24,86,34	20,595*	12,073	19,249	57,27,203	0.003
1984-85	0,36	22,54,09	1,77,89	24,32,06	32,90,74	21,850*	15,061	26,519	77,72,120	0.003

Source: Computed from the basic data given in Appendix 2 and data on viewing population presented in Table 2.

- Notes:
- 1) NA = Not available
  - 2) @ = Cannot be constituted because the data on annual hours of transmission is not available.
  - 3) \* = For estimates of 1983-84, see Appendixes 2 & 3, and 1984-85 estimates are based on programme schedule given in Appendix 7.

b) Total and Average Cost of Production, Transmission and Reception of TV Programmes

To account for the cost of reception, we modified the cost function by adding the annualized fixed cost of reception ( $f_4$ ) to the fixed cost ( $F$ ) and this revised fixed cost was denoted by  $F'$  in Table 5. When this fixed cost are along with the variable cost for a given annual hours of transmission, the total cost can be written as follows:

$$1983-84 : TC'(h) = 2,26,52,50,000 + 12,073h; \quad h = 20,595$$

$$1984-85 : TC'(h) = 2,30,26,80,000 + 18,631h; \quad h = 21,850$$

From this cost function, we found the average cost per hour of production, transmission and reception to be Rs. 1,19,529 in 1983-84 and Rs. 1,54,560 in 1984-85. The average cost per hour of transmission and reception per viewer ( $AC'(h)$ ) came to Rs. 0.014 in 1983-84 and 1984-85.

On the basis of hours of programmes telecast and the cost function, the average cost of transmission and reception per viewer per year worked out to be Rs. 296 in 1983-84 and Rs. 299 in 1984-85.

Based on these calculations the average cost of owning and viewing television per year worked out to be as follows :

$$1983-84 : \text{Rs. } 1774.2$$

$$1984-85 : \text{Rs. } 1792.8$$

The public cost of production and transmission amounted to only Rs. 285.6 in 1983-84 and Rs. 304.2 in 1984-85. The balance in both years was met privately.

As the number of viewers increase, we should expect the public cost of production and transmission per viewer to come down substantially. But, the private cost would not come down substantially unless the cost of TV set comes down drastically or some other ways are found to increase the access of potential viewers to television.



TABLE 5 : TOTAL COST OF PRODUCTION, TRANSMISSION AND  
RECEPTION OF TV PROGRAMMES BY THE VIEWER

Particulars	1963-64	1964-65
1) F Annualized fixed cost of programme production and transmission (Rs. '000)	14,70,06	24,32,06
2) $f_4$ Annualized fixed cost of reception (television sets) (Rs. '000)	2,06,52,60	2,80,26,00
3) F' Total fixed cost (Rs. '000)	2,21,30,74	3,04,58,06
4) V Variable cost (Rs. '000)	24,86,34	32,90,74
5) Annual hours of programme transmission	20,595	21,850
6) AC'(h) Average cost per hour of production, transmission and reception (Rs)	1,19,529	1,54,460
7) N Number of viewers	83,24,424	1,12,96,606
8) $AC(h)/N$ Average cost per hour of production, transmission and reception per viewer (Rs)	.014	.014
Average cost of transmission and reception per viewer per year (Rs)	295.7	298.0
Average cost of owning and viewing a television per year	1774.2	1792.0
Of which :		
- Public cost of programme production and transmission (Rs)	205.6	304.2
- Private cost of reception (Rs)	1488.6	1488.6

c) Cost of Communication Support in the Perspective of the Developmental Outlay for Programmes on Women and Children in the Seventh Plan

If we take the average cost of production and transmission per hour, the present duration of programmes for women and children and the effective viewing population in the target group, we find that a sum of Rs. 4.95 is spent per year per viewer. If we further add the cost of reception to it, the total cost per viewer comes to Rs. 23.1 per year. On the basis of the present viewing population, the expenditure on communication support to development programmes for women and children comes to Rs. 3.85 crores for production and transmission of programmes and Rs. 17.95 crores if we include the cost of reception.

