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The Institute for Social and Economic Change
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**SOCIAL AND ECONOMIC
CHANGE MONOGRAPHS 13**

**Government Spending on Selected
Public Health Services in India:
Central, State and the Local
Governments**

**S Puttaswamaiah
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**Institute for Social and Economic Change
Bangalore
2008**

Foreword

The work presented in this monograph provides a comprehensive review of the government expenditures on water supply, sanitation and public health. This monograph looks at expenditures by the Centre, State and local bodies. The government expenditures on these sectors are viewed from the perspective of public health and not merely as amenities enjoyed by the people.

The monograph points to the severe neglect of sanitation in government spending. It also points to the negligence of what is called 'public health' services in the government budget. It highlights the significant role played by the local government bodies, especially in the urban areas, in providing the basic public health services to the citizens.

As the authors note, this monograph is part of a much broader study conducted by ISEC on redesigning the public health services in Karnataka. I hope that the work initiated under this project would lead to more rigorous studies to emphasise the importance of public expenditure on preventive health services in the country.

*April 2008
Bangalore*

*N Jayaram
Director, ISEC*

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ABBREVIATIONS

Acc	Account
BPH	Basic Public Health
BWS	Bore-wells with hand pump Water Supply Scheme
BWSSB	Bangalore Water Supply and Sanitation Board
CPI-IW	Consumer Price Index of Industrial Workers
CSS	Centrally Sponsored Scheme
Exp	Expenditure
GE	Gastroenteritis
GoK	Government of Karnataka
GPs	Gram Panchayats
GSDP	Gross State Domestic Product
JE	Japanese Encephalitis
JGSY	Jawahar Grama Swarajya Yojana
KPR Act	Karnataka Panchayat Raj Act
KUIDFC	Karnataka Urban Infrastructure Development and Financial Corporation
KUWS&DB	Karnataka Urban Water Supply and Drainage Board
LGO	Local Government Organisations
lpcd	Litres per capita per day
MPH	Medical and Public Health
MWS	Mini Water Supply Scheme
NSSO	National Sample Survey Organisation
PRI	Panchayat Raj Institution
PWS	Piped Water Supply Schemes
RBI	Reserve Bank of India
RDPR	Rural Development and Panchayat Raj
RE	Revised Estimates
TP	Taluka Panchayat
ULB	Urban Local Body
WSS	Water Supply and Sanitation
ZP	Zilla Panchayat

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CHAPTER I

INTRODUCTION

Conceptually, public health services cover a wide array of clinical and non-clinical health services ranging from nutrition support, immunisation, safe drinking water supply, and sanitation to provision of hospital services of various kinds. The population-wide health services generally relate to preventive measures aimed at controlling diseases that often lead to huge economic costs and human suffering. Public health services produce 'public goods' and are of high priority in assuring good health outcomes (Das Gupta and Rani 2004) and call for public expenditures for creating and delivering these services. This study focuses on a sub-set of public health services, namely, non-clinical population-wide health services to examine government spending on public health services in India. The non-clinical preventive health services covered in this study are water supply, sanitation, vector control and some health regulatory activities such as 'food safety'. For convenience in discussion, we term these as 'basic public health (BPH) services'.

Basic public health services covering safe drinking water supply, sanitation, vector control and enforcement of health regulations relating to food safety are of critical importance in an overall system of disease control. For developing countries like India, this should be an area of primary focus as its impact is likely to be widely felt across population as compared to the tertiary care services¹. These BPH services provide an effective population-wide preventive shield against some of the common causes of morbidity and some times mortality.

In the Constitutional assignment of functions, health services in general and many of the public health services, in particular have been delegated to the state governments. Further, following the 73rd and 74th Amendment of the Constitution, the responsibility has now been assigned to self-government bodies at the district, taluk and panchayat levels in rural areas and to urban local bodies in urban areas. However, the effectiveness of lower levels of government in delivering the public health services to population depends on their access to financial and technical resources. Access to financial resources is as important as delegation of responsibilities for the effective delivery of services.

¹ For instance, the 1994 plague epidemic in Surat resulted in losses totalling \$ 1.7 billion (quoted in Das Gupta and Rani 2004).

2 Government Spending on Selected Public Health Services in India

How much is the level of public spending on basic public health services and what is the pattern of spending by different tiers of government? We observe that there is lack of information on a reasonably comprehensive basis on the actual amount spent on BPH services by different governmental organisations, and also across rural-urban areas. This is because public health services have been assigned to different ministries and departments of the Government, both at the Centre and State. Hence, to get a comprehensive view of the total expenditure incurred on these important services we need to examine the expenditures by different ministries in the Central government and departments of the State governments that deal with the provision of public health services. In addition, we also need to examine the expenditures of the local government bodies.

The main objectives of this monograph are to:

- (1) compile the expenditures on BPH services at different levels of government;
- (2) examine the trends and patterns in government expenditure on BPH services across different types of services and across states;
- (3) examine the government expenditures on BPH services in Karnataka in rural and urban areas separately; and
- (4) examine the expenditures by the grass-root local governments at the village level in two selected districts in Karnataka.

CHAPTER II

CURRENT STATUS AND PERFORMANCE OF BASIC PUBLIC HEALTH SERVICES

2.1. The Backdrop

To provide an overall context for further discussion, we first provide a review of the state of BPH services in the country and across states, and also for Karnataka.. Availability of BPH services is an indicator of the quality of life and also achievement of the government in providing health related services. Increase in the coverage of households/habitations with safe drinking water supply, sanitation facilities, decrease in the incidence of water-borne and vector-borne diseases illustrate the positive impact of the efforts of the service providers. An examination of access and coverage of households and habitations with water supply and sanitation facilities, status of morbidity related to water-borne and vector related diseases reveals a large gap in services that remains to be bridged.

2.2. Drinking Water Supply

Safe drinking water is an essential requirement for life, which depends on the availability of adequate quantity of water from unpolluted sources, which can be accessed by households. People depend on different types water bodies, like tap, well, tube well, tanks, ponds, lakes, rivers, canals, springs and others, for drinking water. The Census 2001 data show that tube well/ hand pump is the major source of drinking water, followed by tap water connection. About 41 per cent of the households depend on tube well or hand pump, while nearly 37 per cent of the households have tap water supply, and the rest are collecting water from other sources (Table 2.1). The per cent of household provided with tap water has been increasing over the years. In 1981, about 23 per cent of the households were connected with tap water, while the proportion increased to over 32 per cent in 1991 and nearly 37 per cent in 2001. The same trend also applies to the coverage of households with access to tube wells. The rural-urban differences highlight the poor coverage in rural areas.

Table 2.1: Per cent of Households by Source of Drinking Water

Type of Source	1981			1991			2001		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
Tap	23.03	10.29	63.24	32.26	20.6	65.06	36.7	24.3	68.7
Well	51.71	61.63	20.4	32.23	38.00	15.91	18.2	22.2	7.7
Tubewell/ Handpump	15.16	16.21	11.82	30.04	34.9	16.32	41.3	48.9	21.3
Tank, Pond, Lake, River, Canal, Spring	6.69	8.31	1.6	3.33	4.27	0.66	2.7	3.5	0.7
Others	3.41	3.56	2.94	2.14	2.17	2.04	1.2	1	1.5

Source: Census - 1981, 1991, and 2001

Table 2.2: Distribution of Households Having Safe Drinking Water Sources* (in per cent)

States	1981			1991			2001		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
A. P.	25.89	15.12	63.27	55.08	48.98	73.82	80.15	76.85	90.16
Bihar	37.64	33.77	62.36	58.76	56.55	73.39	86.59	86.11	91.23
Gujarat	52.41	36.16	86.78	69.78	60.04	87.23	84.09	76.87	95.40
Haryana	55.11	42.94	90.72	74.32	67.14	93.18	86.06	81.13	97.31
Karnataka	33.87	17.63	74.4	71.68	67.31	81.38	84.55	80.52	92.12
Kerala	12.20	6.26	39.72	18.89	12.22	38.68	23.39	16.88	42.84
M. P.	20.17	8.09	66.65	53.41	45.56	79.45	72.55	61.51	88.55
MHR	42.29	18.34	85.56	68.49	54.02	90.5	79.82	68.42	95.36
Orissa	14.58	9.47	51.33	39.07	35.32	62.83	64.19	62.88	72.32
Punjab	84.56	81.8	91.13	92.74	92.09	94.24	97.60	96.91	98.88
Rajasthan	27.14	13	78.65	58.96	50.62	86.51	68.18	60.45	93.52
T. N.	43.07	30.97	69.44	67.42	64.28	74.17	85.55	85.29	85.91
U. P.	33.77	25.31	73.23	62.24	56.62	85.78	87.81	85.46	97.16
W. B.	69.65	65.78	79.78	81.98	80.26	86.23	88.53	86.99	92.29
All India	38.19	26.5	75.06	62.3	55.54	81.38	77.92	73.23	90.01

Source: Census - 1981, 1991 and 2001

Note: * = Safe drinking water sources include tap, well and tube well

The same data have been presented in an aggregated form for the states in Table 2.2 where we use a broader definition of safe drinking water sources. The proportion of households with safe drinking water supply, defined as households sourcing water from tap, borewell, tubewell, has

increased from 38 per cent in 1981 to 78 per cent in 2001. Improvement in the coverage of households with safe drinking water supply is more impressive in rural India, where the proportion of such households rose from a low 26.5 per cent to 73 per cent between 1981 and 2001. Across the states almost all states have shown impressive performance in providing safe drinking water sources to households. We should, however, note that this data unfortunately do not reveal information on the quantity of water supplied or its quality.

When measured in terms of habitations covered by drinking water schemes, the most recent data available suggest more impressive performance. Information pertaining to the coverage of rural habitations with adequate drinking water supply across the states has been presented in Table 2.3. The per cent of habitations covered with adequate drinking water supply (40 litres per capita per day (lpcd)) had increased sharply over the period of the 1990s. During 2003 (November), over 93 per cent of the habitations had been provided with adequate water supply.

Table 2.3: Habitations with Full Coverage of Drinking Water Supply (Rural)

States	1996-97 (in percent)	1999-2000 (in percent)	Total habitations - 1999	2003* (in percent)	Total habitation - 2003
Andhra Pradesh	56	69	69,732	96.40	69,732
Bihar	89	100	204,811	100.00	105,340
Gujarat	73	89	29,976	96.77	30,269
Haryana	95	96	6,733	100.00	6,745
Karnataka	62	59	56,617	81.22	56,682
Kerala	15	20	8,921	65.54	9,763
Madhya Pradesh	54	93	157,901	99.91	109,489
Maharashtra	45	64	83,333	81.66	85,930
Orissa	80	98	113,651	91.14	114,099
Punjab	30	62	11,399	67.53	13,449
Rajasthan	53	61	86,082	46.49	93,946
Tamil Nadu	56	83	66,631	78.36	66,631
Uttar Pradesh	76	98	274,209	88.21	243,508
West Bengal	67	70	79,036	100.00	79,036
All India	70	83	13,96,543	93.50	1,422,293

Source: Data have been collected from the Website of the Department of Drinking Water Supply, Government of India

Note: * = as on 27 November 2003

The states of Bihar, West Bengal, Haryana, Madhya Pradesh, Gujarat and Andhra Pradesh have reported impressive performance by covering more than 95 per cent of the habitations. But, the coverage of habitats was poor particularly in Rajasthan, Punjab, and Kerala, which had less than 70 per cent of habitations covered with adequate drinking water supply (in the case of Kerala, caution is needed in interpreting data, as the households might have their own sources of water supply). In the case of Rajasthan, drinking water supply system had been extended to only about 46 per cent of the habitations with adequate drinking water supply². The wide coverage of households/habitations today has been possible because of the investments made by the governments in drinking water supply schemes over the years. Both the Central and State governments have assigned priority to the provision of safe drinking water supply and to fulfil this goal, greater financial resources are being allocated through budgetary provisions. The considerable improvement in the development of infrastructure for the supply of water in both rural and urban areas needs to reach the ultimate consumers of water. The available data from Census and other government sources suggest that although 93 per cent of rural habitations had been fully covered by safe drinking water sources in 2003, only 73 per cent of the rural households had access to these services in 2001. In other words, significant population in the rural areas is yet to have access to what we now recognise as 'safe' sources of drinking water.

2.3. Sanitation Services

Sanitation is another essential public health service. While inadequacy of sanitation and hygiene in public places is a wide-open fact, the widespread inadequacy at the household level needs to be highlighted. Just over 36 per cent of households had been reported to have toilet facilities during 2001 (Table 2.4). There is wide disparity of sanitation services across rural and urban areas, as only about 22 per cent of rural households had toilet facilities, whereas the proportion was 75 per cent among the urban households. During the 1990s, construction of household toilets had increased significantly. But, still the coverage was not satisfactory as over 78 per cent of the rural households lacked the facility.

Information on availability of sanitation services like household latrines and households without drainage connection for wastewater outlet (Table 2.5) shows a dismal picture of the level of services across the states. Availability of household latrines varied significantly across states, from

² The data show increase in the number of habitations in the year 2003 over the figures for 1999.

about 15 per cent of households in Orissa to 84 per cent in Kerala. Provision of household latrines was very low in Orissa (15 per cent), Bihar (19 per cent), and Madhya Pradesh (24 per cent). There was a wide disparity in the availability of household latrines across the rural and urban areas too. However, the number of households with latrine facility had increased considerably between 1991 and 2001. In Haryana, Kerala and Punjab a large number of households had constructed latrine facility. The performance was not impressive in Orissa, Maharashtra, Bihar and Rajasthan in terms of creating latrines at the household level.

Table 2.4: Percentage of Households Having Toilet Facilities

Census-Year	Total	Rural	Urban
1991	23.7	9.48	63.85
2001	36.4	21.9	73.70

Source: Census - 1991, 2001

Table 2.5: Level of Sanitation Facilities Available across the States (in percentage)

States	Households with latrine facility						Households with no drainage connection for wastewater outlet		
	Census-1991			Census-2001			Census-2001		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
Andhra Pradesh	18.4	6.62	54.6	32.99	18.15	78.07	48.44	58.57	17.71
Bihar	11.75	4.96	56.54	19.19	13.91	69.69	61.95	65.14	31.39
Gujarat	30.69	11.16	65.71	44.60	21.65	80.55	61.16	86.35	21.71
Haryana	22.45	6.53	64.25	55.50	71.34	19.34	23.20	28.28	11.59
Karnataka	24.13	6.85	62.52	37.50	17.40	75.23	48.77	64.61	19.03
Kerala	51.28	44.07	72.66	84.01	81.33	92.02	80.28	84.01	69.11
Madhya Pradesh	15.07	3.64	53.00	23.99	8.94	67.74	65.81	80.16	24.07
Maharashtra	29.56	6.64	64.45	35.09	18.21	58.08	39.20	58.86	12.42
Orissa	9.81	3.58	49.27	14.89	7.71	59.69	79.26	85.15	42.51
Punjab	33.18	15.79	73.23	56.84	40.91	86.52	17.84	21.92	10.23
Rajasthan	19.57	6.65	62.27	29.00	14.61	76.11	63.49	76.83	19.81
Tamil Nadu	23.13	7.17	57.47	35.16	14.36	64.33	54.89	72.64	29.98
Uttar Pradesh	18.02	6.44	66.54	31.43	19.23	80.01	29.51	35.01	7.62
West Bengal	31.51	12.31	78.75	43.71	26.93	84.85	69.24	84.09	32.86
All India	23.7	9.48	63.85	36.41	21.92	73.72	53.60	65.82	22.13

Drainage facility is another important sanitation service contributing to the maintenance of health, hygiene and environment. But, this crucial service is highly inadequate in the country (Table 2.5), as over 53 per cent of the households did not have drainage connection to carry safely the wastewater out. This meant that all these households discharged wastewater into open ground or streets. This caused stagnant water pools around habitations providing place for mosquito breeding and of other vectors.

We point finally to the problem of flies, mosquitoes and foul odour—all a result of inadequate sanitation. The 1998 National Sample Survey on water supply, sanitation and hygiene estimated that about 65 per cent of the households experienced the problem of flies, 85 per cent of the households experienced the problem of mosquitoes and 40 per cent suffered foul odour in environment. More importantly, far greater proportion of households experienced an increase in the problem in the past five years as compared to the proportion of households who noticed a reduction in the problem.

The situation with respect to sanitation is dark. Even the basic amenity of a toilet was not available on the premises for over 60 per cent of the households in 2001. The situation with respect to access to drainage was even worse. These indicators are a major pointer to the policy initiatives needed if India hopes to achieve better living conditions for its billion plus population.

2.4. Water-related and Vector-borne Diseases

The third area of basic public health services that are of preventive and non-clinical nature is the direct effort of the Department of Health in vector control and efforts to ensure safety of food supply chain. There are no good sources of information on these activities. The impact of poor public health effort indeed would be the high incidence of water-borne, vector-borne, communicable diseases. Water-borne and vector related diseases, normally, dominate the morbidity pattern in a developing nation, where the BPH services are of poor quality. Most of the water-borne diseases (Diarrhoea, Amiebiosis, Cholera, Typhoid, etc.,) and vector-borne diseases (Malaria, Filariasis, etc.,) are caused due to lack of or inadequate safe drinking water supply, poor sanitation, absence of cleanliness and hygiene in both houses and public places. As these diseases are closely associated with the absence of the above basic facilities, the burden of illness will be more on poor people, who naturally cannot afford these services by themselves. Information presented in Table 2.6 shows the magnitude of incidence of water-borne diseases in India in recent years. The incidence of diarrhoea

was high followed by Malaria. While during 1998 over 750 persons per lakh population suffered from diarrhoea, 190 persons suffered from malaria. The number of people suffering from the diseases shown in the table has fluctuated over the period.

Table 2.6: Incidence of Water-borne Diseases in India

Year	Diarrhoea	Cholera	Malaria	Viral Hepatitis	Japanese Encephalitis	Dengue fever
Total number of incidence of diseases						
1996	66,23,195	3,901	25,52,961	103,792	1,425	NA
1997	58,75,575	2,124	22,19,792	110,902	2,387	850
1998	73,96,921	5,278	18,54,955	86,446	2,048	366
1999	NA	2,446	18,82,357	NA	3,244	773
2000	NA	2,890	20,54,656	135,218	2,269	440
2001	NA	NA	NA	127,377	1,617	2,695
Incidence of diseases per lakh population						
1996	702	0.41	271	11.00	0.15	NA
1997	613	0.22	231	11.56	0.25	0.09
1998	759	0.54	190	8.87	0.21	0.04
1999	NA	0.25	190	NA	0.33	0.08
2000	NA	0.29	204	13.44	0.23	0.04
2001	NA	NA	NA	12.47	0.16	0.26

Source: Indiatat.com

Note: NA = Not Available

Incidence of selected water-borne and vector related diseases across the Indian states had been shown in Table 2.7. Taking all the states together, 74 lakh cases of diarrhoea were reported during 1998. In fact, the incidence of diarrhoea though declined from its level in 1996 to 1997, it increased again in 1998. Across the states more cases were reported from Andhra Pradesh, followed by Maharashtra, Orissa and others. However, incidence of diarrhoea per lakh population was also high in West Bengal, Karnataka, Kerala and Madhya Pradesh. Diarrhoea accounted for around 34 per cent of the mortality in India (Misra, Chatterji and Rao 2003).

The incidence of Malaria, a vector-borne disease, is varying from year to year although the peak level of 1996 had not been breached until 2000. However, this aggregate pattern of declining incidence was not seen across the states. Andhra Pradesh had experienced a sharp increase in the number of cases of Malaria, from 0.98 lakh to 8.06 lakh between 1995 and

2000. Incidence of Malaria was almost constant around 4.5 lakh cases per year in Orissa during 1995-2000, while it declined in states like Karnataka and Maharashtra.

Table 2.7: Incidence of Water-borne and Vector-related Diseases in the States

States	Diarrhoea			Malaria						Viral Hepatitis				
	1996	1997	1998	1995	1996	1997	1998	1999	2000	1996	1997	1998	2000	2001
No. of cases in lakhs														
A. P.	12.91	14.51	18.53	0.98	1.28	1.30	1.19	1.29	8.06	0.28	0.24	0.19	0.28	0.25
Bihar	NA	NA	NA	0.87	1.05	0.75	1.15	1.32	NA	NA	NA	NA	NA	NA
Gujarat	2.39	2.12	2.07	1.91	1.44	1.60	1.01	0.64	0.36	0.05	0.04	0.03	0.04	0.04
Karnataka	6.64	6.01	6.75	2.86	2.19	1.81	1.19	0.97	1.09	0.06	0.04	0.06	0.25	0.26
Kerala	6.11	5.64	5.51	0.12	0.12	0.08	0.07	0.06	0.03	0.12	0.19	0.15	0.06	0.05
M. P.	3.36	4.49	4.79	4.84	6.01	4.52	4.75	5.28	1.95	0.12	0.12	0.05	0.07	0.03
MHR	6.02	8.02	10.99	3.69	3.17	2.05	1.66	1.38	0.81	0.07	0.21	0.11	0.41	0.40
Orissa	7.47	7.47	7.93	3.70	4.59	4.22	4.78	4.83	4.96	0.26	0.22	0.18	0.14	0.07
Punjab	1.35	NA	1.96	NA	0.36	0.28	0.05	0.01	0.00	0.02	NA	0.02	0.02	0.05
Rajasthan	1.65	1.80	2.12	2.51	3.01	2.73	0.76	0.53	0.36	0.02	0.02	0.01	0.02	0.03
T.N.	1.41	0.71	0.47	0.92	0.81	0.72	0.64	0.56	0.43	0.01	0.02	0.01	0.02	0.02
U. P.	13.96	2.58	5.65	1.05	1.69	1.34	1.12	0.99	1.04	0.00	0.00	0.03	0.01	0.02
W.B.	2.97	5.40	7.20	NA	0.88	1.55	1.32	2.27	1.45	0.02	0.02	0.02	0.06	0.06
Total	66.23	58.76	73.97	23.44	25.53	22.20	18.55	18.82	20.55	1.04	1.11	0.86	1.35	1.27
Incidence per lakh population														
A. P.	1,758	1,954	2,467	135	174	175	158	170	1,048	38	32	26	36	32
Gujarat	514	449	432	416	309	338	210	132	72	11	8	6	8	8
Karnataka	1,317	1,175	1,302	574	434	355	229	185	206	13	9	12	47	49
Kerala	1,936	1,770	1,713	38	37	26	23	19	9	38	60	47	17	14
M. P.	440	578	605	645	787	581	600	655	237	16	16	7	8	4
MHR	680	894	1,211	422	358	229	183	150	88	7	23	12	45	43
Orissa	2,133	2,112	2,221	1,067	1,309	1,192	1,338	1,341	1,367	76	64	51	39	20
Punjab	589	NA	838	0	156	119	23	5	2	9	NA	7	8	20
Rajasthan	321	345	398	499	586	522	144	98	65	5	3	2	3	5
T.N.	233	116	77	154	133	119	104	91	69	1	3	1	3	3
U. P.	865	157	335	66	105	81	67	58	59	NA	NA	2	1	1
W.B.	388	697	917	NA	115	200	168	286	180	3	2	3	7	8
Total	691	603	747	248	277	235	199	200	201	11	12	9	13	12

Source: Indiatat.com; Data on Malaria for the year 1995 and Bihar were collected from the India Health Report (Misra et al 2003)

Note: NA = Not Available; in the case of Haryana, data on incidence of diseases was not available for any of the above years

2.5. Status of Basic Public Health Services in Karnataka

This section provides information on the sources of drinking water at household level, number of habitations with adequate drinking water supply, availability of sanitation facilities, and level of water-borne diseases in Karnataka.

2.5.1. Sources and Level of Drinking Water Supply

Table 2.8: Percentage of Households by Principal Source of Drinking Water (2001)

Source of drinking water	Karnataka			All India		
	Total	Rural	Urban	Total	Rural	Urban
Tap	58.89	48	78.43	36.70	24.30	68.70
Handpump	17.11	23	6.19	35.70	43.20	16.20
Tubewell	8.56	9	7.51	5.60	5.70	5.10
Well	12.40	16	6.48	18.2	22.20	7.70
Others 3.04	4	1.40	3.90	4.50	2.20	
Safe drinking water sources						
Tap, Hand pump, Tube well*	84.56	80	92.13	78	73.2	90

Source: Census 2001

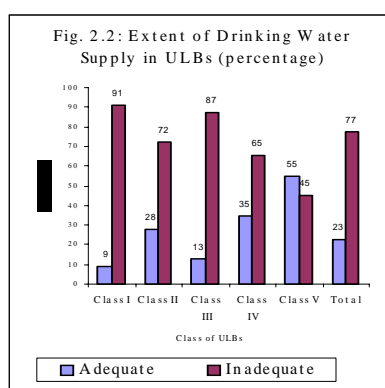
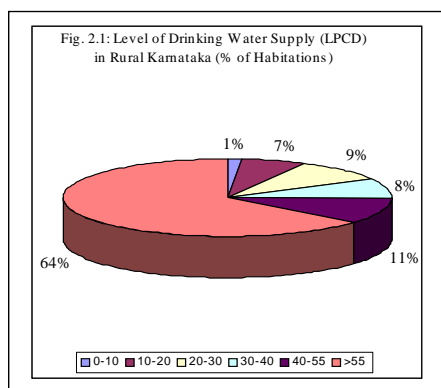
Note: Others include Tank, Pond, River, Canal, Springs and any other Census classification

Access to and availability of safe drinking water sources was an important aspect in the provision of drinking water supply. If more households depended on drinking water sources like tank or pond or other unsafe sources, it indicated the non-availability of safe drinking water sources. Table 2.8 reveals that in Karnataka, nearly 59 per cent of the households had tap water connection, followed by hand pump with over 17 per cent. The Census categorises tap, tube well and hand pump as safe drinking water sources, showing over 84 per cent of the households as having access to safe drinking water sources. But, it is difficult to make this point, as no information on the quality of water is available. Further, in the state, over 15 per cent of the households depended upon wells and other sources for drinking water. The rural-urban break up of information shows that about 20 per cent of the rural households were yet to be covered with safe drinking water sources. Tap water connection, which is considered as one of the safe sources of drinking water, had been provided to only about 48 per cent of the rural households in the State. It is significant to note that the availability of safe drinking water sources to households in the State was higher than that at

the all India level, in both rural and urban areas. Although the performance of the state in providing drinking water sources was good as compared to that at all India level, much is yet to be accomplished to provide safe and adequate quantity of drinking water to the rural and urban population.

How many habitations have been provided with adequate quantity of drinking water supply in the state? Every individual requires a minimum quantity of water per day for keeping his life and to maintain hygiene. The World Bank and the Government of India had proposed that each individual in rural area should get a minimum of 40 litres per capita per day (lpcd), it varies from 70 to 135 lpcd in urban areas depending on population. The Karnataka Government has adopted the norm of providing 55 lpcd of water supply in rural areas, and 70 to 135 lpcd in urban areas, and the efforts are oriented towards achieving this goal. In the State, about 64 per cent of the 56,682 rural habitations had been covered with adequate drinking water supply by the end of 2001 (GoK 2002) as shown in Fig. 2.1. However, over 36 per cent of the rural habitations in the State are yet to be provided with adequate level of drinking water supply. The problem is also acute in urban Karnataka, as over 77 per cent of the 224 urban areas in the State were suffering from inadequate drinking water supply (Fig. 2.2).

It is alarming that all classes of ULBs have less than the desired quantity of drinking water supply. All this indicates that the provision of drinking water supply to households is a critical issue in the State.



2.5.2. Sanitation Services

Sanitation facilities crucial for maintaining hygiene and good health are still inadequate. In Karnataka, over 62 per cent of the households did not have toilet facility in their house (Table 2.9), which meant that these

people were practising open-air defecation, a cause for environmental pollution and source of disease. The problem was worse in rural areas as over 82 per cent of the households lacked latrine facility. In terms of lack of latrine facilities, Karnataka's position was not better than that at all India level, although Karnataka was considered to be a medium developed state. Information on the type of drainage connection of households for wastewater outlet also reveals a dismal picture of inadequate sanitation facilities in both Karnataka and India. While in Karnataka nearly 49 per cent of the households did not have connection to drainage, at the all India level it was 53 per cent. This indicates that most of the houses let their wastewater to the streets or open places. The problem was more acute in rural areas than in urban areas, as over 64 per cent of the rural households had no drainage connection, whereas it was only 19 per cent among the urban households. Lack of drainage connection for wastewater outlet created stagnant water pools, which was a source of breeding of mosquitoes and other vectors.

