

# **ESTIMATES COMMITTEE**

## **(1972-73)**

(FIFTH LOK SABHA)

**THIRTY-EIGHTH REPORT**

MINISTRY OF WORKS AND HOUSING

**NATIONAL WATER SUPPLY PROGRAMME**



सत्यमेव जयते

**LOK SABHA SECRETARIAT**  
**NEW DELHI**

*April, 1973/Vaisakha, 1895 (Saka)*

*Price : 3.10 Paise*

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To

the 36th Report of the Estimates Committee  
(Fifth Lok Sabha) on the Ministry of Works  
and Housing - National Water Supply  
Programme.

AGE

iii)

v)

i

6

Page 2, line 2 from bottom:  
add at the end: 'was extended to  
urban water supply'

11

Page 9, line 1:  
insert 'lakh' after '15'

13

Page 13, para 2.21, line 2:  
For 'radicus' read 'radius'.

16

18

Page 33, Para 2.34:  
(i) Line 11: Insert 'of' after  
'population'  
(ii) Line 12: For 'the' read 'be'.

19

23

27

Page 50, para 2.138, line 9:  
For 'on' read 'an'.

28

Page 53, para 3.1, line 2:  
For 'against' read 'again'.

34

Page 58, para 3.16, line 6:  
Insert 'by' after 'covered'.

36

38

Page 71, para 3.61, line 8:  
For 'Corporation' read  
'Cooperation'.

39

41

Page 86, para 3.120, line 3:  
For 'constnt' read  
'constraint'.

53

Page 87: (i) Para 3.122, line 7:  
For 'this' read 'thus'.

59

(ii) Para 3.123, line 4:  
For 'imperatice' read  
'imperative'.

61

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(ii) Organisational set up

A. Central Level . . . . .

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B. State Level . . . . .

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(1972-73)

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(iv)

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## INTRODUCTION

1. The Chairman, Estimates Committee, having been authorised by the Committee to submit the Report on their behalf, present this Thirty-Eighth Report on the Ministry of Works and Housing—National Water Supply Programme.

2. The Committee took evidence of the representatives of the Ministry of Health and Family Planning at their sittings held on the 30th and 31st October and 3rd November, 1972. The Committee wish to express their thanks to the Secretary, Ministry of Health and Family Planning and other officers of the Ministry of Health and Family Planning, Ministry of Finance and Planning Commission for placing before them material and information which they desired in connection with the examination of the subject and for giving evidence before the Committee.

3. The subjects of Water Supply and Sanitation have since been transferred to the Ministry of Works and Housing under a Presidential Order dated 7th February, 1973 amending the Government of India (Allocation of Business) Rules, 1961.

4. The Report was considered and adopted by the Committee on the 9th April, 1973.

5. A statement giving the analysis of recommendations contained in the Report is appended to the Report—(Appendix VI) .

NEW DELHI;

*April 21, 1973*

*Vaisakha 1, 1895 (Saka)*

KAMAL NATH TEWARI,

*Chairman,*

*Estimates Committee.*



## CHAPTER I

### INTRODUCTORY

1.1. The importance which a country attaches to the need for an adequate and wholesome Water Supply is an index of its civilisation, growth and development. Industrial growth and technological progress in a country, together with a fast increasing population inevitably bring in their wake the multifarious problems of a clean and protected water supply system to its citizens. The natural laws of water depletion and replenishment can be considerably distorted in a local or quasi-local scale in response to needs of a fast growing population. The general awareness of this problem all the world over is adequately borne out by the increasing attention it has been receiving in almost all the countries of the world, especially developed ones. For the less developed countries if the sensitivity to this problem is less pronounced, it is not because the magnitude of the problem is intrinsically small, but merely because of the pre-occupation of their Governments and people with the more urgent problems of survival.

1.2. In India this awareness is hardly a couple of decades old reflecting a sharp increase in population on the one hand, and a significant amount of industrial and technological progress made since Independence on the other. The latter has resulted in a continuous transition from villages to towns and the growth of towns into cities, thus automatically bringing into the forefront the vital importance of clean water supply on a nation-wide scale. Before Independence, organised water supply system existed only in a few major cities in the country beginning with the presidency towns of Calcutta, Bombay and Madras during the last quarter of the last century. During the subsequent decades also organised measures, if any, were taken more with a view to combat the recurring epidemics than with any conscious long term perspective. There was, however, a short period of activity with the coming into being of some popular ministries in several States. Some tangible results had already been achieved in this spurt before the Second World War intervened.

1.3. During the pre-Independence era Bhore Committee (1944) was the first such body to draw a pointed attention to the importance of the safe drinking water supply on a nation-wide scale. After Independence the Central Government appointed the Environmental Hygiene Committee (1948-49) for making an overall assessment of the country-wide problem covering the entire field of Environmental Hygiene. Apart from some

notable recommendations made by this Committee in the broader field of Environmental Hygiene, this Committee recommended specifically a comprehensive plan to provide water supply and sanitation facilities for 90 per cent of the population within a period of 40 years. However, the National Water Supply and Sanitation Committee appointed by the Union Ministry of Health, as late as 1960, have noted in their Report submitted to Government in 1961 that no concerted measures were taken to implement the recommendations of the Environmental Hygiene Committee.

1.4. In the initial stages of the First Five Year Plan, water supply schemes were financed by the States under the heads of Local Development Works and Community Development Works. The size of such schemes was very small and the States came up against such obstacles as lack of finances and organisational capacity, non-availability of materials and equipments etc. Central initiative in the matter was till then lacking.

1.5. In 1953, the Union Health Ministry took up the matter with the States and realised the various problems being faced by them in regard to water supply and sanitation schemes. The States also expressed the desire that the Central Government must step into the picture and announce a programme for providing assistance to the States. As a result, the Union Health Ministry announced the National Water Supply Programme in August, 1954 as part of the Health schemes under the Plan and made specific provisions to assist the States in implementation of their urban and rural water supply and sanitation schemes. The object of the programme was to accelerate the pace of water supply and sanitation in the country by providing financial assistance to the States for taking up water supply and sanitation schemes as also to provide technical help and guidance in the matter.

1.6. Under the Programme, the States were given 100 per cent loan for urban water supply scheme. For rural water supply schemes, limited to population units not exceeding 5,000 (as listed in the Census Reports) 50 per cent of the cost was met by the Central Government by giving grant-in-aid and the other 50 per cent was left to the State Governments to meet partly from their own funds and partly by realising contributions from the beneficiaries either in the form of cost or labour or raw materials. The programme helped the State Governments, in making planned efforts in the field of urban and rural water supply. The Programme was continued with the same pattern of financing during the Second and Third Plans and during the three non-plan years, 1966-67 1967-68 and 1968-69 except that the pattern of financing for rural water supply schemes also for small towns with a population upto 20,000 in 1967.

1.7. Till 1968, the States were required to send all schemes to the Union Ministry of Health for approval and only such schemes which were approved, qualified for Central assistance under the programme. The idea was to ensure, that the schemes so taken up were technically viable. Meanwhile States set up their own Public Health Engineering Departments and built up adequate number of trained personnel. Taking note of this development, States were delegated with powers in 1968 to approve urban water supply schemes upto the value of Rs. 25 lakhs and rural water supply schemes upto the value of Rs. 10 lakhs involving per capita cost upto Rs. 80 and Rs. 60 for urban and rural schemes respectively. These per capita limits were also waived in 1970.

1.8. With the commencement of the Fourth Five Year Plan, the entire pattern of Central assistance to States underwent change. Under the pattern now in vogue, Central assistance to States is given in the form of block loans and block grants in the ratio of 70 per cent. and 30 per cent. respectively. With this change in the pattern of assistance, the original connotation of the programme has changed though the Programme is still being implemented in the State Sector.

1.9. The magnitude of the problem of water supply and its various aspects first came in for criticism in the Third and Fourth Conferences of the Public Health Engineering held respectively in October, 1958 and November, 1960. Third Conference attempted an overall assessment for the first time and helped to focuss attention on a comprehensive planned programme to cover the urban and rural phases within a specified period and recommended a radical reorientation of the existing policies in regard to financing and management methods. These aspects of the problem were again reviewed by the Fourth Conference.

1.10. During the same period some other bodies have also made a critical study of the working of the National Water Supply and Sanitation Programme. During 1959-60 such a study was made by a Panel of Public Health Engineers appointed by the Planning Commission under the Building Projects Team of the Committee on Plan Projects.

1.11. During 1960-61, the Union Ministry of Health constituted another Committee known as the National Water Supply and Sanitation Committee with Shri Lourdhammal Simon, Minister for Local Administration, Madras as the Chairman and some Members of Parliament and the Director, Central Public Health Engineering Research Institute among others, as members. This Committee made an assessment of the magnitude of the existing water supply problem in the country and apart from elaborating on the recommendations made by earlier Committees suggested notable procedural, organisational and financial reforms.

1.12. Again in April, 1963 the Union Health Ministry announced the setting up of a Drinking Water Board with Shri Balvantray Mehta as Chairman and Shri R. R. Morarka and Dr. K. L. Rao among others as Members. The Board submitted its interim report in the same year and appears to have ceased functioning soon thereafter. This Board also suggested a number of administrative, procedural and financial changes. The Board recommended the highest priority to the provision of water supply in the difficult and scarcity areas and recommended the completion of this phase of the programme with a period of five years at the most.

1.13. The All India Seminar on financing and Management of Water and Sewerage Works which was convened by the Central Ministry of Health, in 1964, and with which Mayors, Municipal Chairmen and Commissioners, Public Health Engineers, as well as the representatives of International Agencies such as WHO and World Bank were associated also made some positive recommendations on the subject. The seminar recommended that the provision of water supply and sewerage should be accorded a very high priority in the current nation building programmes. The Seminar also recommended the setting up of statutory water and sewerage Boards in the States and also a Municipal Finance Corporation at the Centre as effective means of increasing the efficiency of financing and operating municipal water supply and sewerage services.

1.14. The magnitude of water supply has been examined in a greater detail in the next chapter. However, it would be relevant here to relate briefly the progress made in providing safe water supply. A brief survey of the extent of water supply and sewerage systems in India was for the first time given by the Health Survey and Development Committee in 1944. According to them only 16 per cent of the total number of towns in India had protected water supplies which served 6.15 percent of the total population or 48.5 percent of the urban population. Sewers had been laid down in 35 cities.

1.15. The National Water Supply and Sanitation Programme came into operation in August, 1954. But no specific physical targets had been laid down till the beginning of the Fourth Five Year Plan. It was the National Water Supply and Sanitation Committee, 1960-61 which made the first attempt at making correct assessment of the existing situation. According to this Committee 681 towns with about 60 per cent of the urban population were covered with adequate or inadequate water supply in 1961. By March, 1971, 1282 towns with 77.3 percent of the total urban population had been covered by adequate or inadequate water supply. The Committee have been informed that by the end of Fourth Five Year Plan 1274 towns with a population of about 2 crores will have no provisions for pro-

tected water supply. On the rural side, by March, 1960, 14713 villages were covered by protected water supply under the National Water Supply and Sanitation Programme. Twelve years later i.e., by March, 1972, 22,000 villages with 3.07 per cent of the total rural population had been covered under the programme with piped water supply. By March, 1971, 186 towns had been connected by sewerage full or partial.

**1.16. Wholesome and adequate supply of drinking water to the general public is now generally accepted as an essential civic amenity. As the position stands today, in rural areas piped water supply has so far been brought within the reach of only 22,000 villages comprising a just 3.07 percent of the rural population which constitutes about 80 per cent of the total population of the country. In urban areas protected water has been made available only to 1282 towns out of 2921 towns in the country. Even in these towns the supply has been partial. Further, even at the end of the Fourth Plan there will still be 1274 towns in the country without this basic amenity. Only 186 towns have so far been connected by sewerage full or partial. Considering the magnitude of the problem viz., making available this basic necessity to a population of 55 crores and considering the backlog in the field, the Committee consider the pace of progress too slow.**

**1.17. Viewing from the angle of progress achieved in the industrial and technological fields, the country is still lagging far behind in the matter of availability of safe water supply to its citizens. As would be seen from facts given in the later chapters of this Report, realisation of the imperative necessity of ensuring supply of safe and wholesome water has been slow to come in. Allocations for water supply have been low, and implementations of various recommendations for organisational and procedural reforms made at several forums and by several bodies have been half-hearted for which both the Central and State Governments have to share the responsibility. The Committee cannot but strongly urge Government to take concreted and positive measures atleast from now onwards to ensure that this basic requirement of wholesome and adequate drinking water is made available to every village and hamlet in accordance with a perspective plan in the shortest possible and specified period.**

## CHAPTER II

### MAGNITUDE OF THE PROBLEM

#### (i) *Urban Water Supply*

2.1. According to the Bhoze Committee (1944) 16 per cent of the total towns and 48.5 per cent of the urban population as of 1941 census had water supplies varying from 2 to 40 gallons per capita.

2.2. According to the National Water Supply and Sanitation Committee, in March, 1960, 246 towns with a population of 59.19 lakhs were covered with adequate water supply and another 435 towns with a population of 149.00 lakhs were covered with partial water supply. Thus in all about 681 towns were covered with adequate/partial water supply in the country covering a total urban population to the range of a little over 2 crores by March, 1960. Percentage-wise around 60 per cent of the urban population was covered with safe water supply in 1961 adequately or partially. Out of this about 33.9 per cent of the urban population had adequate water supply as against 26.3 per cent with inadequate water supply.

2.3. According to 1971 census the population in the country is 547,949,809 of which urban population is 108,787,082 i.e. about 20 per cent.

The Committee have been informed that at the beginning of the Fourth Plan period i.e. in March, 1969, 1150 towns with a population of 555.51 lakhs were covered with water supply. In March, 1971 the total number of towns with adequate/partial water supply rose to 1282, with a population of 841.71 lakhs. Thus according to the Ministry's estimates around 77 per cent of the urban population today enjoys the facility of safe water supply. The Committee have, however, been informed that information of towns covered partially for water supply has not been compiled. It has been stated by the Ministry that "the towns with water supply generally cover the entire city but due to increase in population or extension of towns, there may be some pockets in towns which may not be covered or have inadequate water supply. Therefore, the figures for March, 1969 and March, 1971 include all towns provided with water supply whether covered partially or adequately." However, according to another estimate in 1968-69 40 per cent of the urban population was served with organised water supply for domestic purposes excluding water-borne sanitation. Water

Supply for domestic purposes including water-borne sanitation was available only to 30 per cent of the urban population.

2.4. During the Fourth Plan period the target is stated to be to extend or augment water supply in 500 towns and cities benefitting an additional population of about one crore.

2.5. The Committee have been informed that at the end of the Fourth Plan period, 1274 towns will be without water supply. A statement showing the number of towns which are estimated to be without water supply at the end of the Fourth Plan period, their population and percentage to the total urban population, Statewise, is given below:—

Sl. No.	Name of the States	Number of Towns	Population in Lakhs	Percentage (Urban)
1	2	3	4	5
1.	Andhra Pradesh	96	12.76	15.20
2.	Assam	51	4.14	33.82
3.	Bihar	106	14.94	26.42
4.	Gujarat	105	13.37	17.81
5.	Haryana	9	1.83	10.33
6.	Himachal Pradesh	5	0.21	8.71
7.	Jammu & Kashmir	8	0.42	4.99
8.	Kerala	48	8.85	25.54
9.	Madhya Pradesh	114	12.20	18.02
10.	Maharashtra	99	14.23	9.06
11.	Meghalaya	2	0.18	14.06
12.	Mysore	22	1.54	2.16
13.	Nagaland	Nil	Nil	Nil
14.	Orissa	32	2.20	12.13
15.	Punjab	43	7.87	24.54
16.	Tripura	3	0.36	29.75
17.	Rajasthan	12	0.29	0.64
18.	Tamil Nadu	313	40.46	32.48
19.	Uttar Pradesh	129	13.18	10.64
20.	Manipur	7	0.41	29.08

1	2	3	4	5
21.	West Bengal . . . . .	64	32.48	29.82
22.	Arunachal . . . . .	4	0.14	100.00
23.	Andaman & Nicobar Islands . . . . .	Nil	Nil	Nil
24.	Chandigarh . . . . .	Nil	Nil	Nil
25.	Dadar and Nagar Haveli . . . . .	Nil	Nil	Nil
26.	Delhi . . . . .	Nil	Nil	Nil
27.	Goa, Diu & Daman . . . . .	1	0.25	11.11
28.	Laccadive & Minicoy Islands . . . . .	Nil	Nil	Nil
29.	Pondicherry . . . . .	1	0.18	0.09
30.	Mizoram . . . . .	Nil	Nil	Nil
Total :—		1274	182.49	16.70

2.6. During the Fifth Plan all the remaining 1274 towns are proposed to be covered with safe water supply at an estimated cost of Rs. 275 crores if funds to the extent are made available.

*Scarcity and Health Hazard in urban areas.*

2.7. In a memorandum submitted to the Committee it has been represented that:—

“The urban areas that fall in the scarcity and health hazared zones have similar problems as rural areas but the magnitude of such problem urban areas has not been identified. On the other hand most of the larger cities and metropolitan centres are suffering from acute shortage of water supply for two reasons:—

- (a) the rapid increase of urban population particularly in the larger cities and the failure to augment water supply proportionately, and
- (b) the inadequacy of the existing sources of supply to meet the needs of the growing population of most urban areas.