The outlay in the Sixth Plan for development and welfare programmes of women and children was about Rs. 71.47 crores per year (see Appendix). The Seventh Plan allocation has yet not been finalized. If we take this outlay to be double of the Sixth Plan outlay, the annual outlay would be Rs. 142.94 crores. Now, if the proportion of total cost of production to that of the total outlay per year is computed, we see that the cost of communication support comes to only two percent. If we take the cost of reception also into account, the cost of communication support comes to about 12 percent of the projected development/outlay. This cost could substantially come down as the viewing population increases over the years.

d) Policy Implications

This analysis reinforces the fact that the reach of TV to a large section of the rural population and poorer sections of the urban population is irrelevant,<sup>7</sup> since they will not be able to meet the private cost of owning and viewing television. Further, it is expected that the public cost of production and transmission will substantially come down as viewers from the categories of population who can afford the

<sup>7</sup> See also Alexander Melzer, The Social Use of India's Television Satellite: A Technology Assessment of the INSAT Proposal, (Zurich: Center for Economic Research, Swiss Federal Institute of Technology, Research Monographs, New Series, Volume 11, 1984).

private cost increase. The private cost of owning and viewing TV may also come down with increase of production of TV sets and more fiscal incentives in the next few years. Yet, it is difficult to imagine that the private cost would come down to a level that potential viewers from poorer sections from urban and rural areas can have access to television on their own. Therefore, if we really want to reach these population groups, there is no other way but to go for community TV sets in large numbers at public cost.

#### V LIMITATIONS OF THE ANALYSIS AND DATA BASE NEEDED

The estimates in this analysis have several limitations:

- 1) These costs have been considered as uniform for all types of programmes. We know that the production cost varies from programme to programme. Different sets of cost functions were not possible because of the nature of reporting of data.
- 2) The assessment of effective viewing audience of women and children in the areas within the reach of television has been arrived at based on several assumptions. These assumptions need to be empirically verified.

In order to attempt the differential costing of the various programmes keeping in mind the relevant fixed and variable costs, it is necessary to report the data on the variable cost so that the management of Doordarshan can meaningfully relate the programme contents and pricing decisions with the appropriate cost in view. The cost data may be collected for the categories of programmes aimed at different target groups and those general in nature (See Table 6).

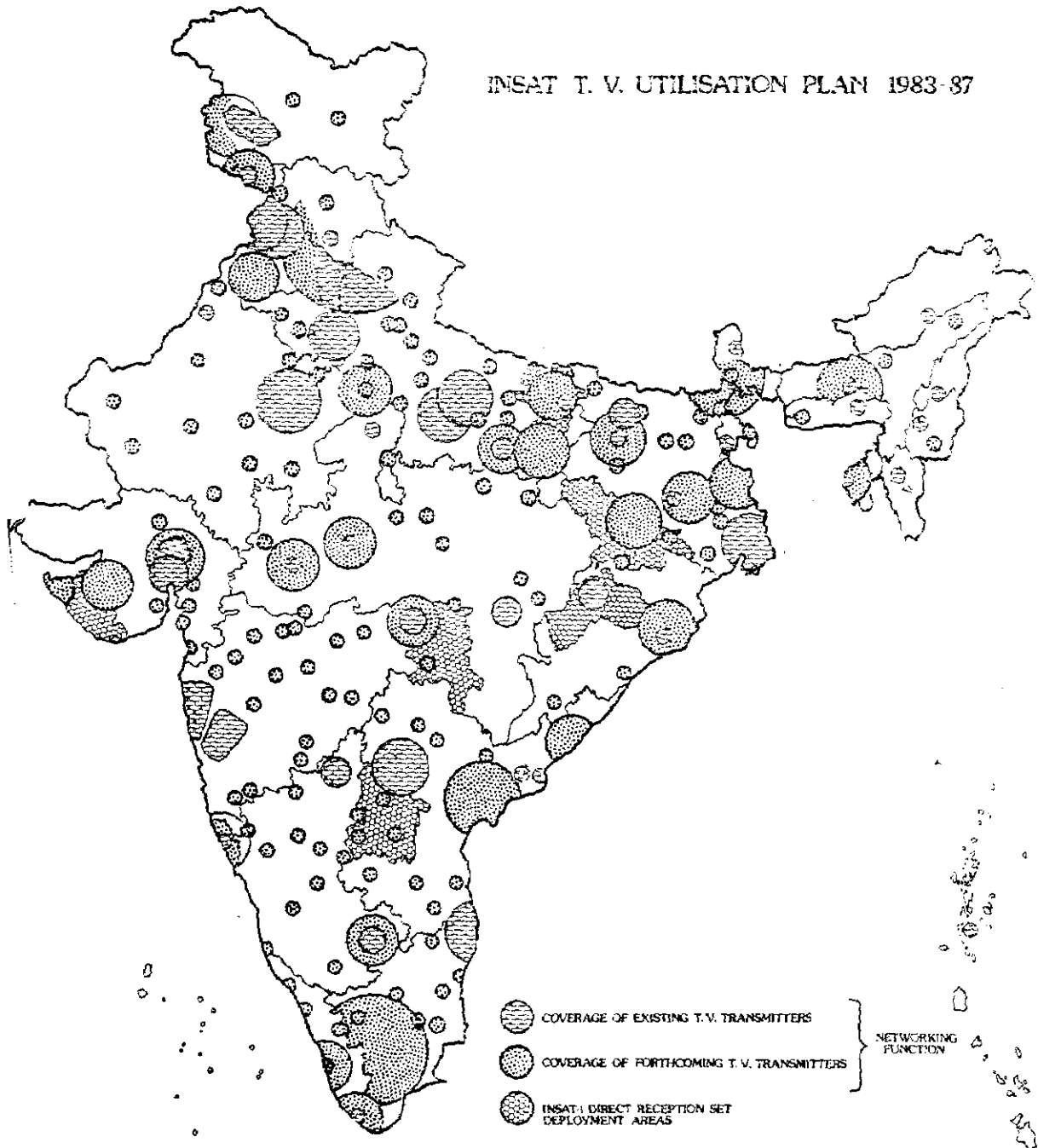
The data on total hours of transmission should be compiled and reported at one place. This data may be collected on monthly basis alongwith the break-up of time spent for a specific target audience (farmers, youth, women, children, industrial works, adult education, school programmes and other general programmes).