Table 2.9: Per cent of Households with Sanitation Facilities (2001)

Sanitation Services	Karnataka			All India		
	Total	Rural	Urban	Total	Rural	Urban
Type of latrine within the house						
Pit latrine	13.38	9.48	20.70	11.5	10.3	14.6
Water closet	18.64	4.67	44.86	18	7.1	46.1
Other latrine	5.48	3.25	9.67	6.9	4.5	13
No latrine	62.50	82.60	24.77	63.6	78.1	26.3
Type of connectivity for waste water outlet						
Closed drainage	17.26	4.28	41.64	12.5	3.9	34.5
Open drainage	33.97	31.11	39.33	33.9	30.3	43.4
No drainage	48.77	64.61	19.03	53.6	65.8	22.1

Source: Census 2001

The evidence available from a sample survey of the households in 1998 reveals widespread problem of flies and mosquitoes in the state. A summary of the findings of this survey (NSSO, 1999) has been provided in Table 2.10 for the major four southern states and at the national level. In Karnataka, about 61 and 78 per cent of the households had reported that they were facing the problem of flies and mosquitoes, respectively. The problem was more severe in Andhra Pradesh than other states; in fact, it was higher than the all India level. Although the problem was low in Karnataka

compared to all India and also Andhra Pradesh, the problem was significantly high as a large proportion of households were facing these problems. Foul odour, a product of lack of sanitation facilities, had been reported by more number of households (43 per cent) in Karnataka. Mosquitoes and foul odour was a major problem in urban areas, while it was flies in rural areas in all the states and also, at the national level. We can notice from the Table that the per cent of households were reported that the problem had increased over the previous 5 years was high. This might indicate that the sanitation services that had been created over the years were still inadequate in controlling the problems of flies, mosquitoes and foul odour.

Table 2.10: Households Experiencing the Problem of Insects and Odour

States	Percent of households experiencing concern about the problem of			Percent of households experiencing change over previous 5 years					
	Flies	Mosquitoes	Foul Odour	Increase in			Decrease in		
				Flies	Mosquitoes	Foul Odour	Flies	Mosquitoes	Foul Odour
Rural									
Karnataka	62.6	76.7	40.1	29	41.3	15.9	6	4.3	9.5
Kerala	42.4	75.4	11.2	14.3	42.3	3.5	10.4	6.3	8.8
A. P.	72.9	92.6	38.3	37.9	57.6	17.0	5.5	4.9	6.7
T. N.	54.6	80.1	23.0	24.2	42.1	7.3	9.7	8.6	10.7
India	68.5	84.0	36.1	48.3	62.9	22.4	5.2	3.8	7
Urban									
Karnataka	57.5	81.1	50.9	23.8	56.2	26.8	8.9	6.0	8.8
Kerala	37.7	89.0	19.7	12.1	44.5	25.0	11.6	5.2	9.5
A. P.	53.1	86.8	47.6	28.8	55.6	7.6	10.6	6.0	10
T. N.	61.1	82.5	42.3	30.3	47.1	19.2	10.9	6.0	11.5
India	65.8	89.6	50.1	41.6	61.3	30.4	8.6	4.8	9.5
Total									
Karnataka	61.04	78.04	43.40	27.41	45.85	19.23	6.89	4.82	9.29
Kerala	41.27	78.68	13.25	13.77	42.83	8.68	10.69	6.03	8.97
A. P.	67.56	91.03	40.81	35.44	57.06	14.46	6.88	5.20	7.59
T. N.	56.94	80.96	29.95	26.40	43.90	11.58	10.13	7.66	10.99
India	67.80	85.46	39.75	46.55	62.48	24.49	6.09	4.06	7.65

Note: Total is Weighted Average

2.5.3. Water and Vector-related Diseases

Benefits of the provision of basic public health services can be seen in the incidence of diseases, particularly water-borne and vector-borne diseases. Table 2.11 shows an increase in the incidence of water-borne and also vector related diseases in the state. While Malaria had not shown any declining trend, incidence of other diseases such as gastroenteritis (GE), Japanese Encephalitis (JE), Viral-Hepatitis, Typhoid had increased. The increase in the incidence of water-borne and vector borne diseases might be due to the inadequate existence of BPH services.

Table 2.11: Incidence of Water-borne and Vector Diseases in Karnataka (No. per '000 Population)

Year	Gastro- enteritis	Cholera	Malaria	JE	Viral Hepatitis	Typhoid	Dengue Fever
1991	0.384	0.016	NA	NA	0.015	NA	NA
1995	0.404	0.012	NA	NA	0.155	0.222	NA
1996	0.490	0.014	NA	0.004	0.028	0.474	NA
1997	0.496	0.015	3.805	0.009	0.036	0.291	0.005
1998	0.431	0.015	2.450	0.006	0.079	0.502	0.002
1999	0.357	0.003	1.955	0.014	0.096	0.489	0.001
2000	0.617	0.007	2.162	0.009	0.061	0.539	0.003
2001	0.467	0.007	3.863	0.004	0.106	0.652	0.004

Source: Department of Health and Family Welfare, Government of Karnataka

Note: NA = Not Available

2.6. Relationship between BPH Services and Incidence of Diseases

The inadequate quantity and quality of public health services such as drinking water and sanitation facilities cause water-borne and vector-borne diseases, is a well known fact. In the above paragraphs we have observed that the provision of BPH services was still insufficient and there was no information on the quality of the services provided. Besides, it was also noticed that the incidence of diseases had not declined noticeably and in fact, in some states it has increased. Of course programmes could resort to other preventive measures to reduce the incidence of water-borne/vector-borne diseases at the household or personal level. In this background an attempt has been made to examine whether inadequate sanitation services and incidence of diseases had any relationship by using correlation analysis. The data on incidence of diseases did not belong to the same years as the

amenities data but they were reasonably close years. Data on the level of BPH services was obtained from Census 2001. The correlation results between households with lack of safe drinking water sources, no toilet facility and no drainage, on the one hand and incidence of diarrhoea, viral hepatitis and malaria on the other had been presented in Table 2.12. Results show that incidence of diarrhoea was more strongly related with lack of safe drinking water sources and lack of access to proper drainage for wastewater outlet at the household level.

Table 2.12: Correlation between BPH Services and Incidence of Diseases

Diseases	Percent of households with		
	No safe drinking water sources (2001)	No toilets (2001)	No drainage (2001)
Diarrhoea (1998)	0.388	-0.048	0.26
Viral Hepatitis (2001)	-0.074	-0.002	-0.24
Malaria (2000)	-0.003	-0.017	-0.20

Note: Years in brackets indicate the reference years of data

The correlation between poor BPH services and viral hepatitis and malaria shows negative relationship, but the correlation coefficient was small. This might indicate that some other factors were also responsible for the incidence of these diseases. Since we do not have information on the quality of water and other sanitation facilities like existence of stagnant water pools, compost yards nearby habitations, or even the household members' hygiene practices etc., it is difficult to examine the relationship further.

Inadequate provision of safe drinking water supply and sanitation facilities necessitates government role in providing financial resources and technical inputs, to bring these services to all people of the society. All individual households may not be able to undertake the necessary expenditures to create these services by themselves. Moreover, there are clear negative externalities even for those who own such amenities if there are others in the neighbourhood who don't. Hence, government spending is necessary in creating BPH services.

2.7. Concluding Remarks

This chapter illustrated the current status of BPH services at all India level, across states and in Karnataka. According to the Census 2001, a large number of households depended on tube well/ hand pump for drinking water

collection. It is significant to note that the proportion of households covered with piped water supply had been increasing over the years, since piped water supply was considered as one of the safe drinking water sources. However, the data do not reveal information on the quantity and quality of the water supplied at the household level. In the sanitation sector much had to be achieved particularly in rural areas, as around 22 per cent of the households reported to have toilet facility, which is an important mechanism for hygiene. Availability of household latrines varied significantly across states, from about 15 per cent of the households in Orissa to 84 per cent in Kerala. Provision of household latrines was very low in Orissa (15 per cent), Bihar (19 per cent), and Madhya Pradesh (24 per cent).

Prevention and control of water-related and vector-borne diseases is another important BPH services. Water-borne and vector related diseases, normally, dominate the morbidity pattern in a developing nation, where BPH services are of poor quality. The incidence of diarrhoea is high followed by Malaria. While during 1998, over 750 persons per lakh population suffered from diarrhoea, 190 persons suffered from Malaria.

The analysis reveals the provision of BPH services was still insufficient and there was no information on the quality of the services provided. It was also noticed that the incidence of diseases had not declined noticeably and in fact, in some states it had increased. The inadequate provision of safe drinking water supply and sanitation facilities necessitates government role in providing financial resources and technical inputs, to bring these services to all people.

CHAPTER III

GOVERNMENT SPENDING ON SELECTED PUBLIC HEALTH SERVICES: CENTRAL AND STATE GOVERNMENTS

3.1. The Backdrop

Financial resources are necessary for improving the quantity as well as quality of any service delivered to the community or target people. In the case of public health services, resources will have to be allocated at different levels of government because of delegation of responsibilities for the services at different levels. In this chapter we first provide a review of the trends and patterns in government expenditure on BPH services in India for the period from 1991-92. The expenditures of the Central Government and 14 major state governments have been reviewed to understand the magnitude of spending in different components of BPH services and also to assess if the expenditures have been geared towards creating new assets or for maintenance of the assets. The available data, however, do not fully distinguish spending by the Central and state governments. Some of the Central government spending also shows up as spending by the States in their respective budget statements since Central expenditure is in the form of assistance to states for various programmes. Secondly, the available data is also not exhaustive. Some expenditure items such as those under the Member of Parliament Fund (or the MLA fund) have not been shown under BPH services although schemes for BPH services have been financed by these funds. Nevertheless, we believe that a systematic examination of the available data would still provide useful insights into the priorities of governments.

Both Central and State governments are involved in providing basic public health services, though the State government has to play a major role given its constitutional obligations. Here we provide a review of government expenditures on BPH services in India and across states. There have been a number of studies that have looked at government expenditures on health services in general (Duggal et al, 1995; Kunhikannan and Aravindam, 1996; Indira and Vyasulu, 2001; Misra et al, 2003). However, expenditures on BPH services at different levels of government have not been examined. This paper also provides a comparative analysis of expenditures over the years, across sub-sectors and across states. It is not possible to examine the 'adequacy' of these expenditures relative to the 'requirement'. We feel

that an examination of the trends and patterns in the expenditure on BPH services is valuable in understanding the emerging scenario for some of the basic services that make healthier living possible.

3.2. Expenditure on BPH Services: Classification of Details and Data Sources

Before examining the trends and patterns of government expenditure we provide details of our methodology for arriving at the expenditure classification used for the analysis. As mentioned earlier, this study focuses on government spending on water supply, sanitation, disease control and implementation of health regulations, which we have termed as BPH services. The analysis covers spending on BPH services by the Central and 14 major state governments, separately. The primary source of data for this analysis is the government budgets. We have also used the 'compiled' budget data wherever possible. These expenditures have been incurred under different heads and departments, and are available under (1) Public Health under a broad category of Medical and Public Health, (2) Other Programmes in Medical and Public Health (both under the Department of Health -Ministry of Health and Family Welfare), (3) Water Supply and Sanitation under the Department of Drinking Water Supply (Ministry of Rural Development) for rural areas; and Department of Urban Development (Ministry of Urban Development) for urban areas, at both Central and State governments. There may be some other sources of funds within the government budget, for example, the Member of Parliament (Member of Parliament Local Area Development) funds, which may be used for water supply and sanitation programmes. Such non-specific allocations have not been taken into account here, but we believe that such expenditures are relatively small. The expenditure had been analysed from these different angles: (1) total expenditure; (2) plan and non-plan expenditure; and (3) revenue and capital expenditures. An analysis of the total expenditure reveals the trends and patterns in the total amount spent on BPH services; plan and non-plan expenditure shows states' new initiatives for creating amenities of water supply and sanitation and maintaining the amenities created, respectively; while revenue and capital expenditure analysis illustrates the spending on creation of infrastructure and maintenance of them respectively.

3.2.1. Central Government Expenditure

Details of Central Government spending on BPH services are available under the budget heads of Medical and Public Health (Department of Health)

and Water Supply and Sanitation (Department of Drinking Water Supply and Department of Urban Development), which are often grouped under expenditure on social services. Social services category includes public spending on education, health, nutrition programme, and other related services. The various programmes financed by the Central government, which we have considered among BPH services have been listed in Table 3.1. Expenditure data on these programmes have been collected from Expenditure Budget (Budget Documents, Government of India).

Table 3.1: Central Government Programmes on Basic Public Health Services

Public Health (Medical and Public Health)	Water Supply and Sanitation
Department of Health	Department of Drinking Water Supply
<i>Public Health (Medical and Public Health)</i>	<i>Rural Drinking Water Supply and Sanitation</i>
1. National Anti-Malaria Programme	1. Accelerated Rural Water Supply Programme
2. Kala-Azar Control Programme	2. Rural Sanitation
3. National Filaria Control Programme	3. Lump sum Provision for Projects/schemes for Benefit of the North Eastern Region and Sikkim
4. T. B. Control Programme	4. Aid Material and Equipment
5. Leprosy Control Programme	
6. Trachoma and Blindness Control Programme	Department of Urban Development
7. National Iodine Deficiency Control Programme	<i>Urban Drinking Water Supply and Sanitation</i>
8. National Aids Control Organisation	5. Urban Water Supply and Sewerage
9. Drugs De-addiction Programme	6. Support to Water Supply Schemes of Major Cities Facing Acute Water Shortage
10. National Institute of Communicable Diseases, New Delhi	7. Solid Waste Management near Airport in the few selected cities
11. Central Research Institute, Kasauli	8. Special Scheme for Solid Waste Management and Sanitation
12. Port Health Establishment and Airport Health Organisation	9. Special Scheme for Water Supply
13. National Institute of Biological Standardisation and Quality Control, New Delhi	
14. B. C. G. Vaccine Laboratory, Guindy, Chennai	
15. All India Institute of Hygiene and Public Health, Calcutta	
16. Lala Ram Swarup Institute of T. B. and Allied Diseases, New Delhi	

Contd....

17. Institute of Human Behaviour and Allied Sciences, Shahdara, Delhi
18. National Mental Health Programme
19. Other Public Health Institutes
20. Other Schemes

Other Programmes

1. Prevention of Food Adulteration
2. Training Institutes

Source: Budget Document - 2003-04, Government of India

3.2.2. State Government Expenditure

The State government has the major responsibility of providing BPH services as laid down in the Constitution. Table 3.2 presents the heads of expenditure by state governments on the BPH services, i.e., Public Health (under Medical and Public Health) and Water Supply and Sanitation. The list has been prepared on the basis of budget documents of Karnataka Government. It indicates various programmes covered under the components of BPH services. The analysis presented here is based on the data available from Reserve Bank of India's (RBI) compilation of state government expenditures (RBI State Finances) and the Finance Accounts of State Governments. Expenditure data related to water supply and sanitation have been obtained from Reserve Bank of India - State Finances, and on public health from the State Finance Accounts.

Table 3.2: Heads of Expenditures in the Components of Basic Public Health Services - State Government

Public Health (Medical and Public Health)	Water Supply and Sanitation
<i>Revenue Expenditure</i>	<i>Water Supply-Revenue Expenditure</i>
1. Direction and Administration	1. Water Supply - Direction and Administration, Training, Survey and Investigation under ARWS (Centrally Sponsored Plan), Machinery & Equipment
2. Training	2. Rural Water Supply
3. Prevention and Control of Diseases - Malaria, Cholera, Leprosy, Filariasis	3. Bilateral Schemes - Integrated Rural Water Supply and Environmental Sanitation
4. Other Diseases - Kyasanur Forest Disease, Centrally Sponsored Scheme of Guinea Worm Eradication, Anti - Japanese Encephalitis, Epidemic Diseases Control Drugs and Chemicals,	

Centrally Sponsored Scheme for Dengue Control, Control of Hepatitis - B, Integrated Disease Surveillance Programme	4. Additional Support to Zilla Parishad - RWS Scheme Grants-in Aid, Sub Mission Project
5. Control of Blindness	5. Grants-in-Aid, Pradhan Mantri Gromodaya Yojana
6. Drug Control	6. Other Schemes
7. Manufacture of Sera and Vaccine	7. Assistance to Local Bodies, Corporations, etc.
8. Public Health Laboratories	8. Assistance to Zilla Panchayats - Zilla Panchayats, Assistance to TPs, Assistance to GPs
9. Health Education and Publicity	9. Grama Panchayats
10. Other Expenditure	10. Suspense - Credit - PHE Circles
<i>Capital Expenditure</i>	<i>Water Supply - Capital Expenditure</i>
1. Other Programmes	1. Water Supply
	2. Rural Water Supply - Bilateral Schemes
	3. Loans and Advances
	<i>Sanitation - Revenue Expenditure</i>
	Sewerage and Sanitation
	Sanitation Services - Rural Sanitation Programme, Panchasutra
	Assistance to Local Bodies, Corporations, etc
	<i>Sanitation - Capital Expenditure</i>
	Sewerage and Sanitation
	Loans and Advances

Source: Budget Documents - 2003-04, Government of Karnataka

3.3. Central Government Expenditure on BPH Services

Information presented in Table 3.3 shows that the Central Government spent Rs 3082 Crores (in current prices) during 2001-02, on BPH services. This was the Central government expenditure incurred by it directly rather than as resource transfer to other governments. This distinction is useful when we aggregate central and state level expenditures on BPH services. It was 0.7 per cent of the total expenditure of the Central Government. The expenditure had increased from over Rs 874 Crores in 1991-92 to Rs 3082 Crores in 2001-02 at an average annual increase of

13.89 per cent. The increase can also be observed in expenditure at constant prices (deflated by CPI-IW - all India, 1981-82 = 100) from Rs 399 Crores in 1991-92 to Rs 665 Crores in 2001-02. But, spending on BPH services as a proportion of the central government's total expenditure, had not shown much improvement over the years; an increase from 0.65 to 0.70 per cent between 1991-92 and 2001-02. Of course, the major responsibility for health and water supply and sanitation services is with the state governments and hence, lower expenditure on these sectors at the Central level may be expected³.

Table 3.3: Central Government Expenditure on Basic Public Health Services

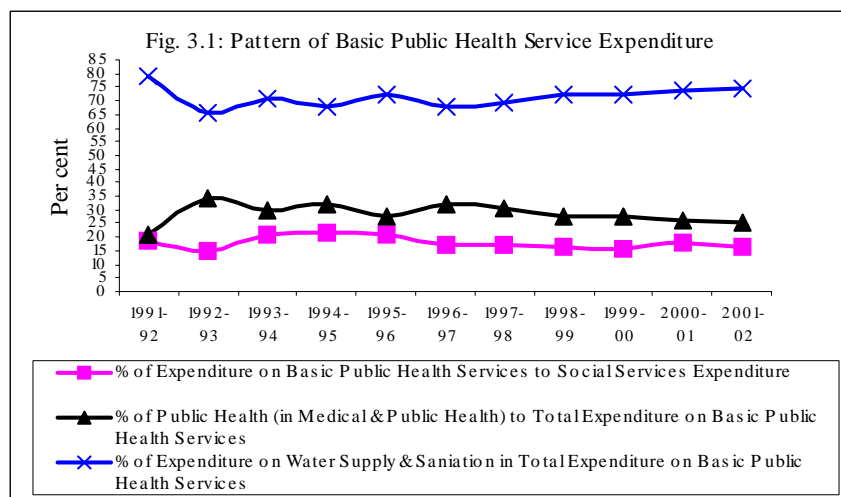
Year	Expenditure in current prices (Rs Crores)			Expenditure in Constant (1981-82) Prices (Rs Crores)			Relative Expenditure Patterns			
	Public health (in MPH)	Water supply & sanitation	Total exp. BPH services	Public health (in MPH)	Water supply & sanitation	Total exp. BPH services	% of public health (in MPH) toBPH	% of water supply & sanitation	% of BPH to social service exp.	% of BPH to total exp.
1991-92	182.72	691.75	874.47	83.43	315.87	399.30	20.89	79.11	18.92	0.65
1992-93	266.69	515.95	782.64	111.12	214.98	326.10	34.08	65.92	15.24	0.46
1993-94	351.04	839.93	1,190.97	136.06	325.55	461.62	29.48	70.52	21.11	0.60
1994-95	436.53	918.33	1,354.86	153.71	323.36	477.06	32.22	67.78	21.89	0.61
1995-96	459.07	1,221.39	1,680.46	146.67	390.22	536.89	27.32	72.68	20.99	0.70
1996-97	564.04	1,193.42	1,757.46	164.92	348.95	513.88	32.09	67.91	17.50	0.65
1997-98	637.39	1,464.11	2,101.50	174.15	400.03	574.18	30.33	69.67	16.99	0.63
1998-99	664.31	1,754.69	2,419.00	160.46	423.84	584.30	27.46	72.54	16.43	0.70
1999-2000	725.59	1,926.31	2,651.90	169.53	450.07	619.60	27.36	72.64	15.64	0.75
2000-01	796.27	2,261.11	3,057.38	179.34	509.26	688.60	26.04	73.96	18.21	0.79
2001-02	788.89	2,293.07	3,081.96	170.39	495.26	665.65	25.60	74.40	16.64	0.70

Source: Budget Documents, Various Issues (Government of India)

Note: Constant Prices = derived using CPI-IW (1981-82 = 100) as the deflator; Social Services expenditures includes spending on social services like education, health, water supply and sanitation, nutrition programme, etc.; Public Health, covered under Medical and Public Health (MPH) which includes expenditure on disease control, health education, etc.; Basic Public Health Services includes expenditure on public health in Medical and Public Health and water supply and sanitation

³ Direct expenditures on BPH services though small, the Centre also provides financial resources to states for programmes including those of water supply and sanitation.

The BPH expenditure as a proportion to total expenditure on social services had actually declined over the period of 1991-92 to 2001-02, but with variations. The expenditure increased from 19 per cent in 1991-92 to 22 per cent in 1994-95, however, declined in the following years, to 16.6 per cent during 2001-02, indicating the declining relative importance of the BPH services within the social sector. The trends in the Central Government expenditures on BPH services suggest that there was a realisation that more needed to be done to improve these minimum services for the population. However, the increase was not keeping pace with the overall spending levels of the government raising the concern that priority for the sector remained low in the overall scheme of expenditure.



Which areas within the BPH services attract greater attention of the Central Government when it comes to expenditure? The composition of BPH services (Fig. 3.1) reveals that expenditure on water supply and sanitation constituted a major share (around 71 per cent during 1991-92 to 2001-02) relative to direct expenditure by the health authorities on public health. Resource allocation on these components had increased over the period as shown by both current and constant prices.

While the amount spent (in 1981-82 prices) on public health (direct spending by health authorities) rose from Rs 83.4 crore in 1991-92 to Rs 170.3 crores in 2001-02, for water supply and sanitation it had increased from Rs 315.8 crores to Rs 495 crore. However, the pattern between 1995-96 and 2001-02 shows that water supply and sanitation had received increased funding in the Central Government budgets relative to other public

health programmes. Although the proportion fluctuated over the period, as a proportion of spending on social services the amount spent on BPH services declined after 1994-95.

Table 3.4: Real Per Capita Expenditure (Rs) on Basic Public Health Services by the Central Government (CPI-IW, 1981-82 prices)

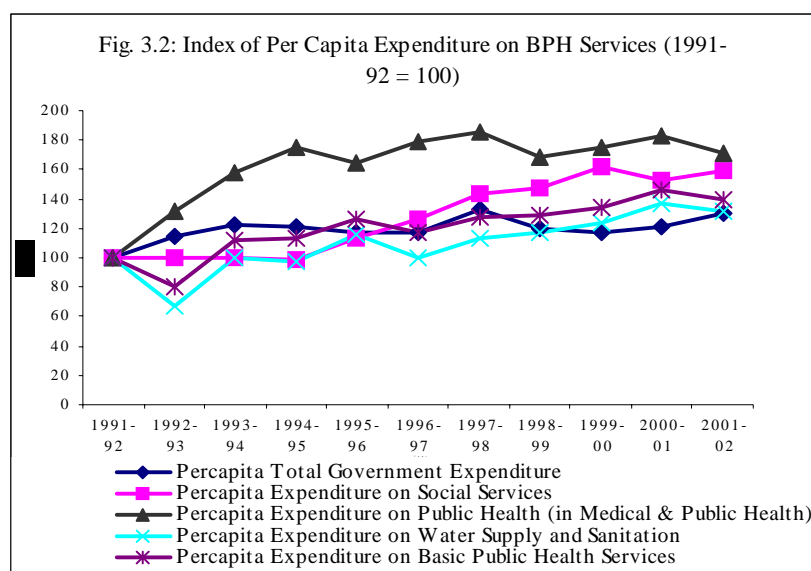
Year	Per capita total government expenditure	Per capita expenditure on social services	Per capita on public health (in MPH)	Per capita expenditure on water supply and sanitation	Per capita exp. on basic public health services
1991-92	716.34	24.67	0.98	3.69	4.7
1992-93	819.67	24.62	1.28	2.47	3.8
1993-94	872.30	24.75	1.54	3.68	5.2
1994-95	865.97	24.27	1.71	3.60	5.3
1995-96	842.31	28.02	1.61	4.27	5.9
1996-97	840.35	31.12	1.75	3.70	5.4
1997-98	949.93	35.25	1.82	4.17	6.0
1998-99	856.63	36.49	1.65	4.35	6.0
1999-2000	836.17	39.99	1.71	4.54	6.3
2000-01	867.58	37.59	1.78	5.06	6.8
2001-02	930.30	39.16	1.67	4.85	6.5
Average (%) annual increase	2.9	4.95	6.16	4.76	4.37

Note: MPH = Medical and Public Health

We now examine the expenditure pattern of the Central government in terms of per capita allocation. Table 3.4 illustrates the per capita total expenditure of the government, per capita spending on social services, per capita expenditure on public health and water supply and sanitation and on basic public health services. During 2001-02 the Central government incurred an expenditure of Rs 6.5 per capita (in 1981-82 prices) on basic public health services, while expenditure on social services and government's total expenditure on per capita basis were Rs 39 and Rs 930 respectively. Despite the meagre spending on BPH services, per capita expenditure on basic public health services did see a rise from Rs 4.7 in 1991-92 to Rs 6.5 in 2001-02, with an average growth of 4.37 per cent. A comparison for the most recent data is, however, not encouraging. Between 2000-01 and 2001-02, total real per capita Central government expenditure increased by about

Rs 60, and expenditure on social services saw a marginal rise by Rs 1.5, but, per capita spending on basic public health services reduced by 30 paise and the reduction could be seen in both water supply and sanitation, and public health.

Water supply and sanitation programmes account for bulk of the Central government spending on BPH services. The programmes of Department of Health geared towards vector control activities have not kept pace with rise in the spending on water supply and sanitation. Within the group of social services, the BPH services have not been able to attract greater share of funds on a sustained basis. The allocation to BPH services in the Central budget is meagre. Given the dark scene on the availability of sanitation facilities, the budgetary provision would appear to reflect no attraction towards these concerns by policy makers. Or, does this indeed reflect lack of effective programmes (or their articulation) so that greater budgetary provisions can be justified?



There has been fluctuation in the per capita expenditure on water supply and sanitation and public health over the years in the 1990s. Figure 3.2 presents the total per capita expenditure, per capita expenditure on social services, per capita spending on public health, water supply and sanitation and on basic public health services in terms of indices, considering 1991-92 as the base. The indices of all per capita expenditures had increased but the rise was not significant since around 1997-98. The per capita expenditure

on social services had increased steadily, while that of public health and water supply and sanitation had experienced fluctuations. The rise in the index of per capita expenditure on BPH services reflects the rise in Central government expenditure on these services. Even on per capita basis there was some rise in Central Government spending on BPH services between early 1990s and early two years of the 21st Century. However, between 1995-96 and 2001-02, the change was insignificant and did not reflect the huge gap in services that needed to be bridged.

3.4. Expenditure on Basic Public Health Services across the States

State governments, having the major responsibility of providing BPH services, assume significant role in financing and implementing these services. We examine here the expenditure pattern across states on the components of BPH services over the period 1991-92 to 2002-03. As mentioned earlier, State Finance Accounts and the State Finances of RBI are the data sources respectively for expenditure on public health and water supply and sanitation. The expenditures covered here refer to the spending by state governments through their budgetary allocations. They do not include expenditures by local governments or by public sector undertakings that are financed by resources outside the assistance from the budgets of State or Central governments. But, as pointed out earlier, the state government spending may also include some of the expenditure of the Central government as the latter provides funds for water supply and sanitation programmes which are implemented by the states. A comparative examination of the spending by state governments indicates the priorities attached by different states to these BPH services. The spending levels may vary not only because of the different priorities but also different requirements of the states due to variations in geography, climate and other natural factors. However, comparison of spending levels over the years by each state does indicate changing priorities attached by the state to basic public health services.