Over the last decades, it is the larger cities that have been growing faster and according to the 1971 Census out of about 3,000 urban places, there were only 142 cities with population of 1,00,000 or over accounting for 52.4 per cent of the entire urban population. In absolute terms most of the metropolitan



areas had 5 to 15 people added to their numbers in the last decade without any appreciable increase in their water supply as envisaged. For instance Delhi had a supply of about 160 mgd (million gallons daily) while it was proposed to augment it to about 290 mgd by 1971. Many of the areas in Delhi have no more than 15 gallons per capita daily as against the modest norm of 50 gpc. Bombay has a supply of only 225 mgd. against its plans of increasing the supply to atleast 350 mgd. by 1970. On the other hand even the existing supply had at times to be cut considerably in the event of failure of rains and the low level of water in the lakes from which Bombay draws its supplies. The Calcutta City Corporation with its area of less than 40 Sq. miles out of the 500 sq. miles that is the Calcutta Metropolitan District, had its per capita supply reduced from about 52 gallons in recent years. The average supply in the municipal areas outside Calcutta Corporation limits would be about 12 gpc. daily. Bangalore has long been suffering from water shortage with a supply of about 13 gpc. daily while Madras has no more than 17 gpc. per day. Leading towns like Ludhiana, Indore, Tiruchirappalli, etc. suffer from similar shortage.

The other problem is the utter inadequacy of existing sources of water to meet the rising demand. Tubewell supplies may be adequate for smaller towns but for bigger urban areas supplies from rivers, canals and lakes have to be harnessed, often from long distances. The regular flow in Yamuna river is no longer adequate for the 3.6 million population of Delhi. In Bombay water has to be carried over a distance of 85 miles and more distance places will need be tapped for the twin city and the metropolitan planning region. The Madras water supply scheme involves the carrying of the Kaveri waters over 165 miles. The result is an enormous increase in the cost of water supply projects apart from the fact that general costs have more than doubled over the last decade. This has raised new problems of financing."

2.8. Commenting upon this the representative of the Ministry of Health and Family Planning stated during evidence:—

"The health hazard aspect in relation to drinking water supply is construed to mean the hazard posed by communicable diseases carried through water. Wherever protected water supply is made available, the incidence of such water-borne diseases falls down very appreciably.

According to the latest available information, in about 1274 towns, most of which are small, there will be no protected drinking water supply at the end of the Fourth Plan. In the Fifth Plan, provision is being proposed to cover all these towns by protected water supply schemes. The question of health hazard would, therefore, be deemed to be limited to these towns only for the present. This, of course, remains a fact that in the existing towns some pockets, particularly slums within the city and on the fringes of the city, unauthorised developments on the outskirts of the city etc. are areas where regular water supply does not exist. Considerable health hazard are, therefore, present. Under a Central Scheme started by the Ministry of Works, Housing and Urban Development, this year slum improvement schemes have been launched in 11 cities which would also take care of safe drinking water supply needs of slums etc.

We have separately not made survey of such slum areas or unauthorised colonies, city-wise and as such cannot say what the extent of the problem at present is."

2.9. The representative of the Planning Commission expressed his views as follows during evidence:—

"Perhaps the problem of the urban areas, to the extent of seriousness that prevails in the rural areas is not as such and most of the urban areas have some standard of water supply. I will supplement it by the further remark that for the minimum-needs programmes, particularly, for slum areas, water supply is included in the slums improvement scheme and for which also adequate provision is being made and will be made in the Fifth Plan."

2.10. Asked what is the likely provision for water supply in urban and rural sectors during the Fifth Plan, the representative of the Planning Commission stated during evidence:—

"It is envisaged that during the Fourth Plan expenditure will be of the order of Rs. 270 crores on urban water supply and sewerage and Rs. 125 crores on rural water supply. But the position is likely to be almost the reverse (during Fifth Plan). The final figures are yet to be calculated. But urban water supply will probably get a little more than what it is now and rural water supply will get stepped up by three to four times,"

2.11. The Committee note that there has been a steady increase in water supply in urban areas of the country during the last two decades. The percentage of urban population served by water supply has risen from 48.5 percent in 1944 to 60 per cent in 1961 and to 77 per cent in 1971. The Committee also note that 1274 towns where there are no arrangements for safe water supply are intended to be covered with water supply during the Fifth Plan covering by and large the entire urban population. They further note that slum improvement schemes have been launched in 11 cities which will also take care of the water supply needs of these cities. However, the Committee are given to understand that no figures are available regarding the actual coverage of the urban population in different towns where water supply is available only partially. Thus while there would be as many as 1274 towns in the country without any organised system of water supply at the end of the Fourth Plan there may be large sections in other urban areas without water supply. Whereas such sections are likely to increase further in view of the tendency of expansion of the cities and towns, the Committee hope that necessary data in this regard also will be collected and adequate provisions made to cover such population simultaneously.

(ii) *Rural Water Supply*

2.12. Total rural population in the country today is about 44 crores and constitutes about 80 per cent of the total population of the country. This is almost equal to the population of the country ten years ago. The number of villages in the country according to 1961 census comes to 567,169.

2.13. Since the First Plan four different programmes were being implemented for the development of rural water supply viz., the Community Development Works Programme, Local Development Works Programme, Home Ministry's Programme for backward classes, scheduled castes and scheduled tribes and National Water Supply and Sanitation Programme.

2.14. The Community Development Works Programme is no more operating. The local Development Works Programme has been changed as the Well-Construction Programme with effect from 1957-58. The Programme aims at providing simple wells and hand-pumps in the villages largely through the agency of Panchayati Raj Institutions. The Department of Community Development in the Ministry of Agriculture looks after the Well-Construction Programme at the Central Level.

2.15. Water Supply Programme for backward classes, scheduled castes and scheduled tribes is now being operated by the Department of Social Welfare. Under the Backward classes sector Programme there is provision of drinking water facilities in one of the schemes in the State Sector under which drinking water wells, pumps and small tanks are constructed in localities/areas predominantly inhabited by the Scheduled Castes and Scheduled Tribes. Funds from the Tribal Development Blocks have also been provided for drinking water facilities to the scheduled tribes.

2.16. National Water Supply Programme, as stated earlier, is in the State Sector of the Plan. Apart from urban water supply, sewerage and sanitation, the programme covers rural water supply scheme. The Schemes under this programme are mainly piped water supply schemes and such other measures for which some sort of mechanised skill is required e.g. installation of tube-wells, handpumps with the help of drilling rigs. At the Central level the programme is in charge of the Ministry of Health and Family Planning. In the Ministry, Central Public Health and Environmental Engineering Organisation looks after various aspects of the programme like planning, programming, technical scrutiny of schemes, guidance to the States in technical matters, liaison with the executing authorities in the State, monitoring the programmes and progresschasing.

2.17. Out of the 567,000 villages in the country, under the National Water Supply Programme about 22,000 villages had been covered by March, 1972 by piped water supply covering a population of 162.94 lakhs or 3.07 per cent of the total rural population. The table below gives the progress made in the matter of piped water supply in rural areas since 1960.

	Villages covered	Population covered (in lakhs)
March, 1960	14713	—
March, 1970	14832	102.92
March, 1972	22171	162.94

The net increase in coverage since 1960 has, therefore, been 7458 villages with a population of about 60 lakhs. A statement showing the number of villages, population and percentage of rural population covered by piped water supply in March, 1960, March, 1970 and March, 1972 is at Appendix I.

2.18. Of the remaining villages, about 4.55 lakh villages have some kind of water supply like hand-pumps, conserved tanks, wells, rivers, streams, springs etc. This still leaves about 90,000 villages where water is not available within a depth of 50 feet or within a distance of one mile.

2.19. The Committee are distressed to note the dismal situation of water supply prevailing in the rural areas of the country today. Even twenty-five years after independence 4.55 lakh villages out of 5.67 lakh villages in the country are still dependent on ancient means of water supply such as hand-pumps, tanks, wells, rivers, streams and springs. What is most deplorable is that there are still about 90,000 "scarcity" villages where water is not available within a depth of 50 feet or within a distance of one mile and there are still about 61,000 "health problem" villages where water is infected with various health hazards.

2.20. The Committee observe that although National Water Supply and Sanitation Programme is working for the last 18 years about 22,000 villages only have so far been covered with piped water supply benefiting a population of just 3.07 per cent of the rural population. It has yet to be fully realised that with 80 per cent of the country's population living in the rural areas, water supply forms the most important single factor for improving nation's health. Considering the long neglect in the past, the Committee urge that this subject will henceforward be allotted special importance and urgency in the National Plans.

### (iii) *Scarcity and Health Problem Villages*

#### A. Assessment

2.21. According to the working definition adopted for "scarcity villages", a village which does not have a perennial water with a radius of one mile or 50' depth is called a "Scarcity village", Health problem villages are the "villages suffering from health hazards."

2.22. About 61,000 villages are faced with problems like Cholera, Guinea-worm, endemicity, excessive fluorides, iron etc. In addition there are over 90,000 villages where water is not available within a depth of 50 feet or within a distance of one mile.

2.23. With a view to solving the problem of scarcity and health problem villages urgently, the Central Government have laid down priorities for taking up of rural water supply schemes according to which the above categories villages are accorded the highest priority in that order next only to the priority for the continuing schemes irrespective of the type of villages.

2.24. In 1962, the Central Government sanctioned special Investigation Divisions with 100 per cent Central assistance to make a preliminary survey of the problem of water supply in difficult and scarcity areas. On the basis of the information collected by the Special Investigation Divisions assessment had been made earlier that there were about 2,10,000 scarcity and problem areas in the country. Subsequently, the Ministry of Health and Family Planning deputed a team of officers to visit each State for making an on the spot assessment in discussion with the State authorities regarding the number of scarcity and problem areas. On the basis of the fresh appraisal, it has been assessed that initially there were about 1,52,000 villages in the country without a safe and assured source of drinking water.

2.25. The break up of such villages is as follows:—

(a) Villages where water is not available within a depth of 50' or within a distance of one mile	90,656
(b) Villages which are endemic to Cholera ..	33,857
(c) Villages with problem of guinea-worm infestation	3,184
(d) Villages where water is unsafe due to the excessive presence of such chemicals as iron, fluorides etc. ..	24,778
	<u>1,52,475</u>

2.26. The Statewise break up of these villages is given in Appendix-II and the problem districts in each State are shown in Appendix-III.

2.27. The Committee have been informed that a population of 1263.66 lakhs is at present affected by the problems of scarcity and health hazards in regard to water supply. A break-up problem-wise is as follows:—

Population in villages where water is not available within a depth of 50' or within a distance of one mile. ..	748.34 lakhs
Population in cholera endemic villages. ..	241.59 "
Population in Guinea-worm affected villages. ..	18.43 "
Population in other problem areas. ..	219.30 "
TOTAL ..	<u>1263.66 "</u>

It has been stated by the Ministry of Health and Family Planning that these figures reflect an initial problem. The problem of some of these villages is stated to have already been solved either during the first three years of the Fourth Plan or during the period earlier than the Fourth Plan. It has been

stated that about 29,000 villages would have been covered under the normal Plan programme leaving a balance of about 1,23,000 villages to be covered after the Fourth Plan.

2.28. According to the earlier assessments there were about 2,10,000 villages in scarcity and problem categories, and consequently on a fresh appraisal made by the officers of the Ministry of Health and Family Planning it was assessed that initially there were about 1,52,000 villages in the country without safe and assured water supply. The Committee wanted to know in what ways the 58,000 villages not included in the category of scarcity and problem villages were different from the remaining 1,52,000 villages and when it was proposed to cover these 58,000 villages with protected water supply. The representative of the Ministry of Health and Family Planning stated during evidence:—

“There was a fresh appraisal. It was because the Special Investigation Divisions did not make a very accurate appraisal. For instance, in some States whole districts were declared as scarcity areas merely because scarcity happened to be prevalent over a part of it at that point of time. There was an over-assessment. When we made a further assessment, we found that the number of scarcity and difficult villages stands at 1,52,000. Even this number is liable to alteration as a result of representations being received from the State Governments who have been revising these figures on the basis of further intensive surveys. This is how 58,000 villages have been excluded.”

2.29. Rajasthan Government have in a memorandum submitted to the Committee informed that out of 33,305 villages in the State 24,321 villages were in the category of permanently disadvantaged villages covering a population of 159.78 lakhs. According to the information furnished by the Union Health Ministry, however, in Rajasthan the number of permanently disadvantaged villages was 4277 and another 6480 villages were infested with guineaworm and other water borne diseases with a population of 91.80 lakhs. When this was pointed out to the representative of the Ministry of Health and Family Planning during evidence he assured the Committee:—

In view of wide disparity, we would like to have another look and we shall have a meeting with the Rajasthan Government and try to arrive at a similarity of views.”

2.30. The Committee note that the scheme of Special Investigation Divisions was initiated in 1962 to investigate the problem of rural water supply in difficult and scarcity areas of the country so that priorities could be determined. It is disturbing to note that according to initial investigations about 13 crores of rural population should be either without a source of water within a reasonable distance or depth or if water was available it would not be safe to drink.

2.31. The Committee note further that there is a difference of opinion in regard to the number of scarcity and problem villages between the Central Health Ministry now works and Housing and some of the State Governments. In some cases such as in the case of Rajasthan there is wide disparity in the assessment. The Committee, therefore, suggest that the matter should be re-examined in all its aspects and agreed conclusions arrived at and priorities determined accordingly. The Committee hope that this assessment work will be completed before the end of the Fourth Plan so that necessary steps could be initiated in time to make safe water available to the remaining areas during the Fifth Plan.

#### B. Scarcity villages in Hilly Regions

2.32. It has been represented to the Committee that the terrain in Meghalaya is mostly hilly. Even though the annual rainfall in Meghalaya varies between 2,000 MM to 20,000 MM most of the rainfall quickly drains away by swift flowing rivers and streams into the neighbouring plains of Assam and Bangladesh. In the months of November to June every year acute drinking water scarcity is experienced all over Meghalaya by drying up of streams, rivers and springs. This entire Meghalaya which consists of three districts viz., Khasi Hills District, Garo Hills District, and Jaintia Hills can be classified as water scarcity area. The representative of the Ministry of Health and Family Planning agreed that acute scarcity was experienced in Meghalaya during the dry months due to reasons mentioned earlier. It would be seen from the list of permanently disadvantaged areas of the country at Appendix III that only Garo Hills district has been included among the scarcity areas. Asked why in view of the difficulties expressed by the State Government of Meghalaya all the district could not be included in list of scarcity areas, the representative of the Ministry of Health and Family Planning stated:—

“According to our working definition adopted for “Scarcity Villages”, a village which does not have a perennial drinking water within a radius of one mile or 50’ depth is called a ‘scarcity village’. In hilly regions if we apply this definition very strictly, a village which has a source of water within one mile directly below it, is not a scarcity village. We, therefore, have to re-classify the hilly villages and we should say that a vertical dis-



tance of 100 metres should be equivalent to a fiat distance of one mile, and if this guideline is accepted, the problem posed by Meghalaya and other hilly regions will be taken care of. We may mention that while sanctioning the schemes for Meghalaya in the accelerated rural water supply programmes which I mentioned earlier, that is, the working definition that has already been adopted. Regarding the specific problem of unavailability of water in the hilly regions in a part of the year, C.W.P.C. and this Ministry have studied the problem. C.W.P.C. has conducted a survey of these regions and has come to the conclusion that in the seismic zone, construction of large storage reservoir is not always safe. Apart from this, the economics of pumping water from storage reservoirs to individual communities would not be favourable. Poor communications make it difficult for carrying out civil works and the cost is very high. The provision of drinking water has, therefore, to be linked with the overall development of the region and opening it up with a suitable communications system. Further, it is considered that for a group of rural communities storage tanks may be constructed at suitable places under the rural water supply programme. This Ministry will soon make a special study for drawing up concrete proposals."

**2.33. The Committee take note of special difficulties experienced by Hilly regions of Meghalaya. They also note that a new working definition of scarcity villages has been adopted in the case of Meghalaya viz. absence of a perennial source of water within a hundred metre vertical distance.**

**2.34. The Committee suggest that this definition should be adopted in other hilly regions also.**

**2.35. The Committee also take note of the findings of the Central Water and Power Commission that in the seismic zones construction of large reservoirs was not always safe. Apart from that the economics of pumping water from storage reservoirs to individual communities may not prove favourable. They further note that in view of economic conditions of the people in these regions and high costs of these works, the provision of drinking water had to be linked with the overall development of the region. The Committee welcome the suggestion of constructing storage tanks for a group of rural communities at suitable places in the Hilly regions. The Committee suggest that comprehensive proposals may be drawn up for implementation not only under the Accelerated Water Supply Programme but also under the regular programmes for execution during the Fifth Plan for the hilly regions.**

### C. Guinea-worm infested areas

2.36. The extent of population affected by guinea-worm infestation is indicated in Annexure II. The problem is prevalent in the States of Madhya Pradesh, Rajasthan, Gujarat, Maharashtra, Andhra Pradesh, Madras etc. On a preliminary assessment made by the Special Investigation Divisions it is estimated that 18.43 lakh population is at present affected by this infestation. In addition Rajasthan has 36 lakh persons affected by Guinea-worm and other water-borne diseases. Separate figures in regard to guinea-worm infestation in Rajasthan are, however, not available with the Committee.