TABLE 6 : FORMAT FOR COLLECTION COST DATA FOR DIFFERENT CATEGORY OF PROGRAMME AIMED AT VARIOUS TARGET AUDIENCE

Categories of Programme	SPECIFIC TARGET AUDIENCE																									
	Farmers			Youth			Women			Children			Industrial workers			Adult Education			School Programmes			Other Programmes				
	D	F	V	D	F	V	D	F	V	D	F	V	D	F	V	D	F	V	D	F	V	D	F	V		
Music and Dance																										
Film/Documentary																										
Discussion/Interview																										
Demonstration																										
Skits and Plays																										
Sports																										
Feature Film/ Film Serial																										
Fillers																										
Commercial																										
Others																										

D = Duration of programme in minutes.  
F = Fixed costs  
V = Variable costs.

INSAT T. V. UTILISATION PLAN 1983-87



Source: INSAT - The Indian National Satellite System.  
Government of India, INSAT Coordination  
Committee, January 1984 pp 41

Appendix - 2

Programme Duration Highlights (Specific Target Group), April 1983

Target Group	(Duration of programme in minutes)										Total Duration %				
	Bombay	Calcutta	Delhi	Jalandhar	Lucknow	Madras	Srinagar	Ahmedabad	Jaipur	Raipur		Muzaffarpur	Sambalpur	Hyderabad	
Farmers	392	104	653	510	596	368	361	20	609	621	631	352	154	5,351	5.20
Youth	117	162	132	120	122	193	113	55	173	148	146	179	37	1,898	1.84
Women	219	71	136	150	220	162	137	45	116	114	80	174	18	1,642	1.59
Children	333	247	386	270	239	411	510	105	322	313	326	151	63	3,685	3.58
Industrial Workers	178	57	-	-	101	116	-	-	-	-	-	-	-	452	0.44
Adult Education	-	-	-	-	-	-	-	-	229	185	210	-	-	622	0.60
<b>Total</b>	<b>1,439</b>	<b>641</b>	<b>1,286</b>	<b>1,050</b>	<b>1,278</b>	<b>1,250</b>	<b>1,130</b>	<b>1,225</b>	<b>1,449</b>	<b>1,379</b>	<b>1,393</b>	<b>856</b>	<b>272</b>	<b>13,650</b>	<b>13.25</b>
<b>School Programmes</b>	-	-	-	-	-	-	40	-	618	618	570	1,075	-	2,921	2.84
<b>Other Programmes</b>	8,282	6,878	3,522	8,353	6,455	8,950	6,379	4,779	5,494	5,559	5,550	4,709	6,494	86,404	83.91
<b>Grand Total</b>	<b>9,721</b>	<b>7,519</b>	<b>9,810</b>	<b>9,403</b>	<b>7,733</b>	<b>10,200</b>	<b>7,549</b>	<b>5,004</b>	<b>7,561</b>	<b>7,556</b>	<b>7,513</b>	<b>6,640</b>	<b>6,766</b>	<b>102,975</b>	<b>100.0</b>

Source: Log Book, April 1983, Doordarshan

Appendix - 3

Language-wise Break-up of Programme Transmission, April 1983

(Duration of Programme Transmission in minutes)