3.4.1. State Governments' Expenditure on Public Health through Health System

In order to achieve and maintain better health status, implementation of public health programmes such as prevention and control of diseases and food safety norms is crucial. The state governments provide these services through their existing health system, i.e., Health Department. As illustrated in the previous section, financial assistance for implementation of various

public health programmes is allocated under the head 'Public Health' in the general head of 'Medical and Public Health'. Here, we have presented the expenditures incurred by state governments on public health services. Details presented pertain to Revenue Expenditure of State governments as obtained from the Finance Accounts of respective states. A point to be made here is that to a large extent the state governments spending on public health is under the Revenue account. For instance, in Karnataka around 99 per cent of the expenditure on public health was under revenue account between 1991-92 and 1999-00, while it was 100 per cent then onwards. This indicates that revenue account constituted a major share of expenditure on public health activities implemented through the health system. Considering this fact we have taken revenue expenditure on public health programmes for the present analysis.

State government spending (revenue) on public health programmes under Medical and Public Health, in current and constant prices, has been presented in Table 3.5 for the period 1991-92 to 1996-97. The public health expenditure amounted to Rs 1371 crores (in current prices) taking all states together during 1996-97, more than double the level of Central Government spending on public health during the same year⁴. Across the states, Maharashtra's expenditure is greater than any other state. Expenditure data, presented in 1981-82 prices between 1991-92 and 1996-97 shows a small increase in the amount spent on public health activities, from Rs 374.27 crores to 400.87 crores for all states with an average annual growth rate of 1.39 per cent. Rajasthan, Kerala and Madhya Pradesh had increased their expenditure at a high rate, 8.92, 7.3 and 5.7 per cent respectively, than other states. But, the public health expenditure had not increased in important states like Karnataka, Punjab, Maharashtra and Haryana. We can say that in these states along with Bihar and Orissa expenditure on public health activities remained stable.

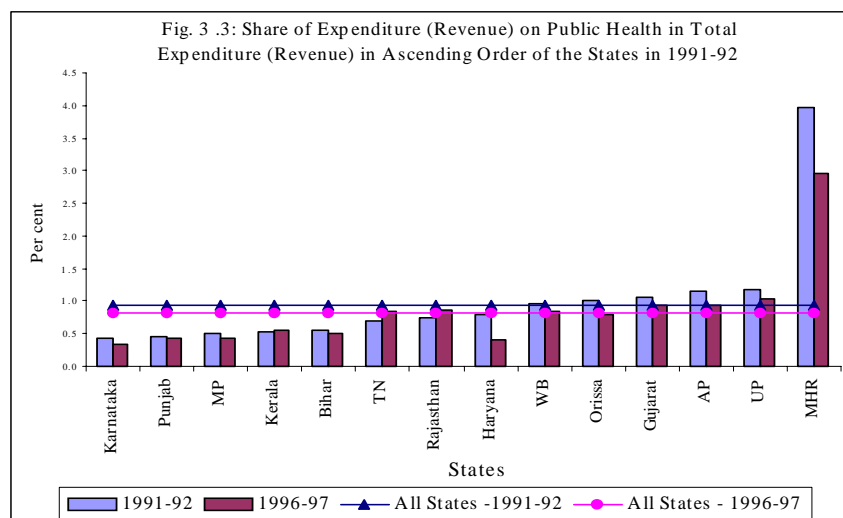
The relative importance assigned to public health has been obtained by calculating the ratio of expenditure (revenue) on public health programmes to total revenue expenditure of the state governments. The combined expenditure of all states on public health programmes was less than 1 per cent of the total revenue expenditure during both 1991-92 and 1996-97 (Fig. 3.3). Here also we can observe that Maharashtra state government had allocated relatively more financial resources (about 3 per cent of the total revenue expenditure during 1996-97). While in a majority of other states the ratio was significantly less than the ratio of all states taken together.

⁴ Again the possible over-estimation of the state-level expenditure needs to be reiterated.

Table 3.5: State Government Expenditure (Revenue) on Public Health under Medical and Public Health (Rs Crore)

States	Amount (Current Prices)						Amount (Constant Prices - 1981-82)						Avg. annual growth rate (%)
	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	
Andhra Pradesh	74.83	82.46	96.86	112.35	109.54	135.94	34.17	34.36	37.54	39.56	35.00	39.75	3.45
Bihar	31.65	50.05	37.42	39.44	47.86	42.12	14.45	20.85	14.50	13.89	15.29	12.32	0.05
Gujarat	55.95	54.27	64.34	78.13	87.10	95.66	25.55	22.61	24.94	27.51	27.83	27.97	2.15
Haryana	17.99	17.81	20.35	22.84	22.12	27.65	8.22	7.42	7.89	8.04	7.07	8.08	0.16
Karnataka	21.55	24.87	26.53	30.79	33.11	34.51	9.84	10.36	10.28	10.84	10.58	10.09	0.59
Kerala	17.10	19.37	22.96	27.16	34.57	37.74	7.81	8.07	8.90	9.56	11.05	11.04	7.3
Maharashtra	214.61	249.02	264.99	317.52	360.02	338.77	97.99	103.76	102.71	111.80	115.02	99.05	0.54
Madhya Pradesh	49.61	46.94	70.43	71.18	62.70	89.71	22.65	19.56	27.30	25.06	20.03	26.23	5.72
Orissa	26.38	29.93	28.81	35.10	39.10	40.81	12.05	12.47	11.17	12.36	12.49	11.93	0.07
Punjab	18.66	22.28	23.16	23.72	23.93	29.37	8.52	9.28	8.98	8.35	7.65	8.59	0.51
Rajasthan	30.47	35.54	40.27	44.68	56.55	72.38	13.91	14.81	15.61	15.73	18.07	21.16	8.92
Tamil Nadu	60.10	69.19	76.78	85.41	98.24	108.65	27.44	28.83	29.76	30.07	31.39	31.77	2.98
Uttar Pradesh	121.55	145.93	155.21	144.14	177.50	198.75	55.50	60.80	60.16	50.75	56.71	58.11	1.41
West Bengal	51.05	52.93	63.61	65.56	74.74	88.36	23.31	22.05	24.65	23.08	23.88	25.84	2.33
All States	819.66	918.78	1020.12	1129.32	1261.47	1370.99	374.27	382.83	395.40	397.65	403.03	400.87	1.39

Note: Constant Price = CPI -IW, All India



The pattern of expenditure can also be examined in terms of per capita spending. The real per capita revenue expenditure (price index 1981-82 = 100) incurred by state governments during 1991-92 to 1996-97 has been estimated and presented in Table 3.6. The per capita expenditure had not changed much during the above period, hovering around Rs 4.25 for all states together. Indeed, there was a marginal decline (0.6 per cent) in the per capita expenditure between 1991-92 and 1996-97. Across the states, Rajasthan and Kerala significantly increased the spending, while most of the other states allocated lower amount over the years for public health programmes. This indicates that the importance assigned in terms of providing funds for public health programmes varied across states. A comparison of per capita spending reveals that only 5 states (namely, Maharashtra, Gujarat, Andhra Pradesh, Tamil Nadu and Haryana) out of the 14 considered here incurred higher expenditure than the per capita expenditure of all states taken together. It should be noted that the expenditure incurred on public health programmes by the Karnataka state government was the second lowest (Rs 2.03) as compared to other states during 1996-97. We have data on 'public health' expenditure of the states only up to 1996-97. This limited data suggests that there has not been any significant change in the budgetary allocations to this component of BPH services by the states despite its importance in controlling some of the common vector borne diseases such as malaria, filaria and dengue fever.

Table 3.6: Per capita Real Revenue Expenditure (in Rs) by State Governments on Public Health

States	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	Avg. annual growth rate
Andhra Pradesh	5.10	5.04	5.42	5.62	4.89	5.47	1.8
Bihar	1.66	2.35	1.61	1.52	1.64	1.31	-1.5
Gujarat	6.12	5.33	5.78	6.28	6.25	6.09	0.2
Haryana	4.93	4.38	4.58	4.60	3.97	4.31	-2.3
Karnataka	2.17	2.25	2.19	2.27	2.18	2.03	-1.2
Kerala	2.67	2.71	2.94	3.11	3.53	3.54	5.9
Madhya Pradesh	3.38	2.87	3.94	3.56	2.80	3.50	3.2
Maharashtra	12.30	12.81	12.48	13.36	13.52	11.34	-1.3
Orissa	3.78	3.84	3.39	3.69	3.67	3.44	-1.6
Punjab	4.16	4.46	4.24	3.88	3.50	3.81	-1.5
Rajasthan	3.12	3.27	3.39	3.36	3.80	4.21	6.3
Tamil Nadu	4.88	5.04	5.12	5.09	5.23	5.31	1.7
Uttar Pradesh	3.94	4.24	4.13	3.43	3.77	3.67	-0.9
West Bengal	3.39	3.16	3.47	3.20	3.25	3.43	0.5
All States	4.38	4.40	4.48	4.43	4.42	4.25	-0.6
Average Annual Increase		2.1	1.8	-0.9	-0.9	1.2	

Source: Finance Accounts, various issues

Note: Expenditure is in constant prices of CPI -IW, base 1981-82=100

3.4.2. Expenditure on Water Supply and Sanitation across the States

Drinking water supply and sanitation being essentials for healthy life and major responsibility of providing these services lying with states, the state governments' efforts in terms of finance, programmes, etc., plays an important role in deciding the quality of these services. An attempt has been made here to examine the pattern of government spending in major states (14 states) on water supply and sanitation between 1991-92 and 2002-03. Information presented in Table 3.7 illustrates diversified pattern of proportion of expenditure on water supply and sanitation across the states. Taking all states together the expenditure on water supply and sanitation constituted about 2.64 per cent of the total spending of state governments during 2002-03, which was a slight improvement over the years from 2.49 per cent in 1991-92. During 2002-03, only 4 states had spent higher than the average proportion of all states taken together. In fact, the number of 'above average' states had declined over the period, which might indicate that the rise in

overall share was due to the increase in the share of water supply and sanitation in relatively smaller number of states. During 2002-03, 10 out of 14 states spent less than the average share of all states combined. The proportion of expenditure on water supply and sanitation to total expenditure of state government varied substantially across the states, from 1.4 per cent in West Bengal and Uttar Pradesh to 6.2 per cent in Rajasthan during 2002-03. Governments in less developed states like Uttar Pradesh, Orissa, and Bihar spent just around 1.5 per cent of their total expenditure on water supply and sanitation. Even a state like West Bengal with relatively higher per capita GSDP was also in this category. Rajasthan reported the highest share of expenditure on water supply and sanitation compared to other states during the period following 1991-92. The top 3 states in this regard were Rajasthan, Madhya Pradesh and Tamil Nadu. These states remained among the top 4 in 2002-03 with Haryana becoming one of the top 3. While states like Rajasthan and Haryana had increased the proportion of expenditure on water supply and sanitation, states such as Andhra Pradesh, Bihar, Kerala, Maharashtra and Orissa had reduced the share between 1991-92 and 2002-03.

Table 3.7: Expenditure on Water Supply and Sanitation by State Governments

States	As % to total government expenditure				As % to expenditure on social services			
	1991-92	1995-96	1999-2000	2002-03 (RE)	1991-92	1995-96	1999-2000	2002-03 (RE)
Andhra Pradesh	2.61	2.40	2.71	1.98	8.55	7.40	7.64	6.95
Bihar	2.08	2.07	1.88	1.67	6.38	5.87	5.92	5.39
Gujarat	1.90	1.60	3.10	2.25	6.84	5.44	9.75	6.20
Haryana	2.17	2.61	4.19	3.69	8.47	10.00	14.83	13.36
Karnataka	2.32	1.83	2.37	2.48	7.48	5.65	6.59	7.79
Kerala	2.51	2.07	2.12	2.05	7.32	6.12	6.34	5.95
Madhya Pradesh	3.23	3.19	2.90	3.61	9.93	9.71	8.24	10.90
Maharashtra	2.23	2.44	2.41	1.92	7.41	7.79	7.51	6.20
Orissa	2.19	2.32	2.39	1.70	7.43	7.00	6.08	6.09
Punjab	0.95	1.31	0.87	2.17	5.00	5.72	3.95	9.52
Rajasthan	5.47	6.17	6.41	6.24	18.46	19.79	17.51	17.55
Tamil Nadu	2.99	3.06	2.16	3.46	9.63	8.44	6.15	10.14
Uttar Pradesh	1.33	1.38	0.98	1.38	5.40	5.24	3.97	5.47
West Bengal	1.14	1.57	1.39	1.40	3.13	4.89	4.05	4.77
All States	2.49	2.69	2.64	2.64	8.39	8.65	8.26	8.74

Note: RE = Revised Estimates

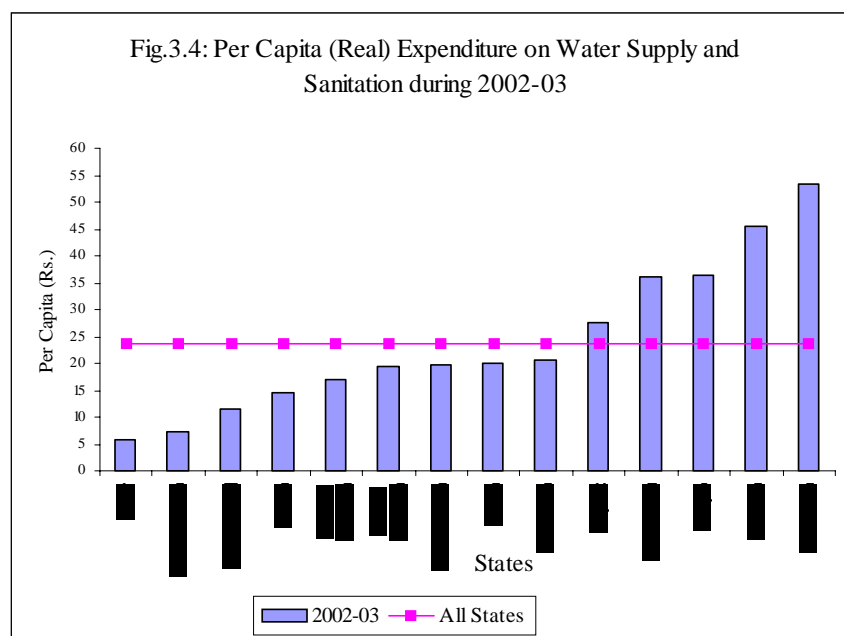
Expenditure on water supply and sanitation as per cent to social services stood at 8.74 during 2002-03 taking all states together, which was a slight increase from 8.39 per cent in 1991-92 (Table 3.7). Among the states the percentage varied between 4.7 in West Bengal to 17.5 in Rajasthan. Compared to other states, Rajasthan, Haryana, Madhya Pradesh, Panjab and Tamil Nadu spent a higher share on water supply and sanitation, which was more than all states' percent of 8.7 during 2002-03. But, the expenditure share had declined over the period in many states such as Andhra Pradesh, Bihar, Kerala, Maharashtra, Orissa, and Rajasthan. Does this indicate any decline in the significance attached to water supply and sanitation within the social sector? It cannot be that these states had achieved their targets relating to BPH services.

3.4.2.1. Per Capita Expenditure on Water Supply and Sanitation across States

Table 3.8: Per Capita Expenditure (Prices = 1981-82) on Water Supply and Sanitation by State Governments (in Rs)

States	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	Avg. annual growth rate
AP	15.0	16.0	16.7	21.6	16.3	15.3	17.5	23.5	19.5	13.9	18.8	19.5	4.71
Bihar	7.7	8.8	7.5	7.1	6.8	4.4	4.4	5.4	9.1	8.4	4.8	5.6	1.17
Gujarat	15.3	16.4	17.1	26.7	12.9	14.4	17.9	26.1	33.4	53.3	23.3	27.7	13.43
Haryana	17.6	22.9	24.3	49.6	30.5	45.3	36.7	36.0	43.1	39.6	50.1	45.4	14.37
Karnataka	16.0	34.2	32.9	45.8	14.6	15.0	17.1	13.4	16.3	29.8	30.5	20.5	13.68
Kerala	16.4	15.2	16.2	15.7	15.4	13.8	19.9	15.2	20.5	14.9	15.6	20.1	4.17
MP	15.1	15.1	16.4	17.6	15.6	16.0	15.8	15.5	15.9	14.3	21.9	17	2.49
MHR	16.2	14.3	14.5	16.9	20.5	21.3	26.5	23.1	23.4	22.9	23.4	19.8	2.63
Orissa	11.7	13.7	11.7	11.8	12.5	12.8	15.0	18.6	17.1	14.3	13.8	14.5	2.67
Punjab	11.3	13.7	10.4	11.0	14.0	12.6	12.3	12.8	11.6	14.5	28.3	36.4	14.64
Rajasthan	34.4	35.2	40.3	44.2	47.3	41.4	46.5	50.7	47.2	46.6	50.2	53.3	4.37
TN	24.3	32.9	29.6	29.1	21.6	27.4	17.4	17.3	19.3	31.8	33.2	35.9	6.95
UP	6.4	6.4	6.4	6.6	6.4	7.3	9.5	6.2	5.1	8.5	11.0	7.1	4.81
WB	4.9	3.5	6.2	11.3	7.4	8.0	8.6	9.6	10.3	12.4	12.6	11.6	13.34
All States	15.3	15.7	16.1	19.1	17.5	17.3	19.0	19.6	20.5	22.8	24.7	23.5	4.24

In order to probe the pattern or disparity in the amount spent by state governments on water supply and sanitation across the states further let us verify the real per capita expenditure (1981-82 = 100), which has been presented in Table 3.8. All states taken together spent about Rs 23.5 per capita (in 1981-82 prices) during 2002-03 on water supply and sanitation. On a comparative basis, the Central Government expenditure in 2000-01 was only Rs 6.8 per capita, which reveals the significantly larger resource allocation by states⁵. The real per capita expenditure on water supply and sanitation by all states combined increased from Rs 15.3 in 1991-92 to Rs 23.5 in 2002-03 at an average annual rate of 4.24 per cent. Across the states the expenditure varied from Rs 5.6 per capita in Bihar to Rs 53.3 in Rajasthan during 2002-03 (Fig. 3.4). In only 5 states the per capita allocation was more than that all states taken together. These states were Rajasthan, Haryana, Punjab, Tamil Nadu and Gujarat. There was considerable fluctuation in per capita expenditure on water supply and sanitation from year to year in the states. Uttar Pradesh, Bihar and West Bengal did not show adequate efforts towards providing funds for water supply and sanitation as their per capita expenditure was the lowest compared to other states.



⁵ Even allowing for likely over-estimation of expenditure by the state governments, their expenditure is at least twice as much as the Centre.

While Punjab had increased the per capita expenditure from Rs 11 in 1991-92 to Rs 36 per capita in 2002-03, in Bihar, the per capita expenditure declined from Rs 7.7 to 5.6 in the above years. In Uttar Pradesh, although the expenditure increased from Rs 6.4 in 1991-92 to 9.5 in 1997-98, it fell to a low of Rs 5.1 in 1999-2000, and again increased to Rs 11 in 2001-02, but dropped to Rs 7 in 2002-03. In Karnataka, the per capita expenditure on water supply and sanitation was around Rs 20 during 2002-03, which was less than the per capita expenditure of all states together. An important point is that the per capita spending on water supply and sanitation of Karnataka was higher than all states taken together up to 1994-95, then onwards lower, but during 2001-02 and 2002-03 it increased again. However, the average annual increase in the per capita spending on water supply and sanitation shows that states like Gujarat, Haryana, Karnataka, Punjab and West Bengal had allocated financial resources at a higher rate as compared to other states.

Table 3.9: Index of Per Capita Real Expenditure on Water Supply and Sanitation by State Governments

States	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03
AP	306	327	341	440	332	312	356	479	399	284	383	398
Bihar	157	179	153	145	138	89	89	111	185	172	97	115
Gujarat	313	335	348	546	263	293	366	533	683	1089	476	565
Haryana	359	467	496	1013	623	924	749	735	879	809	1023	926
Karnataka	326	697	672	934	297	306	350	273	332	608	622	419
Kerala	334	310	331	321	314	281	406	310	419	304	318	410
MP	308	309	334	360	318	327	322	316	325	291	447	346
Maharashtra	331	292	297	345	419	435	542	472	477	468	478	405
Orissa	240	280	239	240	256	262	306	379	350	293	283	296
Punjab	231	280	212	224	285	258	251	261	237	296	578	743
Rajasthan	702	718	823	901	966	845	950	1034	962	950	1025	1088
Tamil Nadu	497	671	604	595	441	560	355	354	393	648	677	733
UP	131	130	131	135	131	149	195	127	104	174	224	145
WB	100	71	126	231	152	164	176	196	209	253	257	238
All States	312	319	329	390	357	354	388	401	417	466	503	479

Note: Index Base = Per Capita Expenditure on Water Supply and Sanitation in West Bengal, 1991-92 = 100

A comparative picture of per capita spending on water supply and sanitation across the states has been provided using an index, which has taken the per capita expenditure of West Bengal during 1991-92 as the base. West Bengal has been taken as the base because the per capita expenditure incurred on water supply and sanitation was the lowest there in 1991-92 as compared to other states. Index results (Table 3.9) show that the per capita spending on water supply and sanitation had increased between 1991-92 and 2002-03 in all the states, excepting Bihar for the years 1996-97, 1997-98 and 2001-02. Rajasthan had shown relatively higher increase in the expenditure compared to other states.

There are, thus, significant variation in the spending levels of states on water supply and sanitation either in terms of their percentage of share in state budgets or in terms of per capita expenditure. While the ability of the states to mobilise their own resources which could then also be leveraged against Central Government resources was greater for more developed states, this might not be the only determinant of the pattern of expenditure across the states. For instance, Rajasthan spent the highest sums on water supply and sanitation in per capita terms although it was not among the higher per capita income states.

3.4.2.2 Pattern of Expenditure on Water Supply and Sanitation

Given the large differences in state level spending on water supply and sanitation, we have attempted to examine the pattern of the differences in some detail. First, we examine if the patterns across states has undergone a change over the years. For instance, although some states might have low expenditure than others at some stage of their development, this position might change over time: either the state might have begun to allocate more resources mobilised 'somehow' or the state that spent large amounts initially decrease the spending levels after achieving some programmes in water supply and sanitation services. Second, given the variation in the patterns over time, we have examined the relationship between per capita spending by a state on water supply and sanitation and per capita gross state domestic product (GSDP) and total budgetary expenditure of the state. The hypothesis is that when a state is able to mobilise more of its own resources, it provides higher resources to water supply and sanitation. Second, when a state is able to spend more in the aggregate, it also provides larger budget to water supply and sanitation⁶.

⁶ The Centre influences spending pattern of the states through its funding of specific programmes sometimes fully and sometimes on cost sharing basis

3.4.2.2a. Are Spending Patterns of the States Rigid?

Ranking of states on the basis of real per capita expenditure on water supply and sanitation, illustrated in Table 3.10, reveals that the rank of many states had fluctuated from year to year. While in 1991-92, Rajasthan, Tamil Nadu and Haryana topped in the list, during 2002-03, Punjab was one among the top three spenders on water supply and sanitation, Tamil Nadu dropped to the fourth position. Punjab had made more efforts to provide water supply and sanitation, which could be seen in the increased expenditure from Rs 11.3 per capita in 1991-92 (11th rank) to Rs 36.4 per capita in 2002-03 (3rd rank). Other states like Karnataka, Maharashtra, Madhya Pradesh, Andhra Pradesh and Gujarat fluctuated in their ranking, while Bihar, Uttar Pradesh and West Bengal remained in lower rank throughout the study period. We have noted that 9 states including Karnataka, Maharashtra and Kerala spent less than the average per capita expenditure of all states taken together in 2002 - 03.

Table 3.10: Per Capita (Real) Expenditure (Rs) on Water Supply and Sanitation by States - Ranking of States

States	1991-92	States	1995-96	States	2000-01	States	2002-03
1 Rajasthan	34.4	Rajasthan	47.3	Gujarat	53.3	Rajasthan	53.3
2 Tamil Nadu	24.3	Haryana	30.5	Rajasthan	46.6	Haryana	45.4
3 Haryana	17.6	Tamil Nadu	21.6	Haryana	39.6	Punjab	36.4
4 Kerala	16.4	Maharashtra	20.5	Tamil Nadu	31.8	Tamil Nadu	35.9
5 Maharashtra	16.2	AP	16.3	Karnataka	29.8	Gujarat	27.7
6 Karnataka	16.0	MP	15.6	Maharashtra	22.9	Karnataka	20.5
7 Gujarat	15.3	Kerala	15.4	Kerala	14.9	Kerala	20.1
8 MP	15.1	Karnataka	14.6	Punjab	14.5	Maharashtra	19.8
9 AP	15.0	Punjab	14.0	Orissa	14.3	AP	19.5
10 Orissa	11.7	Gujarat	12.9	MP	14.3	MP	17.0
11 Punjab	11.3	Orissa	12.5	AP	13.9	Orissa	14.5
12 Bihar	7.7	West Bengal	7.4	West Bengal	12.4	West Bengal	11.6
13 Uttar Pradesh	6.4	Bihar	6.8	Uttar Pradesh	8.5	Uttar Pradesh	7.1
14 West Bengal	4.9	Uttar Pradesh	6.4	Bihar	8.4	Bihar	5.6
All States	15.3	All States	17.5	All States	22.8	All States	23.5

3.4.2.2b. Is Expenditure on Water Supply and Sanitation Related to Government's Total Expenditure?

Is per capita expenditure on water supply and sanitation associated with (1) spending on water supply and sanitation as a percent of

total government expenditure, (2) per capita total expenditure of the government and (3) per capita real GSDP? We have examined these issues in this section. The relationship has been examined through correlation analysis between per capita expenditure on water supply and sanitation with per capita total spending of the government and per cent of water supply and sanitation to total government expenditure and per capita real GSDP across the states (Table 3.11).

Table 3.11: Estimated Correlation Coefficients between Spending on Water Supply and Sanitation, and Total Government Spending and GSDP

States	Correlation between per capita exp. on water supply and sanitation and per capita total expenditure of the government	Correlation between per capita exp. on water supply and sanitation to percent of water supply sanitation exp. in total government exp.	Correlation between per capita exp. on water supply and sanitation and per capita real gsdp
Andhra Pradesh	0.23ns	0.58**	0.19ns
Bihar	0.85*	0.85*	0.37ns
Gujarat	0.68**	0.92*	0.50ns
Haryana	0.82*	0.86*	0.63ns
Karnataka	0.22ns	0.97*	-0.29ns
Kerala	0.54***	0.29Ns	0.21ns
Madhya Pradesh	0.38ns	0.89*	0.03ns
Maharashtra	0.59**	0.79*	0.83*
Orissa	0.40ns	0.45Ns	0.69**
Punjab	0.78*	0.92*	0.36ns
Rajasthan	0.82*	0.70*	0.80*
Tamil Nadu	0.34ns	0.84*	-0.40ns
Uttar Pradesh	0.33ns	0.96*	0.48ns
West Bengal	0.83*	0.60**	0.80*
All States	0.96*	0.52***	0.92*

Note : *, **, *** indicates significance at 1 per cent, 5 per cent and 10 per cent level, respectively
ns = not significant

The per capita expenditure on water supply and sanitation and per capita total government spending taking all states together were closely related as revealed by the correlation coefficient (0.96), which is significant

at 1 per cent level of probability. This indicates that the total government expenditure influenced spending on water supply and sanitation. This is further confirmed by the significant correlation coefficient (0.52) between per capita expenditure on water supply and sanitation and percent of water supply and sanitation expenditure to total government expenditure.

The correlation results show that a majority of the states exhibited positive relationship between per capita spending on water supply and sanitation and total government spending. Expenditure on water supply and sanitation is related to the state's income level when we consider the correlation for the case of 'all states'. The significant correlation coefficient between per capita spending on water supply and sanitation and the per capita real GSDP (0.92) illustrates this point. However, across the states no pattern can be seen, as only a few developed states (Maharashtra, West Bengal) and also a few less developed states (Orissa, Rajasthan) showed positive and significant relationship between spending on water supply and sanitation and per capita real GSDP. This might indicate that changes in income level had no impact on the policy of a state government with respect to its allocation of resources for providing water supply and sanitation services to people. The policy has been influenced by its ability to raise its overall level of spending rather than to its state level income.