2.37. As pointed out by the Drinking Water Board in their interim Report in 1963 the step-wells are the direct cause of such guinea-worm infestation. The cause and effect are too well-known for any special Investigation in this behalf; and the remedy is also stated to be simple and not very costly. What is required is to prevent access to such wells or ponds by the infested persons or, for that matter by anybody. The conversion of such stepwells into draw-wells would automatically arrest the further spread of the disease amongst those who use such source. It would also make the water in such wells safer. The mere conversion of a step-well into draw well is, therefore, the most urgent and essential first stage of improvement. The cost involved would be just that due to the provision of a masonry wall blocking entry into the source. Further improvements to the well to bring it to the optimum standards of a sanitary well and covering it with a slab and providing hand pumps or power pumps may all form the second stage of improvements to the source. What is important to note is that the completion of the first stage by itself is a remedy against the spread of guinea worm disease in the area.

2.38. In this connection the Board had recommended as follows:—

“The Board would, therefore, give this matter the highest priority and suggest that, irrespective of other considerations, the concerned State Governments should proceed to make a survey of this specific problem, prepare correct estimates for the first stage of improvements, and to include adequate provision in its budget for 1964-65 to cover all guinea-worm infested areas in the manner indicated. This is all the more necessary because the only remedy or palliative for guinea worm disease is to prevent its spread at the source. Unlike other water borne diseases, guinea-worm infestation has no cure through medicines or prophylactic measures.”

2.39. No figures are available with the Ministry indicating the number of step-wells and ponds, infested with guinea-worm diseases. Statewise as in March, 1964, the number of them converted into step-walls and draw wells during 1964 to 1972; the number of wells/ponds improved further and fitted with handpumps, power pumps, the number of wells/ponds requiring conversion/improvement today.

2.40. It has, however, been stated by the Ministry in this connection that "high priority has been accorded to taking up water supply schemes in areas suffering from health hazards which include guinea-worm infested areas also, both under the National Water Supply and Sanitation Programme and the Accelerated Rural Water Supply Programme."

2.41. The Committee note that the Drinking Water Board had in their interim Report in 1963 made a specific reference to the problem of Guinea-worm infested areas and had recommended adequate provision in 1964-65 budget to cover all these villages. In the absence of figures indicating the steps taken in implementation of the positive recommendations made by the Drinking Water Board in regard to guinea-worm infested areas the Committee are inclined to conclude that either no follow-up action was taken to implement the recommendation or there is no mechanism to gauge the progress actually made in the execution of the different programmes. Even though the Committee are given to understand that these areas will now be covered by the end of the Fifth Plan, the Committee feel that if some steps had been initiated in 1964-65, by this time the sufferings of the people in the guinea-worm infested areas could have been mitigated to a great extent.

2.42. The Committee desire that necessary mechanism should be evolved to keep a watch on the progress made in the execution of the schemes under the National Water Supply Programme.

#### D. Implementation

2.43. Recommending a high priority to be accorded to the rural phase of the Programme the National Water Supply and Sanitation Committee (1960-61) had in their report stated:—

"The rural phase of the entire programme has an urgency and importance of its own. There is a unanimity of opinion all over the country that safe water supply should be provided within the reach of every village and hamlet by the end of the Third Plan, if possible, and before the end of the Fourth Plan in

any case. And, side by side, rural sanitation also should receive simultaneous attention, with a special emphasis on the the hygienic disposal of human excreta and sanitary disposal of liquid wastes. These measures demand and highest priority in the Rural Health Schemes as they constitute the only positive practical step for the eradication water-borne and filth-borne diseases from the rural areas of the country. Their far reaching effects in rehabilitating rural health and economy are too significant to miss."

2.44. Asked why inspite of the unanimity of the opinion prevailing in the country at that time and thereafter it has not been possible to adhere to the time schedule in this regard the representative of the Ministry of Health and Family Planning stated during evidence:—

"The major constraint so far has been inadequate financial allocations for water supply and sanitation."

2.45. Asked if there was any possibility of reaching the target before the end of the Fourth Plan, the representative remarked:—

"Absolutely not, nor can it be at the end of the Fifth Plan."

2.46. Asked by what time the target is expected to be achieved the representative explained:—

"Again it depends on your target. If your target is that disadvantaged villages should be covered first, and if the Plan places Rs. 650 crores at our disposal, we should cover them by the end of the Fifth Plan. There is no shortage of manpower, skill and all that."

2.47. Considering the importance of the matter, the Drinking Water Board of the Ministry of Health set up in 1963 had also fixed up a period of five years at the most for the implementation of the phase of providing drinking water to difficult and scarcity areas. The following observations of the Board are worth quoting:—

"For obvious reasons, the Board would accord the highest priority to the provision of water supply in the difficult and scarcity areas which have mostly been neglected under all the programmes hitherto. The Board considers this matter so urgent and important that it would fix the period of implementation of this phase of the programme to the next five years at the most,

With this special aim in view, the Board had to take stock of the present situation and gauge the possibilities of implementing an accelerated programme to cover the difficult and scarcity areas in the two remaining years of the Third Plan, forming an integral part of a comprehensive programme.

The Board realises that until a complete and correct assessment of the total rural water supply situation is made possible from the final reports of the investigation divisions, the formulation of a comprehensive rural water supply programme to cover the needs of all rural populations in the country may not be possible except on an *ad hoc* basis. Nevertheless the unsolved problems of rural water supply to the difficult and scarcity areas are so keenly realised by all the States, that any efforts to bring speedy relief to such areas under an accelerated programme, even as an interim measure and within the limitations of the existing set up would be most welcome to the State Governments.

The Board has, therefore, decided to present this interim report to the Union Health Ministry setting out the manner in which a beginning could be made to solve this problem as part of a comprehensive programme which could be formulated in due course. Time is of the greatest essence in the implementation of the rural water supply programme in the present context of our national economy and development. Any plan, interim though it may be, would be fruitful if it can utilise effectively the remaining two years of the Third Plan by accelerating the present pace of progress, and paving the way for a realistic implementation of an expanded programme in the Fourth Plan. To this end the Board has set out its views in this report and would urge that immediate action should be pursued to put the plan into action."

2.48. Asked to state the circumstances that impeded the implementation of the recommendation of the Board the representative of the Ministry of Health and Family Planning stated during evidence:—

"Because of lack of adequate resources, the objective could not be achieved. In 1963, the Plan as a whole also received setback. We have had those Annual Plans because of various reasons."

2.49. In reply to another question the representative of the Ministry of Health and Family Planning stated:—

“The programme is vitally important. After all, without water we cannot live and yet we find that in the past, very little has been done. By the end of the Fourth Plan, about 1,23,000 “difficult” villages would still be uncovered, and we want to cover them very rapidly. This is the wish of the Government as well as of the Ministry. The total cost will be of the order of Rs. 670 crores at today’s prices. So far, the programme has suffered from only one main obstacle, namely lack of resources. With resources, this is one of the programmes that can go forward very rapidly indeed.”

2.50. The representative of the Planning Commission also assured the Committee during evidence that:—

“But so far as water is concerned, all I can say is that the Planning Commission is far more conscious of this fact than it has been before and this is reflected in the comparative figures they have provided in the Plans and, as I submitted earlier something like four or five times more of outlay on rural water supply will be made in the Fifth Plan. With the constraint on the resources, you will also appreciate that the Planning Commission has to be selective in its approach. But, so far as rural water supply, is concerned, it is perhaps committed that, by the end of the Fifth Plan difficult areas should get water supply.”

2.51. However, Approach paper of the Fifth Plan as approved by the National Development Council envisages allocation of Rs. 550 crores during the Fifth Plan for Rural Water Supply as against Rs. 650 crores asked for by the Ministry of Health and Family Planning.

2.52. The Committee note that the National Water Supply and Sanitation Committee (1960-61) of the Ministry of Health had recommended the highest priority to the provision of safe water supply to the rural population as in their opinion this could be one positive step for eradication of water-borne and filth borne diseases. That Committee had desired that safe water should be provided within the reach of “every village and hamlet by the end of the Third Plan if possible, and before the end of the Fourth Plan in any case.” The Drinking Water Board (1963) had also given the highest priority to the provision of water supply in the difficult and scarcity areas. In view of the importance of the matter the Board had chosen to give an interim report on the subject and had stipulated a period of five

years for implementation of this phase of the programme. The Committee are, however, disappointed to note that this programme continued to be overlooked for want of funds.

2.53. The Committee note that the Approach Paper of the Planning Commission envisages an allocation of Rs. 550 crores as against Rs. 650 crores asked for by the Ministry of Health and Family Planning (now Works and Housing) for providing safe water supply in scarcity and health problem villages. More than the financial provision, the Committee feel that there has to be a greater stress on physical achievement of the target, as what the Plan sets out to achieve, is the provision of safe water supply to as many as 1,24,000 villages, as compared to only 22,000 villages which have been provided piped water during the last 20 years. The Committee would like the Planning Commission and Government at all levels to prepare without delay, plans and designs for implementation of the programme. There would also have to be careful planning of material resources, particularly water pipes and pump sets etc., so that these do not become a constraint in the implementation of the programme. The Committee would also suggest that a detailed annual plan should be prepared indicating, inter alia, the complete schemes which are to be taken up and the relative priorities. This would enable Government at various levels, not only to ensure timely implementation, but would also facilitate the task of monitoring and taking remedial measures where necessary, to ensure that the Plan targets do not slip.

#### E. Special Investigation Divisions

2.54. As stated earlier the scheme of Special Investigation Division was started in 1962 and is being continued during the Fourth Plan as a centrally-sponsored scheme. The object of this scheme is to make an appraisal of the problem of rural water supply in the difficult and scarcity areas in the country. Special Investigation Divisions and sub-Divisions have been sanctioned to the various States with 100 per cent central-assistance to carry out preliminary surveys in the difficult and scarcity areas. In 1962-63, 19 Divisions and 82 sub-Divisions had been set up in various States but the number of such Divisions got reduced to 17 Divisions and 70 sub-Divisions because the actual expenditure being incurred by States was more than the financial assistance that was being given to them. Considering the importance of this scheme, the Fourth Plan outlay of Rs. 2 crores for this scheme was increased to Rs. 3.5 crores subsequently and in December, 1971, 19 Divisions with 101 sub-Divisions were sanctioned. Of a total of about 1,52,000 scarcity and problem villages in the country, about 65,000 villages are stated to have been surveyed by these divisions till now. It is expected that by the end of the Fourth Plan all the villages would have been surveyed.

2.55. It was observed in the Seminar "Water in Man's life in India" last year that even though Special Investigation Divisions have been functioning in the various States under a centrally-sponsored scheme, precise data on the existing resources, problems and proposals for rural water supply has not become available. It was observed that there was need to plan the work of these divisions so that this preliminary assignment was completed within the Fourth Plan which would enable the rural water supply programme to be implemented in accordance with the physical needs in the permanently disadvantaged areas.

2.56. It has also been represented to the Committee by some of the States that the work done by these Investigation Divisions has not been satisfactory. For instance, it has been represented by one State Government that the existing one Special Investigation Division with only two sub-Divisions attached was "two meagre" to cope up the investigation work of the entire State. This was practically more so for the State due to difficult communication and long rainy season. By contacting various agencies and also by physical verifications at site to the extent possible, the investigation division roughly made an assessment of the rural water supply position in the entire State. It has, however, been stated by the Government of the State that the data collected by these agencies was not accurate. Therefore, physical verification of the data already collected has been started. This work is stated to be progressing slowly due to vastness in jurisdiction and difficult climatic and communication conditions.

2.57. In case of another State also it has been represented that detailed survey and compilation of data of 70,000 villages could not be done due to inadequate staff. The State being the largest in the country, it has been represented that in case information was to be properly compiled, then, 7 Investigation Divisions and 28 sub-Divisions would be required as against the existing 2 Investigation Divisions and 4 sub-Divisions.

In this connection the representative of the Ministry of Health and Family Planning stated during evidence that the special Investigation Divisions in the States were further strengthened in 1971-72 as a result of Mid-term Appraisal of the scheme. Two more sub-Divisions were sanctioned for the State of Assam. In addition, instructions were issued for proper reorganisation of the set up and the manner in which the work should be done by the strengthened special Investigation Divisions.

He informed the Committee that:—

"Some States have, of course, been asking for more staff and more Divisions under the scheme. However, the Ministry's view is that a number of States were not properly utilising the special Investigation Divisions and some of them were employing them for even executing the schemes. In the case of Assam, it was found that S.I.D. had not been used for the purpose for which it had been created and that, partly, was the reason



for shortfall in its performance. The point is, that the States must allow the S.I.Ds. to do their job. For execution, they have to do themselves."

2.58. The Committee wants to know how it was ensured that after making assessment the work was being carried out according to the Plan in the States and that the money allotted was properly utilised. The Secretary, Ministry of Health and Family Planning stated:—

"I do not know whether the Planning Commission does any monitoring but we do some monitoring. The S.I.Ds. are centrally sponsored schemes; my own view is that the S.I.Ds. should work strictly under the Centre as they used to at one time. Then and then alone will we know the total picture of the problem accurately in the country and will know whether they are working satisfactorily."

2.59. In this connection the representative of the Planning Commission stated that the question of making centrally-sponsored schemes into Central schemes was one of technicality. Ultimately the goods had to be delivered by the State Government representatives. In the opinion of the representative of the Planning Commission the fact that the Central Government was giving money was a fair amount of incentive in its hands to goad and guide the States according to a certain programme. It was the man behind that mattered. For the centrally-sponsored schemes the funds come from the Centre and for the Central Schemes also the funds come from the Centre; only there is slight difference in accountability.

2.60. The representative of the Ministry of Health and Family Planning pointed out that:—

"There is difference in the flow of funds. If it is a central scheme, if we find they are not doing the work, we stop the funds. If it is a centrally-sponsored scheme, the Finance Ministry automatically releases funds and we came to know of any shortfall in performance sometimes only in April, or March when we cannot do much."

2.61. The representative of the Planning Commission, however, informed the Committee that some thinking was going on for the Fifth Plan and it was being considered to combine the functions in regard to investigation and planning and to promote it as a central scheme.

2.62. The Committee are greatly distressed to find that the Special Investigation Divisions which were set up as early as 1962, have been able to cover only 65,000 villages so far, out of about 1,52,000 scarcity and problem villages in the country. The Committee have, however, been given to understand that the remaining villages totalling 87,000 would be surveyed before the end of the Fourth Plan. This statement amazes the Committee, as it is proposed to achieve within the course of a few months, the survey of 87,000 villages, which is practically one and half times of what had been done in the earlier ten years. There has been obviously no close watch kept on the progress made by the Special Investigation Divisions in carrying out their work from year to year, and to take active measures to see that the work was speeded up. Apart from the speed, what has caused great concern to the Committee is the view expressed by knowledgeable authorities that the data collected through these surveys in many cases, is not accurate or reliable. The Committee feel that this could and should have been avoided by issuing suitable guidelines for investigation work, right in the beginning, by contemporaneous review of the work carried out and by taking effective measures to bring about improvement. Even now, the Committee feel that where the data is not complete or accurate or reliable, no time should be lost in correcting it.

2.63. The Committee are also concerned to note, on the one hand, the plea put forward by several State authorities that the staff sanctioned for the Special Investigation Divisions is inadequate and, on the other, the view of the Central Ministry that the staff for the investigation work are diverted to other assignments. The Committee would like to stress that there should be an agreed approach in this matter and both the Centre and the States should ensure, not only that the work of investigation is completed according to a detailed programme to be drawn up in that behalf but that the data collected and collated are completely reliable, to provide the basis for detailed planning and designing.

2.64. The Committee are not convinced of the merit of establishing a separate planning and design unit since 1972, for working out details of rural water supply, for implementation. The Committee feel that the work of planning and designing should be made an integral part of the investigation units, which should be suitably strengthened where necessary, for this work.

2.65. Elsewhere, the Committee have noted Government's determination to ensure that safe water supply becomes available at least to all the 1,52,000 scarcity and problem villages. The Committee feel that this task can be performed only if there is detailed planning and designing, in advance. This under-scores the need for strengthening suitably, the Special Investigation Divisions to perform this work, according to a prescribed time-schedule. The Committee would stress that there should be a con-

**temporaneous watch at high levels, to see that the work proceeds on the right lines to throw up reliable data and that correct remedial measures are taken where necessary, in time.**

#### **F. Planning and Design Units**

2.66. After preliminary survey of scarcity and difficult areas has been made, the next step is to prepare detailed rural water supply, schemes for these areas which can be taken up for implementation. To assist the States further, Special Planning and design units were sanctioned to various States in December, 1971 with 100 per cent Central assistance for preparing detailed rural water supply schemes on individual and regional basis so that the data collected by the Special Investigation Divisions can be put to beneficial use. The idea of this scheme which is a centrally-sponsored one, is to ensure that at the beginning of the Fifth Plan, an adequate number of properly investigated and designed schemes is available for being taken up for implementation without any loss of time.