Language	Bombay	Calcutta	Delhi	Jalan- dhar	Lucknow	Madras	Sri- nagar	Ahme- dabad	Jaipur	Raipur	Muzaf- farpur	Sambhal- pur	Hyde- rabad	Total Dura- tion	%
Hindi	2636	1921	5564	2715	4660	1377	1457	1102	5140	5014	5006	915	1560	39150	38.03
English	2367	2137	3031	1516	1304	2386	1595	2301	1790	1790	1790	1490	1025	25622	24.00
Marathi	3464	-	167	-	-	-	-	-	-	-	-	-	-	3631	3.53
Gujarati	671	11	29	-	-	-	-	1375	-	-	-	-	-	2146	2.00
Bengali	50	3163	62	46	46	46	46	46	46	46	46	46	64	3753	3.64
Tamil	9	-	10	-	-	5000	-	-	-	-	-	-	8	5035	4.89
Oriya	-	164	-	-	-	-	-	-	-	-	-	3064	-	4028	3.91
Kannada	-	40	20	-	151	142	-	-	-	-	-	-	8	369	0.36
Kashmiri	-	10	16	16	22	29	2201	16	16	16	16	16	33	2495	2.42
Telugu	-	15	17	-	10	267	-	-	-	-	-	-	2923	3232	3.14
Urdu	-	50	135	295	311	50	1745	50	50	50	50	50	50	2034	2.00
Malayalam	-	-	16	-	-	-	-	-	-	-	-	-	4	20	0.02
Bhojpuri	-	-	19	-	-	-	-	-	-	-	-	-	-	19	0.02
Assamee	-	-	145	-	-	-	-	-	-	-	-	-	-	145	0.14
Punjabi	-	-	160	4365	-	5	41	-	-	-	-	-	7	4570	4.45
Dogri	-	-	-	60	-	-	70	-	-	-	-	-	-	130	0.13
Audhi	-	-	-	-	81	-	-	-	-	-	-	-	-	81	0.08
Rajasthani	-	-	-	-	13	-	-	-	-	-	-	-	-	13	0.01
Other Languages	34	-	-	73	202	58	-	75	-	-	-	-	25	467	0.45
Gojri	-	-	-	-	-	-	57	-	-	-	-	-	-	57	0.05
Music & Dance	435	-	343	306	333	840	259	259	519	640	605	259	259	5057	4.91
Break-down	55	-	-	-	-	-	-	-	-	-	-	-	-	55	0.05
Fillers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>9721</b>	<b>7519</b>	<b>9810</b>	<b>9403</b>	<b>7733</b>	<b>10200</b>	<b>7549</b>	<b>5004</b>	<b>7561</b>	<b>7556</b>	<b>7513</b>	<b>6640</b>	<b>6766</b>	<b>102975</b>	<b>100.0</b>

Source: Log Book, April 1983, Doordarshan

Appendix - 4

Capital Expenditure (f<sub>2</sub>)

(Rs. in thousands)

Financial Year	Studio			Transmitters			Machinery and Equipment			Total (4 + 7 + 10)
	Plan	Non- Plan	Total (2+3)	Plan	Non- plan	Total (5+6)	Plan	Non-plan	Total (8+9)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1976-77	457,82	-	457,82	408,43	-	408,43	1,54	-	1,54	867,79
1977-78	169,28	66	169,94	276,84	-	276,84	1,58	-	1,58	448,36
1978-79	87,54	30,05	117,59	76,86	-	76,86	3,55	-	3,55	198,00
1979-80	122,88	29,93	152,91	97,81	-	97,81	3,22	-	3,22	253,84
1980-81	206,20	37,75	243,95	81,25	-	81,25	6,82	-	6,82	332,02
1981-82	681,84	249,04	930,88	157,60	25,16	182,76	1,27	-	1,27	1,114,91
1982-83	354,36	389,97	744,33	672,34	231,58	903,92	5,14	-	5,14	1,653,39
1983-84 <sup>+</sup>	810,26	490,93	1301,19	2838,84	467,70	3316,54	10,23	-	10,23	4,667,96
1984-85 <sup>@</sup>	795,27	399,16	1194,43	4233,86	447,37	4681,23	17,94	-	17,94	5,093,60

+ Revised Estimates

@ Budget Estimates

Source: Compiled from various issues of Demand for Grants, Ministry of Information and Broadcasting, Government of India.