As observed above, expenditure on water supply and sanitation is related to the total expenditure of the government. The following analysis, illustrates the nature of this relationship across states by using the regression equation given below:

$$\ln \text{PCTWSS}_i = a_0 + a_1 \ln \text{PCTGOVEXPTT}_i + e_i$$

where

PCTWSS_i	=	Per capita expenditure on water supply and sanitation of i^{th} state
PCTGOVEXPTT_i	=	Per capita total government expenditure of i^{th} state
e_i	=	random error term
\ln	=	natural logarithmic operator

The results in Table 3.12 show that expenditure on water supply and sanitation increased with rise in the total government expenditure as indicated by the coefficient of log (per capita total government expenditure) for the case of 'all states'. But, across the states a varied picture of the relationship emerges, as the results were significantly positive in the case of a few states, while not significant in others.

Table 3.12: Relationship between Per Capita Expenditure on Water Supply and Sanitation and Per Capita Total Government Expenditure

States	Constant	log Per capita total govt. exp	R square
Andhra Pradesh	0.578ns	0.233Ns	0.06
Bihar	-3.297*	1.613*	0.72
Gujarat	-3.316**	1.561*	0.55
Haryana	-3.280*	1.588*	0.71
Karnataka	-1.214ns	0.893Ns	0.07
Kerala	0.022ns	0.411***	0.25
Madhya Pradesh	-0.912ns	0.786Ns	0.14
Maharashtra	-1.783ns	1.046**	0.41
Orissa	0.083ns	0.379Ns	0.21
Punjab	-3.501**	1.511*	0.52
Rajasthan	-1.787**	1.205*	0.69
Tamil Nadu	-0.266ns	0.576Ns	0.06
Uttar Pradesh	-1.97ns	1.047Ns	0.07
West Bengal	-2.358**	1.188*	0.64
All States	-1.874*	1.107*	0.92

Note : *, **, *** indicates significance at 1 per cent, 5 per cent and 10 per cent level, respectively

Ns = not significant

Estimated elasticity (Table 3.12) shows that in the case of all states an increase in the total government expenditure increased the spending on water supply and sanitation by 1.1 per cent. Among the states the increase is more in the case of Bihar where the elasticity is around 1.6. The analysis reveals that as government's total expenditure increased there was a tendency to increase spending on water supply and sanitation as well, and at a relatively higher pace. This is a positive tendency but may not be adequate in view of the continuing deficiency in services.

3.4.2.2c. Expenditure on Water Supply and Sanitation and State Income

How does the income level of state influences expenditure on water supply and sanitation? To answer this question systematically, we have estimated the following regression model:

$$\ln \text{PCTWSS}_i = a_0 + a_1 \ln \text{PCTRLGSDP}_i + e_i$$

where

$PCTWSS_i$	=	Per capita Expenditure on Water Supply and Sanitation in i^{th} state
$PCTRLGSDP_i$	=	Per capita Real GSDP of i^{th} state
e_i	=	error term
\ln	=	natural logarithmic operator

From the results of the above equation (Table 3.13), it is difficult to draw any conclusion on the relationship between expenditure on water supply and sanitation and the income of state, as most of the estimated elasticities were not significant.

Table 3.13: Relationship between Per capita Expenditure on Water Supply and Sanitation and GSDP (Real)

States	Constant	log per capita RLGSDP	R square
Andhra Pradesh	0.30Ns	0.237Ns	0.03
Bihar	-2.19Ns	0.849Ns	0.11
Gujarat	-3.67Ns	1.210Ns	0.24
Haryana	-7.896**	2.270**	0.47
Karnataka	4.24Ns	-0.729Ns	0.08
Kerala	0.595Ns	0.154Ns	0.03
Madhya Pradesh	1.08Ns	0.028Ns	0.00
Maharashtra	-3.87**	1.240*	0.82
Orissa	-4.69***	1.550**	0.47
Punjab	-1.69Ns	0.427Ns	0.12
Rajasthan	-1.44Ns	0.785*	0.64
Tamil Nadu	3.91***	-0.620Ns	0.18
Uttar Pradesh	-3.88Ns	1.240Ns	0.17
West Bengal	-7.18*	2.050*	0.65
All States	-2.27*	0.880*	0.84

Note : *, **, *** indicates significance at 1 per cent, 5 per cent and 10 per cent level, respectively

Ns = not significant

However, results of the double-log regression equation presented in Table 3.13 show a marginal (or less than proportionate) increase in spending on water supply and sanitation with increase in income when we consider the case of 'all states'. Across the states, Haryana, Maharashtra, Orissa and West Bengal had increased the expenditure on water supply and sanitation more than proportionately with the increase in their per capita real income

(GSDP). In the case of Rajasthan, the estimated elasticity was less than 1. And, in the other nine cases, the estimated coefficient was statistically not significant. This might indicate that irrespective of the level of development or income, the state governments expended on water supply and sanitation.

3.5. Creation and Maintenance of Assets in Water Supply and Sanitation Services

A common issue that arises with respect to expenditures of the government in the delivery of various services is the balance between creating new assets and their maintenance. Increasingly, there is a recognition that complete reliance on government funds or subsidies leads to poor maintenance of assets and some contributions from the beneficiaries would serve to increase greater participation by them in the maintenance of assets. In the Indian context, expenditures of the government have been distinguished in terms of 'plan' and 'non-plan'. Roughly, the 'plan' expenditures refer to those that create assets and represent new initiatives and programmes, whereas the 'non-plan' expenditure is on the continuation of the previous programmes or maintenance of assets created under the past programmes. There is also a distinction between 'capital' and 'revenue' expenditures, which more clearly reflect the 'creation of assets' and their maintenance. We have examined the pattern of differences in state government expenditures on water supply and sanitation with respect to these distinctions.

3.5.1. Plan and Non-Plan Expenditure in Water Supply and Sanitation across the States

Let us examine the pattern of plan and non-plan expenditure across states, which can reveal the states' new initiatives for creating amenities of water supply and sanitation and maintaining the amenities created, respectively. Information presented in Table 3.14 shows that the pattern of plan expenditure varied across the states. Taking all states together the share of plan expenditure was around 68 per cent during the period of 1991-92 to 2002-03. A contrasting picture could be observed among the states. States such as Rajasthan, Haryana and Punjab, which had topped in the list of per capita expenditure, spent more in non-plan category. The share of plan expenditure in these states (including Maharashtra) had declined over the period, which might indicate that they spent more on maintaining the water supply and sanitation amenities created earlier. But, this should be compared with the proportion of households with access to water supply and sanitation facilities, to examine whether curtailment in plan share was

justified. However, states such as Gujarat, Karnataka, Kerala, Tamil Nadu, Uttar Pradesh, West Bengal and Madhya Pradesh had spent significantly high share (over 74 per cent) in plan expenditure. In fact, Karnataka had reported over 98 per cent, while Gujarat and Uttar Pradesh showed 85 per cent. Is this at the cost of maintenance expenditure on the infrastructure that was created? The high share of plan expenditures and its continuous increased over the years in some states raises questions.

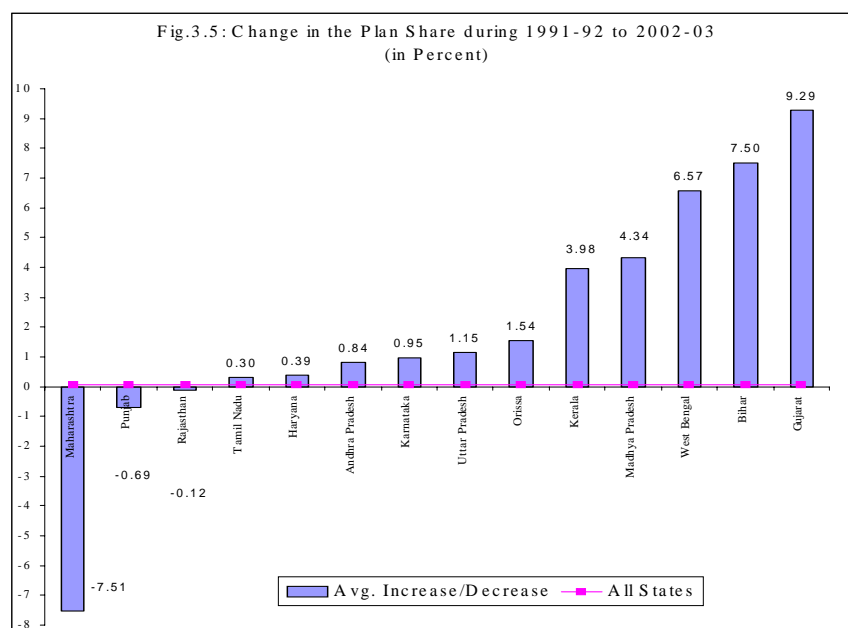
Table 3.14: Pattern of Plan Expenditure on Water Supply and Sanitation across States (Per cent to Total Expenditure)

States	Years					Variation in the Pattern Across Years		
	1991	1995	1998	2000	2002	Maximum	Minimum	Coefficient of Variation (%)
Andhra Pradesh	76.5	81.4	74.0	71.7	78.6	81.4	71.7	4.95
Bihar	49.4	36.6	55.2	41.2	46.5	55.2	36.6	15.77
Gujarat	34.7	55.6	81.3	83.3	85.0	85.0	34.7	32.60
Haryana	69.1	38.2	37.9	41.8	39.1	69.1	37.9	29.70
Karnataka	89.4	92.0	94.1	99.0	98.7	99.0	89.4	4.45
Kerala	54.3	76.4	76.2	76.5	79.6	79.6	54.3	14.22
Madhya Pradesh	49.3	50.0	53.1	58.6	74.1	74.1	49.3	17.94
Maharashtra	93.2	89.3	81.1	50.7	36.1	93.2	36.1	36.08
Orissa	62.4	74.5	63.4	66.8	68.2	74.5	62.4	7.14
Punjab	46.5	40.7	24.7	38.1	33.2	46.5	24.7	22.45
Rajasthan	51.2	56.5	48.1	38.2	47.4	56.5	38.2	13.77
Tamil Nadu	82.9	85.9	83.2	82.3	82.6	85.9	82.3	1.70
Uttar Pradesh	87.8	75.5	96.5	72.4	85.0	96.5	72.4	11.63
West Bengal	70.9	61.8	68.1	72.5	74.5	74.5	61.8	7.13
All States	68.8	69.6	70.5	67.4	68.6	70.5	67.4	1.68
<i>Variation in the Pattern</i>								
Maximum	93.2	92.0	96.5	99.0	98.75			
Minimum	34.7	36.6	24.7	38.1	33.19			
Coefficient of Variation	27.21	28.48	30.19	29.13	31.08			

An interesting point could be observed from Maharashtra, where the plan expenditure has declined from over 93 per cent in 1991-92 to 36 per cent in 2002-03. Contrary to Maharashtra, both Gujarat and Kerala had

raised the share of plan expenditure over the period in a significant way. Hence, there was no clear pattern in spending across the states on plan expenditure of water supply and sanitation. The gap between maximum and minimum share of plan expenditure was too wide across the states (respectively 99 and 38 per cent in 2002-03, for instance) and also within the states over time; further, there was no decline in the gap. The coefficient of variation computed illustrates that the share of plan expenditure fluctuated across the states.

Figure 3.5 presents the average change in the share of plan expenditure across the states during the reference period of 1991-92 to 2002-03. Percentage increase in the plan expenditure was significantly high in Gujarat, Bihar, West Bengal, Madhya Pradesh and Kerala. In Gujarat, Bihar and West Bengal the share had increased respectively by 9.29, 7.5 and 6.5 per cent, indicating that these states had taken up new initiatives to provide water supply and sanitation facilities. In Bihar and West Bengal the plan expenditure share had increased quite impressively, although these states had shown low per capita expenditure on water supply and sanitation, while in Maharashtra the share had been reduced by 7.5 per cent during the period.



3.5.1.1. Is the Plan Expenditure on Water Supply and Sanitation Related to Income Level and Total Government Expenditure of the State?

The analysis presented in the above section shows variation in the plan share of expenditure on water supply and sanitation across the states. We now examine if there was any relationship between the state government's 'plan' expenditure on water supply and sanitation and the state's income and the level of total expenditure of the government. Since income (GSDP) is often a determinant of expenditure, an attempt has been made here to examine the above relationship across the states. The estimated Rank Correlation Coefficient (Table 3.15) indicated no relationship between plan expenditure on water supply and sanitation and per capita (real) GSDP and also with the per capita total expenditure (real) of the government. Our explanation for this lack of significant relationship between the share of plan expenditure on water supply and sanitation and per capita real GSDP of a state might be that even in higher income states, a large number of habitations may still be inadequately covered by these facilities and hence, these richer states continued to spend in the same manner as the poor states where expenditures were incurred in creating the infrastructures for water supply and sanitation. The other factors such as the climatic conditions, water quality might also influence expenditures on water supply and sanitation besides GSDP.

Table 3.15: Relationship between Share of Plan Expenditure on Water Supply and Sanitation (WSS) and Per Capita Real GSDP and Per Capita Total Government Expenditure (Real) - Rank Correlation

Year	Share of Plan Expenditure on WSS and Per capita GSDP	Share of Plan Expenditure on WSS and Per capita Total Expenditure of Government	Share of Plan Expenditure in WSS and Per capita Total Expenditure on WSS
1991	0.05	-0.12	-0.06
1995	0.06	-0.1	-0.08
1998	-0.1	-0.33	-0.31
2000	0.05	-0.06	-0.05

Further, we examine how stable was the pattern of plan expenditure on water supply and sanitation of the state governments over the years.

The Rank Correlation analysis (Table 3.16) shows that the state government expenditure on the new initiatives was related to that incurred in the previous years. For instance, the high rank correlation coefficients for the years 1991 and 1995 (0.78) and for the years 1998 and 2000 (0.82) illustrate this point. Thus, although the state governments' expenditure on the new initiatives in water supply and sanitation were not related to the income level or to the total expenditure of the government, the expenditure was influenced by other important factors for creation water supply and sanitation facilities and also it was related to the spending in the previous years.

Table 3.16: Rank Correlation Matrix

Correlation of	Share of plan expenditure in 1991	Share of plan expenditure in 1995	Share of plan expenditure in 1998	Share of plan expenditure in 2000
Share of plan expenditure in 1991	1	0.78	0.6	0.33
Share of plan expenditure in 1995	0.78	1	1	0.60
Share of plan expenditure in 1998	0.6	0.74	1	0.82
Share of plan expenditure in 2000	0.33	0.60	0.82	1

3.5.2. Revenue Expenditure on Water Supply and Sanitation across States

In the provision of drinking water supply and sanitation, both the creation of infrastructure and maintenance of them are crucial for the efficient delivery of services. Government resources for these activities were allocated under expenditure heads of capital and revenue, respectively. An analysis of the pattern of revenue and capital expenditures would reveal the focus of government expenditure. Table 3.17 illustrates that the share of revenue and capital expenditure was around 50 per cent during 2002-03 taking all states together. The percentage of revenue expenditure however, had declined, from 64.5 in 1991-92 to 52.4 in 2002-03, which meant an increase in the share of capital expenditure. The maximum and minimum share of revenue expenditure across the states also indicated the decline. This is a significant change as more resources are now being devoted to the creation of infrastructure for providing drinking water and sanitation services. But, there was a marked difference in the composition of revenue and

capital expenditures across the states. Revenue expenditure constituted more than 75 per cent in Kerala, Maharashtra, Punjab, Orissa and West Bengal, indicating higher spending towards maintenance of the water supply and sanitation schemes. But, from the available data it has not been possible to assess whether this maintenance provided for adequate repairs of assets as well.

Table 3.17: Share of Revenue Expenditure on Water Supply and Sanitation (in per cent)

States	Years					Variation		
	1991	1995	1998	2000	2002	Maximum	Minimum	Coefficient of Variation (%)
Andhra Pradesh	53.8	68.2	93.64	47.1	30.1	93.6	30.1	40.85
Bihar	51.3	56.7	41.46	54.1	50.9	56.7	41.5	11.37
Gujarat	49.3	56.9	37.87	16.2	30.1	56.9	16.2	42.00
Haryana	94.5	63.1	63.01	62.4	63.6	94.5	62.4	20.30
Karnataka	50.9	100.0	100.00	41.6	46.7	100.0	41.6	43.52
Kerala	71.7	67.7	74.82	76.2	78.5	78.5	67.7	5.66
Madhya Pradesh	88.7	92.8	96.20	93.7	31.2	96.2	31.2	34.42
Maharashtra	70.2	60.4	83.10	89.0	86.5	89.0	60.4	15.60
Orissa	76.9	82.6	80.36	72.6	76.0	82.6	72.6	5.00
Punjab	100.0	100.0	99.93	100.0	100.0	100.0	99.9	0.03
Rajasthan	51.4	45.7	50.66	59.9	51.3	59.9	45.7	9.90
Tamil Nadu	61.2	60.1	60.12	20.6	20.2	61.2	20.2	49.33
Uttar Pradesh	85.3	85.1	92.99	46.0	71.2	93.0	46.0	24.39
West Bengal	77.5	76.1	90.26	92.5	81.2	92.5	76.1	8.94
All States	64.5	62.8	66.63	53.6	52.4	66.6	52.4	10.88
<i>Variation</i>								
Maximum	100	100	100	100	100			
Minimum	49.3	45.7	37.9	16.2	20.2			
Coefficient of Variation (%)	25.06	23.69	28.59	42.68	42.45			

In contrast, states such as Andhra Pradesh, Gujarat, Madhya Pradesh and Tamil Nadu reported revenue expenditure of around 30 per cent (in 2002-03) of their total expenditure on water supply and sanitation. However, the ratio of revenue expenditure had fluctuated considerably (high coefficient of variation) in the case of a few states viz., Tamil Nadu,

Karnataka, Gujarat and Andhra Pradesh. The table has further shown that in a few states the revenue expenditure share had increased while in some states it had reduced. In the case of Punjab, the entire expenditure had been incurred under revenue account.

Let us examine whether the state government's expenditure on maintenance of water supply schemes was related to the income level, total government expenditure, and expenditure on water supply and sanitation. The rank correlation results presented in Table 3.18 reveal that revenue expenditure on water supply and sanitation had no strong relationship with either income level of the state or total government expenditure. But we could see a strong relationship between the ratio of revenue expenditure on water supply and sanitation and the per capita expenditure (real) on water supply and sanitation. This relationship was negative, indicating decline in revenue expenditure with increase in the spending on water supply and sanitation. The analysis illustrates that states were allocating more resources on capital creation in water supply and sanitation. This might be due to the focus of these programmes on creating capital assets for water supply and sanitation, while the state was expected to provide resources for revenue expenditure, which happened to be at a slower pace.

Table 3.18: Rank Correlation Matrix of State Government Spending on WSS and Other Selected Variables

Years	Revenue expenditure on WSS and per capita real GSDP	revenue expenditure on WSS and per capita real total government expenditure	share of revenue expenditure in WSS and per capita total expenditure on wss
1991	0.12	0.05	-0.35
1995	-0.04	-0.04	-0.49
1998	0.02	-0.13	-0.4
2000	0.06	0.1	-0.5
2002	NA	0.09	-0.11

Note: NA = Not Available

Is the spending pattern similar over the years? Table 3.19 provides the estimated rank correlation coefficients of state government spending on maintenance of water supply and sanitation schemes of a particular year with that of another year.

Table 3.19: Rank Correlation Matrix of the Share of Revenue Expenditure across the Years

	1991	1995	1998	2000	2002
1991	1	0.52	0.42	0.70**	0.54**
1995	0.52	1	0.91**	0.36	0.27
1998	0.42	0.91**	1	0.38	0.23
2000	0.70**	0.36	0.38	1	0.71**
2002	0.54**	0.27	0.23	0.71**	1

** Correlation is significant at 0.01 level (2-tailed).

* Correlation is significant at 0.05 level (2-tailed).

For instance, the revenue expenditure pattern of 1991, 2000 and 2002 were strongly related. Similarly, the spending of 1995 and 1998 were also related, which indicates that the state governments had been maintaining their respective revenue expenditure positions over the years.

3.6. Concluding Observations

Basic public health services are the foundation for promoting and maintaining health status and quality life in the community. The linkages between provision of BPH services and health status and thus, on economic development call for government intervention in the form of financing, provision of technical inputs, creation of infrastructure and providing education, particularly in developing countries. In India, the level of BPH services, water supply and sanitation, and control of communicable diseases, is inadequate. Although it is claimed that nearly 78 per cent of households have safe drinking water sources (tap, tube well or bore well) the question of quantity and quality of drinking water is unanswered. This is because drinking water particularly in a majority of rural areas is often contaminated with chemicals or other matter. Similarly, the level of sanitation services is highly insufficient. Even the minimum amenity of a latrine is available only to about 36 per cent of the households, with this percentage being still smaller in the rural areas (22 per cent). Other sanitation services like drainage, sullage, safe waste disposal systems are also inadequate. All these factors call for government intervention for the provision of BPH services. In India both the Central and State Governments are responsible for ensuring adequate provision of these facilities and hence are involved in providing financial and technical resources for the supply of BPH services. The present chapter provided an assessment of the pattern of spending by the Central and State Governments on BPH services.

An analysis of the past trends showed that the Central Government spent about Rs 3000 crore on BPH services during 2001-02, and the expenditure increased during 1991-92 to 2001-02. But, the expenditure on BPH services as a percent of spending on social services declined, indicating the decline in the relative importance assigned to BPH services.

Among the components of BPH services, water supply and sanitation constitute a major share of expenditure. Out of Rs 6.5 per person spent by the Central government during 2001-02, water supply and sanitation accounted for Rs 4.85 while public health under Medical and Public Health shared Rs 1.67 per capita. This difference between the amount spent on water supply and sanitation and on other BPH services has increased over time at the Central Government level. This shows that in the provision of BPH services, water supply and sanitation is given importance in the Central government programmes.

State governments' spending on BPH services has shown a varied pattern across the states. The expenditure (revenue) on public health activities under the Medical and Public Health had increased during 1991-92 to 1996-97 at an average annual growth rate of 1.39 per cent. But, this picture does not hold good for all states as in some states like Karnataka, Punjab, Maharashtra, and Haryana the expenditure had not increased. Moreover, in poor states like Orissa and Bihar the spending on public health remained constant. The per capita spending on public health programmes in Maharashtra, Gujarat, Andhra Pradesh, Tamil Nadu and Haryana was higher than the average of all states taken together, which indicates that in many of the states the per capita expenditure on public health services was not high.

Similarly, expenditure on water supply and sanitation also varies across states. While for all states taken together, spending on water supply and sanitation constituted about 2.64 per cent of the total spending of state governments during 2002-03, across the states the proportion ranged from 1.4 per cent in West Bengal and Uttar Pradesh to 6.2 per cent in Rajasthan. Again we noticed that poor states such as Uttar Pradesh, Bihar, and Orissa were allocating lower share of their total financial resources for water supply and sanitation services. The state governments are incurring about Rs 23.5 per person for creating water supply and sanitation services and the per capita expenditure had increased at a rate of 4.24 per cent taking all states together. However, across the states the difference was too wide as the per capita expenditure varied from Rs 5.6 in Bihar to Rs 53.3 in Rajasthan. The index of per capita expenditure revealed that in Bihar, the expenditure had declined in some years, while in other states it had increased.

Our results showed a strong relationship between expenditure on water supply and sanitation and total expenditure of the government. Further, we observed that expenditure on water supply and sanitation had increased with rise in the total expenditure of the government and this was more significant in the case of states like Bihar, Orissa, West Bengal and Karnataka.

The states do not have any pattern in spending on new initiatives in water supply and sanitation services as the ratio of plan in the total expenditure on water supply and sanitation differs across the states. It should be noted that the plan expenditure had declined in a few states like Rajasthan, Haryana, and Punjab. Similarly, Maharashtra also reported a fall in the plan share of water supply and sanitation. The analysis reveals that there was no relationship between plan expenditure of water supply and sanitation and total expenditure of the government across states. This indicates that the plan expenditure on water supply and sanitation has been influenced by factors other than the total expenditure level of the states.

CHAPTER IV

PUBLIC EXPENDITURE ON PROVISION OF SELECTED PUBLIC HEALTH SERVICES: THE CASE OF KARNATAKA

4.1. The Backdrop

Considering the significance of public health services, it is necessary to examine the role of different organisations involved in delivering BPH services. In this Chapter, we examine the role of different government organisations in terms of financial inputs of several public health service providers in Karnataka. We examine financial allocations made by the Central Government, State Government and the local government organisations (LGOs) in delivering selected public health services in Karnataka.

4.2. State Government Expenditure on Basic Public Health Services

Expenditure incurred by the Karnataka State Government for creating the BPH services has been analysed to find out the pattern in government spending and share of different components of BPH services in the total expenditure of the state. The study has taken a narrow definition of BPH services by considering public health activities carried out by the state's health system and water supply and sanitation services provided by the government, for reviewing the expenditure pattern. The State Government allocates financial resources for 'public health' services under the respective heads of account. Data of the state government expenditure on these services have been obtained from the Budget Document of the State Government, i.e., Detailed Estimates of Expenditure - Vols. IV and V for the years between 1991-92 and 2003-04. While Vol. IV of the Detailed Estimates of Expenditure provides expenditure on public health activities, Vol. V contains government spending on water supply and sanitation. The various items of expenditure under 'public health' in Medical and Public Health and 'water supply and sanitation' have been listed in Table 4.1. The expenditure analysis covers the period between 1991-92 and 2003-04.

Table 4.1: Heads of Expenditures in the Components of Basic Public Health Services - State Government

Public Health (Medical and Public Health)	Water Supply and Sanitation
<i>Revenue Expenditure</i>	<i>Water Supply - Revenue Expenditure</i>
1. Direction and Administration	1. Water Supply - Direction and Administration, Training, Survey and Investigation under ARWS (Centrally Sponsored Plan), Machinery & Equipment
2. Training	2. Rural Water Supply
3. Prevention and Control of Diseases - Malaria, Cholera, Leprosy, Filariasis	3. Bilateral Schemes - Integrated Rural Water Supply and Environmental Sanitation
4. Other Diseases - Kyasanur Forest Disease, Centrally Sponsored Scheme of Guinea Worm Eradication, Anti - Japanese Encephalitis, Epidemic Diseases Control Drugs and Chemicals, Centrally Sponsored Scheme for Dengue Control, Control of Hepatitis - B, Integrated Disease Surveillance Programme	4. Additional Support to Zilla Parishad - RWS Scheme Grants-in Aid, Sub Mission Project
5. Control of Blindness	5. Grants-in-Aid, Pradhan Mantri Gromodaya Yojana
6. Drug Control	6. Other Schemes
7. Manufacture of Sera and Vaccine	7. Assistance to Local Bodies, Corporations, etc.
8. Public Health Laboratories	8. Assistance to Zilla Panchayats - Zilla Panchayats, Assistance to TPs, Assistance to GPs
9. Health Education and Publicity	9. Grama Panchayats
10. Other Expenditure	10. Suspense - Credit - PHE Circles
<i>Capital Expenditure</i>	<i>Water Supply - Capital Expenditure</i>
1. Other Programmes	1. Water Supply
	2. Rural Water Supply - Bilateral Schemes
	3. Loans and Advances
	<i>Sanitation - Revenue Expenditure</i>
	1. Sewerage and Sanitation
	1a. Sanitation Services - Rural
	1b. Sanitation Programme,
	1c. Panchasutra
	1d. Assistance to Local Bodies, Corporations, etc
	<i>Sanitation - Capital Expenditure</i>
	2. Sewerage and Sanitation
	3. Loans and Advances

Source: Government of Karnataka (2003) Detailed Estimates of Expenditure - Vol. IV and Vol. V

4.2.1. Total Expenditure on BPH Services

The State government spent about Rs 5646 crores during the period 1991-92 to 2002-03 for the provision of BPH services. Information presented in Table 4.2 shows that expenditure on BPH services, in current prices, has increased at an annual rate of 13.4 per cent between 1991-92 and 2003-04. The government stepped up its spending on basic public health services from Rs 80 crores to Rs 146 crores (in real prices, 1981-82 = 100) between 1991-92 and 2002-03. The amount spent on BPH services during 1999-00 was the highest compared to the other years, which declined in the following years.