2.67. Financial provision for this plan is Rs. 110 lakhs for this scheme in the Fourth Plan and the Ministry of Health and Family Planning have stated that this amount is likely to be spent during the years 1972-73 and 1973-74. It has further been stated by the Ministry that 1100 regional and individual water supply schemes covering about 14,000 villages will be prepared by the end of the Fourth Plan. Asked if this would not leave a gap between the preparation of schemes and implementation thereof during the Fifth Plan, the representative of the Ministry stated during evidence that these schemes were proposed to be prepared by the Planning and Design Cells for implementation during the Fourth Plan and beginning of the 5th Plan as advance action for which it is proposed to spend Rs. 00.75 crores in 1973-74 and thereafter, each year Rs. 2.10 crores upto 1977-78. Also under special Investigation Division scheme it is proposed to spend Rs. 00.89 crores in 1973-74. Thus a total of Rs. 10.04 crores is proposed to be spent to cover the remaining 1,23,000 villages. The representative stated that there was, therefore, no question of gap in the performance.

2.68. Some State Governments have in their memoranda submitted to the Committee represented that preparation of detailed design and estimates on the entire rural areas by the present Design Cells as per yardstick fixed by the Government of India will take a long time. The State Government of Assam feels that assuming that additional staff as asked for under the Special Employment Programme are sanctioned, the design for piped schemes can be completed in about 10 years time. Government of Meghalaya feels that the preparation of complete plans and designs will take about fifteen years.

2.69. During evidence the Committee were informed that the sanction for the Central Scheme of Planning and Design Cells was issued in December, 1971. Most of the States have created units only in the current year (1972) and it was, therefore, too early to judge whether the norms prescribed under the scheme were too low or too high. No formal complaint regarding the norms for preparation of schemes being excessive were stated to have been received from any State Government. However, some Chief Engineers were stated to have orally represented that norms were perhaps excessive. The Committee were assured that efforts would be made to make the norms realistic.

2.70. The Committee note that a centrally-sponsored scheme of Planning and Design Units, has been put into operation during 1972 to ensure that at the beginning of the Fifth Plan an adequate number of properly investigated and designed schemes are available for being taken up for implementation without any loss of time. The Committee hope that these units will be ready with a sufficient number of schemes in advance for implementation towards the end of the Fourth Plan and the beginning of the Fifth Plan.

2.71. The Committee also hope that the norms prescribed for preparation of these schemes will be re-examined to ensure that they are realistic.

(iv) *Sewerage and Sewage Disposal*

2.72. A sewer system and sewerage disposal is an inseparable concomitant of a water supply. The obligation to collect the waste water and dispose it of safely is there, once a water supply scheme is installed.

2.73. On this subject the National Water Supply and Sanitation Committee in their Report in 1961 quoted the then Union Health Minister from his address to the Fourth Conference of Public Health Engineers. This appears to be relevant even today:—

“Water supply and sewerage are twin facilities, and normally should be taken up side by side. There is no point in relieving water scarcity by installing a water supply scheme and increasing local insanitation by delaying the sewerage scheme. The cause and the effect are obvious. But here again local bodies are faced with difficulties. While a local body may successfully argue its ‘ways and mean’ position to undertake a water supply scheme it usually gets into a state of mental atrophy in regard to its sewerage scheme. The conventional norms deciding the financial viability of a project, make a sewerage scheme almost a total liability on the community, as there is no visible or direct monetary return therefrom. This is not a correct basis of assesment and some change in outlook seems justified.

A sewerage system relieves the local body of expenditure on obligatory services like scavenging and nightsoil conservancy, anti-Filaria and anti-Mosquito measures, and sullage drains crews, apart from giving relief in medical expenditure to the local body and the Government alike. These beneficial factors should all be evaluated as remunerative features contributed by a sewerage system and financial allocations should be based on such judgement."

2.74. The National Water Supply and Sanitation Committee had observed that:—

"Because of the financial incapacity of local-bodies and the element of subsidy needed to promote urban sewerage schemes, it is possible that the progress of sewerage schemes will be retarded in the implementation of the Programme. This cannot be helped; and it should not also result in impeding the progress of water supply schemes either. It is inevitable that more water supply schemes would be installed under the Programme before a corresponding number of sewerage systems come into effect. A certain time lag between the completion of a water supply scheme and that of a sewerage system for the same town may have to be tolerated because of the financial limitations of the local-body and the State Government to do anything better. It will be necessary for the State Governments, and possibly the Centre, to give a fillip to the implementation of urban sewerage schemes by offering subsidies in the initial stages to the extent necessary, after all other resources available to the local-body have been completely tapped. With an improved standard of living and the felt need for a sewerage scheme along with water supply, it may be expected that urban communities would be prepared in an increasing measure to support their sewerage systems on a self-sufficient basis."

2.75. According to the figures made available by the survey made by the Health Survey and Development Committee (1944) and recapitulated by the Environmental Hygiene Committee (1949) sewers had been laid partially in 35 cities and towns in the country in 1944. Later, the National Water Supply and Sanitation Committee reported that 75 cities and towns had been sewered till 1960 fully or partially. According to the information furnished by the Ministry 186 towns had been sewered till March 1971. Thus in about three decades sewerage has been introduced in another 151 cities and towns. In these 186 towns where a sewers have been laid so far, there are areas where sewers serve only parts of the cities and towns.

2.76. The Table below gives the position of sewerage facilities available in various States of the country full or partial by March, 1971.

1. Andhra Pradesh	3
2. Assam	Nil
3. Bihar	2
4. Gujarat	10
5. Haryana	18
6. Himachal Pradesh	3
7. Jammu and Kashmir	Nil
8. Kerala	1
9. Madhya Pradesh	11
10. Maharashtra	22
11. Meghalaya	Nil
12. Mysore	20
13. Nagaland	Nil
14. Oriss	
15. Punjab	31
16. Tripura	Nil
17. Rajasthan	3
18. Tamil Nadu	20
19. Uttar Pradesh	31
20. Manipur	Nil
21. West Bengal	7
22. Arunachal	Nil
23. Andaman and Nicobar Islands	Nil
24. Chandigarh	1
25. Dadar & Nagar Haveli	Nil
26. Delhi	1
27. Goa, Diu & Daman	1
28. Laccadive & Minicoy Islands	Nil
29. Pondicherry	1
30. Mizoram	Nil

**TOTAL: 186**

2.77. The Central Council of Health recommended in their meeting held in November, 1969, *inter alia* that priority should be given to (1) Sewerage schemes for towns in areas which are Hyper-endemic for filariasis and (ii) the schemes for conversion of dry latrines into flush latrines. Intimating the action taken on this recommendation, Government have informed the Committee that 8 States and most of the Union Territories have replied so far. The States of Andhra Pradesh, Assam, Bihar, Kerala, Madhya Pradesh, Mysore, Nagaland and Rajasthan have not yet sent their reports. While the States agree that priority should be given to sewerage schemes in towns hyper-endemic to filariasis, all the States report inability to take up this work due to paucity of funds. The U.P. State has stated that the element of subsidy which is now 25 per cent in the State, should be increased to enable the economically background towns to take up sewerage schemes. West Bengal has stated that sewerage schemes in such towns should be included under the Filaria Control Scheme which is Centrally-sponsored with 100 per cent. grant. All these States are stated to have agreed to the implementation of schemes for conversion of dry latrines. Though the allocations are not large, a beginning has been made in this programme in most of the States. The West Bengal State have informed that though a scheme was considered for inclusion in the Fourth Plan, they could not do so due to limited resources.

2.78. In a paper submitted in the Seminar on financing and management of Water Supply and Sewerage works held in January, 1973 it has been pointed out that "inadequacy of both sewerage and sewage treatment facilities is primarily due to non-availability of adequate funds. This is quite natural as, in India, like other developing countries there are many competing demands on the limited finances available for development. Furthermore, such facilities, especially sewage treatment in the past, used to be highly expensive with the then available one or two mechanised processes and specialised equipments. Thus the cost of these facilities was also one of the factors responsible for limiting the execution of such facilities even for small and medium sized towns."

2.79. According to the estimates of the Ministry of Health and Family Planning a sum of Rs. 1,346 crores would be required for total urban sewerage of all the 2,735 towns remaining to be sewered at the end of the Fourth Plan, apart from the urban sewage disposal. During the Fifth Plan it is proposed (as per the approach paper of the Ministry of Health and Family Planning) to cover 83 towns with a population of 2.44 crores at the expense of Rs. 500 crores. Cost of dry latrines into sanitary latrines in 1,325 unsewered towns will be Rs. 170 crores and the cost of augmentation of existing sewerage systems will be of the order of Rs. 300 crores. Thus in all Rs. 970 crores will be required for urban sewerage during the Fifth Plan period. In addition the Approach paper to the Fifth Plan envisages coverage of about 150 towns (with a population of 1.0 lakh and above) in regard to disposal of urban waste at the cost of Rs. 400 crores.

2.80. Commenting upon the financial magnitude involved, the paper submitted in the seminar, referred to earlier, states:—

“This reveals the magnitude of the problem and creates a doubt in the minds of all concerned as to whether it will be possible to implement such facilities costing of this order within the limited resources available for the whole country. Taking into account the time lag involved in implementation and population growth occurring concurrently at a much faster rate, it will be a formidable task to solve the total problem of sewage disposal. However, finding ways and means of reducing the cost and making the facilities self-supporting ventures will definitely go a long way in easing out the situation facilitating a larger number of towns to implement sewage disposal facilities.”

2.81. The paper has suggested the following measures towards making the sewerage and sewage disposal scheme more viable and self-supporting:—

- (1) By adopting low cost sewage treatment methods especially stabilisation ponds and aerated lagoons, considerable amount of saving in both capital and maintenance costs could be obtained which could attract many small and medium sized towns to install such treatment methods.
- (2) Providing sewage effluents from stabilisation ponds to farmers on a chargeable basis even at the nominal rates of plain irrigation water, and maintaining fish ponds with a portion of effluent revenue can be earned over and above the annual expenditure including repayment of loan required for the treatment plant. The surplus amount of earning could very well be used to off-set the annual expenditure involved in the sewerage system of the town.
- (3) In view of the fact that nutrients worth of Rs. 0.35 are present in 1000 galls. of sewage effluents, a rational approach on evaluation and adoption of appropriate rate—charges for sewage effluents required to be considered so as to off-set the annual expenditure to a great extent on sewerage facilities besides self-supporting the treatment methods.”

2.82. In a memorandum submitted to the Committee also it has been stated that since the problem of water supply is intimately connected with that of sewage disposal, the treatment of sewage and industrial wastes represents a central issue in urban water supply. The issue has its hydrological and even agricultural aspects. It has, however, been represented that



this has received a very low priority in this country. This has to a large extent been due to the high cost of conventional sewage 'digesters' whose plants have usually been imported. The state of indigenous production of such plants is rather unsatisfactory. Current efforts have, therefore, been developed towards methods of treatment which are more suited to local conditions (climate) availability of equipment and low capital and running costs. One such method which was devised a little more than a decade ago, is this so-called "Oxidation pond" which needs no mechanical equipment and depends for its successful operation on adequate sunshine and a warm temperature, both of which conditions are amply met under the Indian climate conditions. At present more than 50 "Oxidation ponds" exist in the country. The "Oxidation ditch" represents another variant of this device. Still another device which has been developed in the country is the mechanically created "lagoon" which is stated to be the simplest of all these. Since all these devices are reasonably simple and inexpensive to operate, it has been suggested that the devices could be put to more extensive use throughout the country, not merely in some parts of the big metropolitan areas but also in smaller cities and towns where the facilities of sewage disposal are almost non-existent.

2.83. Asked if any efforts had been made for their more extensive use and if so what success had been achieved thereby, the Ministry of Health and Family Planning have stated that the Central Public Health Environmental Engineering Organisation, while tendering advice to State Governments on their schemes, suggests the use of these methods namely "Oxidation ponds", "Oxidation ditch", and "lagoon" especially for small communities. The State Governments have generally reacted favourably to these suggestions. It has been stated by the Ministry that use of these methods will be considerably enlarged in the Fifth Five Year Plan when it is proposed to make a much larger outlay for sewerage and sewage treatment facilities.

2.84. The Committee note that sewerage facilities in urban areas do not exist in several States like Assam, Jammu and Kashmir, Meghalaya, Nagaland, Tripura, Manipur, and Andaman and Nicobar Islands. In some other States such as Andhra Pradesh, Bihar, Himachal Pradesh, Kerala, Orissa and Rajasthan the facilities are only nominal. None of these States has more than 3 cities which have any sewerage arrangements even partially. In all, there are 186 towns in the country today which are sewered out of a total number of 2921 towns. Even in these cities there are areas which are unsewered. Considering the fact that the number of towns and cities covered by the facility of water supply has reached 1282 in March, 1971 benefiting a population 841.71 lakhs and another 500 towns are targeted to be covered during the Fourth Plan period further benefiting about a crore of people and there is further a proposal to cover all the remaining towns in the country with water supply during the Fifth Plan, the Committee feel that it is high time that adequate steps are taken to

provide sewerage facilities to the towns which are already covered by water supply. The Committee note that according to the Ministry of Health and Family Planning the total cost of covering 2735 towns with sewerage facilities will amount to Rs. 1346 crores. That Ministry have in their Approach paper for the Fifth Plan proposed to cover 83 towns with a population of one lakh by sewerage facilities at an estimated cost of Rs. 970 crores. In addition the Ministry have asked for Rs. 400 crores to cover about 150 towns with solid waste disposal arrangements during the Plan period. Realising the magnitude of the task ahead and considering the financial difficulties of the municipalities, the Committee do not wish to recommend that the progress of water supply programmes should be stalled to meet the sewerage needs. They would, however, like to stress the point that time-lag between water supply and sewerage facilities has to be reduced and care has to be taken to ensure that the slums are not allowed to spread. The Committee, therefore, suggest that a phased programme may now be chalked out to make available this facility early, beginning with cities endemic to fifth-borne diseases like filariasis and cholera etc.

2.85. While the setting up of the Water and Sewerage Boards recommended elsewhere in the Report will go a long-way in making these operations self-paying, ways and means have to be devised to find finances at the local levels also.

2.86. The Committee feel that the Public Health Engineering Research Institute as well as other national health laboratories should address themselves urgently to the problem of evolving suitable equipment for sewage digestion, so as to do away with the need for importing Sewage Digesters. The Committee note that some progress has already been made in this direction by evolving Oxidation Ponds, Oxidation Ditch and lagoons etc. The Committee need hardly stress that if these processes are efficacious, they should be pressed into service without delay and improvements effected in the light of experience. The Committee would also stress that continued research should be made, with a view to simplify and reduce the cost of treating the sewage, so as to keep the economic burden within the reach of the local population.

#### (v) *Water Pollution*

##### A. The Problem

2.87. It is obviously of primary importance that water should be available to mankind in sufficient quantity but of no less significance is the quality of water. Rarely can the water as drawn from a rain, lake or well be used directly for municipal or industrial purpose. The impurities introduced into it either by natural or man-made pollution can seriously affect the health and both the equipment and quality of the industrial product.

2.88. The natural accumulation of impurities in water is a result of the Chemico-physical constitution of the world and very little can be done about it, except to treat the supply according to need.

2.89. Pollution of surface water has been going on ever since the appearance of settled communities. People found it convenient to dispose of unwanted materials in nearby rivers because these were carried away. So long as the quantity of pollutants was small, the self-purification capacity of the stream could deal with the situation. In large cities and industrial towns, the water carriage system for sewage became a necessity and the pollution from the towns came to be removed to the rivers. In the course of time this practice results in the destruction of aquatic life and is detrimental to agriculture hazard, to public health and a costly liability to industry. The increasingly complex nature of wastes brought about by "chemical Revolution" has created problems in the utilisation of water sources for municipal and industrial purposes.

2.90. River Hooghly in Calcutta receives wastes from jute mills, textiles mills, tanneries, pulp and paper mills, distilleries and a number of miscellaneous industries. Damodar receives wastes from steel mills, coke even plants, distillery pulp and paper mills and coal based chemical industries. Ganga at Kanpur receives wastes from tanneries, textile mills, wooden mills, jute mills and a number of pharmaceutical industries.

2.91. Water Pollution of Jamuna River at Delhi is a frequent phenomenon causing large scale fish mortality during summer months and there is always a danger of jaundice epidemic. A study of the river shows how the quality of water deteriorates between Delhi and Agra, a distance of about 200 kilometres. Guinea worms have been reported in large number of rural wells. In Calcutta and its environs, there is an additional problem of iron bacteria with its attendant complaints of pipe chocking colour and tastes.

2.92. Use of synthetic detergents and pesticides, intermittent supply of water and estuaries including bays, lagoons etc. are among other causes of water pollution.

According to the Ministry of Health and Family Planning the only objective method of preventing pollution of water is to have suitable legislation. Although the subject of legislation falls in the State list, the Central Government considering the urgency of the problem, introduced the "Prevention of Water Pollution Bill, 1969" in Rajya Sabha in December, 1969. The Bill has been under reference to a Joint Committee of both the Houses. The Committee has visited various places in the country to obtain first hand information of the problem and is considering the Bill.