Appendix - 5

Expenditure on Direction and Administration and Listener Research (r<sub>3</sub>)

(Rupees in thousands)

Financial Year	Direction and Administration			Listener Research			Total (4 + 7)
	Plan	Non-plan	Total	Plan	Non-plan	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1976-77	-	22,52	22,52	1,03	1,01	2,04	31,56
1977-78	32	31,28	31,61	10,16	55	10,71	42,32
1978-79	41	35,13	35,54	10,15	68	10,83	46,37
1979-80	11	34,48	34,58	7,13	1,63	8,76	43,35
1980-81	-	35,50	35,58	8,11	82	8,93	44,43
1981-82	3,16	41,01	44,17	7,65	58	8,23	52,40
1982-83	12,03	68,84	80,87	9,55	63	10,18	91,05
1983-84 <sup>+</sup>	20,70	89,99	110,69	13,26	96	14,22	124,91
1984-85 <sup>@</sup>	19,14	141,86	161,00	15,09	1,00	16,09	177,09

+ Revised estimates

@ Budget estimates

Source: Compiled from various issues of Demand for Grants, Ministry of Information and Broadcasting, Government of India.

Appendix - 6  
Components of Variable Cost (V)

(Rupees in thousands)

Financial Year	Operation and Maintenance			Commercial Services			Programme Services			Total (4 + 7 + 10)
	Plan	Non-plan	Total	Plan	Non-plan	Total	Plan	Non-plan	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1976-77	58,39	81,96	140,35	-	12,38	12,38	220,07	381,78	601,85	754,50
1977-78	92,40	64,41	156,81	-	34,40	34,40	330,64	335,49	675,13	865,34
1978-79	82,03	51,06	133,09	-	77,86	77,86	393,58	330,32	724,00	934,95
1979-80	22,27	120,81	143,08	-	92,10	92,10	148,50	646,41	794,91	1030,09
1980-81	37,37	103,08	140,45	-	118,87	118,87	177,30	764,99	942,29	1201,61
1981-82	35,97	157,40	193,37	-	177,31	177,31	232,56	926,41	1158,99	1529,65
1982-83	49,64	303,20	352,84	-	243,43	243,43	278,44	1183,07	1461,51	2057,76
1983-84 <sup>+</sup>	72,81	209,71	282,52	-	285,33	285,33	351,30	1567,19	1910,49	2486,34
1984-85 <sup>@</sup>	309,59	302,93	615,52	-	305,49	305,49	806,92	1562,01	2369,73	3290,74

+ Revised estimates

@ Budget estimates

Source: Compiled from various issues of Demand for Grants, Ministry of Information and Broadcasting, Government of India.

Appendix - 7

Details of Transmission - Doordarshan, Upqarh Doordarshan Kendras and LPT Centres

(Duration in hours and minutes)

Kendras	Daily evening transmission hours (Monday through Saturday)	Additional Transmission				ETV per week
		2nd Saturday Morning	Sunday Morning	Sunday Evening	First Sunday Evening	
Delhi (Mussoorie)	5.30	3.00	2.00	9.50	-	10.0
Bombay	5.15	3.00	3.00	6.40	9.10	2.0
Calcutta	4.10	-	1.00	6.40	0.40	-
Madras	4.40	-	3.30	-	-	0.40
Lucknow	4.40	2.00	3.00	6.40	0.40	-
Jalandhar	5.40	2.00	3.00	7.00	9.00	-
Srinagar	4.40	2.00	3.00	6.40	0.40	1.20
Bangalore	3.10	2.00	3.00	6.10	0.40	-
Nagpur	3.10	2.00	3.00	6.40	-	4.30
Pij	3.10	-	3.00	6.40	-	-
Hyderabad	3.40	2.00	3.00	7.40	-	4.30
Gulbarga	3.40	-	3.00	7.40	-	-
Sambalpur	4.40	-	3.00	6.10	0.40	3.00
Jaipur	4.40	2.00	3.00	6.10	0.00	3.00
Raipur	4.40	2.00	3.00	6.10	0.00	3.00
Muzaffarpur	4.40	2.00	3.00	6.10	0.00	3.00
LPTs	5.30	2.00	3.00	40	-	-

Source: Doordarshan - Basic Information Audience Research Unit, Directorate General, Doordarshan, New Delhi July 1984.

## Appendix - 2

Sixth Plan Outlay : Women and Child Welfare, Central and Centrally Sponsored Schemes.

		(Rs. in crores)
<u>Central</u>		
I. Women welfare		34.34
II. Planning, Research, Training and Evaluation		9.75
III. Others		30.01
	Sub-total	74.10
<u>Centrally Sponsored</u>		
I. Child welfare		50.75
II. Women welfare		0.75
	Sub-total	51.50
	Total	125.60
<u>States*</u>		109.70
<u>Union Territories*</u>		121.97
	Grand Total	357.35

Source: Government of India, Sixth Five Year Plan, 1960-65, Planning Commission, New Delhi, 1960.

\* Includes other social welfare schemes.