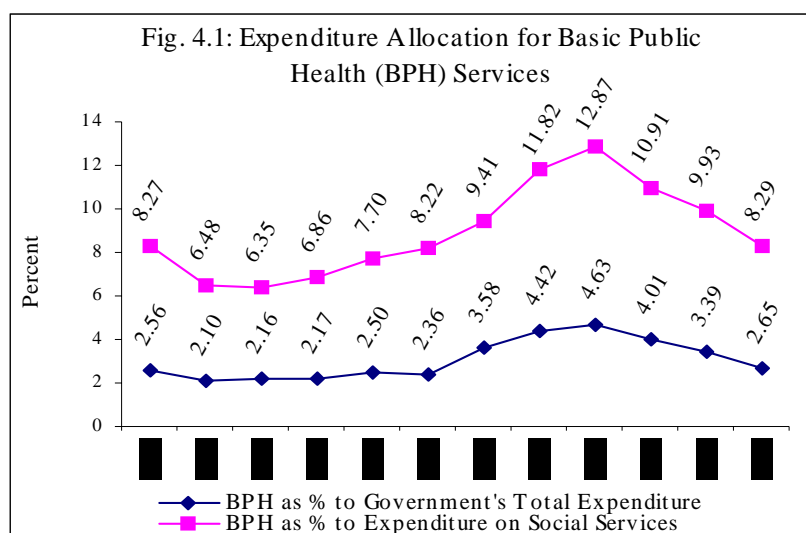
Table 4.2: Expenditure on Basic Public Health Services in Karnataka (Rs Crore)

Year	in Current Prices	In Constant Prices
1991-92	175.80	80.27
1992-93	174.68	72.79
1993-94	183.89	71.28
1994-95	231.43	81.49
1995-96	301.42	96.30
1996-97	351.50	102.78
1997-98	389.44	106.40
1998-99	550.39	132.95
1999-00	705.10	164.74
2000-01	668.78	150.63
2001-02	641.93	138.64
2002-03	566.27	117.48
2003-04	704.87	146.24
Annual avg. growth - %	13.4	6.07

Note: Constant Prices in CPI-IW, 1981-82 = 100

Financial resource allocation for BPH services as a per cent to total expenditure of the State Government and expenditure on social services has been shown in Fig. 4.1. The State Government had allocated about 2.65 per cent of its total expenditure for BPH services during 2002-03. The share of BPH services in total expenditure of the government declined between 1991-92 and 1996-97 from 2.56 per cent to 2.3 per cent, which increased from 1997-98 to 1999-2000, but again fell to 2.6 in 2003-04. Similarly, expenditure on BPH services as percent to social services had fluctuated between 1991-92 and 2003-04. During 1991-92, about 8.2 per

cent of expenditure on social services had been allocated to BPH services, which increased to 12.87 per cent in 1999-00, but again fell to 8.29 per cent in 2002-03. The reduction in the state government spending on BPH services since 1999-2000 was, therefore, not only in absolute value (current or constant prices) but also relative to other government expenditure on social sectors and overall spending by the state. This indicates the shift away in the importance assigned to BPH services in the allocation of financial resources.



4.2.2. Composition of Expenditure on Basic Public Health Services

In the provision of BPH services, programmes on both public health and water supply and sanitation are interlinked. Hence, in the allocation of resources this aspect needs to be recognised. The shares of public health activities and water supply and sanitation in the total expenditure on BPH services indicate overwhelming allocation of budgetary resources to water supply and sanitation programs as compared to public health (Table 4.3). Expenditure on water supply and sanitation constituted about 91 per cent of the total spending on BPH services during 2003-04 showing a meagre share of financial resources to public health activities. This pattern was observed in the entire period of 1991-92 to 2003-04. There was a sharp decline in the share of public health from 18.5 per cent in 1992-93 to 9 per cent in 2003-04. Although, the expenditure in absolute terms has increased for public health at an average annual growth rate of 12.2 per cent, it was rising

slower than the 14.2 per cent growth rate of water supply and sanitation between 1991-92 and 2003-04 increasing the disparity in their shares. Safe drinking water supply and environmental sanitation being the core elements of public health, greater expenditure on these amenities was a positive trend for promoting and maintaining public health.

**Table 4.3: Share of Components of BPH Services
(Rs in Crore and Current Prices)**

Years	Public Health (PH)	% of PH to Total	Water Supply and Sanitation (WSS)	% of WS&S to Total	Total
1991-92	21.72	12.36	154.08	87.64	175.80
1992-93	32.37	18.53	142.31	81.47	174.68
1993-94	26.71	14.52	157.18	85.48	183.89
1994-95	31.45	13.59	199.98	86.41	231.43
1995-96	33.78	11.21	267.64	88.79	301.42
1996-97	35.02	9.96	316.48	90.04	351.50
1997-98	55.86	14.34	333.58	85.66	389.44
1998-99	40.76	7.41	509.63	92.59	550.39
1999-2000	50.21	7.12	654.88	92.88	705.10
2000-01	45.57	6.81	623.21	93.19	668.78
2001-02	45.33	7.06	596.59	92.94	641.93
2002-03	62.54	11.04	503.73	88.96	566.27
2003-04	64.03	9.08	640.84	90.92	704.87
Average	12.2		14.28		13.4
Annual Rate of Growth - %					

Note: Public Health = Public Health in Medical and Public Health; and Water Supply and Sanitation

Although among the components of BPH services water supply and sanitation has a major share of expenditure, within water supply and sanitation the allocation depicts a huge disparity in the expenditure on water supply and spending on sanitation (Table 4.4). Both water supply and sanitation are essential for maintaining health and hygiene, but the share of state government expenditure on sanitation is less as compared to that of water supply. Throughout the period of 1991-92 to 2003-04, sanitation constituted about 4.5 per cent of the spending on water supply and sanitation, excepting the years 1996-97, 1997-98 and 2002-03. However, in 2002-03

and 2003-04 there was a significant step up in government spending on sanitation leading to a doubling of the share over the average for the previous four years. In absolute value there was a significant increase in the amount spent on both water supply and sanitation over the period, particularly on sanitation it had increased at an annual average rate of 42.5 per cent, whereas on water supply the increase was at 14 per cent. However, the increase had not been able to enlarge the share of sanitation, as expenditure on water supply also had increased.

**Table 4.4: Expenditure on Water Supply and Sanitation
(in Rs Crore)**

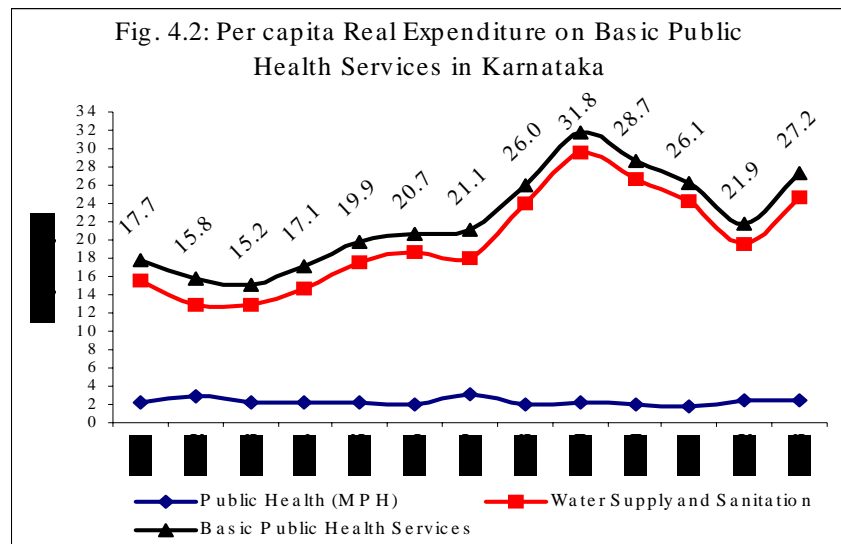
Year	Water Supply	Sanitation	Total Expenditure
1991-92	151.08 (98.1)	2.99 (1.94)	154.08
1992-93	134.60 (94.6)	7.71 (5.42)	142.31
1993-94	150.84 (96.0)	6.35 (4.04)	157.18
1994-95	191.79 (95.9)	8.19 (4.09)	199.98
1995-96	257.56 (96.2)	10.08 (3.77)	267.64
1996-97	280.75 (88.7)	35.73 (11.29)	316.48
1997-98	303.26 (90.9)	30.32 (9.09)	333.58
1998-99	480.92 (94.4)	28.71 (5.63)	509.63
1999-00	625.76 (95.6)	29.12 (4.45)	654.88
2000-01	592.55 (95.1)	30.66 (4.92)	623.21
2001-02	567.07 (95.1)	29.52 (4.95)	596.59
2002-03	450.79 (89.5)	52.94 (10.51)	503.73
2003-04	586.90 (91.6)	53.94 (8.42)	640.84
Average	14.03	42.5	14.27
annual growth - %			

Note: Figures in brackets are percent to Total Expenditure

4.2.3. Per Capita Expenditure on Basic Public Health Services

Per capita expenditure (in constant prices) on BPH services in Karnataka has been shown in Fig. 4.2. The State Government had spent about Rs 27 per capita on BPH services during 2003-04, which was an increase of 52.5 per cent over the level in 1991. The per capita expenditure had reached a high of about Rs 32 in 1999, but declined then onwards up to 2002-03. The expenditure rose again in 2003-04 to Rs 27 over its level of Rs 22 in 2002-03. Despite this phase of decline, the real per capita expenditure on BPH services had increased at an annual average rate of 4.61 per cent during 1991-92 to 2003-04. Consistent with its expected responsibility in the

health sector the state had provided much higher level of financial resources for BPH services, than the Central Government. For instance, during 2001-02 the State Government had incurred an expenditure of about Rs 26 per person, while it was Rs 6.5 per capita by the Central Government⁷ as observed in the previous chapter. Component-wise trends show that the per capita expenditure on BPH services had increased mainly due to rapid raise in expenditure on water supply and sanitation especially during 1998-99 and 1999-2000, while spending on public health was almost constant over the period. The per capita expenditure on water supply and sanitation increased from Rs 15.5 to Rs 24 between 1991-92 and 2003-04, while that of public health remained around Rs 2.5 per capita. Figure 2.4 illustrates the disparity in the amount spent between public health and water supply and sanitation programmes by the State Government. Real per capita expenditure on water supply and sanitation was nearly Rs 27 during 2003-04, while that on public health services was around Rs 2.5 per capita. Indeed, the disparity between the per capita expenditure of water supply and sanitation and public health services had increased during the period between 1991-92 and 2003-04.



⁷ The share of state government in this accounting may be an over-estimate since some of the Central government spending may also be accounted under the state government expenditure. However, even if all the Central government expenditure is included in state expenditure, the latter would account for twice the level of Central expenditure on BPH services.

4.2.4. Expenditure on Creation and Maintenance of Assets of Basic Public Health Services

In the delivery of BPH services the creation and maintenance of assets play a crucial role. Hence, in the financial resource allocation on these two activities one must not be neglected for another, which means new asset should be created to cover a large number of population, while the assets already created must be maintained for efficient delivery of services. The expenditure incurred by the State Government on creation and maintenance of new assets of BPH services has been reviewed in this section. Government spending on creation of assets is available under the heading of 'capital expenditure', while on maintenance activities in 'revenue expenditure' head. A detailed analysis of the revenue and capital expenditure on the components of BPH services, i.e., public health under Medical and Public Health, and water supply and sanitation has been presented separately.

Table 4.5: Revenue and Capital Expenditure on Public Health (MPH) (Rs Crore)

Year	Revenue Expenditure	Revenue Expenditure as % to Total Expenditure	Capital Expenditure	Capital Expenditure as % to Total Expenditure	Total Expenditure
1991-92	21.55	99.2	0.17	0.8	21.72
1992-93	32.29	99.8	0.08	0.2	32.37
1993-94	26.53	99.3	0.18	0.7	26.71
1994-95	30.79	97.9	0.67	2.1	31.45
1995-96	33.11	98.0	0.67	2.0	33.78
1996-97	34.51	98.6	0.50	1.4	35.02
1997-98	55.36	99.1	0.50	0.9	55.86
1998-99	40.28	98.8	0.48	1.2	40.76
1999-2000	49.91	99.4	0.30	0.6	50.21
2000-01	45.57	100.0	0	0	45.57
2001-02	45.33	100.0	0	0	45.33
2002-03	62.54	100.0	0	0	62.54
2003-04	64.03	100.0	0	0	64.03

Table 4.5 provides information on revenue and capital expenditure of public health under Medical and Public Health. It is surprising to see that hardly any allocation had been made in capital account, particularly in recent years. This clearly shows the inadequate importance given for infrastructure creation to provide public health services in the state. Delivery of services like disease control, implementation of health education and regulation

activities, etc., requires infrastructure facilities. But, this aspect had almost been completely sidelined, as the financial resources allocated were meagre for asset creation activities. The entire amount had been spent in revenue account, which mainly contains salary component. No doubt that a large number of personnel is required for delivering public health services, but it does not mean non-requirement of infrastructure facilities. For instance, laboratory facilities of water quality testing, vector control, etc., are very essential for effective implementation of BPH services. But, a majority of rural and also urban areas did not have these facilities at nearby places, which made them depend on facilities existing in the state capital (i.e., Public Health Institute, Bangalore) or at other distant places for getting tested the quality of water or food. This is also a time consuming process. This example shows the inadequate infrastructure in public health delivery system, besides highlighting their importance.

Construction and maintenance of infrastructure related to water supply and sanitation determines the level of facilities available to people, which depend to a large extent on the financial resources allocated by the government and also the efforts made by people. The expenditure allocation by the state government for creating assets and maintaining the already created assets has been analysed here separately for (i) water supply, and (ii) sanitation. With regard to water supply two stages in the pattern of proportion of revenue and capital expenditure can be observed (Table 4.6). While the revenue expenditure had the high share up to 1998-99, both revenue and capital expenditures had almost equal share between 1998-99 and 2002-03. In the year 2003-04 the capital expenditure accounted for 62 per cent, the highest ever, during the period between 1991-92 and 2003-04. This indicates the shift in the priority of the State Government from 1998-99 towards creation of more assets for water supply. But, since the expenditure been shared almost equally between revenue and capital accounts in the recent years, it can be said that the government has given equal priority for both creation as well as maintenance of assets already created for providing water supply. Another point that could be observed was about the source of capital expenditure on water supply.

The state government finance for creating assets for water supply came from loans until 1997-98. But, from 1997-98 onwards the State Government had allocated financial resources from its own sources for assets construction. Although the government provided about 30 per cent to the capital expenditure in 1998-99 its proportion had declined, while that of loan increased until 2002-03. This shows that the State Government depended upon borrowings to finance for water supply schemes.

Table 4.6: Share of Revenue and Capital (including Loans and Advances) Expenditures in Water Supply and Sanitation (in per cent)

Year	Water Supply				Sanitation			
	Revenue	Capital			Revenue	Capital		
		Capital Outlay	Loans by State	by Govt. Total		Capital Outlay	Loans by State	by Govt. Total
1991-92	52.33	0.00	47.67	47.67	64.9	0.0	35.1	35.1
1992-93	69.09	0.00	30.91	30.91	63.0	0.0	37.0	37.0
1993-94	76.25	0.00	23.75	23.75	55.9	0.0	44.1	44.1
1994-95	82.62	0.00	17.38	17.38	69.5	0.0	30.5	30.5
1995-96	85.19	0.00	14.81	14.81	16.5	0.0	83.5	83.5
1996-97	79.26	0.00	20.74	20.74	91.6	0.0	8.4	8.4
1997-98	95.90	0.00	4.10	4.10	85.5	0.0	14.5	14.5
1998-99	53.76	30.76	15.48	46.24	86.1	0.0	13.9	13.9
1999-2000	53.64	27.60	18.76	46.36	88.1	0.0	11.9	11.9
2000-01	44.30	19.31	36.40	55.70	87.0	0.0	13.0	13.0
2001-02	51.97	9.29	38.73	48.03	84.8	0.0	15.2	15.2
2002-03	52.52	7.79	39.70	47.48	67.4	24.6	8.0	32.6
2003-04	38.00	35.27	26.73	62.00	32.6	60.0	7.4	67.4

The pattern of revenue and capital expenditure on sanitation (Table 4.6) reveals that most of the spending was in the revenue account, barring a few years. The ratio of revenue expenditure ranged from 56 per cent to 92 per cent between 1991-92 and 2002-03, except 1996-97, showing the inadequate resources allocated for assets creation in the sanitation sector. Most of the sanitation facilities being public goods essentially required government's investment for better provision of public health services. But, the low percentage of financial resources allocated for the creation of assets shows the scanty attention given by the government for sanitation sector. This might be one of the reasons for lack of sanitation services, particularly in rural areas. The capital expenditure on sanitation also had been financed through borrowings up to 2001-02. The State Government started providing capital outlay for sanitation from 2002-03 onwards.

The State government provides financial support to local governments in providing public health services. For instance, for creating new drinking water supply assets, the state government provides grants and loans to Zilla Panchayats (ZP) and ULBs. While much of the capital expenditure from the state government is towards loan to local governments

for creating capital assets, some of the revenue expenditure may also support this activity. We note, however, that in more recent years, the state government has been directly spending money in creating assets related to water supply and sanitation.

4.2.5. Plan and non-plan expenditure on bph services

Let us examine the State Government expenditure pattern on new initiatives and maintenance of the assets created for delivering BPH services, which are usually shown under plan and non-plan expenditures, respectively. Information presented in Table 4.7, shows contrasting pattern of plan and non-plan expenditures among public health (MPH) and water supply and sanitation. The spending on public health is mainly constituted by non-plan expenditure. For instance, during 2003-04 non-plan expenditure was over 66 per cent, indicating that the spending on new initiatives/programmes was less in public health under Medical and Public Health and most of the allocated resources were spent on maintenance and operation of the existing programmes. But, in the case of water supply and sanitation an opposite picture was seen, where more than 98 per cent of the expenditure of water supply was on new programmes, while the entire allotted amount was spent on new initiatives in sanitation, particularly in the recent years.

Table 4.7: Share of Plan and Non-Plan Expenditure in Public Health (MPH), Water Supply and Sanitation (in per cent)

Years	Public Health (MPH)		Water Supply		Sanitation	
	Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan
1991-92	37.19	62.81	89.1	10.9	35.3	64.7
1992-93	46.89	53.11	94.1	5.9	72.4	27.6
1993-94	41.88	58.12	92.6	7.4	64.8	35.2
1994-95	46.27	53.73	95.0	5.0	71.3	28.7
1995-96	48.18	51.82	92.3	7.7	100.0	0.0
1996-97	45.17	54.83	94.2	5.8	92.6	7.4
1997-98	32.51	67.49	95.3	4.7	100.0	0.0
1998-99	43.76	56.24	96.5	3.5	100.0	0.0
1999-2000	39.72	60.28	97.6	2.4	100.0	0.0
2000-01	41.19	58.81	98.9	1.1	100.0	0.0
2001-02	37.74	62.26	98.6	1.4	100.0	0.0
2002-03	39.75	60.25	98.6	1.4	100.0	0.0
2003-04	33.66	66.34	98.7	1.3	100.0	0.0

4.3. A Comprehensive View of Government Spending on BPH Services in Karnataka

The Central Government, State Government, rural and urban local bodies (PRIs and ULBs) are involved in providing the BPH services. While states hold the major responsibility, the Centre provides financial support to the State. Indeed the Central Government supports most of the BPH services carried out by the state. In addition, local bodies are also contributing from their own resources to augment public health services. In this background we now examine the financial allocations by different levels of government on BPH services to an estimate of what in fact is the total government spending on BPH services in the state.

4.3.1. Methodology for Identifying the Sources of Funds for BPH Services

There are mainly two groups of expenditures relating to BPH services. One is the expenditure incurred by the Department of Health and Family Welfare under the 'Public Health' component of health services. The other is expenditure on drinking water supply and sanitation schemes incurred by the State Government. In addition, local government bodies (Panchayat Raj Institutions in rural areas and Urban Local Bodies in urban areas) are the public bodies that are directly involved in the delivery of BPH services to the citizens. They also raise their own revenues to meet at least partially the cost of these BPH services. The budget documents of the Karnataka Government provide details of the expenditures on specific programmes and tasks by the government. We have selected expenditures incurred on public health activities under the Medical and Public Health account presented in the Detailed Estimates of Expenditure - Vol. IV, and the spending on water supply and sanitation shown in the Detailed Estimates of Expenditure - Vol. V. These expenditures are available in Revenue Account (Plan, Non-Plan) and Capital Account (Plan, Non-Plan). Among these expenditures, some are entirely financed either by the Centre or State governments, while others met both by the Central and State governments together. Looking at these details we have classified the sources of finances as Centre or State governments. For instance, centrally sponsored schemes (CSS) are grouped under Central Government, State Government sponsored schemes are put under the State Government.

Expenditures by ZPs on public health activities are obtained from the 'Budget Allotment for Zilla Panchayat - Plan and Non-Plan' (GoK 2003), which have been shown under 'public health' in the document. In addition,

expenditures of urban local bodies on water supply and sanitation have been collected from the 'State of Urban Infrastructure in Karnataka' prepared by the Karnataka Urban Infrastructure Development and Financial Corporation (KUIDFC 2003). The following section provides information on the financial contribution by different sources on public health and water supply and sanitation programmes.

4.3.2. Government Expenditure on Basic Public Health Services

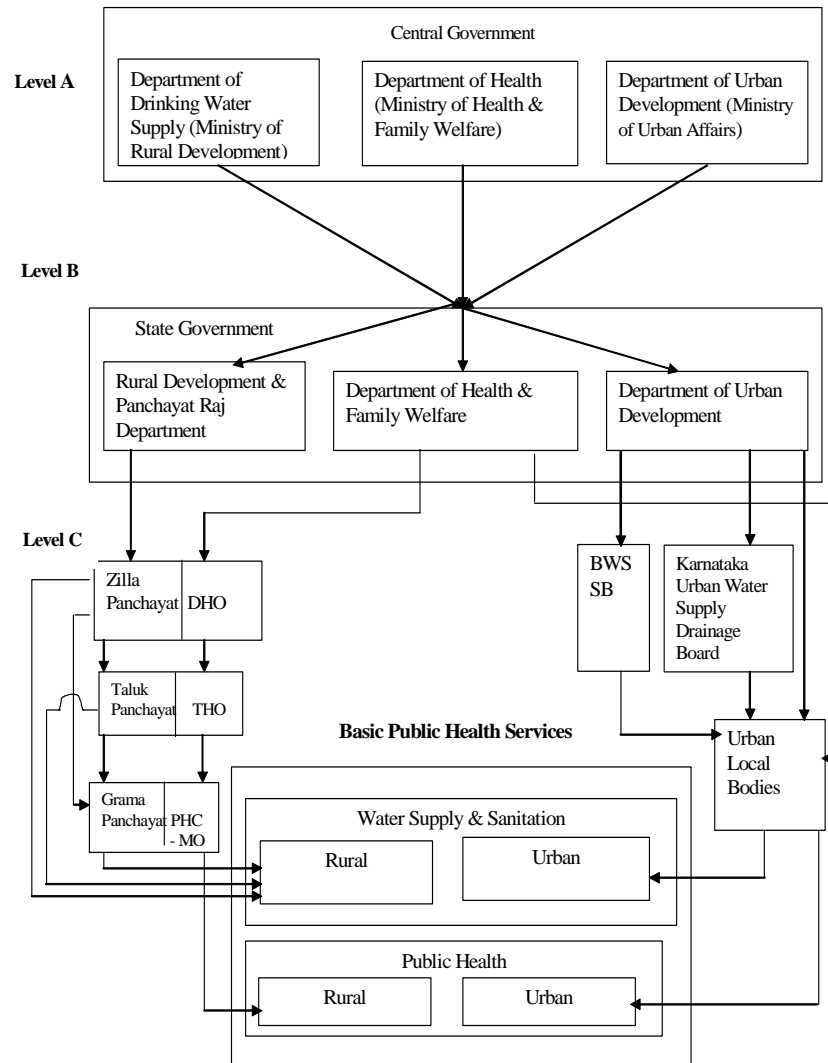
The three main components of BPH services that we have focussed here are (a) drinking water supply, (b) sanitation and (c) vector control and enforcement of regulations relating to food quality. It is difficult to quantify exactly how much is the expenditure incurred by the various government bodies on these activities. Such information is useful in assessing the priorities assigned by the government to these tasks as well as understanding if the expenditures incurred adequately address the concerns relating to public health. This study is an attempt to provide such information basing on the data available primarily from the Budget Documents of Karnataka Government.

The conceptual financial flow mechanism that we adopt has been illustrated in Figure 4.3. It captures the flow of finances from the government budgets to the final use of funds in urban and rural areas. It also points to the three main layers of government in channelising the funds: the Centre, the State and the Local Bodies.

At the top of the flow is the Central Government (Level A), although in terms of total spending the amount originating from the Central Government specifically on BPH services in a given state may be rather small. Within the Central Government funds are allocated to BPH services under three main department budgets. They are; Department of Health (in Ministry of Health and Family Welfare), Department of Drinking Water Supply (in the Ministry of Rural Development) and Department of Urban Development (in the Ministry of Urban Affairs). The three ministries (departments) provide funds for specific programmes of BPH services. Such funds flow through State Government budgets. In other words, the implementation or delivery of BPH services is through the State Government machinery.

At the State Government level (Level B), there are again three departments which account for the bulk of the BPH services: Department of Rural Development and Panchayat Raj, Department of Health and Family Welfare, and Department of Urban Development.

Figure 4.3: Financial Resources to Basic Public Health Services



As shown in Figure 4.3, the flow of funds or delivery of BPH services can be seen separately for rural and urban population. The rural segment, the left hand side of the flow is represented by the Zilla Panchayat (ZP), Taluk Panchayat (TP), and Grama Panchayats (GP), which in turn are complemented by the technical wing of Department of Public Health, viz.,

the District Health Office at the ZP level, Taluk Health Office at the TP level, and Primary Health Centre for a group of GPs. In other words, flow of finances is from the State budgets to ZPs, TPs and GPs and some money may flow through the structure of Department of Health and Family Welfare at different levels.

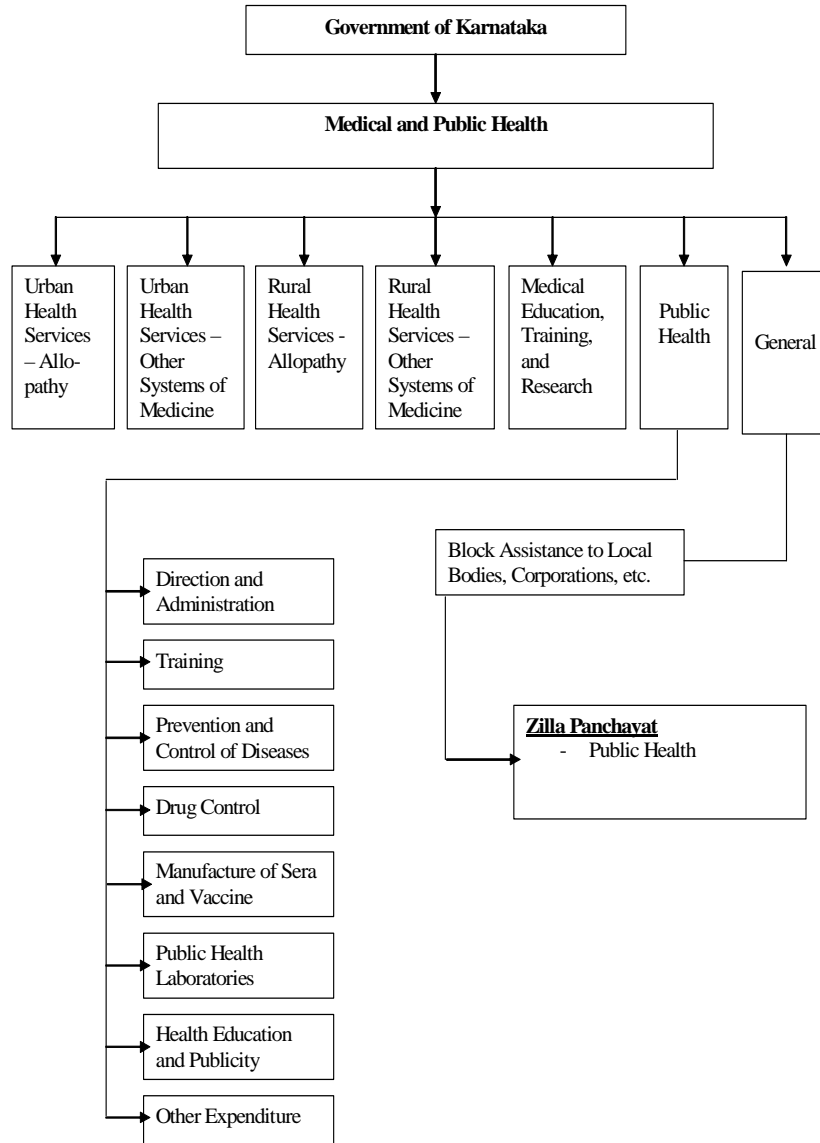
The right hand side of Figure 4.3 (Level C) represents financing of the urban segment of BPH services. The Department of Urban Development monitors the programme for water supply and sanitation, besides other responsibilities. The Bangalore City is covered by a separate government agency called "Bangalore Water Supply and Sanitation Board (BWSSB)", which provides services of water supply and sanitation in the city. For all other urban areas in the state Karnataka Urban Water Supply and Drainage Board (KUWS&DB) is responsible for planning and implementation of water supply and sanitation schemes. These two agencies are responsible mainly for the development of facilities in the urban areas while the operation and maintenance activities are to be carried out by the ULBs. The ULBs utilise the services of the BWSSB and KUWS&DB to provide water supply and sanitation services to the urban population.