2.93. The Bill envisages setting up of water Pollution Boards both at the Central and State levels. These Boards will be vested with the executive authority and they will be responsible for undertaking a programme to control pollution of water sources in the country. A provision of Rs. 7.6 lakhs has been made in the Central Sector in the Fourth Plan for meeting the expenditure on the establishment of these Boards etc.

2.94. It has been represented to the Committee that "local Governments, municipalities and corporations are the worst offenders in regard to pollution. They are polluting all the rivers. They don't take any steps to safeguard the purity of river waters. In the name of the economy, the P. W. D. in each State is allowing the disposing of waters into the nearest river.

2.95. The Ministry of Health and Family Planning have stated in written note that "It is a fact that sewage is being discharged into the water courses which is resulting in pollution of these water courses. In a large number of towns the sewage is either not treated or sewage treatment plants do not function properly with the result that untreated sewage is let of into the rivers etc."

2.96. It has been stated by the Ministry that the situation is proposed to be controlled in two ways:—

- (i) Through legislation which is now before the Joint Committee of Parliament; and
- (ii) Through Plan Schemes of setting up of proper sewerage treatment plants in all the sewered places and by sewerage large towns.

#### **B. Advance Action**

2.97. It has been represented to the Committee that the problem of water and environmental pollution has received considerable attention in the last few years but we are still nowhere near evolving a strategy to meet the dangers in the actual operational field. The Water Pollution Prevention Bill is before the Parliament for the last 2 years and the Joint Select Committee has collected considerable evidence and material. It is hoped that the Bill will be enacted in the near future. It is, however, necessary immediately to anticipate in advance the difficulties of implementation and the C.P.H.E.E.O. should get busy working out the organisational, administrative and technical details for effective enforcement of the new legislation. Ultimately it will be necessary to press into service the local government machinery and it will need a massive programme of orientation and training of local functionaries to develop a fresh awareness towards the attendant problems.

2.98. Asked if any advance action has been initiated to anticipate the difficulties of implementation and towards working out organisational, administrative and technical details for effective enforcement of the coming legislation regarding water pollution, the representative of the Ministry of Health and Family Planning stated during evidence that the training programme was in operation for training personnel in control of water pollution under WHO assisted scheme. Advice of WHO experts had also been availed of on the various aspects of water pollution and control. Also the Central Public Health Engineering Organisation had been giving advice to the State Public Health Engineering Departments and others in matters relating to prevention of water pollution. Measures relating to control of water pollution etc. had also been brought to the notice of the State Governments and local bodies in meetings and conferences. The representative stated that "wherever we find that definite action is needed, we do take up this particular issue."

2.99. It was pointed out that the Bill sought to:—

- (i) establish at the Centre as well as in the States water pollution prevention Boards with the necessary complement of technical and administrative staff and to confer on them such powers as are necessary to deal effectively with the problem of water pollution in the country.
- (ii) provide penalties for contravention of the provisions of the Act; and
- (iii) establish Central and State Water testing laboratories to enable the Boards to assess the extent of pollution, lay down standards and establish guilt or default.

2.100. Asked if some work relating to the setting up of the Boards and Laboratories could be initiated in advance to facilitate the implementation of Bill the representative stated that it was not known as to what shape the Boards would take when the Bill was passed because even in the Select Committee, the thinking had undergone a number of changes. There would be further amendments when the Bill came before Parliament. Nor was it known what the Boards would do about laboratory. Therefore, no action had been taken to set up any laboratory.

2.101. The Committee note that a comprehensive Water Pollution Bill is pending before a Joint Select Committee of Parliament. The Committee have no doubt that the bill would take care of all aspects of water pollution, with particular reference to the health hazard which is being created at an increasing pace, by rapid industrialization of the country. With the advance in modern technology, there is no reason why we should

not be able to eliminate this health hazard and pollution right in the beginning, instead of letting it become a problem of gigantic proportions, as is the case in some of the advanced countries. The legislation is as effective as its implementation. The Committee would, therefore, like the Ministry of Health and Family Planning (now Works and Housing) to work out in detail the machinery which would be required to implement the legislation on water pollution, so as to ensure that it is effectively administered in the interests of public health.

### C. Water Testing Laboratories

2.102. It has been represented that in respect of urban water supply there are arrangements for the purification of water and its testing before its supply for domestic consumption. The problem is different in respect of rural areas where no such organisations exist at present. The public wells which supply drinking water should be periodically tested and necessary measures taken to maintain its purity.

2.103. The Committee wanted to know if any arrangements existed in the States to test water periodically in public wells and tanks with a view to maintain their purity and whether these arrangements were sufficient. It has been stated by the Ministry that Public Health Laboratories in the different States examine water quality. Besides some of the major water works are stated to have their own laboratories for this purpose. It has, however, been admitted by the Ministry of Health and Family Planning that the facilities are insufficient as far as coverage is concerned.

2.104. As has been mentioned earlier, out of 5.67 lakh villages, a mere 22,000 have been provided with piped water supply and an overwhelming majority have to make do with traditional sources of supply, viz. dug-wells, pumps, ponds, tanks etc. The Committee consider that the least that can be done by Government, is to ensure that the water actually being used by these villages is periodically tested, in order to determine its suitability for human consumption, and remedial measures taken as necessary, to improve its quality till safe water supply can be provided on assured basis. The Committee would like the Central/State Government to draw up pilot schemes in this behalf which, after being tested in the field, could be extended to other areas in the shortest possible time. The Committee need hardly point out that the tests for checking the quality of water should be simplified to the extent possible, with the help of research institutes, so as to enable the local civic authorities to undertake this task of testing.

#### D. Research Work regarding Pollution

2.105. It has been represented to the Committee that "little research work has been done in this country in respect of water pollution particularly for industrial wastes. Industries are springing up all over the country. It is essential before a licence is granted to set up any industry or permission is granted to set up any industry, the treatment of its wastes should be spelted out and should form part of the project report."

2.106. In a written note submitted to the Committee, the Ministry of Health and Family Planning have stated :

"These aspects were being taken care of in the Prevention of Water Pollution Bill now before Parliament."

2.107. A technical authority has drawn attention to the following problems relating to water pollution on which research is urgently needed:—

- (i) Determination of acute and chronic toxicities of all pollutants including pesticides, heavy metals, other chemicals and herbicides to Indian fish and other aquatic life.
- (ii) Determination of physiological and histological effects of pollutants.
- (iii) Development of methods of studying diffusion processes near the bottom of estuarine areas.
- (iv) Development of mathematical and physical models of circulation in relation to transport and dispersion of pollutants in estuaries and coastal waters.
- (v) Studies on absorption and adsorption of pollutants by sediments in suspension.
- (vi) Investigation of the accumulation of pollutants in macro and micro-organisms resulting from direct intake from the physical environment or by intake of organic matter.
- (vii) Investigation of biological transport of pollutants within the food webs of the aquatic environments.
- (viii) Studies to understand the physiological background of different types of accumulation processes of the various organisms.
- (ix) An extensive research programme should be organised to evaluate ways and means of augmenting supplies and improving efficiency in usage. These include intensified use of low quality water for industry and tolerant crops, watershed management, reduction of evaporation and seepage losses from storage and conveyance units, weather modifications and sea water desalination.

- (x) Rationalisation of well construction methods, using chemically less susceptible material than brass or uncoated steel, should be immediately implemented, along with research on materials development.
- (xi) Detailed geohydrological exploration in areas having ground water salinity problems should be intensified to isolate connate water bodies or saline/brackish aquifers; well grouting and packing techniques should improve; water table studies should be intensified to facilitate drainage measures.
- (xii) Mathematical analogue modelling techniques be developed to simulate ground water behaviour.

2.108. Position in respect of these aspects has been stated by the Ministry as follows:—

- (i) Some studies have been carried out with regard to toxicity bioassay with regard to D.D.T. wastes. Very little work has been done with respect of evaluation of specific compounds on Indian fish.
- (ii) Not done.
- (iii) Not done.
- (iv) Not done.
- (v) Not done.
- (vi) Not done.
- (vii) Not done.
- (viii) Not done.
- (ix) (a) Low quality water for industry Reclamation of sewage for producing clean water useful, for industry is already on a plant scale—Union Carbide of Bombay is one illustration.
- (b) Low quality water for tolerant crops—sewage is used for irrigation at several places in the country.
- (c) Evaporation studies have been carried out by C.P.H.E.R.I. and several field stations in the States using Cetyl alcohol.
- (d) Water desalination—Defence Research organisation and Central Marine and Salt Research Institute have finalised a model for this purpose.
- (x) Substitute non-corrosive pipes like P.V.C. are being gradually used in the country; for well strainers.



(xi) Several Organisations like Geological Survey of India, Central Ground Water Board, Exploratory Tubewells Organisation, Rajasthan Ground Water Board are engaged in this work.

(xii) Not done.

2.109. The Committee have dealt, earlier in this Section, with the proposed legislation to prevent pollution. It is of the utmost importance that the factors which cause pollution, should be thoroughly investigated by research and other allied institutions, so as to find efficacious remedies to pollution which results from industrial processes, particularly from the discharge of their wastes and effluents. The Committee are concerned to find that out of 12 problems listed for urgent research in the context of preventing pollution, work is at present going on only in respect of 4 or 5 aspects, while the remaining have not received attention. The Committee would like Government to review the matter comprehensively in consultation with the research institutions and all others concerned and draw up a meaningful and time-bound programme with proper priorities, for intensifying research to find efficacious answers to the problem of pollution, so that this could be given effect to, in the interests of public health.

(vi) *Water Supply in Delhi*

2.110. According to 1971 census the Delhi Union Territory had a total population of 40.40 lakhs of which 36.30 lakh was urban and 4.14 lacs rural. At present the urban population is increasing at a rate of 0.14 lakh per year.

2.111. Due to the high ratio of urban population the water supply problem in the Union Territory of Delhi is predominantly an urban water supply problem. Actually the rural areas already provided with piped water supply are also drawing water from the water supply system of the Delhi Metropolitan area.

2.112. At present there are two sources of water supply in Delhi viz. (i) surface water source and (ii) underground water source. Surface water is drawn from the source Jamuna at Wazirabad and Okhla and water is supplied after treatment. For underground water Delhi is not considered to be a very good source both in respect of quality and quantity. However, about 50 tubewells have been sunk in some of the areas in South and West Delhi. Underground water from the river bed is also being tapped by means of ranney type-wells.

2.113. Quantity of water supplied from different sources is as follows:—

Wazirabad	.. 80 MGD
Chandrawal	.. 90 MGD
Okhla	.. 6 MGD
Tubewells	.. 7 MGD

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183 MGD

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The Committee have been informed that 5 MGD of water from Wazirabad source cannot be utilised due to the fact that some of areas served by the Plant have not been fully developed, leaving thereby a quantity of 178 MGD. By overloading the other plants the average supply of water during this year (1972) is 181 MGD for a population 36.3 lakhs which works out to 49.8 gallons per capita.

2.114. It has been stated in a memorandum submitted to the Committee by Delhi Administration that:—

“At present Delhi is being supplied with about 170 million gallons of filtered water and 30 million gallons of unfiltered water (for gardening etc.) per day. This supply, on an average, gives a per capita per day water supply of about 55 gallons. This figure compared to the per capita per day supply usually available in other big cities of the country appears quite high, but for the general high standard of living in Delhi and dry climate in the region in which Delhi is situated this supply is being found too short for the actual requirements of the citizens of Delhi. There are many localities in Delhi where the per capita per day water consumption is already 100 gallons or above. In the area under the jurisdiction of New Delhi Municipal Committee, holding a population of about 3 lakhs, the present water supply, on adding both filtered and unfiltered water supply, is about 55 million gallons per day which gives an average per capita per day supply of about 180 gallons. Similarly in the cantonment area the filtered water supply of about 7 million gallons per day is being given to a population of about 60,000. In addition to this, they are drawing a substantial quantity of water supply from wells for gardening purposes. Thus in the Cantonment area also the average per capita water is well above 100 gallons per day.

The above mentioned facts and figures must be kept in mind while assessing the water supply requirements of Delhi in the coming years. There will no doubt be a substantial population of not so well-to-do people and their average per capita per day water consumption may be only 25 or 30 gallons. In view of this the Naskar Committee appointed by the Government of India to give recommendations regarding augmentation of water supply in Delhi recommended in their report of 1965 an average per capita per day supply of about 75 gallons. The Committee had also estimated the

population of Delhi in future years and worked out the future water supply requirements for Delhi as given in the following table:—

Year	Requirement of water Supply (in MGD)
1971	288
1976	366
1981	459
2001	766

By interpolation of the above figures the present day requirements of water supply in Delhi work out to about 300 MGD. The present water supply of about 170 MGD is, therefore, short of the requirements by about 130 MGD. These requirements will be increasing at a rate of about 17 MGD annually."

2.115. Progress made in the augmentation of water supply during the last decade is indicated in the following figures furnished to the Committee during evidence:—

1960	90 MGD
1966-67	114 MGD
1967-68	127 MGD
1968-69	134 MGD
1969-70	139 MGD
1970-71	146 MGD
1971-72	164 MGD
1972-73	178 MGD

2.116. The representative of the Delhi Water Supply and Sewage Disposal Undertaking, during evidence, projected the future requirements of drinking water in Delhi and its actual availability as under:—

The urban population in 1971 as per the latest census figures is 36 lakhs and at the rate of 50 gallons per day per head we will require 180 million gallons. We are now supplying 178 million gallons which is more or less that figure. By 1974, the projected population based on the last census figures will be 41 lakhs and at 50 gallons we will require 205 m. gallons. In the next two years, we are augmenting the supply by 27 m. and that will come to 205.5, which will more or less keep pace with the population increase. In 1976 the population is expected to be 45 lakhs and at 50 gallons it comes to 225 million by which time we will have augmented our water supply by 100 millions which will come to 307.5. Actually by that time, we will be surplus. In 1981 the population is expected to be 56 lakhs and at 50 gallons, we would require

280 million gallons. On the basis of 50 gallons, we would have enough upto 1981. Of course, we are also thinking of increasing the per capita supply to 60 gallons in which case we will require more. But upto 1981, care has been taken to get water from the State Governments. Negotiations have already been started on a long-term scheme with State Governments, building separate dams and so on."

2.117. The representative of the Delhi Water Supply and Sewage Disposal Undertaking apprised the Committee during evidence of the following measures initiated towards augmentation of water supply during the next decade:—

".....On a short term basis, we are going to augment by about 15 million gallons next year; the year after that we will be augmenting by 12.5 million gallons; in other words, 27.5 million gallons in the next two years. At the same time we have also started a scheme for augmenting water supply by 100 million gallons. We are going to get water from U.P. and Haryana Governments. We have already taken steps to initiate action for setting up a 100 million gallon plant with the State Government for supplying water and for carrying out works in their territory. This plant is expected to be ready by May, 1976. But in between that, we are planning that, by 1975, at least 50 million gallons would be available. You will see that from 90 million we have come to 178 million gallons. We will add 27 million gallons within the next two years and another 100 millions by 1976."

2.118. The Committee have been informed that for water beyond 1981, various schemes like Lakhwar Dam Project in U.P., Dadahu Dam Project in Himachal-Pradesh and the Dhauj and Kot Project in Haryana are under consideration.

### *Master Plan*

2.119. The Government of India has set up a Committee to prepare a master plan for the development of water supply and sewerage and drainage works in the Union Territory of Delhi during the next 30 years. The Public Health Engineering Wing of Delhi Administration will be preparing this Master Plan under the guidance of the above Committee. The Master Plan is proposed to be completed in three stages; first to remove the deficiency in existing water supply, sewerage and drainage systems; the second to cater for the needs upto the year 1981; and the third for the period from 1981 to 2001.

2.120. The present deficit in the water supply is expected to be made up by the Fifth Plan period and thereafter the water supply will keep on increasing to match with the increase in demand due to growth of population.

### *Distribution*

2.121. The representative of the Delhi Water Supply and Sewage Disposal Undertaking stated during evidence that taken on an overall basis, there was sufficient water in Delhi, but there were some problems like the seasonal variations, distance of a colony from the main headworks, etc. Referring to the difficulties faced in supplying water to the areas which had been recently developed the representative stated:—

“It is unequal distribution because the headworks are at the northern end of the city and expansion is going on towards the south and other areas. There are also many old areas like the old city, Sadar, Paharganj, where the distribution system is very old which requires remodelling. As colonies develop away from the main works, those at the tail end suffer some shortage. For example, take R. K. Puram area. It is right at the southern most point of Delhi whereas the plant is at the northern most point. There we are able to give them only four hours supply in the morning and four in the evening. The problem is of conveying the water to the place. In other areas, we give 13 hours supply, 4—11 in the morning and 4—10 in the evening.”

2.122. The steps stated to have been taken or being taken to solve this problem are indicated in the succeeding paragraphs.

2.123. It is proposed to supply 5 MGD of water from the Ranney wells. The additional Ranney wells constructed by 1974-75 will also be utilised for supplying the water to South Delhi.

2.124. In South Delhi an integrated scheme has been taken up which envisages the construction of regional overhead tanks to supply water to the various areas. The water will be boosted up from the Kailash Reservoir.

2.125. Similarly, in West Delhi, an integrated scheme for supplying water from the Rajouri Garden underground tanks to various regional reservoirs has been taken up in hand. These overhead tanks and booster pumping stations will help to equalise the supply of water during the summer months.

2.126. In the city area, scarcity is also felt in the summer months as the pressure is inadequate. An underground reservoir at Ram Lila Maidan with booster pumping station is under construction. This will improve the water pressure in the city area which is at present fed from the Jhandewalan Reservoir and where the levels in the reservoir go very low during the summer months due to greater drop off. Other schemes like putting up booster pumping stations at Pahari Dhiraj, Jhandewalan are in progress. This will also improve the pressure of water in the localities served by it.

2.127. It has been stated that the Cabinet has recently decided to amalgamate the Delhi Water Supply and Sewage Disposal Undertaking of the Municipal Corporation of Delhi, the Water and Sewage Disposal Wings of the N.D.M.C. and the Cantonment Board into a Statutory Autonomous Board. Action is being taken to introduce the necessary legislation in Parliament. With the setting up of the above Board, there will be only one authority for receiving and distributing water in the Capital and this is expected to avoid the difficulties now being experienced due to the presence of numerous authorities responsible for water supply in the Capital.

#### *Coordination with Neighbouring States*

2.128. On the question of augmenting water supply in Delhi in co-ordination with neighbouring States the Chief Engineer, Delhi Water Supply and Sewage Disposal Undertaking stated during evidence that the meetings were held by the Minister of Irrigation and Power with the neighbouring States of Haryana and Punjab. 200 cusecs of water had been obtained from U.P. After the Ramganga Scheme water would also be available from upper Ganga Canal. Haryana Government had also agreed to supply 300 cusecs right through the year. With this 100 m. gallons of water would be available. Further negotiations were stated to be going on with the neighbouring States which were to be finalised for exchanging sewage. Haryana Government was stated to have agreed to give 50 p.c. raw water in exchange for sewage after treatment.

#### *Coordination*

2.129. The representative of the Ministry of Health and Family Planning stated during evidence that there were a number of authorities responsible for water supply in Delhi as in large municipal areas and it was very necessary that their action should be coordinated. He stated:—

“In Delhi there has not been much coordination, we must admit. It was only in the last summer when there was great shortage and queues started forming up at the taps that at the instance of the Health Minister a meeting was convened on the 27th June, 1972 in which this whole problem of coordination was taken up. All authorities concerned were present. Our Ministry,

Planning Commission, Ministry of Irrigation and Power, Ministry of Home Affairs, Delhi Administration, Delhi Municipal Corporation, New Delhi Municipal Committee, Delhi Electricity Supply Undertaking and C.P.W.D., these are the authorities who are concerned with the supply of water in one way or the other. Also there is D.D.A. The whole question of coordination as well as future action was gone into. Thinking about the future action we split in two, one was for immediate needs and the other was for distant or future needs. Since then a number of meetings have been held to see that in a coordinated fashion these decisions are carried out.

2.130. Asked if it was working satisfactorily the representative stated:—

“It is too early to say. We started on the 27th June. I must admit before this there was no institutional and sustained attempt at coordination.”

2.131. Since the chances of getting employment in urban areas are more than those in the rural areas the population in the larger cities is increasing rapidly. Same is the case in regard to Delhi. New colonies are coming up including those developed by D.D.A. The Committee wanted to know if the essential services for these colonies are planned beforehand and it is ensured that water, electricity, transport medical facilities etc. are provided for simultaneously and if so why difficulties in regard to all these facilities were being faced at present. The representative of the Delhi Development Authority explained during evidence:—

“Most of the houses which we have built, we have already allotted them and they are occupied. Actually we have also to depend for water on other agencies like the Municipal Corporation and we have been regularly having coordination meetings with them and we have tried to find solutions. Where we do not get pipe water supply, we have put tube wells. The question is we cannot stop the construction because the position changes from day to day. There is shortage with regard to pipes. There may be difficulty in getting labour and so many problems come in. But we cannot stop planning because the cost of construction goes every year by 10 per cent.

2.132. The representative of the Delhi Development Authority explained further:—

“In our plan we do provide for all these facilities. So far as shopping centres are concerned, D.D.A. themselves construct them. So far as the other facilities are concerned like transport, health and all that, we provide land for them, but actual construction

etc. has to be done by the particular organisation. We do have frequent meetings even with the allottees of flats. We do realise the difficulty. But at the moment what we can do is to write to the concerned department to do the needful. We have no statutory authority to compel any department that they must do. But we do try to see that all these facilities are provided. I admit that they are not there to the extent they are necessary. We are trying to improve things.”

2.133. He informed the Committee that for that purpose monthly meetings for coordination were being held with different authorities.

2.134. Expressing his view on the subject of coordination among different authorities for providing these facilities the representative of the Ministry of Health and Family Planning stated:—

“Question of jurisdiction comes. We have also felt that there should be one coordinating authority. In Calcutta there is the Calcutta Metropolitan Development Authority where one authority works under the Health Ministry—because the Health Ministry is concerned with local self-government and in a sense, controls all municipal activities. If the Estimates Committee feels that coordination is necessary in Delhi and if they make a recommendation to this effect, that there should be some coordinating authority under the Ministry which deals with local self-government, then we may be able to set up some such body here.”

He elucidated the point further:—

“In all big cities, there are a vast number of departments involved. Coordination is absolutely vital, not so much in planning — I think, our cities plans are all quite well made — in execution and implementation, that is where we fail. This is a very important thing. So, we have taken up in our Ministry the question of coordination in the matter of water supply to the whole of Delhi. We began the work only five months ago. We hope, it will show results in the near future. If you want other works also to come under this, such as, transport and electricity, unless the rules of business of the Government are changed and one Ministry is given the responsibility for coordination, I am afraid, things will not work out to anybody's satisfaction. At present, there are five Ministries involved. The Ministry of Irrigation and Power deals with irrigation and Power; the Ministry of Transport deals with buses; the Ministry of Works and Housing deals with D.D.A.; the Ministry of Health deals with



sewerage and water supply and the Home Ministry deals with Delhi Administration; and the C.P.W.D. is dealt with by the Works and Housing Ministry. One Ministry must be given all the responsibility so that the responsibility can be squarely placed and coordination effected properly. This Ministry can be either the Home Ministry because it deals with Delhi Administration or it can be the Works and Housing Ministry because it deals with local self-governments and is doing the same kind of work in Calcutta. Whatever Government decides, it will be a good decision because only one Ministry will be responsible for all these things."

2.135. Asked if the Lt. Governor could perform these functions the representative stated:—

"But the point is that he has no powers. If on the basis of a recommendation made by this Committee, the final accountability is placed on some Ministry, I would submit that it should not be the Delhi Administration because they will have little influence on the Central Ministries; it will be only a Central Ministry which will be able to influence another; if it is placed in some Central Ministry, things will improve."

### *Quality of Water*

2.136. The River Jumuna is being grossly polluted in Delhi. Due to this pollution it has become necessary to close down the Okhla Water-works that had been feeding the South Delhi colonies. The Committee have been informed during evidence that this had not been stopped altogether. For the same reason it is being proposed to shift the unfiltered water supply intake near Rajghat to some other source that can give unpolluted raw water.

2.137. The Lt. Governor of Delhi has formed an Action Group for controlling the pollution of environment in the Union Territory of Delhi and this Group is also going to take suitable steps to prevent the pollution of the river Jamuna in Delhi. Arrangements have already been made with the Central Public Health Engineering Research Institute, Nagpur for conducting a sanitary survey of the River Jamuna so that the sources of pollution could be identified and the nature and quantum of the pollutants from those sources could also be ascertained and necessary action taken to prevent the pollution. The proposed sanitary survey of the river is going to be taken up shortly.

During evidence the Committee have been assured by the Additional Director-General of Health Services that water supplied to Delhi was quite potable.

2.138. The Committee note that at present 178 million gallons of drinking water is available to a population of 36 lakhs in the Capital which works out to 49.3 gallons per capita per day. It would appear from the facts brought before the Committee that so far all efforts towards water supply in Delhi have been based on an average supply of about 50 gallons per capita/per day. In this connection the Committee wish to point out that the Naskar Committee appointed by the Government of India to give recommendations regarding augmentation of water supply in Delhi had recommended in their Report in 1965 an average per capita/per day supply of about 70 gallons. Calculated on the basis of the recommendations of the Naskar Committee, the present day requirement for Delhi would work out to about 300 m.g.d. Thus Delhi is short of the requirements by about 120 m.g.d. The Committee are not aware of the considerations for which action for augmentation of water supply in Delhi is based on 50 gallons per capita/per day. Further in some colonies of Delhi and in cantonment area 100 gallons of water is being consumed on an average per capita/per day; and in some places in New Delhi adding both filtered and unfiltered water average consumption ranges to 180 gallons a day. The Committee hope that Government will keep these consideration in view while formulating future plans in regard to augmentation of water supply in Delhi.

2.139. The Committee further note that the current availability of water supply does not take into account the rural population of the Capital. With just 4.14 lakhs of population residing in rural areas the water supply problem in the Union Territory of Delhi, though predominantly an urban water supply problem but with the city expanding fast and the rural and urban areas getting progressively interspersed, it is hardly possible to exclude this population for the purposes of availability of safe water supply. The Committee, therefore, feel that assessment of future requirements of water supply for Delhi should also take into account, the rural population of Delhi.

2.140. The Committee also note the difficulties being experienced by the people in Delhi on account of unequal distribution of water. The result is that there are localities in Delhi and New Delhi where the per capita per day water supply is 100 gallons and more and consequently there are colonies where water supply is less than the average of 50 gallons per head per day. This has happened as stated by Government on account of the distance of the colonies from the main headworks which are at the northern end of the city and the expansion is going on towards southern and western areas. Further, there are many old areas like the old city, Sadar and Paharganj where the distribution systems are stated to be very old and require remodelling. The Committee wish to observe that whatever may be the reason, whether for want of proper planning or for want of remodelling at appropriate stage of distribution systems, the citizen is hardly concerned and it is the duty of the planners and engineers to foresee

such eventualities. In any case, the Committee note that some steps are already in hand such as putting up of regional overhead tanks in South Delhi and Rajouri Garden and installation of booster pumping stations at Ramliha-grounds and other places. The Committee hope that these programmes would be expedited so as to bring about early relief to the citizens.

2.141. The Committee feel that the decision to set up a statutory autonomous Board by amalgamating the Delhi Water Supply and Sewage Disposal Undertaking, the Water and Sewage Disposal Wings of the New Delhi Municipal Committee and the Cantonment Board is in the right direction. The setting up of this Board should help solve distribution and other problems and also help in bringing about an integrated approach towards augmentation of water supply in Delhi. The Committee hope that necessary legislation in this regard will be brought before the Parliament early.

2.142. The Committee note that some arrangements have been finalised with the State Governments of Uttar Pradesh and Haryana for 100 m. gallons of water and the treatment plant for this supply will also be ready by 1976. The Committee hope that necessary time schedule in putting into operation this plant will be adhered to. They also hope that further negotiations with State Government of Haryana for raw water in exchange of sewage and other schemes for requirements beyond 1981, such as Lakhawar Dam Project in Uttar Pradesh and Dadahu Dam Project in Himachal Pradesh and the Dhauj and Kot Project in Haryana which are at present under consideration will also be finalised early so that necessary action for implementation of these programmes can be initiated at appropriate time.

2.143. The Committee also note in this connection that the Government of India has set up a Committee to prepare a master plan for the development of water supply in Delhi during the next 30 years to be completed by three stages. The Committee suggest that a time schedule may be drawn for the completion of this plan which may be adhered to.

2.144. The Committee note that a number of organisations/Departments are concerned with Water supply in Delhi in one way or the other, such as the Health Ministry (now Works and Housing), the Planning Commission, the Ministry of Irrigation and Power, the Ministry of Home Affairs, the Delhi Municipal Committee, the New Delhi Municipal Committee and the C.P.W.D. The Committee are surprised to note that coordination should be lacking among these bodies even in the Capital. The Committee, however, note that though much belated, some coordinating efforts have been initiated in this direction since June, 1972 and hope that these efforts will bring in the desired results.

2.145. The Committee, however, do not think such half-hearted measures could be of permanent value and feel that much more drastic measures are absolutely essential for the Capital for an effective, and overall coordination among all the organisations concerned not only with water supply but with all civic amenities such as electricity, transport, medical facilities, education etc. under a high power coordinating authority. The Committee note that in Calcutta, Calcutta Metropolitan Development Authority has been formed with a view to achieve such coordination under the Health Ministry (now Works and Housing). In this connection the Committee have in their report on "Housing" commended the suggestion in regard to vesting in the Lt. Governor all necessary powers of the Central Government for bringing about coordination among the different organisations engaged in providing various civic amenities in Delhi. The Committee hope this suggestion will also receive serious consideration by Government.

2.146. The Committee have been assured during evidence that water supplied to Delhi is quite potable. They, however, note that River Jamuna is being grossly polluted in Delhi and that an Action Group is already on the job to take suitable steps to prevent pollution of the river with the help of Central Public Health Engineering Research Institute. The Committee hope that the nature and sources of pollution will be identified expeditiously and suitable measures taken to prevent water pollution in Delhi.

## CHAPTER III

### FINANCIAL AND OTHER PROBLEMS

#### (i) *Finances*

##### (A) **Priority for Water Supply in Plans**

3.1. The importance of water supply has been underlined time and again. Even before Independence, the Health Survey and the Development Committee, 1945 had commented:—

“The provision of a safe water supply should receive the highest possible priority from the administration responsible for the welfare of its people. This has been recognised by every civilised country in the world. Many have yet to fulfil adequately their responsibility in this connection, but few have as much leeway to make up as the Government of India. The provision of a safe and adequate water supply is a basic requirement, the importance of which cannot be over-emphasised, and this remark applies with special reference to a tropical country like India which is subject to epidemic waves of water-borne diseases of great magnitude.”

3.2. The same awareness of the importance of adequate and safe water supply could be seen from the first Plan document as evidenced by the following extract:—

“The provision of a safe and adequate water supply is a basic requirement and should receive the highest priority. Though the provision of protected water supplies started in India about the same time as in England and U.S.A., the progress made has been little. Only 6 per cent of the total number of towns in India have protected water supplies which serve 6.15 per cent of the total population or 48.5 per cent of the urban population. The position of the water supply has deteriorated considerably in the larger towns. In the rural areas and small urban areas, the water supply continues to be unsatisfactory.

“The introduction of protected water supply alone will not be sufficient for achieving healthful living. It is also essential to adopt measures for the hygienic collection and disposal of community wastes. Only 23 cities out of 48 having a population of over 1 lakh have sewerage systems. There are 12 other towns which are partially seweraged. About 3 per cent of the total population is now served by sewerage systems.”

3.3. The Second Five Year Plan also highlighted the importance of water supply and sanitation in the following words:—

“Water borne and allied diseases are responsible for a large incidence of mortality and morbidity in the community, which can be brought under control by establishing protected water supplies and sanitary methods of excreta disposal.”

3.4. However, it has been represented to the Committee that “it is not unusual to look upon protected water supply as a competing need with low priority as against irrigation requirements. . . . The provision of safe and adequate water supply has not received the attention it deserves in our Five Year Plans. Even the very limited allocations have not been utilised to the fullest extent. Drinking water is looked upon as only a welfare measure. It has hardly been appreciated that water supply and sewerage facilities have promoted and accelerated development and they encourage to say nothing of increasing the productive potential of the nation’s work-force by protecting them against water-borne diseases. It is necessary to orient the thinking of the technical ministries in the matter of development and conservation of water resources so that the community’s needs of safe water supply find due place in the national plans.”

3.5. It has been pointed out that the Third Conference of Public Health Engineers held in 1958 put forward the first overall assessment of the total magnitude of urban water supply and sanitation schemes “awaiting accomplishment” to be of the order of Rs. 896 crores. Considering the special problems of distant sources of supply for some major cities the National Water Supply and Sanitation Committee 1960-61, assessed the figure as Rs. 950 crores. As regards rural requirements, the Planning Commission estimated the total workload in respect of minimum water supply at the end of the second plan period to be Rs. 160 crores with an other 25 per cent contribution by villages making a total of Rs. 200 crores. The Fourth Conference of Public Health Engineers is stated to have given an estimate of Rs. 600 crores for piped water supply and sanitary latrines for all villages.

3.6. Tables below give the details of the financial provisions made, funds released by the Central Government, and the actual expenditure incurred

during the various Plan periods for water supply and sanitation separately for urban and rural sections.