The accounting of the government expenditures on BPH services, therefore, should be possible in principle, through an examination of the budgets of the different organisations and their linkages illustrated in Figure 4.3. But, it is a complex task since the linkages in the budget documents are generally not specific to the BPH services and they are not provided under one head of accounts.

In this chapter, we proceed to account for the patterns of government spending from the information available in budget documents of the Government of Karnataka. We have used some supplementary information on the expenditure on water supply and sanitation from budgets of ULBs and KUWS&DB to fill some of the gaps in urban segment of the accounts. The accounting is still incomplete in some respects: the local bodies (rural or urban) may be raising additional funds from the state government to meet the electricity bills for the water supply; the expenditure under employment programmes such as Swarna Jayanthi Rojgar Yojana that may be used to construct drains or water supply related facilities is not captured in the accounting scheme presented here. Subject to these limitations, the present monograph proceeds to calculate the share of expenditure on BPH services by different sources in the state of Karnataka. Keeping the flow of finances indicated in Figure 2.5 in view, we examine the Budget Documents of the Government of Karnataka.

4.3.2.1. Financial Sources for Public Health (Medical and Public Health) Programmes

Figure 4.4: Channels of Finance to Public Health (Medical and Public Health)



Source: Detailed Estimates of Expenditure – Part. IV, and Budget Allotment for Zilla Panchayat Plan and Non-Plan for the year 2003-04, Government of Karnataka

Expenditures incurred on public health services are available in the budget documents (Detailed Estimates of Expenditure - Vol. IV) of the State Government. The Government allocates finances to public health activities under the Medical and Public Health account of budget. Medical and Public Health includes the following major heads: 1. Urban Health Services - Allopathy, 2. Urban Health Services - Other Systems of Medicine, 3. Rural Health Services - Allopathy, 4. Rural Health Services - Other Systems of Medicine, 5. Medical Education, Training and Research, 6. Public Health, and 7. General. Among these, the amount allocated under Public Health is entirely spent on public health activities, while spending under the head General is in the form of funds allocated in block grants to Zilla Panchayat and Taluk Panchayats, some of which is expended on public health related activities. More specific information on the expenditure of ZPs on public health is available under 'Rural Health Services' in the 'Budget Allotment for Zilla Panchayat - Plan and Non-Plan'. Expenditures on Public Health programmes are available in Revenue and Capital Accounts and that of ZPs in Plan and Non-Plan. The scheme-wise heads of expenditure in Medical and Public Health and sub-major heads of expenditures in Public Health and that of ZPs have been presented in Figure 4.4 (Appendix I provides a complete listing of the expenditure heads).

These different heads of expenditures have then been classified according to the source of finance and they are presented in Appendix II.

4.3.2.2. Financial Flow to Water Supply and Sanitation

Following the procedure outlined above, we consider the expenditure items under water supply and sanitation from the Budget Documents of Government of Karnataka. We first developed a complete listing of the relevant expenditure items, and then classified into Central, State and ZP levels, based on the information in the budget documents. The complete listing of expenditures have been given in Appendix III. These details have been obtained from the Detailed Estimates of Expenditure - Vol. V of Government of Karnataka. The expenditures have been further grouped as rural and urban, and presented in Appendix IV and V respectively for water supply and sanitation. The accounts of expenditure on urban services have been supplemented by information from ULBs obtained from the KUIDFC (KUIDFC 2003). The details of expenditure incurred by KUWS&DB have been collected from the Annual Report of KUWS&DB (KUWS&DB - website) and Economic Survey (GoK).

4.3.3. Financial Sources to BPH Services

Based on the above categorisation of financial sources to BPH services, we have analysed the expenditures incurred by these different agencies. The analysis considers expenditures in two points of time, i.e., 1999-00 and 2002-03. Availability of data from all sources is the reason behind selecting these two years. The major findings of the analysis of financial contribution by each source have been discussed below.

4.3.3.1. Share of Central, State and Local Government Organisations in Expenditure on BPH Services

Major responsibility of providing basic public health services (water supply and sanitation and public health (BPH)) lies with the state government, which is evidenced by the share of expenditure borne by different providers of BPH services shown in Table 4.8. The table presents expenditure on BPH services for the years 1999-2000 and 2002-03. While, the Central Government has contributed about 16.5 per cent of the expenditure incurred on BPH services through its direct budgetary provisions, the state government has been financing over 83 per cent directly or through other bodies under its control. In 1999-2000, the state government accounted for about 54 per cent of the expenditure directly under the provisions for public health, water supply and sanitation and the ULBs accounted for an additional 20.5 per cent of the government spending on BPH services in Karnataka. The KUWS&DB contributed an additional 5 per cent of the BPH expenditures in the state. The expenditure under the head ZP shown in Table 4.8 relates to the provision in the State budget as transfer to ZP specifically for public health activities. We note here that in the case of ULBs, their payment to KUWS&DB towards the services provided by the latter had not been included in their expenditure on BPH services but they were part of the KUWS&DB expenditure. The state government's budgetary support to KUWS&DB was a part of the state government expenditure and netted out from KUWS&DB's expenditure. In this sense, the figures in Table 4.8 do not accurately reflect the expenditure by different agencies on BPH services.

The total spending by different levels of government added up to over Rs 1000 crores in Karnataka in the year 2002-03. This was nearly double the level of expenditure one gathered from the state government's budget under the BPH heads of account (Rs 566.27 Crore in 2002-03). A substantial portion of the total expenditure had been incurred in the urban areas which does not show up in the budget information. Again we were

unable to comment on whether this amount was spent in the optimal manner or whether the amount was adequate. However, given the task that remained to be accomplished, the current levels of spending appeared to be inadequate.

Table 4.8: Total Expenditure on Basic Public Health Services in Karnataka (Rs in Crores)

Sources	1999-00		2002-03	
	Amount	Percent	Amount	Percent
Central Government	163.39	16.49	167.34	16.41
State Government	538.55	54.36	394.43	38.68
Zilla Panchayat	33.81	3.41	30.26	2.97
KUWSDB	51.79	5.23	157.16	15.41
ULBs	203.19	20.51	270.44	26.52
Total	990.73	100.00	1019.63	100.00

A second point that emerges from our analysis was the increase in the share of expenditure by ULBs and KUWS&DB between 1999-00 and 2003-03. While the expenditure share of ULBs had increased from 20 per cent in 1999-2000 to 26.5 per cent of the total expenditure in 2002-03, KUWS&DB expenditure rose from 5 per cent to 15.4 per cent in the above period. However, the share of Central Government expenditure had remained at the same level (16.4 per cent) between 1999-00 and 2002-03.

The contribution by different sources of expenditure on the components of BPH services has been presented in Table 4.9. The state government has been contributing a higher share for each component of BPH services, viz., public health and water supply and sanitation than that by the central government. For instance, during 1999-2000, out of the total expenditure on public health the central government provided about 10.5 per cent, while the State government directly contributed over 49 per cent and most of the balance 40 percent indirectly through other government or public sector bodies. Similarly, state is spending more on water supply and sanitation, a direct share of about 54.8 per cent during 1999-00, while Central government provided 16.4 per cent. Other major contributors to water supply and sanitation budget were ULBs, with over 22 per cent of the expenditure in 1999-2000. The share of expenditure on public health directly by the State Government has increased, while provision through ZPs had declined in 2002-03 as compared to 1999-00. But, for water supply and sanitation direct expenditure by the state government declined, expenditure by ULBs and KUWS&DB increased. This indicates that State Government is the major financial source for public health, while for water supply and sanitation

activities the financial responsibility had been increasing on other government bodies, particularly in urban areas.

Table 4.9: Source and Component-wise Share of Expenditure in Basic Public Health Services in Karnataka

Sources	1999-2000			2002-2003		
	Public Health	Water Supply and Sanitation	Total	Public Health	Water Supply and Sanitation	Total
Amount (Rs Lakh)						
Central Government	888.61	15450.49	16339.11	1036.28	15697.92	16734.2
State Government	4164.43	49690.42	53854.86	5192.74	34249.98	39442.72
Zilla Panchayat	3381.28	NA	3381.28	3026.03	NA	3381.28
KUWSDB	NA	5178.7	5178.7	NA	15716.00	15716
ULBs	*	20319	20319	*	27044.49	27044.49
Total	8434.33	90638.61	99072.94	9255.05	92708.39	101963.4
In per cent						
Central Government	10.54	17.05	16.49	11.20	16.93	16.41
State Government	49.37	54.82	54.36	56.11	36.94	38.68
Zilla Panchayat	40.09	NA	3.41	32.70	NA	3.32
KUWSDB	NA	5.71	5.23	NA	16.95	15.41
ULBs	*	22.42	20.51	*	29.17	26.52
Total	100.00	100.00	100.00	100.00	100.00	100.00

Note: NA - Not Applicable; * = data not available

4.3.3.2. Expenditure across Rural and Urban Areas

An attempt has been made here to provide the expenditures incurred across the rural and urban areas of Karnataka for delivering BPH services. This exercise was carried out only for water supply and sanitation, and not for public health due to non-availability of expenditure data in rural and urban areas for public health services. Table 4.10 illustrates much disparity in the expenditure across rural and urban areas, particularly during 2002-03. The government has spent about 67 per cent of the total expenditure on water supply and sanitation in urban areas, while the rural areas could get only 33 per cent. There was a sharp decline in the share of amount spent for rural water supply and sanitation between 1999-00 and 2002-03, from 53.6 to 33 per cent. Even in absolute terms financial resource flow had reduced to rural areas.

**Table 4.10: Expenditure on Water Supply and Sanitation
(Rs in Lakhs) - Rural/Urban**

Rural/Urban	1999-2000	2002-03
Rural	48575 (53.59)	30589.9 (33.00)
Urban	42064 (46.41)	62118.49 (67.00)
Total	90639	92708.39

Note: Figures in brackets are percent to Total

4.4. Conclusions

Modern societies need complex arrangements to provide some of the basic amenities of life such as safe drinking water and sanitation. The growth of urban population has brought on its own peculiar requirements with respect to the quantum of water that is needed and adequate space for the disposal of waste generated by the population. Even in terms of type of waste that is generated by the households, their disposal is becoming difficult with the emergence of non-bio degradable waste. The role of government has become critical in the provision of these services. To improve the services, government has to assess how much is actually the current effort and what is required for any improvement.

In this monograph we have attempted to examine the quantum of financial resources provided by different levels of government in the state of Karnataka. The expenditure at the local level may be incurred directly by the higher levels of government or through grants or other mechanism to the local level authorities. This complex transfers and programmes make it difficult to understand how much is the current level of financial effort by the government. We have attempted to trace these transfers mainly through the budget documents at different levels.

What we have found can be summarised briefly as follows:

- Although the achievement of providing access to safe drinking water for large proportion of households is impressive, the task remains incomplete, as the supply of safe water is still not adequate in terms of quantity and quality.
- With respect to sanitation, the gap between desirable and the current status is wide and the trends in the allocation of financial resources suggest that attention to sanitation has been indeed little until very recently.

- The expenditure pattern suggests that since 1990-2000 there is very little that is happening by way of creating capital assets under 'public health' component of the budget of Department of Health and Family Welfare. Most of the expenditure is in 'revenue' account and large part is 'non-plan'. Public health spending is only 10 per cent of the total state government expenditure on BPH services.
- Between water supply and sanitation, water supply accounts for almost 90 percent of the state government spending. Capital expenditure on water supply services declined from around 1998-99. This is reverse of the trend in the case of sanitation. In other words, there is some positive turn in the case of programmes on sanitation in the state. Though late, this increase in spending on sanitation programmes is a positive development.
- Taking into account the expenditures by various levels of government, we estimate that about Rs 1000 crores were spent on these services in the year 2002-03. This is nearly double the level of expenditure that one obtains under the heads 'water supply and sanitation' and 'public health' in budget documents. Thus, lot more is being spent on the ground on BPH services than what is superficially revealed in budget documents.
- As expected, the expenditure on BPH services is incurred primarily by the state government as the share of the Centre accounts for around 16 per cent of the total government expenditure on BPH services in Karnataka.
- There has been a marked improvement in the allocation of resources on BPH services to urban areas. The expenditure shares of ULBs and the major public sector undertaking, KUWS&DB had improved between 1999-2000 and 2002-03.
- The worrisome feature of the trends is the decline in the financial resources allocated to rural areas for BPH services. It is important to recognise that the task remains unfulfilled in this segment of the state with respect to BPH services.

CHAPTER V

GRAM PANCHAYATS AND SELECTED PUBLIC HEALTH SERVICES: AN ANALYSIS OF EXPENDITURE IN TWO DISTRICTS OF KARNATAKA

5.1. The Backdrop

Provision of key public health services (water supply, sanitation vector control and food safety) is largely the responsibility of local government organisations (LGOs). While the Central and State Governments provide financial, technical and other related inputs for creating infrastructure for such services, implementation and maintenance of the programmes are carried out by the local government organisations like Panchayat Raj Institutions (PRIs) in rural areas and Urban Local Bodies (ULBs) in urban areas. Panchayat Raj Institutions - Zilla Panchayat (ZP), Taluk Panchayat (TP), and Gram Panchayat (GP) are directly involved in creating and maintaining the infrastructure for efficient provision of services. The Gram Panchayats, the third tier of the decentralised system of administration, are increasingly responsible both for creation and maintenance of these selected or 'basic' public health services (BPH) schemes in rural areas. However, creation of assets and maintaining the infrastructure created for the provision of BPH services lie mainly on the GP's strength of financial and manpower resources. In this Chapter we provide an analysis of the expenditure by Gram Panchayats on the creation and maintenance of infrastructure and manpower employed for the provision of BPH services. This analysis is useful in understanding how the BPH services are provided at the GP level. Here, we should note that the Gram Panchayats have to carry out the specified works, while ZP and TP also play important roles in the provision of BPH services.

5.1.1. Public Health Functions of Gram Panchayats

The Karnataka Panchayat Raj Act, 1993 (KPR Act 1993) specifies various functions of GPs to create the provision of BPH services. Details of the functions are listed in Chapter IV - Sections 58 (1 - Schedule I; and 1-A), 68, 75, 77, 78, 82, 85, 86, 87, 88, 89, 90, 91, 99, 100, 101, 102, 106 and 110 of the KPR Act 1993, which have been illustrated in Table 5.1. The list clearly shows that the GPs are required to carry out different types of BPH activities like provision and maintenance of water supply and sanitation schemes and implementation of public health regulations. The KPR Act

states that the GPs are required to implement the functions specified in Section 58 - 1 Schedule I as per the guidelines or norms laid down by the State Government or Central Government when funds for such functions are provided by either of them. Further, Section 58 (1-A) states that notwithstanding anything contained in sub-section (1) and Schedule I it is obligatory on the part of Gram Panchayat to make reasonable provision in the fund at its disposal for providing services (listed in Table 5.1). Besides, the GPs have to carry out BPH functions specified in other Sections of the KPR Act.

Table 5.1: Basic Public Health Functions of Gram Panchayats

Water supply functions	Functions related to sanitation	Functions of food quality control and health
1	2	3
Section 58 (1)	Section 58 (1)	Section 58 (1)
Schedule - I (Item VIII, XXXI)	Schedule - I (Item XVIII, XXVI, XXIX, XXXI)	Schedule - I (Item - XIX, XXVII, XXX)
Item XVIII Rural Sanitation	Item XVIII Rural Sanitation	Item XIX Health and Family Welfare
Item VIII Drinking water	Item XVIII Rural Sanitation	Item XIX Health and Family Welfare
1. Construction, repairs and maintenance of drinking water wells, tanks and ponds	1. Maintenance of general sanitation	1. Implementation of family welfare programmes
2. Prevention and control of water pollution	2. Cleaning of public roads, drains, tanks, wells and other public places	2. Prevention and remedial measures against epidemics
3. Maintenance of rural water supply schemes	3. Maintenance and regulation of burning and burial grounds	3. Regulation of sale of meat, fish and other perishable food articles
	4. Construction and maintenance of public latrines	4. Participation in programmes of human and animal vaccination
	5. Disposal of unclaimed corpses and carcasses	5. Licensing of eating and entertainment establishments
	6. Management and control of washing and bathing ghats	6. Destruction of stray dogs
	Item XXVI Construction and Maintenance of cattle sheds, pounds, cart stands	7. Regulation of curing, tanning and dyeing of skins and hides
Item XXXI - Such other functions as may be entrusted by the Rural Development and Panchayat Raj Department	Item XXIX Regulation of manure pits in public places	8. Regulation of offensive and dangerous trades
Maintenance of piped water supply and mini water supply		

contd....

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1	2	3
	Item XXXI - Such other functions as may be entrusted by the Rural Development and Panchayat Raj Department	Item XXVII Construction and maintenance of slaughter houses
	1. Jawahar Rozgar Yojana	Item XXX
	2. Construction and maintenance of drainage	Establishment and Control of Shandies
	3. Removal of manure pits and prevention of unhealthy practices	
	4. Construction of community latrines and maintenance	
	5. Assistance to construction of household latrines	
Section 58 (1-A)	Section 58 (1-A)	Section 58 (1-A)
iii. Maintaining water supply works either on its own or by annual contract by generating adequate resources	i. Providing sanitary latrines to not less than ten per cent of the households every year and achieve full coverage as early as possible	vi. Achieving universal immunisation of children
	ii. Constructing adequate number of community latrines for the use of men and women and maintaining them	xiii. Destruction of rabid and ownerless dogs
	viii. Providing sanitation and proper drainage	
	xii. Filling up of insanitary depressions and reclaiming unhealthy localities	
	xvi. Earmarking places away from the dwelling houses for dumping refuse and manure	
Section 77 - Power for providing adequate drinking water: supply pure and sufficient water, set apart any water body for supply of water, prohibit use of water bodies for other than drinking purposes	Section 75 - Power as to Sanitation, conservancy and drainage: for improvement of sanitary condition	Section 68 - Control of Hotels: Licensing and renewal of license of hotels

contd....

1	2	3
Section 78 - Power of GPs to make bye-laws regarding provisions of water supply: Making bye-laws for conserving and preventing injury to sources and means of water supply	Section 99 - Power for making drains	Section 88 - Closing of places for the disposal of the dead
Section 82 - Powers and duties in regard to sources of water supply: Protection of drinking water source	Section 100 - Sufficient drainage of houses	Section 89 - Power of entry into buildings, etc., where infectious disease exists
Section 85 - Power to prohibit use of water from certain sources:	Section 106 - Inspection of drains	Section 90 - Dis-infection of buildings, etc.
Section 86 - Penalty for using water for certain purposes		Section 91 - Articles exposed to infection
Section 87 - Abatement of nuisance from foul water		Section 110 - Prohibition of nuisance

Source: Karnataka Panchayat Raj Act 1993

5.1.2. Revenue Sources for GPs

These responsibilities can be efficiently implemented only if adequate financial and manpower resources are provided to Grama Panchayats. The KPR Act has specified different sources of revenue for Grama Panchayats. According to the Act, the GPs can levy tax, the power which is not given to Taluk Panchayat or Zilla Panchayat. The revenue sources of GPs are:

A. Own Source: Under Section 199 of the KPR Act 1993, the GP has the following own sources:

1. Tax on land and buildings that are not subject to agricultural assessment within the limits of their respective geographical area subject to the exemptions and maximum rate specified by the State Government.
2. Water rate for supplying of water for drinking and other purposes
3. Other taxes:
 - i. Tax on entertainment other than cinematograph shows;
 - ii. Tax on vehicles, other than motor vehicles;
 - iii. Tax on advertisement and hoarding;
 - iv. Pilgrim fee on persons attending the jatras, festivals, etc., where necessary arrangement for water supply, health and sanitation are made by the Grama Panchayat;

- v. Market fee on persons who expose their goods for sale in any market place;
- vi. Fee on the registration of cattle brought for sale in any market place;
- vii. Fee on buses and taxies and auto-stands provided adequate facilities are provided for the travellers by the Grama Panchayat; and
- viii. Fee on grazing cattle in the grazing lands.

B. Transfers⁸:

State Finance Commission: The State Finance Commission, constituted by the State Government under Section 267 of the KPR Act 1993, recommends to the State Government for transferring certain portion of its own revenue to PRIs. Although, two State Finance Commissions have submitted their report the State Government has not accepted the recommendations for transferring funds⁹, instead it is giving a lump sum amount for each GPs. This lump sum grant is given to meet general expenditures including spending on electricity charges, water charges sanitation and other welfare schemes.

Central Finance Commission: According to the 73rd Amendment to the Constitution the Central Finance Commission recommends transfer of funds to the State Government to strengthen the resource base of rural bodies.

5.2. Availability of BPH Services

It is well known that a large number of households and habitations, particularly in rural areas do not have access to safe drinking water and sanitation facilities (Census 2001). For instance, in rural Karnataka 20 per cent of the households do not have access to safe drinking water, while around 83 per cent of the households lack latrine facility. Another important sanitation facility, the drainage connection for wastewater outlet, is absent in a majority of the households (48.7 per cent) particularly in rural areas.

⁸ This Section has been drawn mainly from Rao *et al* (2004)

⁹ The first State Finance Commission recommended a share of 30.6 per cent of the State's own revenues to rural PRIs. The shares of GPs, TPs and ZPs were placed at 25 per cent, 25 per cent and 40 per cent respectively. Distribution of funds across the PRIs was based on the indicators of (i) population, (ii) social and economic indicators of backwardness as indicated by illiteracy rate, road length per sq. km area and number of persons per hospital bed.

Besides, most of the amenities already created are not being maintained properly, leading to low or sub-optimal functioning of the system. Information presented in Table 5.2 illustrates that in 2001 the supply of drinking water was less than the norm prescribed in all three types of drinking water supply schemes, pointing to the sub-optimal functioning of the systems. According to the Department of Rural Development and Panchayat Raj (2001) as many as 21 per cent of drinking water bore wells, 7 per cent of mini water schemes and another 7 per cent of piped water supply schemes were found defunct.

Table 5.2: Actual Level of Drinking Water Supply in Rural Areas (Based on Sample Survey - 2001)

Type of water supply	No. of habitations surveyed	% of habitations with < 55 lpcd
Borewell with Handpumps	470	91.7
Mini Water Supply Schemes	646	91.48
Piped Water Supply Schemes	977	86.07

Source: Government of Karnataka, High Power Committee Report, 2002

Another aspect of public health service is the implementation of health regulations, particularly those relating to food safety. These functions have received no attention by the Grama Panchayats and also no systematic information is available on this matter.

Considering the significant responsibilities assigned to Grama Panchayats and the prevailing inadequate public health service provisions, this chapter attempts to review the availability of BPH services, manpower for maintenance activities and the expenditure incurred by GPs to create and maintain the services. We selected two districts namely Tumkur and Raichur for examining the above issues. Tumkur and Raichur districts were selected on the basis of an examination of data on a number of indicators on a performance index constructed by using the public health infrastructure and health output indicators. While Tumkur showed moderate achievement, lying in the middle range of indicators, Raichur's performance was low, falling at the bottom of the rank. This study has used the database developed by the Institute for Social and Economic Change, Bangalore, covering all the Grama Panchayats in the State for a project on Information Management System (Project by Rural Development and Panchayat Raj Department, Government of Karnataka). Here we have utilised the data for the two

districts focussing on water supply and sanitation activities of GPs¹⁰. While the data on manpower is available for the year 2000, the expenditure data are available for two years, i.e., 1999 and 2000. The data shows that funds for meeting the GP expenditure came from Central Government, State Government in the form of grant-in-aid, sponsored programmes, Jawahar Grama Swarajya Yojana (JGSY) Programmes. In addition, GPs also raised their own revenues through taxes and fees. The revenue and expenditure of GPs have been shown under two heads (1) Account One and (2) JGSY. JGSY included expenditures incurred for employment generation in the villages under a GP (20 per cent of the amount required to be spent in SC/ST areas), while all other expenditures of GPs have been shown under Account One.

Table 5.3: Categories of Gram Panchayats

Categories	Population size
1. Small	< 1500
2. Medium - I	1501 to 3000
3. Medium - II	3001 to 7000
4. Big - I	7001 to 15000
5. Big - II	> 15001

In order to account for the size of GPs and their relative position in terms of expenditure and manpower availability for delivering the BPH services, the analysis has been carried out across the GPs by classifying them into 5 groups on the basis of population as shown in Table 5.3.

Information on the number of GPs, villages, and households across the GPs, in the two selected districts, has been presented in Table 5.4. There were 163 GPs in Raichur, while Tumkur had 312 GPs. The percentage distribution of GPs shows that GPs of category Medium - II (population size - 3001 to 7000) were the largest group in terms of numbers in both the districts. Raichur and Tumkur had over 77 and 81 per cent of GPs, respectively, in this category. Tumkur district has larger number of GPs and also villages than Raichur. The number of villages per GPs was around 6 in Raichur, while it was 12 in Tumkur taking all GPs together.

¹⁰ However, information on the availability of sanitation facilities at the GPs has not been provided in the present data set. Therefore, this chapter does not analyse the availability of sanitation facilities.

Table 5.4: Details of Gram Panchayats (GPs) in Selected Districts

Type of GP	No. of GPs	% of GPs	No. of villages	% of villages	No. of House holds	% of House holds	No. of villages per GP	No. of House holds per village
Raichur								
Small	1	0.61	10	0.98	1278	0.55	10	128
Medium - I	1	0.61	5	0.49	598	0.26	5	120
Medium - II	126	77.30	792	77.88	159650	69.27	6	202
Big - I	32	19.63	200	19.67	56600	24.56	6	283
Big - II	3	1.84	10	0.98	12365	5.36	3	1237
Total	163	100	1017	100	230491	100	6	227
Tumkur								
Small	0	0	0	0	0	0	0	0
Medium - I	1	0.32	6	0.16	1283	0.29	6	214
Medium - II	254	81.41	2934	80.63	338671	77.78	12	115
Big - I	56	17.95	686	18.85	93942	21.57	12	137
Big - II	1	0.32	13	0.36	1525	0.35	13	117
Total	312	100	3639	100	435421	100	12	120

5.2.2. Drinking Water Supply Schemes

In both the districts villages have been provided with different drinking water supply systems such as Mini Water Supply Scheme (MWS), Piped Water Supply Scheme (PWS) and public taps. Selection of a particular water supply scheme depends on the norms of population size and geographical location of the habitation (Table 5.5).

Table 5.5: Criteria for Selection of Water Supply Schemes

1 Habitations with population less than 500 in plains and less than 350 in hilly areas	Bore wells with hand pumps (BWS) One bore well per 100 population
2 Habitations with population more than 500 and less than 1000 in plains and more than 350 and less than 700 in hilly areas.	Mini Water Supply Schemes (MWS) Piped Water Supply Schemes (PWS) with provision of individual house service connection
3 Habitations with population more than 1000 in plains and more than 700 in hilly areas	

Source: GoK, RDPR, 2000

As we can see in Table 5.6 in Raichur and Tumkur districts, about 75 and 65 per cent of the villages, respectively had been covered with either MWS/PWS. More number of villages had been covered by mini water supply schemes compared to piped water supply schemes. This might be due to two reasons: (1) size of the village, or (2) all the eligible habitations might not have been covered with PWS. However, a large number of eligible villages were yet to be provided with MWS/PWS. Interestingly, some villages in the categories of Big - I and - II GPs had also not been covered with MWS/PWS.