TABLE—I

## URBAN

(Amounts in Rs. lakhs)

Sl. No.	Period	Allocation	Funds released (Loans 100%)	Approximate Expenditure
1.	First Plan . . . . .	1272.	815.22	1000
2.	Second Plan . . . . .	5700	3594.23	4200
3.	Third Plan . . . . .	8084	6612.18	9154*
4.	1966-67 . . . . .	1950	1649.00	3380*
5.	1967-68 . . . . .	1800	1296.00	3636*
6.	1968-69 . . . . .	2046	1633.00	3783 <sup>4</sup>
7.	1969-70 . . . . .	3221	Included in the bulk loans	3537
8.	1970-71 . . . . .	4030	Do.	4559
9.	1971-72 . . . . .	5448	Do.	5453
10.	1972-73 . . . . .	7937	Do.	—

TABLE—II

## RURAL

(Amounts in Rs. lakhs)

Sl. No.	Period	Allocation	Funds released (grants 50%)	Approximate Expenditure
1.	First Plan . . . . .	600	277.96	3300
2.	Second Plan . . . . .	2800	789.95	
3.	Third Plan . . . . .	1633	575.20	1863
4.	1966-67 . . . . .	662	271.00	Included in Urban
5.	1967-68 . . . . .	908	394.00	Do.
6.	1968-69 . . . . .	628	330.00	Do.
7.	1969-70 . . . . .	1310	Included in the Bulk Grants	2002
8.	1970-71 . . . . .	2158	Do.	2615
9.	1971-72 . . . . .	2888	Do.	3110
10.	1972-73 . . . . .	3760 <sup>5</sup>	Do.	—

\*Including expenditure on Rural and non plan urban scheme as shown in respective Plan reports of the Planning Commission.

<sup>5</sup>Excluding Rs. 1910 lakhs released for Central Accelerated Rural Water Supply Programme.

3.7. It would be seen from Tables above that provision made during the Third Five Year Plan was only Rs. 30 crores for urban water supply and sanitation and Rs. 16 crores for rural water supply schemes. Asked why inspite of the expert estimates lower allocations were made during the Third Five Year Plan, the representative of the Ministry of Health and Family Planning stated:—

“The sectoral allocations on Plan schemes are made by the Planning Commission based on the total resources available and the *inter se* priorities are then accorded to the schemes. In the Third Five Year Plan evidently, a higher priority was not accorded to water supply and sanitation. Accordingly, lower allocations were made.”

3.8. The plan allocations for water supply and sewerage schemes during the first three five year Plans and 3 Annual Plans of 1966-69 and Fourth Five Year Plan compared with the total estimated plan outlay in the public sector and the actuals of such outlays are as follows:—

	First Five Year Plan	Second Five Year Plan	Third Five Year Plan	Annual Plans 1966-69	Fourth Plan
Total estimated outlay in public sector	2069	4800	7500	6756.5	15902.2
Actuals . . . . .	1960	4600	8576.5	—	—
Estimated outlay on Water Supply and Sewerage . . . . .	48.49	91	105.7	100.6	407.3

3.9. Agreeing that the provisioning of adequate and safe water supply had received a low priority in the Five Year Plans, the representative of the Ministry of Health and Family Planning stated during evidence:—

“The Ministry has always been representing its case for according high priority to drinking water as a basic human need. It is also needed for preventing a large number of communicable water-borne diseases and thus for economic growth. Secondly, it is not a fact that the allocations have not been used. In fact expenditure trends in the Fourth Plan reveal that most of the States would be spending on the rural-urban water supply more than the allocations made. However, the Ministry feels that the allocation for drinking water supply considered against the minimum needs is inadequate. The total allocation in the Fourth Plan is about three per cent of the total plan outlay in the public sector; the picture varies from State to State. In the Fifth Plan our approach based on minimum needs has been



indicated and provision should be made for the programmes we have indicated; which are, sewerage and garbage disposal, control of environmental pollution, etc. We have suggested that the entire urban and rural population should be provided with assured source of water supply, all major towns with a population of one lakh and above should be covered with sewerage, dry latrines should be converted into sanitary latrines, adequate provision should exist for covering major towns with proper disposal of urban waste, a fairly comprehensive programme launched for controlling water and air-pollution and an expanded programme for imparting training to personnel should be made. Our proposal is that Rs. 575 crores should be allotted for urban water supply, Rs. 970 crores for conversion of dry latrines and for urban sewage disposal, Rs. 400 crores for urban waste disposal, Rs. 25 crores for environmental population control and Rs. 650 crores for rural water supply and coverage of 1,23,000 problem villages, Rs. 200 crores for rural sanitation. The total is Rs. 2820 crores."

3.10. It has already been stated that before the beginning of the Fourth Plan no specific physical targets had been laid down.

3.11. A statement showing the financial outlay and physical targets for the Fourth Five Year Plan are given in Appendix IV.

3.12. It has been stated that during the Fourth Plan an allocation of about Rs. 400 crores has been made for water supply and sanitation sectors out of which about Rs. 123 crores have been earmarked for rural water supply. This allocation represents the sum total of the allocations made for this sector in the Fourth Five Year Plan of all the States.

3.13. During the first three years of the Fourth Plan, an expenditure of about Rs. 135 crores has been incurred against the allocation of about Rs. 127 crores for urban water supply and sanitation (separate figures for water supply and sanitation are not available). An allocation of about Rs. 79 crores has been finalised in the current year (1972-73). The Ministry of Health and Family Planning expect that the expenditure on urban water supply and sanitation will exceed the allocation during the Fourth Plan period.

3.14. For rural water supply an expenditure of Rs. 77 crores was made during the first three years of the Fourth Plan as against the allocation of about Rs. 63 crores. During the current year an outlay of Rs. 38 crores has been earmarked for this sector. It is expected that the expenditure on rural water supply during the Fourth Plan would be of the order of about Rs. 140 to 150 crores against the allocation of about Rs. 123 crores.

3.15. The main reason for the excess expenditure anticipated during the Fourth Plan is that States have been giving increasingly higher priority to the Programme. They have been supplementing their allocations by obtaining loans from the Life Insurance Corporation of India and by diverting funds from other sectors of development to the water supply sector.

3.16. Asked what exactly is the requirement of resources to meet the present situation, the representative stated:—

“It all depends on what you would like the requirement to be. If you want, as a first step, that rural disadvantaged areas should be given water supply, it will cost Rs. 670 crores. But if you want the entire country to be covered water supply and sanitation it will cost Rs. 6,000 crores.”

3.17. The Ministry of Health and Family Planning has spelt out its approach towards the water supply and sanitation programme in Fifth Five Year Plan.

3.18. Indications as to the likely allocations for water supply during the Fifth Plan were given by the representative of the Planning Commission during evidence as follows:—

“I will reply in an indirect way; it is envisaged that during the Fourth Plan expenditure will be of the order of Rs. 270 crores on urban water supply and sewerage and Rs. 125 crores on rural water supply. But the position is likely to be almost reverse (during the Fifth Plan). The final figures are to be calculated. But urban water supply will probably get a little more than what it is now and rural water supply will get stepped up by three to four times.”

3.19. The Committee note that provision of safe water supply and sanitation has not received the attention it deserved in the Five Year Plans in spite of the fact that its importance had been emphasised early by the expert bodies like Health Survey and Development Committee, 1945 and by the Planning Commission itself. During the first two Plans meagre allocations were made and even these were not fully utilised. Lower allocations were made in the Third Plan as compared to the needs indicated by expert bodies like Third and Fourth Conferences of Public Health Engineers in 1958 and 1960 and by the National Water Supply and Sanitation Committee in 1961 and even though the Health Ministry (now Works and Housing) had all along been pressing for higher allocation for water supply. The Committee are surprised to note that in this vital sector of nation building activity no specific targets, physical or financial, were fixed before the Fourth Plan. Naturally not much progress could have been expected.

3.20. The Committee, however, note an encouraging trend in this regard since the beginning of the Fourth Plan in which Rs. 400 crores have been allocated for water supply and sanitation sectors out of which Rs. 123 crores have been earmarked for the Rural Sector. According to the indications against this allocation of Rs. 123 crores, for the rural sector, expenditure is likely to be of the order of Rs. 140 to 150 crores. The Committee also note in particular that the States have been giving an increasingly higher priority to this Programme.

3.21. The Committee hope that this sector of the Programme will henceforward receive appropriate place in the Plans and the allocations will be such as to ensure that the basic facilities of safe water supply and sanitation are made available throughout the country in a phased manner by a specified date, at any rate before the end of the next decade.

#### B. Procedure regarding release of Finances

3.22. In a memorandum submitted to the Committee by a State Public Health Engineering Department, it has been represented that the amounts are released through local bodies who have to draw the amounts from Government and place at the disposal of the Department. The amounts are provided in the budget and Vote on Account of the legislature is obtained in the beginning of the year itself but the amounts are released to local bodies at the middle or far end of the financial year as they have to undergo a number of procedures. Therefore, the Department has to slow down the Programme some times due to non-deposit of funds by the concerned local bodies.

3.23. The representative of the Ministry of Health and Family Planning explained the position during evidence as follows:—

“It is true that red-tape does delay occasionally the release of funds and there are cases where funds are released even on the 31st March. We are taking two steps to correct this: One is that we are tightening up our procedure to see that funds get released quickly and the second is we have suggested a structural change. We would like the financial year of the Government of India to revert back to what has been in the past before the Britishers. The financial year should start from 1st of July because the construction season goes upto the outbreak of the monsoon. We should be able to carry on construction till the 30th June without break. The monsoon can thus be utilised for purposes of getting the funds released to the various executing authorities. So three months delay which is inevitable is covered by the rains in which no work is possible in the field.”

3.24. The Committee note the difficulties experienced by the Public Health Engineering Departments in the States in regard to the procedure involved in getting the amounts released through local bodies. Even though the amounts are provided in the budget and vote on account of the legislature is obtained in the beginning of the year itself, the amounts are actually released to local bodies towards the middle or lag-end of the year as they have to go through a number of procedural formalities. Consequently, the Departments concerned are not able to sustain the tempo of work right through the year. The Committee desire that ways and means should be devised to place funds in time in the hands of the executing authorities in order to sustain the tempo in the implementation of the programmes.

3.25. Asked if any difficulty was being experienced by the Ministry of Health and Family Planning or other Departments in getting the amounts allotted released in time the Secretary, Ministry of Health and Family Planning stated:—

“Let me say in the Finance Ministry there is some delay. In some cases the delay is great, in many cases it is not great. Sometimes the fault is that of the Finance Ministry, sometimes the fault is of the Administrative Ministry. All that we can do, first of all within the existing structure we can ourselves work harder, meet often so that these problems are sorted out and secondly we must have some structural changes. One is the question of financial year, and secondly we have suggested that in each Ministry there should be task force in which Finance Ministry should be represented where if there is difference of opinion between the Finance and the executing Ministry it should be settled in that task force. Even if Finance disagrees then the Chairman of the Task Force, who would normally be the Secretary of the Ministry, would take a final decision.”

3.26. The Committee were informed that the proposal regarding the task force had been discussed in the Secretaries' committee and since the Finance Ministry did not agree with the proposal it had been rejected once and had been mooted again in higher formations within Government.

3.27. The Committee note that delays are at present being experienced in getting the allotted amounts released from the Government. The Committee note that the suggestions mooted by the Ministry of Health and Family Planning (now Works and Housing) for setting up of a “Task Force” with a view to help release funds expeditiously is at present under consideration of Government. The Committee would like the problem to be identified and work like procedures evolved to ensure timely release of allotted funds. The Committee would like to be informed within three months action taken or proposed to be taken to bring about the necessary improvement.

### C. Backward States

3.28. It has already been mentioned in this Report earlier that under the existing pattern central assistance to the States is given in the form of block loans and block grants in the ratio of 70 per cent and 30 per cent respectively. Central assistance is not normally tied up with any particular scheme or sector of development. In some cases, however, outlays for schemes or sectors are earmarked and rural water supply is one such sector. The changed pattern of assistance has been designed to give greater autonomy to the States in deciding their priorities and the object of earmarking is to ensure that the priorities determined by the Central Government and the Planning Commission in consultation with the States are adhered to. While in other sectors or schemes States are permitted to make inter-sectoral adjustments, they cannot do so in the case of earmarked sectors without losing some part of Central assistance. If the outlays earmarked for a particular sector, rural water supply for example, are not fully spent, States would lose the proportionate part of Central assistance to the extent of the shortfall. This assistance is, however, available to the States uniformly, irrespective of their respective stage of development.

3.29. The Committee wanted to know if any special assistance, financial as well as technical, over and above loans/grants referred to earlier, were available to such States which are more backward comparatively and where the magnitude of water supply problem is much more than others as, for example, Uttar Pradesh, Bihar, Himachal Pradesh, Madhya Pradesh and Mysore who have the largest number of permanently disadvantaged villages, West Bengal with largest number of health problem villages in the country and Rajasthan with special problem of being most arid zone in the country.

3.30. The representative of the Ministry of Health and Family Planning stated during evidence:

“According to the policy approved by the National Development Council, all the States, irrespective of the magnitude of the problem of water supply are being given Central assistance in the form of block loans and block grants for the schemes under the national water supply and sanitation programme. However, with effect from the current year, a special central scheme called the accelerated rural water supply scheme has been launched with an outlay of Rs. 20 crores this year and Rs. 40 crores next year. Assistance to various States under this programme is based on various relevant factors like the magnitude of the problem, the stage of backwardness etc., and the allocations made to the various States in the current year are also available with us. But we must also say that the state of backwardness is the state of physical backwardness; a backward States does

not mean a State which has not been able to go ahead because of lack of will or because of inertia. We do not consider such a State backward for the purpose of this scheme."

3.31. The Committee note that Central assistance for water supply is available to the States uniformly under the existing pattern of block loans and grants irrespective of their respective stages of development. Assistance for water supply programme is also available under the Accelerated Rural Water Supply Programme out of a total sum of Rs. 20 crores during 1972-73 and Rs. 40 crores during 1973-74 keeping in view the magnitude of the problem of the State, its stage of backwardness etc. Whereas the Committee agree that the States must exert themselves to make available this basic necessity to their people speedily they would also like the Central Government/CPHEO to play a more active role in respect of such States with a view to help them achieve the objective.

#### D. Local Contribution

3.32. It has been stated by the Ministry in a written note that there is no uniform pattern of local contribution in the financing of the water supply schemes in the country. It varies from State to State. For urban water supply schemes, whereas some States are providing 100 per cent loan assistance to the local bodies, some others insist on a certain percentage of the cost of the scheme being borne by the local body itself. In a few States certain percentage of grant-in-aid is also allowed to the local bodies apart from the loan assistance.

3.33. For rural water supply schemes the extent of grant assistance varies from State to State and within a State slab system of grant assistance operates for various sizes of rural community. Generally very small rural communities are not required to make any contribution to the cost of the scheme. In some States, villages situated in difficult areas irrespective of the size are also not required to make any contribution. For others a percentage of the cost has to be contributed by the rural community, the remaining portion being provided by the State as grant-in-aid.

3.34. A case relating to local contribution has recently been published in a book entitled 'Case studies in Panchayati Raj' by Indian Institute of Public Administration. The case describes what happened for seven years to a water supply scheme of Kabirpur village in Nal District of Gujarat. The village people wanted to have water without paying the required contribution towards the cost of the scheme, since they were too poor. The officials and higher level leaders accepted this promise and made efforts to get the scheme implemented with the expenditure being borne fully by Government. The efforts began in June 1961; even till January, 1968, the scheme had not been implemented and the village was without water.

3.35. Asked if insistence for local contribution had at times delayed the execution of schemes, the representative of the Ministry of Health and Family Planning stated during evidence:—

“It is a fact that execution of some schemes has suffered as a result of insistence on local contribution in a few States. It is also a fact that poorer villages which could not raise local contribution were deprived of the provision of water supply whereas others who could raise it got these schemes sanctioned. The problem has, however, been varying from State to State and to tackle it various States have been adopting various means of liberalising assistance to rural communities.”

3.36. Asked if Government had evolved some policy/guide-line to be followed by the States to tackle the situation, the representative of the Ministry stated during evidence:—

“The trend is towards liberalisation of assistance to rural communities by the States. It would be appreciated that a common policy by the Central Government to be followed by the whole country would not be of help in as much as in some States (particularly in prosperous regions) villages have been able to raise local contribution. In view of the limited total plan outlay it would not be desirable to discourage contributions by those who can make it. However, for the accelerated rural water supply programme, which is meant for disadvantaged areas, the Central Government has provided for full assistance in the form of grants for meeting the entire costs of these schemes.”

3.37. The Committee note that no uniform pattern of local contribution in the financing of the water supply schemes is being followed in the country. The Committee also note that the trend is towards liberalisation of assistance to rural communities by the States. It is also appreciated that a common policy by the Central Government to be followed by the whole country would not be of much help as in some States villages have been able to raise local contribution and it will not be desirable to discourage local contribution by those who can make it. Nevertheless the Committee feel that suitable guidelines should be evolved for the States to follow, keeping in view the size of the community, their economic condition, the long delays in implementation of schemes often caused in an effort to raise such contributions and other relevant factors.