Table 5.6: Drinking Water Supply Schemes

Type of GP	No. of villages	No. of MWS	No. of PWS	No. of public taps	% of villages with either MWS, PWS or both
Raichur					
Small	10	6	0	0	60
Medium - I	5	5	1	35	120*
Medium - II	792	413	180	1396	74.9
Big - I	200	97	50	561	73.5
Big - II	10	2	5	64	70.0
Total	1017	523	236	2056	74.6
Tumkur					
Small	0	0	0	0	0
Medium - I	6	6	1	0	116.7*
Medium - II	2934	1417	493	15	65.1
Big - I	686	330	126	0	66.5
Big - II	13	3	3	0	46.2
Total	3639	1756	623	15	65.4

Note: * This percentage is more than 100 as few villages might have been provided with both MWS and PWS

5.3. Manpower for Operation and Maintenance of BPH Services

While creation of assets or infrastructure is one part in the delivery of public health services, operation and maintenance of the systems already created is another. The performance and efficiency of the system in delivering services mainly depend upon its operation and maintenance activities. However, operation and maintenance activities of any system are based on

the manpower and financial resources available with the agency involved in this task. We discuss here the position of GPs with respect to manpower for operation and maintenance of water supply and sanitation schemes in the two selected districts.

5.3.1. Maintenance of Drinking Water Supply Schemes

Operation and maintenance of drinking water supply system is as important as creation of water supply structures. But, there was inadequate number of watermen in both Raichur and Tumkur districts (Table 5.7), where it seemed that one waterman looked after the drinking water supply systems in two villages. The distribution of watermen per village, 0.6 and 0.5 respectively in Raichur and Tumkur districts, has been presented in the table below illustrates this point .

Table 5.7: Number of Watermen for Operation and Maintenance of Water Supply Schemes

Type of GP	No. of watermen	No. of watermen per GP	No. of watermen per village
Raichur			
Small	6	6	0.6
Medium - I	5	5	1
Medium - II	464	4	0.6
Big - I	122	4	0.6
Big - II	16	5	1.6
Total	613	4	0.6
Tumkur			
Small	0	0	0
Medium - I	6	6	1
Medium - II	1350	5	0.5
Big - I	341	6	0.5
Big - II	6	6	0.5
Total	1703	5	0.5

5.3.2. Manpower for Sanitation-Related Services

Clean environment is an essential requirement for better public health outcome. But, to large extent maintenance of cleanliness and hygiene in villages depend upon the resources provided for sanitary works and manpower (sanitary workers). Sanitary workers particularly sweepers are

crucial for the maintenance of streets, drainage, etc. Information presented in Table 5.8 shows the number of sweepers per GP and village. Most of the villages did not have even one sweeper as the ratio was 0.2 and 0.1 respectively in Raichur and Tumkur districts¹³. The same picture held true in all categories of GPs in both the districts, except in Big- II group of GPs in Raichur district. Hence, we can say that the GPs hardly gave attention for sanitation related activities particularly of manpower.

Table 5.8: Number of Sweepers in Gram Panchayats

Type of GP	Total no. of sweepers	No. of sweepers per GP	No. of sweepers per village
Raichur			
Small	0	0	0
Medium - I	0	0	0
Medium - II	84	1	0.1
Big - I	47	1	0.2
Big - II	28	9	2.8
Total	159	1	0.2
Tumkur			
Small	-	-	-
Medium - I	-	-	-
Medium - II	225	1	0.1
Big - I	136	2	0.2
Big - II	1	1	0.1
Total	362	1	0.1

5.4. Expenditures of Gram Panchayats on BPH Services

In this section we bring out the details of expenditures incurred by the GPs in Raichur and Tumkur districts for delivering the BPH services, specifically water supply and sanitation, in the years 1999 and 2000. Here, we aim to examine the quantum of financial resources allocated to provide public health services by GPs, and how the expenditure varied across the type of GPs and what was the resource assigned for operation and maintenance of the schemes. Information presented in Table 5.9 shows that the expenditure on water supply and sanitation as percentage of total

¹³ The argument made with reference to a waterman being able to cover more than one village is difficult to sustain with respect to sanitation work.

expenditure¹⁴ of GPs varied across the two districts. While nearly 45 per cent of the total spending of GPs in Raichur was incurred on water supply and sanitation, it was just over 12 per cent in Tumkur district during 2000. However, there was not much variation in the share of expenditure on water supply and sanitation across the GPs within districts. However, the percentage allocation of expenditure by the GPs in Raichur was high compared to that in Tumkur district. GPs in both the districts had behaved differently in spending on water supply and sanitation between 1999 and 2000. While the share of expenditure on water supply and sanitation in Tumkur district declined sharply, it increased in Raichur.

Table 5.9: Expenditure on Water Supply and Sanitation as per cent to Total Expenditure of Gram Panchayats

Type of GP	Year - 1999	Year - 2000
Raichur		
Small	61.77	49.65
Medium - I	17.98	14.42
Medium - II	40.52	45.83
Big - I	39.69	43.52
Big - II	50.60	44.43
Total	40.77	44.98
Tumkur		
Small	-	-
Medium - I	17.43	8.00
Medium - II	23.95	12.18
Big - I	25.24	12.99
Big - II	21.43	8.77
Total	24.20	12.33

How do the expenditures on water supply and spending on sanitation fare in the total expenditure on water supply and sanitation of GPs? Table 5.10 depicts that GPs in Raichur district had incurred more expenditure on sanitation services than on water supply in both 1999 and 2000, which was

¹⁴ The total expenditure does not include amount paid on electricity bill of water supply by Grama Panchayats. Discussion with officials in RDPR, GoK, indicates that the electricity bill of water supply is around Rs 23 crore per month taking all Grama Panchayats together. This gives an average expenditure of Rs 40643 per Grama Panchayat per month (Total number of GPs is 5659), i.e., Rs 4.87 lakh per GP per annum.

around 61 per cent of the total expenditure on water supply and sanitation. A similar pattern of expenditure was also observed in Tumkur district during 1999, but it shifted towards water supply in 2000. Indeed there was a fall in the share of expenditure on sanitation in Tumkur, which could be observed from the data of sanitation expenditure as per cent to total expenditure of GPs presented in the table. While the share of expenditure on water supply had not declined (which was around 7.5 per cent), that of sanitation declined sharply from 16.5 per cent in 1999 to 4.7 per cent in 2000 in Tumkur. However, it should be noted that barring the year 2000 for Tumkur district, GPs in both the districts had spent more on sanitation services as compared to water supply. The higher expenditure on sanitation might be due to the functions assigned to GPs. GPs were responsible for construction and maintenance of sanitation facilities like drainage, roads, latrines, etc. But, with regard to water supply they were supposed to operate and maintain them, while ZPs created the assets. Although, GPs had spent higher share on sanitation much of this expenditures might have been on the construction and repair of roads.

Table 5.10: Expenditure on Water Supply and Sanitation by GPs (in per cent)

Type of GP	Year- 1999		Year - 2000		Exp. on water supply as % to total exp. of GPs		Exp. on sanitation as % to total exp. of GPs	
	Water supply	Sanitation	Water supply	Sanitation	1999	2000	1999	2000
Raichur								
Small	25.96	74.04	39.04	60.96	16.04	19.38	45.73	30.27
Medium - I	86.59	13.41	89.10	10.90	15.57	12.85	2.41	1.57
Medium - II	41.08	58.92	40.43	59.57	16.65	18.53	23.88	27.30
Big - I	33.87	66.13	34.16	65.84	13.44	14.86	26.25	28.65
Big - II	31.68	68.32	36.88	63.12	16.03	16.39	34.57	28.04
Total	38.92	61.08	39.06	60.94	15.87	17.57	24.90	27.41
Tumkur								
Small	-	-	-	-	-	-	-	-
Medium - I	19.00	81.00	78.22	21.78	3.31	6.26	14.12	1.74
Medium - II	31.68	68.32	59.97	40.03	7.59	7.31	16.36	4.88
Big - I	32.11	67.89	67.90	32.10	8.10	8.82	17.13	4.17
Big - II	17.37	82.63	72.19	27.81	3.72	6.33	17.70	2.44
Total	31.71	68.29	61.81	38.19	7.68	7.62	16.53	4.71

5.4.1. Per Capita Expenditure on Water Supply and Sanitation

Is there any difference in the amount spent on water supply and sanitation across the districts and GPs? This has been analysed by calculating the per capita expenditure incurred on water supply and sanitation by the GPs in the study districts. The per capita expenditure presented in Table 5.11 reveals variation in expenditure between Raichur and Tumkur districts. While the per capita expenditure in Raichur was about Rs 30, it was Rs 23 in Tumkur district during 2000. However, the per capita spending was high in Tumkur in the year 1999, which indicates that the amount spent by GPs varied considerably from year to year. Another point that can be made from the table is that there is decrease in the per capita expenditure with increase in the size of GPs, particularly in the year 2000. This might be because of the allocation of equal amount of financial resources irrespective of the size of GPs. Per capita expenditure on water supply and sanitation presented separately illustrates that in Raichur GPs had increased the spending on both water supply and sanitation, while in Tumkur expenditure on water supply had been stepped up, but it had declined on sanitation. From the above analysis we observe that expenditure on water supply by GPs was fairly stable in both the districts, while that on sanitation had fluctuated.

Table 5.11: Per Capita Expenditure on Water Supply and Sanitation in GPs

Type of GP	Water supply		Sanitation		Total expenditure (Water supply + Sanitation)	
	1999	2000	1999	2000	1999	2000
Raichur						
Small	56.42	78.66	161.00	123	217.28	201.50
Medium - I	36.42	48.37	6.00	6.00	42.06	54.29
Medium - II	10.11	12.98	14.50	19.13	24.62	32.11
Big - I	6.95	8.71	13.57	16.79	20.52	25.49
Big - II	8.82	7.67	19.03	13.13	27.85	20.80
Total	9.32	11.74	14.62	18.32	23.94	30.06
Tumkur						
Small	-	-	-	-	-	-
Medium - I	6.01	19.78	25.60	5.51	31.61	25.28
Medium - II	9.83	14.05	21.19	9.38	31.02	23.43
Big - I	9.27	14.87	19.60	7.03	28.87	21.90
Big - II	1.90	5.88	9.05	2.27	10.95	8.15
Total	9.62	14.18	20.72	8.76	30.34	22.94

5.4.2. Components-wise Expenditure on Water Supply and Sanitation

What are the items of expenditure covered in the spending by GPs in their task of providing BPH services? An attempt has been made here to examine this aspect with respect to spending on water supply and sanitation. We are aware that GPs are responsible mainly for maintenance of water supply schemes, while ZPs create the infrastructure; and in the case of sanitation GPs are required to both implement and maintain the created assets. As a result a high share of expenditure on water supply would be for maintenance of the water supply schemes. However, GPs do spend on creation of assets like laying down pipes for supplying water, etc., under JGSY programme. Information presented in Table 5.12 covers the expenditure incurred by GPs under JGSY, maintenance expenditure like repairs, replacements, etc., of water supply system, and the salary of watermen. In the expenditure on water supply major portion was spent on operation and maintenance (maintenance expenditure + salary of watermen) of the drinking water supply systems in both the districts. In Raichur district the GPs had spent more on repair and replacement works of water supply systems, where the share was around 55 per cent of the total water supply expenditure in both 1999 and 2000. But, in Tumkur district there was high expenditure on salary of watermen (44.6 per cent). Expenditure on maintenance and salary of watermen constituted respectively around 55 and 38 per cent in both the districts during 2000. While GPs' expenditure on maintenance and salary remained stable in two years, the share of expenditure increased in Tumkur. This might indicate some efforts to economise on salary expenditures.

Let us examine the expenditure incurred per Gram Panchayat and per village for operation and maintenance of water supply schemes, which would enable us to examine the allocation of resources at GP and village levels. Information presented in Table 5.13 shows that during 1999 in both Raichur and Tumkur districts on an average about Rs 59 thousand per GP had been spent on water supply schemes. In Raichur district more amount had been expended on repair works of the water supply schemes followed by salary of watermen. In Tumkur district GPs had spent higher amount on salary of the watermen. Across the GPs we could observe an increasing trend in the expenditure on maintenance with the size of GPs in Raichur district, but no pattern was seen in other expenditures in either Raichur or Tumkur districts. However, both the districts had allocated more funds for maintaining the water supply systems, which might indicate that the GPs were giving importance towards maintenance of the schemes.

Table 5.12: Share of the Components of Expenditure on Water Supply (in per cent)

Type of GP	1999			2000		
	Expenditure under JGSY	Maintenance expenditure	Salary of Waterman	Expenditure under JGSY	Maintenance expenditure	Salary of Waterman
	on water supply	on water supply schemes		on water supply	on water supply schemes	
Raichur						
Small	-	45.00	54.99	-	60.56	39.44
Medium - I	16.77	49.14	34.09	29.11	28.11	42.78
Medium - II	8.69	55.82	35.49	7.90	56.18	35.92
Big - I	9.15	55.51	35.35	2.67	58.92	38.41
Big - II	8.35	50.05	41.61	2.22	42.81	54.97
Total	8.76	55.38	35.86	6.80	56.13	37.07
Tumkur						
Small	-	-	-	-	-	-
Medium - I	-	59.79	40.21	-	83.72	16.28
Medium - II	18.67	36.65	44.69	5.40	54.72	39.88
Big - I	18.51	36.83	44.66	8.97	56.03	35.00
Big - II	-	70.22	29.78	11.13	51.56	37.31
Total	18.58	36.77	44.65	6.29	55.09	38.62

Analysis of expenditure on per village basis (Table 5.14) shows that about Rs 9,000 - 12,000 per village was spent in Raichur district, while it was Rs 5,000 - 7500 per village in Tumkur district. The expenditure incurred in Raichur district was more than that in Tumkur district in both 1999 and 2000. This might be partly due to the pattern of allocation of resources by the state government to districts, which might not take into account the number of GPs in the district, as Tumkur had more number of GPs than Raichur.

Table 5.13: Distribution of Expenditure on Water Supply (Rupees per GP)

Type of GP	1999				2000			
	Exp. under	Maintenance	Salary	Total	Exp. under	Maintenance	Salary	Total
	JGSY on water supply	exp. on water supply schemes	of water men	exp. on water supply	JGSY on water supply	exp. on water supply schemes	of water men	exp. on water supply
Raichur								
Small	-	28970	35400	64370	-	54349	35400	89749
Medium - I	10630	31139	21600	63369	24497	23660	36000	84157
Medium - II	4974	31939	20308	57221	5803	41274	26391	73468
Big - I	5380	32654	20794	58829	1969	43426	28306	73701
Big - II	12226	73319	60960	146506	2833	54549	70040	127423
Total	5191	32818	21252	59261	5074	41913	27684	74672
Tumkur								
Small	-	-	-	-	-	-	-	-
Medium - I	-	10705	7200	17905	-	49355	9600	58955
Medium - II	10537	20687	25227	56450	4359	44173	32191	80722
Big - I	13879	27621	33489	74989	10792	67398	42099	120288
Big - II	-	22640	9600	32240	11093	51410	37200	99703
Total	11069	21906	26602	59577	5521	48381	33913	87815

Table 5.14: Distribution of Expenditure on Water Supply (in Rupees per Village)

Type of GP	1999				2000			
	Exp. under	Maintenance	Salary	Total	Exp. under	Maintenance	Salary	Total
	JGSY on water supply	exp. on water supply schemes	of water men	exp. on water supply	JGSY on water supply	exp. on water supply schemes	of water men	exp. on water supply
Raichur								
Small	-	2897	3540	6437	-	5435	3540	8975
Medium - I	2126	6228	4320	12674	4899	4732	7200	16831
Medium - II	791	5081	3231	9103	923	6566	4198	11688
Big - I	861	5225	3327	9413	315	6948	4529	11792
Big - II	3668	21996	18288	43952	850	16365	21012	38227
Total	832	5260	3406	9498	813	6718	4437	11968

contd....

Tumkur								
Small	-	-	-	-	-	-	-	-
Medium - I	-	1784	1200	2984	-	8226	1600	9826
Medium - II	912	1791	2184	4887	377	3824	2787	6988
Big - I	1133	2255	2734	6122	881	5502	3437	9819
Big - II	-	1742	738	2480	853	3955	2862	7669
Total	949	1878	2281	5108	473	4148	2908	7529

The per capita expenditure of the components of spending on water supply by the GPs (Table 5.15) also shows that spending on operation and maintenance of water supply schemes was high. In Raichur all GPs taken together had spent about Rs 11 per capita (maintenance and salary of watermen together) while in Tumkur it was over Rs 13 per capita during 2000. The GPs had increased their spending on maintenance between 1999 and 2000. The per capita expenditure on maintenance had increased in both the districts between 1999 and 2000. We observed that previously there was a higher percent of allocation of financial resources by GPs for sanitation related facilities compared to water supply. Here, an analysis of the components of sanitation expenditure has been provided to examine the relative importance assigned to different aspects of sanitation by GPs.

Table 5.15: Per Capita Expenditure on the Components of Water Supply at Gram Panchayats (in Rs)

Type of GP	1999			2000		
	Expenditure under JGSY on water supply	Maintenance expenditure on water supply schemes	Salary of Waterman	Expenditure under JGSY on water supply	Maintenance expenditure on water supply schemes	Salary of Waterman
Raichur						
Small	-	25.39	31.03	-	47.63	31.03
Medium - I	6.11	17.90	12.41	14.08	13.60	20.69
Medium - II	0.88	5.65	3.59	1.03	7.29	4.66
Big - I	0.64	3.86	2.46	0.23	5.13	3.34
Big - II	0.74	4.41	3.67	0.17	3.28	4.22
Total	0.82	5.16	3.34	0.80	6.59	4.35
Tumkur						
Small	-	-	-	-	-	-
Medium - I	-	3.59	2.42	-	16.56	3.22
Medium - II	1.83	3.60	4.39	0.76	7.69	5.60
Big - I	1.72	3.41	4.14	1.33	8.33	5.20
Big - II	-	1.34	0.57	0.65	3.03	2.19
Total	1.79	3.54	4.30	0.89	7.81	5.48

Sanitation includes various aspects like construction and maintenance of roads, streets, drainages, latrines; cleanliness of village environment; control and removal of vector breeding sources. For better public health maintenance of all these services is essential. Therefore, GPs have to give adequate importance while allocating their financial and manpower resources. But, Table 5.16 shows that GPs had given more importance for constructing roads and drainages in both the districts, while purchase of phenyl, brooms, bleaching powder, etc., which was essential for maintaining streets and drainage had received far less allocation of financial resources. While the share of this item was about 8 per cent in Raichur during 2000, it was less than 1 per cent in Tumkur. Similarly, spending on the salary of sweeper also constituted a small proportion in both the districts. This corresponded to the few sanitary workers appointed by the GPs as seen earlier.

Table 5.16: Components of Expenditure on Sanitation (Per cent to Total Expenditure on Sanitation)

Type of GP	1999					2000				
	Exp. under JGSY sanitation	Exp. on roads under JGSY	Exp. on construction and repair of roads, buildings, drainages (in acc.1)	Exp. on construction of materials - phenyl, brooms, powder (in acc.1)	Salary of sweepers (in Acc. 1)	Exp. under JGSY sanitation	Exp. on roads under JGSY	Exp. on construction and repair of roads, buildings, brooms, drainages (in acc.1)	Exp. on purchase of materials of sweepers (in Acc. 1)	Salary of sweepers (in Acc. 1)
Raichur										
Small	13.62	84.45	1.93	-	-	14.81	68.70	16.49	-	-
Medium- I	-	100	-	-	-	-	-	-	100.00	-
Medium- II	12.14	38.43	40.21	5.25	3.96	10.25	26.80	51.83	7.38	3.74
Big - I	6.13	26.84	57.15	2.76	7.12	9.85	26.39	45.79	9.79	8.17
Big - II	11.98	2.11	40.71	11.61	33.60	18.47	8.29	17.88	4.85	50.51
Total	10.68	33.95	43.86	4.98	6.53	10.47	26.36	48.92	7.87	6.38
Tumkur										
Small	-	-	-	-	-	-	-	-	-	-
Medium- I	19.19	39.65	33.35	-	7.81	-	-	64.78	-	35.22
Medium- II	29.61	51.01	14.19	0.14	5.04	46.40	0.66	40.76	0.83	11.36
Big - I	31.49	52.55	10.94	0.71	4.32	48.54	1.09	38.34	0.84	11.19
Big - II	11.37	78.16	6.23	-	4.24	52.08	-	27.08	3.91	16.93
Total	29.94	51.44	13.48	0.27	4.88	46.77	0.74	40.30	0.84	11.36

The analysis of per capita expenditure on the components of sanitation by GPs (Table 5.17) shows that constructing roads, drainages, etc., accounted for a large part of the expenditure by GPs in both the districts. The GPs in Raichur had spent relatively high amount of resources per capita than that in Tumkur for providing sanitation services during 2000. However, the per capita expenditure on purchase of phenyl, bleaching powder, brooms, which were essential for maintaining cleanliness was very meagre in both the districts. For instance, during 2000 the GPs in Raichur had spent about Rs 1.4 per capita on purchasing the sanitary materials, while in Tumkur it was miniscule (Rs 0.07 per capita). It should be noted that even the salary component of the sanitary workers was also very less as the per capita spending was just around Rs 1 in both the districts. The analysis indicates that in sanitation sector GPs had given more importance for creating assets while maintenance had received far less attention.

Table 5.17: Per Capita Expenditure of the Components of Sanitation Services by Gram Panchayats

Type of GP	1999					2000				
	Exp. on sanitation under JGSY	Exp. on roads under JGSY	Exp. on construction and repair of roads, buildings, drainages (in acc.1)	Exp. on purchase of materials - phenyl, brooms, powder (in acc.1)	Salary of sweepers (in Acc. 1)	Exp. on sanitation under JGSY	Exp. on roads under JGSY	Exp. on construction and repair of roads, buildings, drainages (in acc.1)	Exp. on purchase of materials - phenyl, brooms, powder (in acc.1)	Salary of sweepers (in Acc. 1)
Raichur										
Small	21.91	135.85	3.11	-	-	18.19	84.39	20.26	-	-
Medium - I	-	5.64	-	-	-	-	-	-	5.92	-
Medium - II	1.76	5.57	5.83	0.76	0.57	1.96	5.13	9.91	1.41	0.72
Big - I	0.83	3.64	7.76	0.37	0.97	1.65	4.43	7.69	1.64	1.37
Big - II	2.28	0.40	7.75	2.21	6.39	2.42	1.09	2.35	0.64	6.63
Total	1.56	4.96	6.41	0.73	0.96	1.92	4.83	8.96	1.44	1.17
Tumkur										
Small	-	-	-	-	-	-	-	-	-	-
Medium - I	4.91	10.15	8.54	-	2.00	-	-	3.57	-	1.94
Medium - II	6.28	10.81	3.01	0.03	1.07	4.35	0.06	3.82	0.08	1.07
Big - I	6.17	10.30	2.14	0.14	0.85	3.41	0.08	2.69	0.06	0.79
Big - II	1.03	7.07	0.56	0.00	0.38	1.18	-	0.61	0.09	0.38
Total	6.20	10.66	2.79	0.06	1.01	4.10	0.06	3.53	0.07	1.00

Table 5.18: Distribution of expenditure on sanitation (in Rupees/GP)

Type of GP	1999						2000					
	Exp.on sanitation under JGSY	Exp. on roads under JGSY	Exp. on construc-tion and repair of roads, buildings, drainages- Acc. 1	Exp. purchase of sanita-tion materials- phenyl, brooms, bleaching powder- Acc. 1	Salary to sanita-tion workeres- Acc. 1	Tt. Exp. on sanitation	Exp.on sanitation under JGSY	Exp. on roads under JGSY	Exp. on construc-tion and repair of roads, buildings, drainages- Acc. 1	Exp. purchase materials- phenyl, brooms, bleaching powder- Acc. 1	Salary to sanita-tion workeres- Acc. 1	Tt. Exp. on sanitation
Raichur												
Small	25000	155000	3550	-	-	183550	20757	96289	23113	-	-	140159
Medium - I	-	9810	-	-	-	9810	-	-	-	10300	-	10300
Medium - II	9964	31539	32995	4310	3253	82060	11099	29004	56097	7992	4046	108237
Big - I	7047	30832	65657	3165	8183	114883	13995	37499	65065	13911	11612	142082
Big - II	37853	6653	128653	36679	106180	316018	40270	18080	39000	10585	110140	218075
Total	9936	31567	40784	4628	6075	92990	12195	30705	56997	9167	7434	116498
Tumkur												
Small	-	-	-	-	-	-	-	-	-	-	-	-
Medium - I	14645	30261	25456	-	5960	76322	-	-	10631	-	5780	16411
Medium - II	36047	62099	17278	175	6129	121729	25001	356	21963	446	6120	53886
Big - I	49917	83298	17336	1128	6843	158522	27597	622	21798	477	6363	56857
Big - II	17448	119893	9550	-	6500	153391	20000	-	10400	1500	6500	38400
Total	38408	65987	17290	345	6258	128289	25371	401	21860	454	6164	54250

Table 5.19: Distribution of expenditure on sanitation (in Rupees/village)

Type of GP	1999						2000					
	Exp.on sanitation under JGSY	Exp. on roads under JGSY	Exp. on construc -tion and repair of roads, buildings, drainages- Acc. 1	Exp. purchase of sanita -tion materials- phenyl, brooms, bleaching powder- Acc. 1	Salary to sanita -tion workeres- Acc. 1	Tt. Exp. on sanitation	Exp.on sanitation under JGSY	Exp. on roads under JGSY	Exp. on construc -tion and repair of roads, buildings, phenyl, drainages- Acc. 1	Exp. purchase materials - -tion materials- phenyl, brooms, bleaching powder- Acc. 1	Salary to -tion workeres- Acc. 1	Tt. Exp. on sanitation
Raichur												
Small	2500	15500	355	-	-	18355	2075.7	9628.9	2311.3	-	-	14015.9
Medium - I	-	1962	-	-	-	1962	-	-	-	2060	-	2060
Medium - II	1585	5018	5249	686	518	13055	1766	4614	8925	1271	644	17220
Big - I	1128	4933	10505	506	1309	18381	2239	6000	10410	2226	1858	22733
Big - II	11356	1996	38596	11004	31854	94805	12081	5424	11700	3176	33042	65423
Total	1592	5059	6537	742	974	14904	1955	4921	9135	1469	1191	18672
Tumkur												
Small	-	-	-	-	-	-	-	-	-	-	-	-
Medium - I	2441	5044	4243	-	993	12720	-	-	1772	-	963	2735
Medium - II	3121	5376	1496	15	531	10538	2164	31	1901	39	530	4665
Big - I	4075	6800	1415	92	559	12941	2253	51	1779	39	519	4641
Big - II	1342	9223	735	-	500	11799	1538	-	800	115	500	2954
Total	3293	5658	1482	30	537	10999	2175	34	1874	39	528	4651

In the above section we observed that most of the expenditures incurred on sanitation had been spent on construction activities. Table 5.18 further illustrates the point showing very meagre allocation of financial resources on maintenance activities such as purchase of sanitation materials (phenyl, brooms, bleaching power) and salary to sweepers. The expenditure per GP in Tumkur during 2000 shows that out of Rs 54,000 only about Rs 450 was spent on purchasing sanitary materials, while the salary on sanitary workers was around Rs 6000. In Raichur district the GPs had assigned relatively more funds for the above activities than that in Tumkur. However, the amount spent for these purposes was less as compared to the total expenditure per GP.

The village-wise scenario of expenditure on components of sanitation (Table 5.19) also reveals an inadequate amount of funds allocated towards purchase of maintenance materials. The GPs had spent just about Rs 40 per village per year in Tumkur district for buying phenyl, brooms, bleaching powder, etc., which were very essential in keeping clean the streets, improving drainage, etc. Similarly salary of sweepers was also less compared to the expenditure on constructing sanitation facilities. This reveals that importance had been given by the GPs for constructing sanitation facilities, while neglecting maintenance activities

5.5. Conclusions

The analysis of manpower and financial resources allocated by the grama panchayats in Raichur and Tumkur districts for delivering BPH services has revealed significant points. The GPs are required to carry out important functions like operation and maintenance of drinking water supply systems, and implement and maintain sanitation services in the villages. Execution of these activities needs both manpower and financial inputs in the hands of GPs, otherwise delivery of services would be less than optimal. The GPs in both Raichur and Tumkur did not have adequate manpower for carrying out the services of water supply and sanitation. It is to be noted that one waterman was maintaining water supply schemes in more than one village, which definitely adversely affected his work efficiency and also delivery of services. Similarly, the sanitary workers were also few in number in both the districts. There was only one sanitary worker/sweeper per GP revealing the inadequacy.

On the expenditure front the GPs were spending for operation and maintenance of drinking water supply schemes and for construction and maintenance of sanitation facilities. Review of expenditure shows that GPs in Raichur had spent about 45 per cent of their budget on water supply and sanitation, while it was 12 per cent in Tumkur district during 2000. In the expenditure on water supply and sanitation, a large portion was spent on sanitation services in Raichur and Tumkur during 1999, but in 2000 GPs in Tumkur district had reduced their spending on sanitation services. The per capita expenditure on water supply and sanitation is around Rs 30 and Rs 23 respectively in Raichur and Tumkur districts. We noted that the per capita spending declined with the increase in the size of GPs, which might be because of equal allocation of resources among GPs. Maintenance of the assets already created was an important aspect, and GPs assumed a significant role in this task. Major share of GPs expenditure on water supply was going for operation and maintenance of the systems. But, across Raichur and Tumkur a difference was observed in the expenditure on repair and works and salary of watermen. While GPs in Raichur district maintained around 55 per cent of their expenditure on water supply during 1999 and 2000, in Tumkur it was low in 1999 and high in 2000. But, in Tumkur district no attempt had been made to recruit more number of watermen although there was an increase in the expenditure. In the case of sanitation more spending was incurred on construction of roads, drainages, while other important activities like purchase of phenyl, bleaching powder, brooms, etc., had got minute share. The analysis clearly reveals that the GPs did not have adequate number of manpower for carrying out the operation and maintenance of public health services, and also the expenditure incurred by them was insufficient particularly for controlling the vectors and maintaining cleanliness in the villages.

CHAPTER VI

SUMMING UP

In the overall health delivery system, public health services occupy a crucial role in preventing many diseases and improving the quality of life. Hence, provision of basic public health (BPH) services, such as water supply, sanitation, vector control, food quality control, etc., assumes significance. More specifically, public health services become important in countering poverty as the burden of ill health would extract relatively far more resources from poor people. Provision of public health services, which are 'public goods', necessitates public investment for creating and maintaining the required infrastructure. In order to provide these services, the Constitution of India has assigned various functions to different levels of government, i.e., Central, State and Local. Although all three layers of the government are involved, the state governments have a major responsibility of providing public health services because they are responsible for providing technical support in the provision of services and also in the transfer of resources obtained from the Centre to the lower levels of government. Considering the fact that access to and availability of services for the population to a large extent depends upon public spending, this study has examined the pattern of government expenditure on basic public health services. The analysis was done at three stages. At the first level, an analysis of expenditure by the Central and 14 major state governments was carried out to understand the financial efforts for creating and maintaining assets for delivering public health services. The second level of analysis, selecting Karnataka state as a case study, has examined the state government's expenditure pattern and also identified the sources of financing for public health services. This analysis has traced the financial contribution of different service providers in public health delivery system.

The enactment of Panchayat Raj Act in India has provided the local government organisations (Zilla Panchayat, Taluka Panchayat and Grama Panchayat) with various functions ranging from creation to operation and maintenance of public health infrastructure. In this new system, the GPs have a major responsibility of creation and operation and maintenance of assets created for delivering the services. In this context, the third level of analysis has focused on the expenditure incurred by GPs in two districts, Tumkur and Raichur in Karnataka.

The study has analysed, at the outset, the current status of basic public health services and their health impact, to provide a context for

examining the expenditure. The exercise has revealed key issues relating to access and availability of water supply and sanitation services across rural and urban areas and the incidence of vector and water-borne diseases. A review of the data on safe drinking water sources showed that tube wells are the major source followed by tap water connection and the proportion of households collecting drinking water from these sources had increased over the period. However, tap water connection, considered as safe drinking water source, was yet to reach the majority of households. There was a wide disparity in the coverage across rural-urban areas, which has highlighted the need for action. Further, the available data did not indicate quality of water supplied, adding to the difficulty in assessing the adequacy of services.

In the provision of drinking water supply, the quantity of water supplied also does matter from the point of view of hygiene. Based on the available data it was seen that the number of habitations covered with adequate drinking water supply (40 lpcd) increased sharply over the period of the 1990s. In 2003 (November) over 93 per cent of the habitations were provided with adequate water supply. States of Bihar, West Bengal, Haryana, Madhya Pradesh, Gujarat and Andhra Pradesh had covered over 95 per cent of the habitations, the efforts needed to be strengthened further in states like Rajasthan and Punjab.

Sanitation facilities, such as toilet, wastewater outlets, drainage, etc., constitute an integral part of public health delivery system. However, only about 36 per cent of households had toilet facilities during 2001. There was a wide disparity of sanitation services across rural and urban areas, as only about 22 per cent of the rural households had toilet facilities, whereas the proportion was 75 per cent among the urban households. Across the states, availability of household latrines varied significantly, from about 15 per cent of households in Orissa to 84 per cent in Kerala. Although, the per cent of households with toilet facility rose between 1991 and 2001, yet a large number of households (64 per cent) lacked this basic facility in India.

Access to drainage facility, a crucial means of removing wastewater, is highly inadequate in the country, as over 53 per cent of the households do not have drainage connection. This means that such households let off wastewater on open ground or to the streets, a source of unhygienic surroundings and breeding vector.

The impact of inadequate public health services was observed in the high magnitude of vector and waterborne diseases. For instance, in 1998, while 190 persons per lakh population suffered from Malaria, it was 750 persons from diarrhoea. Diarrhoea is a major concern in states like

Andhra Pradesh, Maharashtra, Orissa, Karnataka and West Bengal. The study has found a strong correlation between diarrhoea and lack of safe drinking water sources, toilets and drainage facilities. This strong linkage between basic public health amenities and morbidity pattern calls for government investment.

Our analysis has depicted that the Central Government had allocated about 0.7 per cent (Rs. 3082 Crore) of its total expenditure specifically for the provision of basic public health services during 2001-02. The expenditure had increased about 13.9 per cent per annum since 1991-92, but as a proportion of total government spending the allocation to BPH services had not shown much improvement. It was observed that in the composition of BPH services, expenditure on water supply and sanitation constituted a major share than the amount spent on public health (under Medical and Public Health). Calculation of per capita expenditure on BPH services illustrated that the Central Government incurred about Rs. 6.5 per person during 2001-02, raising it from Rs. 4.7 per person in 1991-92. However, the increase was very meagre and fluctuating, compared to the rise in per capita expenditure on social services and also the per capita total expenditure.

All states taken together had incurred an expenditure of about Rs. 1371 Crores in 1996-97, more than double the level of Central Government spending on public health (just the public health component) during the same year. But, spending on public health by all states taken together constituted less than 1 per cent of the total expenditure of the states. Among the states Maharashtra government spent higher than any other state. While Rajasthan, Kerala and Madhya Pradesh had increased their expenditure at a high rate, 8.92, 7.3 and 5.7 per cent, respectively, states like Karnataka, Punjab, Maharashtra and Haryana had not increased public health expenditure. Another point to be noted is that expenditure incurred was mainly on revenue head, while capital expenditure on public health had almost been neglected among all the states.

An analysis of spending on water supply and sanitation showed that all states together incurred about 2.49 per cent of their total expenditure on these services. But, a wide variation in spending across the states was observed as the number of states below average was high (10 out of 14 states in 2002-03). Further, less developed states like Uttar Pradesh, Orissa, and Bihar had allocated much smaller proportion of around 1.5 per cent of their total spending, on water supply and sanitation. We observed a major increase in terms of per capita expenditure from Rs. 15.3 in 1991-92 to Rs. 23.5 in 2002-03 taking all states together, but with significant disparity across

the states.

An examination of the relationship between per capita expenditure on water supply and sanitation and (1) spending on water supply and sanitation as a percent to total government expenditure, (2) per capita total expenditure of the government, and (3) per capita real GSDP, revealed a significant positive correlation, when all states were considered together. However, across the states this pattern was not observed, except for a few developed states. An analysis of the nature of relationship illustrated that expenditure on water supply and sanitation increased with a rise in the total expenditure for all the states.

An important issue that emerged with respect to expenditure was the balance between creating new assets and their maintenance. Our analysis of plan and non-plan expenditures revealed that all states taken together were spending more on plan expenditure that was to create new assets. But, across the states this picture did not hold, as some states like Punjab, Haryana, and Rajasthan had spent more in non-plan expenditure. Further, we observed no significant relationship between the plan expenditure on water supply and sanitation and per capita real GSDP and also with the per capita total expenditure of the government. An examination of revenue and capital expenditure depicted a change in the focus of government spending, i.e., increase in the share of capital expenditure in recent years, all states taken together. Although this was an important departure, it did not hold true for all states.

Involvement of various organisations in the delivery system of public health services necessitated a study of their role in terms of financial contribution. In this context, the study has examined financial sources for public health services by selecting Karnataka State. Karnataka, a medium level developed state, has performed well in providing certain BPH services like water supply, sanitation, etc., as compared to the all India average. For instance, the proportion of households with tap water connection was about 59 per cent in Karnataka, while it was around 37 per cent at the all India level. However, some problems associated with inadequate sanitation, resulting in flies, mosquitoes and foul odour, were high in the State. Further, the state had experienced an increase in diseases such as diarrhoea, viral hepatitis, typhoid, and others in recent years. These problems needed to be arrested at the earliest for maintaining good health status.

The analysis has showed that Karnataka Government had spent about Rs. 5646 Crores on BPH services, between 1991-92 and 2002-03, during which period these expenditures experienced an annual rise of 13.4

per cent. The allocation constituted about 2.65 per cent of the total expenditure during 2002-03, which was higher compared to that by the Central Government. However, the percentage allocation had fluctuated during the study period, indeed the increased significance given for BPH services until 1999, had declined then onwards, particularly within the social services sector. This indicates a shift away from BPH services in the financial resource allocation pattern of the state.

The composition of expenditure on BPH services illustrates that water supply and sanitation constituted a major share (91 per cent), while public health received small share, a pattern seen in the spending by both the Central government and the major state governments. Irrespective of the disparity in the proportion, water supply and sanitation and public health had seen an increase in the total amount allocated over the period, which was a positive step by the state governments. Another important observation is that within water supply and sanitation, expenditure on water supply was much higher (over 90 per cent) than that on sanitation services. This point has to be considered seriously in the context of highly inadequate sanitation facilities in the state.

Our attempt to identify the financial sources of BPH services took into account the three layers of government: the Centre, the State and the Local Bodies. This analysis was carried out in the case of Karnataka. Considering the availability of data we examined the contribution by each of these sources of finance on water supply and sanitation, for two years, i.e., 1999-00 and 2002-03. The state government having the major responsibility contributed over 83 per cent of the total expenditure on water supply and sanitation, while the Central Government's share was just around 16 per cent. Another important observation was the increased share of ULBs and the KUWS&DB in providing urban water supply and sanitation programmes. The exercise of tracing the sources of finances revealed that the expenditure incurred on water supply and sanitation was much higher than that one gathered from the state government's budget allocation. The analysis further illustrated a huge disparity across rural and urban areas, where rural areas received significantly lower allocation as compared to urban areas.

Considering the significant role assigned to local level government organisations, it is necessary to examine the resources, both manpower and financial, allocation for delivering public health services. The study carried out an analysis of expenditure on creation and maintenance of infrastructure for water supply and sanitation services, and the manpower allocated for the purpose at the Grama Panchayat level, by selecting GPs in two districts

of Karnataka. Although the KPR Act has clearly mentioned about various functions of GPs with respect of public health services, it was distressing to see a meagre allocation of both manpower and financial resources by GPs. In both districts the number of watermen, for operation and maintenance activities, was small. Many villages did not have waterman for operating and maintaining the water supply systems. Similarly, for maintenance of cleanliness and hygienic conditions in the village sanitary workers or sweepers are essential. But, the study revealed that most of the villages did not have even one sweeper and there were no other financial provisions either. This indicates that the GPs had not given much importance for operation and maintenance of public health facilities. These functions could only be assumed to be left to private initiative.

The analysis of expenditure illustrated that the proportion of spending on water supply and sanitation in the total expenditure varied across the districts. For instance, all GPs taken together had spent about 45 per cent of their total expenditure on water supply and sanitation, while in Tumkur it was around 12 per cent. It was observed that GPs has spent a higher share of their expenditure on sanitation activities as compared to water supply. This might be due to the greater effort on improving sanitation, both construction and maintenance, assigned to GPs. In the case of water supply GPs were required to maintain the system after the ZP constructed it. However, it should be noted that a higher share of expenditure under sanitation went towards construction and the maintenance activities had been neglected. A meagre expenditure (less than 1 per cent of the expenditure on sanitation) is incurred on necessary inputs like bleaching powder and other requirements. This indicates the inadequate financial and manpower resources allocated by GPs towards providing BPH services.

In the background of the results found in this study, the following points might be considered for enhancing and enlarging the provision of BPH services. Public health services are an integral part of the health delivery system. Hence, the relative importance for BPH services should be recognised more fully within the social sector spending and also in the overall expenditure. Further, there is anomaly in terms of expenditure incurred, i.e., the importance assigned, on public health schemes (vector control, food quality control, etc.) versus water supply and sanitation. While increased expenditure on water supply and sanitation is a welcome sign, public health programmes also need to be addressed considering the morbidity pattern. States that are spending less on these services also happen to have low coverage of public health services, which indicates that these states need to

increase their expenditure on creation and maintenance of the assets that provide BPH services. The rural areas fall much behind as compared to urban areas with regard to availability of the services and also in terms of expenditure. This gap needs to be filled to increase and improve public health facilities to large number of rural population. The major shift in the BPH functions to local government organisations, in the new system of governance, has not made much difference on the expenditure front. The local government organisations, particularly in rural areas, are allocating small financial and manpower resources for delivering BPH services.

Appendix I: List of Expenditure Activities in Public Health under Medical and Public Health

Heads of expenditure	Sub-heads of expenditure
<i>001 Direction and Administration</i>	
<i>003 Training</i>	
	01 Health Training Centre, Ramanagarm
	02 Rural Health Training Centres and Sub-centres
	03 Health and Family Welfare Training Centres
	04 Communicable Diseases Investigation - cum - Training Centre - Mandya
	06 Training of Health Visitors
	07 Training of Senior Laboratory Technicians
	09 Training of Food Inspectors
<i>101 Prevention and Control of Diseases</i>	
	1 Malaria
	01 Malaria Maintenance Phase - Lump sum State
	02 National Anit-Malaria Programme - Rural (operational Cost by State)
	03 National Anit-Malaria Programme - Urban Other Expenditure
	06 Mental Health Project
	07 National Malaria Eradication Programme (NMEP)
	3 Cholera
	01 Cholera Control Programme
	4 Leprosy
	01 Central Leprosarium, Bangalore
	02 Leprosy Control Centres
	04 Leprosy Control Schemes
	05 CSS of National Leprosy Control (100%)
	06 Voluntary Health Org. for Leprosy Control
	08 Taking over of Leprosy Project run by Darwin Foundation
	6 Filaria
	01 CSS of National Filaria Control Programme
	02 Filaria Control Scheme
	7 Other Diseases
	01 Kyasanur Forest Diseases (KFD)
	02 Manufacture of KFD Vaccine
	06 CSS of Guinea Worm Eradication Scheme
	07 Anti - Japanese Encephalitis

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- 09 Epidemic Diseases Control Drugs and Chemicals
- 10 National Iodine Deficiency Disorder Control Programme (CSS - 100%)
- 11 CSS Aids Control Programme (CSS 100%)
- 12 CSS for Dengue Control
- 13 Control of Hepatitis - B, Lump sum - State
- 14 Integrated Disease Surveillance Programme

8 Control of Blindness

- 01 CSS of National Programme for Prevention And Control of Visual Impairment and Trachoma
- 02 CSS of National Programme for Prevention And Control of Blindness - DME (100%)
- 03 Control of Blindness - State Plan Scheme

104 Drug Control

106 Manufacture of Sera and Vaccine

107 Public Health Laboratories

- 01 Public Health Institute, Bangalore
- 02 Chemical Examination Regional Laboratory
- 04 Food Analysis Laboratories under PFA Act
- 07 CSS of Supply of Equipement under PFA (100%)

112 Health Education and Publicity

- 01 Bureau of Health Educaiton - 112

800 Other Expenditure

- 02 State Transport - Lump sum - State
- 07 Grants to Victoria Dharmashala
- 08 Blood Transfusion Services - Lump sum - State
- 10 Health Nutrition and Population Project
- 11 Logistic Project

Note: CSS = Centrally Sponsored Scheme

Source: Detailed Estimates of Expenditure - 2003-04, Government of Karnataka (2003)

**Appendix II: Classification of Sources of Public Health
Expenditure in Karnataka**

Central Government (Revenue Expenditure)	State Government (Revenue Expenditure)
101 Prevention and Control of Diseases	001 Direction and Administration
1 Malaria	003 Training
07 National Malaria Eradication Programme (NMEP) -Centre's Share	01 Health Training Centre, Ramanagaram
4 Leprosy	02 Rural Health Training Centres and Sub- centres
05 CSS of National Leprosy Control (100%)	03 Health and Family Welfare Training Centres
6 Filaria	04 Communicable Diseases Investigation cum Training Centre - Mandya
01 CSS of National Filaria Control Programme	06 Training of Health Visitors
7 Other Diseases	07 Training of Senior Laboratory Technicians
06 CSS of Guinea Worm Eradication Scheme	09 Training of Food Inspectors
10 National Iodine Deficiency Disorder Control Programme (CSS - 100%)	101 Prevention and Control of Diseases
11 CSS Aids Control Programme (CSS 100%)	1 Malaria
12 CSS for Dengue Control	01 Malaria Maintenance Phase - Lump sum State
8 Control of Blindness	02 National Anit-Malaria Pgm. - Rural (operational Cost by State)
01 CSS of National Pgm. for Prevention and Control of Visual Impairment and Trachoma	03 National Anit-Malaria Pgm. - Urban Other Expenditure
02 CSS of National Pgm. For Prevention and Control of Blindness - DME (100%)	06 Mental Health Project
107 Public Health Laboratories	07 NMEP - State's Share
07 CSS of Supply of Equipement Under PFA (100%)	3 Cholera
Central Government Total	01 Cholera Control Programme
	4 Leprosy
	01 Central Leprosarium, Bangalore
	02 Leprosy Control Centres
	04 Leprosy Control Schemes
	06 Voluntary Health Org. for Leprosy Control
	08 Taking over of Leprosy Project Run by Darvin Foundation
	6 Filaria
	02 Filaria Control Scheme
	7 Other Diseases
	01 Kyasanur Forest Diseases (KFD)
	02 Manufacture of KFD Vaccine

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- 07 Anti - Japanese Encephalitis
- 09 Epidemic Diseases Control Drugs and Chemicals
- 13 Control of Hepatitis - B, Lump sum - State
- 14 Integrated Disease Surveillance Programme
- 8 Control of Blindness**
- 03 Control of Blindness - State Plan Scheme
- 104 Drug Control**
- 106 Manufacture of Sera and Vaccine**
- 107 Public Health Laboratories**
- 01 Public Health Institute, Bangalore
- 02 Chemical Examination Regional Laboratory
- 04 Food Analysis Laboratories under PFA Act
- 112 Health Education and Publicity**
- 01 Bureau of Health Educaiton - 112
- 800 Other Expenditure**
- 02 State Transport - Lump sum - State
- 07 Grants to Victoria Dharmashala
- 08 Blood Transfusion Services - Lump sum - State
- 10 Health Nutrition and Population Project
- 11 Logistic Project

Zilla Panchayat Expenditures

Plan Expenditures	Non Plan Expenditures
06 Public Health	06 Public Health
101 Prevention and Control of Diseases	001 Direction and Administration
1 Malaria	03 District Establishment
51 Malaria Control Programme	04 Other Establishment
3 Cholera	003 Training
51 Cholera Control Programme	02 Rrl Health Trng. Centres and Sub Centres
4 Leprosy	08 Training of Health Inspectors
04 Leprosy Control Scheme	101 Prevention & Control of Diseases
6 Filaria	1 Malaria
71 Filaria Control Programme	01 Malaria Maintenance Phase
7 Other Diseases	3 Cholera
51 Brain Fever	01 Cholera Control Pgm
52 Mental Health Programme	4 Leprosy
53 Guinea Worm Eradication Pgm	02 Leprosy Control Centres

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55 Cancer Control Programme	03 Survey, Education and Treatment Centres
59 AIDS Control and Detection	04 Leprosy Control Scheme
8 Control of Blindness	05 Leprosy Control Scheme (CSS)
01 National Pgm for Prevention and Control Of Blindness	5 Plague
Total ZP Schemes on PH - Plan	01 Plague Control Units
	6 Filaria
	51 Filaria Units
	71 Filaria Control Scheme
	7 Other Diseases
	52 Mental Health Pgm
	8 Control of Blindness
	01 National Pgm for Prevention and Control of Blindness
	107 Public Health Laboratories
	02 Chemical Examination Regional Centres
	03 District Health Laboratories
	Total ZP Schemes on Public Health

Note : CSS = Centrally Sponsored Scheme

Appendix III: Items of Expenditure on Water Supply and Sanitation

Revenue Exp.	Capital Exp.
01 Water Supply	01 Water Supply
001 Direction and Administration	102 Rural Water Supply
003 Training	1 Bilateral Scheme
005 Survey and Investigation ARWS CSS Plan	80 Integrated Rural Water Supply and Env. Sanitation Prj. - II (DANIDA)
052 Machinery & Equipment	81 Integrated Rural Water Supply and Env. Sanitation Prj. (World Bank)
102 Rural Water Supply	82 Integrated Rural Water Supply and Env. Sanitation (Netherlands)
07 Bilateral Schemes	83 RDED - Capital Exp.
03 Integrated Rural Water Supply And Environmental Sanitation	84 Integrated Rural Water Supply and Env. Sanitation Prj. (Jala Nirmala)
80 World Bank Cell	Loans and Advances
81 District Project Cell Integrated Rural Water Supply And Environmental Sanitation - II	01 Water Supply Loans to Public Sector Undertakings
82 DANIDA	BWSSB
83 World Bank Assisted	Replacement of corroded pipes at TG Halli Reservoir
84 Netherlands Assisted	Maintenance of Borewells in Bangalore
85 Project Planning and Monitoring Unit	Rehabilitation of Ground level Reservoir
86 State Watershed Devt. Cell	Scheme for Water Audit
08 Additional Support to Zilla Parishad	Integrated water Management to meet
01 RWS Scheme Grants-in Aid	
02 Sub Mission Project Grants-in-Aid	
03 Pradhan Mantri Gromodaya Yojana	

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09	<i>Other Schemes</i>	Additional Requirement
05	Management Information System	Cauvery Water Supply Stage - IV
07	HRD Cell	Augmentation of Water Supply - French Assistance
	Total Rural Water Supply - 102	
191	Assistance to Local Bodies, Corporations, etc.	
191-1	KUWS&DB	
01	Piped Water Supply Scheme - Grants	
02	Accelerated UWS (CSS)	
03	Grants for UWS Schemes	
191	Assistance to Local Bodies, Corporations, etc.	
191-2	Zilla Parishads & Mandal Panch	
01	Block Assistance to Zilla Panchayats & Mandal Panch	
02	CSS ARWS Grants for ZP	
191-3	BWSSB	
196	Assistance to ZPS	
2	Zilla Panchayats	
01	Block Assistance to Zilla Panchayats	
02	ARWS Grants for ZP	
197	Assistance to TPs	
2	Taluk Panchayats	
01	Block Grants - ZP	
198	Assistance to GPs	
2	Grama Panchayats	
02	ARWS lumpsum - ZP	
799	Suspense	
2	Credit - PHE Circles	
02	Sewerage and Sanitation	02 Sewerage and Sanitation
105	Sanitation Services	190 Investment in Pub. Sector & Other Undertakings
2	Rural Sanitation Programme - State Sector	Repayment of loan to HUDCO by KLAC
4	Panchasutra	
191	Assistance to Local Bodies, Corporations, etc.	Loans and Advances
4	Zilla Parishads & Mandal Panch	02 Sewerage and Sanitation
01	CSS Rural Sanitation Programme - Grants in Aid for ZP	Loans to KUWSDB
196	Assistance to ZPs	1 LIC Schemes in ULBs
4	ZPs	2 Improvement of sanitation in newly added areas
	Rural Sanitation Pgm - Lump sum to ZP	

Source: Detailed Estimates of Expenditure - 2003-04, Government of Karnataka

Note: CSS = Centrally Sponsored Schemes
 KUWS&DB = Karnataka Urban Water Supply and Drainage Board
 UWS = Urban Water Supply Schemes

Appendix IV: Classification of Financial Sources to Water Supply**Rural Water Supply**

Central Government (Revenue Expenditure)	State Government (Revenue Expenditure)	State Government (Capital Exp.- Loans and Advances)
01 Water Supply	01 Water Supply	102 Rural Water Supply
005 Survey and Investigation	001 Direction and	1 Bilateral Scheme
ARWS CSS Plan	Administration	80 Integrated Rural Water
02 Sub Mission Project	003 Training	Supply and Env. Sanitation
Grants-in-Aid	052 Machinery & Equipment	Prj. - II (DANIDA)
03 Pradhan Mantri	102 Rural Water Supply	81 Integrated Rural Water
Gromodaya Yojana	07 Bilateral Schemes	Supply and Env. Sanitation
02 CSS ARWS Grants for ZP	03 Integrated Rural Water	Prj. (World Bank)
02 ARWS Grants for ZP	Supply and Env.	82 Integrated Rural Water
02 ARWS lumsum - ZP	Sanitation	and Supply Env. Sanitation
Central - Total	80 World Bank Cell	(Netherlands)
	81 District Project Cell	83 RDED - Capital Exp.
	Integrated Rural Water	84 Integrated Rural Water
	Supply and Env.	Supply and Env. Sanitation
	Sanitation - II	Prj. (Jala Nirmala)
	82 DANIDA	
	83 World Bank Assisted	
	84 Netherlands Assisted	
	85 Project Planning and	
	Monitoring Unit	
	86 State Watershed Devt. Cell	
	08 Additional Support to Zilla	
	Parishad	
	01 RWS Scheme Grants-in Aid	
	09 Other Schemes	
	05 Management Information System	
	07 HRD Cell	
	191 Assistance to Local Bodies, Corporations, etc.	
	191-2 Zilla Parishads & Mandal	
	Panchayat	
	01 Block Assistance to Zilla	
	Panchayats & Mandal Panch	
	196 Assistance to ZPS	
	2 Zilla Panchayats	
	01 Block Assistance to Zilla	
	Panchayats	
	197 Assistance to TPs	
	2 Taluk Panchayats	
	01 Block Grants - ZP	
	198 Assistance to GPs	
	2 Grama Panchayats	
	799 Suspense	
	2 Credit - PHE Circles	
	State - Total	

Note: CSS = Centrally Sponsored Schemes

Appendix IV : Classification of Financial Sources to Water Supply

Urban Water Supply

Central Government (Revenue Expenditure)	State Government (Revenue Expenditure)	State Government (Capital Expenditure - Loans)	Other Sources
191 Assistance to Local Bodies, Corporations, etc.	191 Assistance to Local Bodies, Corporations, etc.	Loans and Advances	
191-1 KUWS&DB 02 Accelerated UWS (CSS)	191-1 KUWS&DB 01 Piped Water Supply Scheme - Grants 03 Grants for UWS Schemes	01 Water Supply Loans to Public Sector Undertakings BWSSB Replacement of corroded pipes at TG Halli Reservoir Maintenance of Borewells in Bangalore Rehabilitation of Ground level Reservoir Scheme for Water Audit Integrated water Management to meet Additional Requirement Cauvery Water Supply Stage - IV Augmentation of Water Supply - French Assistance	Urban Local Bodies KUWSDB BWSSB

Note : KUWS&DB = Karnataka Urban Water Supply and Drainage Board
UWS = Urban Water Supply Schemes

Appendix V: Classification of Expenditure on Sanitation by Sources

Rural Sanitation Services			Urban Sanitation Services		
Central Government (Revenue Exp.)	State Government (Revenue Exp.)	State Government (Capital Exp.)	State Government (Loans)	Other Sources	
105 Sanitation Services	02 Sewerage and Sanitation	02 Sewerage and Sanitation	02 Loans to KUWSDB	Urban Local Bodies	
191 Assistance to Local Bodies, Corporations, etc.	105 Sanitation Services	190 Investment in Pub. Sector & Other Undertakings	1 LIC Schemes in ULBs	BWSSB	
	2 Rural Sanitation Programme - State Sector	Repayment of loan to HUDCO	2 Improvement of sanitation in newly added areas		
01 CSS Rural Sanitation Programme - Grants in Aid for ZP	4 Panchasutra	by KLAC			
Central Government	191 Assistance to Local Bodies, Corporations, etc.				
	4 Zilla Parishads & Mandal Panchayat				
	196 Assistance to ZPs				
	4 ZPs				
	Rural Sanitation Programme - Lump sum to ZP				
	State Government - Total				

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