### E. Cost of Water and Water Rates

3.38. It has been pointed out to the Committee that the cost of water supply has been steadily rising particularly in the last decade. Back in the Forties the cost of water supply in a number of cities had been under 25 paise per thousand gallons, largely due to the earlier low cost investments. Water rates were as low as 2,000 to 3,000 gallons to the rupee. But with new works and rising capital investment for augmenting water supply, the costs have been steadily rising. In Delhi for instance the costs have gone up from about 50 paise per 1,000 gallons in early Sixties to almost a rupee today including cost of distribution and it is expected to rise further. In the case of high cost projects it is estimated that the rates will have to be as high as Rs. 2.50 or 3.00 per thousand gallons to make the schemes self-liquidating. Water rates in urban communities have, however, failed to match the costs generally. With the exception of Madras and New Delhi Municipal Committee there is hardly a major local authority in the country that has not been incurring deficits from general revenues. The basis for water rates is either (i) fixed water tax rate with free supply; or (ii) fixed charges on the basis of ferrule and number of taps; or (iii) water charges by measurement through metred supply. Not only the water rates and taxes have been low but only a small percentage of connections is metred which encourages waste and leakages to say nothing about the free water supplied through public standposts. In Delhi Municipal Corporation area alone the estimated cost of water supplied through public taps is stated to be about Rs. 60 lakhs a year. On the other hand the New Delhi Municipal Committee with almost 100 per cent metred supply and slightly higher rates than those for the Corporation area has been able to meet not only the water costs but also in part the cost of Trunk Sewerage Services. This reluctance on the part of urban local bodies to levy adequate rates to make the services pay for incentives is a serious constraint on mobilisation of capital resources for the expansion and augmentation of these essential services, which can in no way be considered too expensive at reasonable rates.

3.39. It was pointed out in the Seminar on Financing and Management of Water and Sewerage Works (1964)—“the ability and willingness of the urban dweller to pay not only for water but also for sewerage has not been fully appreciated and exploited. The cost to the urban dweller in communities where there is no water supply or sewer facilities is far greater than any charges that would reasonably be incurred in sustaining an organised water supply and sewerage system which gives immunity from water-borne diseases, reduces insanitation and cuts down mortality and morbidity rates resulting in savings in the medical bill to the citizen the local bodies and the State and Central Governments. Taking all factors



into consideration the cost of not providing these facilities would be greater than the cost of providing them."

3.40. It has been suggested that the pricing policies and rates for these services must be made realistic as an essential condition of assistance.

3.41. In this context an extract from the report of the T.C.M. Team which assessed the situation that prevailed in this country in 1960 in the field of water supply and sanitation is worth reproducing:—

"The concept that water, like air, is free and should be provided without charge seems to exist throughout India, particularly in rural areas. This philosophy and a low per capita income have been responsible atleast in part for the present under-development of safe water supplies and sewerage systems. These factors have also contributed to an observed reluctance of local officials to assume the financial responsibility for operating, maintaining and extending water works. This situation must be corrected by clear explanations of the fundamental economics involved. Water in nature is free, but its collection, purification, and cost money must be paid for."

3.42. The representative of the Ministry of Health and Family Planning stated during evidence that:—

"The question of making urban water supply and sanitation schemes self-paying has been impressed on the State authorities at various meetings of the Central Council of local-Self Government and the Central Council of Health as well as at the meetings of the Chief Public Health Engineers. While all the States and all these august bodies agree in principle, yet there has been general reluctance when it comes to action on the part of local bodies and other authorities to raise the water rates. This has resulted in non-provision of adequate services to match increasing demands. Consequently many towns do not raise enough funds from water charges even to operate these facilities, and the existing facilities are also badly in need of augmentation. The solution that we have suggested and which we would like to repeat is an autonomous board on the lines of the Electricity Board."

3.43. Regarding metering also the representative stated that:—

"There is a demonstrated reluctance on the part of the local bodies who are operating water supply to depart from flat rates to meter rates because this will be unpopular measure and this will have some administrative difficulties."

3.44. The Committee were informed during evidence that no specific studies had been made regarding the estimated loss that is being incurred by local bodies or the State Governments as a result of the prescription of flat rates and non-metering. The representative of the Ministry of Health and Family Planning, however, stated during evidence:—

“I may add that now that this question has been raised I feel we should make such studies and we should entrust these studies to one of the units which have been set up under our Ministries.”

3.45. The Committee note that even though the cost of water supply has been steadily rising consequent to the rising capital investments for setting up new high cost projects and for augmenting existing water supply systems there has been a general reluctance on the part of local bodies to raise correspondingly the water charges with a view to make the water supply schemes viable. The Committee note further that there is a demonstrated reluctance on the part of the local bodies who are operating water supply to depart from flat rates to meter rates because of administrative difficulties and apprehensions of unpopularity. Consequently there is hardly a major local authority in the country with the exception of Madras and New Delhi Municipal Committee that has not been incurring deficits which have to be made up from general revenues. This has in turn inhibited the initiative of the local bodies towards assuming responsibility for operating, maintaining and extending water works.

3.46. The Committee hope that with the setting up of Water and Sewerage Boards the problem of financing and management of water works would be solved to a great extent.

3.47. The Committee suggest that a study of losses incurred by local bodies on account of prescription of flat rates and non-metering should also be taken up early. Such a study, will, in the opinion of the Committee, be helpful in bringing home to all concerned the real implications of adhering to the policy of flat rates and non-metering.

#### F. Water and Sewerage Boards

3.48. Setting up of Statutory water and sewerage Boards on a Statewise or Region-wise basis has been suggested by a number of expert bodies as a first essential step towards putting the programme of water supply on its own momentum.

3.49. The Planning Commission in the Third Plan Report made the following recommendation:—

“Statutory water and sewerage boards, empowered to float loans and levy cess, and set up with the object of undertaking water supply and sewerage schemes within their jurisdiction are likely to be helpful in the effective and efficient management of water supply schemes.”

3.50. The National Water Supply and Sanitation Committee (1960-61) had recommended that:—

“Independent statutory bodies styled as “Water and Drainage Boards”, either Statewise or on a region-wise basis, may be set up, clothed with a adequate statutory powers to promote and finance water supply and sewerage schemes for all urban local bodies. The statutory bodies will exercise control on investigation, design, construction and operation of the projects on behalf of the local bodies in the same manner in which commercial enterprises are managed by business houses. Independent statutory bodies for the purpose are necessary to infuse confidence in the subscribing public that their investments on the urban schemes would be properly safeguarded.”

3.51. The All India Seminar on Financing and Management of water and sewerage works held in 1964 also recommended the formation of water and Drainage Boards in following terms:—

“The seminar is of the unanimous opinion that the formation of statutory Water and Drainage Boards is an effective means for increasing the efficiency of financing and operating municipal water supply and sewerage services. Such Boards will have the advantage of, (a) an increased efficiency resulting from financial autonomy, (b) improved ability to raise capital with confidence, (c) better opportunities for small municipalities grouped together to finance and operate their schemes on a businesslike footing, (d) the economies implicit in a common source of water where it may be made to serve several undertakings, (e) a better and fuller realisation of water revenues when this duty is divorced from local politics, (f) the economies possible by pooling technical and administrative staff to serve a number of municipalities, and (g) opportunities for equalising the rates in every region.

The seminar therefore very strongly recommends the immediate formation of Water and Drainage Boards in every State.

A statutory Water and Drainage Board should be set up at each State level, with regional boards if and to the extent necessary within the State, to provide water and sewerage services and to collect revenues to meet such services, to raise the capital needed to provide the facilities, and to exercise all other corporate powers necessary to act on behalf of the constituent local bodies within its jurisdiction."

3.52. The Committee have been informed in a written note that the formation of Water and Drainage Boards has been commended to the States and the State of Tamil Nadu have already set up such a Board. The question of setting up such Boards in U.P., Haryana, Madhya Pradesh, Kerala is under consideration of the respective State Governments.

3.53. In so far as such a Board had thus been set up only to Tamil Nadu, the Committee wanted to know why the idea had not found favour with the States. The representative of the Ministry of Health and Family Planning stated during evidence:

"The States have accepted this idea but they are slow in putting it into practice.....The States said that we were getting small amounts. But if they get large amounts, then there is the possibility they may set up such Boards."

3.54. As regards the working of the Board in Tamil Nadu representative of the Ministry stated during evidence that the experience of the working of the Board in Tamil Nadu was very good but it was doing only construction work. In his opinion such a Board should take up distribution and collection of dues also. Asked if the States had been apprised of the experiences of the working of the Board in Tamil Nadu the representative stated that the State Governments knew about the functioning of the Tamil Nadu Board through various forums like the Central Council of local-self Government, the Central Council of Health and through Plan discussions. No paper on the subject was stated to have been circulated to the States.

#### *Constitution of the Boards*

3.55. Regarding the constitution of these Boards the Seminar on Financing and Management of Water and Sewerage Works 1964 had contemplated that normally such statutory water and drainage Boards would encompass all activities including production, conveyance and distribution of water within their statutory areas and also for the collection, treatment and disposal of sewage from that area. It is, however, possible that some local bodies may prefer to purchase water in bulk from the statutory board and arrange for the internal distribution themselves and may also prefer to have the statutory board to take over sewage in bulk from the local areas and to arrange for its treatment and disposal. In such cases, provision may

be made for contractual arrangements between the statutory board and such individual local bodies, defining their mutual obligations under the contract. There was a preponderance of opinion, however, amongst the participants of the Seminar that this should be avoided if possible, as the supply and distribution of water as also collection and disposal of sewage are two interdependent functions and the division of such functions amongst two independent agencies might lead to inefficiency and avoidable difficulties for both parties.

3.56. In this connection it has been stated in a memorandum submitted to the Committee that:--

"The reluctance of the local authorities to follow a realistic water rates policy has intensified the demand for establishment of Statewise water and sewerage authorities to handle the twin public utilities on a joint basis. The National Seminar of 1964, recommended the setting up of statutory water and drainage boards at the State level with regional boards where necessary to perform all functions including production, conveyance and distribution of water, all the operations of sewerage and sewage disposal and collecting revenues from the consumers directly. The World Bank has had a similar approach which led to the establishment of the Calcutta Metropolitan Water Supply and Sanitation Authority and the Bangalore Water Supply and Sewerage Board. The success of these experiments is still a matter of speculation and the Calcutta Metropolitan Statutory Authority which attempted to do too much, has failed to get going.

Even at the National Seminar the representatives of Municipal Corporations raised objections to such an omnibus approach and the Seminar conceded that "Any major corporation or municipality which has shown its financial ability, management efficiency and popular support" need not be placed under such a statutory board. It was also considered possible that some local bodies may prefer to purchase water in bulk from a statutory Board and arrange for local distribution, and may also prefer to manage internal sewerage and let the Board arrange for bulk disposal and treatment of sewage. It may be mentioned that such an arrangement worked with success in Delhi under a Joint Water Supply and Sewerage Board for a long time till 1958 when the Municipal Corporation of Delhi was established, but the principle continued to be applied to the services being provided to the New Delhi Municipal Committee and the Cantonment Board on a cost basis. The best way would be to have regional water and sewerage authorities based on geophysical and hydrological areas to develop and provide water supply and drainage services on a bulk basis to local communities

This will help to integrate the rural and urban needs on an area basis. It will be preferable for such boards or authorities to concentrate on trunk services and major capital works leaving the internal distribution, to the local authorities concerned, which should pay for bulk services on cost basis, allowing a small margin for contingent and unforeseen costs. This is necessary to ensure local involvement and developing a sense of local responsibility for the provision and maintenance of such services. It will also relieve the statutory authorities of much of detailed routine."

3.57. Expressing his agreement in principle with the above suggestion the representative of the Ministry of Health and Family Planning stated that acceptability would vary from State to State depending on local conditions. He felt that the cost of the such Boards would also be a factor in influencing State Governments. Regarding the scope of the functions of these Boards he was of the view that the internal distribution should be done by the boards and not by the local authorities.

### *High Power Committee*

3.58. The National Water Supply and Sanitation Committee (1960-61) had while recommending the setting up of Water and Drainage Boards simultaneously recommended the setting up of a high Power Committee with Members representing the fields of public health engineering, business management, administration, financing and banking, for suggesting the measures to be taken by State Governments for creating such statutory boards, the legal enactments necessary for the purpose, organisational, administrative and managerial reforms that will be needed and the codes and bye-laws applicable to the regional boards when set up. Considering the matter of paramount importance the Seminar on Water and Sewerage Works had also recommended that the Government of India should appoint a high level committee with the representatives of the Union Ministry of Health, the Union Ministry of Finance, the Planning Commission, a Mayor of a Corporation, a Chairman of a Municipality, a Municipal Commissioner, a Public Health Engineer and a lawyer assisted by Consultants as necessary to draft model enactment for setting up Statutory Water and Drainage Boards, defining their powers and duties and recommending appropriate methods of fund raising.

3.59. It has been stated by the Ministry of Health and Family Planning in a written note that:—

“A Committee was set up for the purpose but never met. However, through various forums like the Central Council of local self Government, setting up of a Board has been commanded to the States from time to time.”

3.60. During evidence the Committee were informed that:—

“A High Power Committee was set up in 1965 under Prof. M. S. Thackkar, Member, Planning Commission with Shri S. Rajagopalan, Deputy Director General, Public Health Engineering. The Board did not function because of various reasons upto 1968. In 1968 the matter was considered as to whether the need for this Board was there at all and the State Chief Public Health Engineers expressed a view that under the difficult financial conditions the State Governments were reluctant to agree. A decision was, therefore, taken on 14th August, 1968 that a Committee need not be reconstituted for the present. The functions of the Board were being performed by the Ministry.”

3.61. The Committee note that a number of expert bodies have from time to time recommended the setting up of autonomous statutory water and sewerage boards on a Statewise or regionwise basis as an effective means for increasing efficiency of financing and operating municipal water supply and sewerage services. It is, however, unfortunate that even though the proposal was first put forth over a decade ago, very little has been done in most of the States to implement the recommendations of such bodies as the Technical Corporation Mission Team in 1960 and the Seminar of 1964. Such a Board has so far been set up only in Tamil Nadu.

3.62. The Committee also note that even the Central Government hardly evinced any interest in this important aspect of the problem. A high power Committee was set up in 1965 on the lines indicated by the National Water Supply and Sanitation Committee, 1960-61 and as reiterated by the Seminar in 1964, for setting out concrete measures to be taken by State Governments and to draft model enactment for setting up Statutory Boards, defining their powers and duties and recommend appropriate methods of fund raising. It is indeed very sad to learn that this Committee never met and in 1968 it was even decided that this body need not be reconstituted.

3.63. Again, even though the working of the Board in Tamil Nadu has been considered to be on the right lines by the Central Government, they have not circulated any paper to the States apprising them of the experiences of the working of this Board.

3.64. At the moment the country is on the threshold of the Fifth Five Year Plan, which envisages provision of basic facilities to the people and amongst these water supply is of paramount importance. It is about time that the necessary administrative machinery is geared up to implement the programme envisaged in the Plan. In the opinion of the Committee, the proposal in regard to the setting up of the Water and Sewerage Boards may help in finding a satisfactory solution to the whole problem of financing and management of the Water and Sewerage works. They recommend that Central Government/Central Public Health Engineering Organisation should assume the leading role in this matter and persuade the State Governments to set up these Boards.

(ii) *Organisational Set Up*

A. **Central Level**

3.65. It has been stated that three different programmes are in vogue in regard to water supply at present viz., National Water Supply and Sanitation Programme, the Wells Construction Programme and the Water Supply Programme for Backward Classes, Scheduled Castes and Scheduled Tribes.

(1) *National Water Supply and Sanitation Programme*

3.66. This programme is now continuing in the State sector of the Plan. It covers the schemes for urban water supply, urban sewerage and sanitation and rural water supply. The rural water supply schemes, under this programme are mainly the piped water supply schemes and such other measures for which some sort of mechanical skill is required e.g. installation of tube-wells, handpumps with the aid of drilling rigs.

3.67. At the Central level the programme is in the charge of Ministry of Health and Family Planning (now the Ministry of Works and Housing). In the Ministry, Central Public Health Environmental Engineering Organisation looks after various aspects of the programme like planning, programming, technical scrutiny of schemes, guidance to the States in technical matters, liaison with the executing authorities in the State, monitoring the programmes and progress-chasing.

(2) *Wells construction programme*

3.68. The programme aims at providing simple wells and hand-pumps in the villages largely through the agency of the Panchayati Raj Institutions.

3.69. The Department of Community Development in the Ministry of Agriculture looks after the Wells Construction Programme at the Central level.



(3) *Water Supply Programme for backward classes, scheduled castes and scheduled tribes*

3.70. The Programme is now being operated by the Department of Social Welfare. Under the Backward Classes sector programme there is provision of drinking water facilities in one of the schemes in the State Sector under which drinking water wells, pumps and small tanks are constructed in localities/areas predominantly inhabited by the scheduled castes and scheduled tribes.

3.71. It is observed from the preceding paragraphs that a number of departments are at present engaged in the implementation of the different programmes. The Committee wanted to know as to how coordination in these programmes was achieved at the level of the Central Government. It has been stated by the Ministry that:—

“Some measure of coordination is achieved at the annual plan discussions convened by the Planning Commission, where the representatives from the States, Ministry of Health and Family Planning, the Department of Community Development are present. At these meetings progress in the past is evaluated and plans for implementation in the next year are drawn up.”

3.72. During evidence the representative of the Ministry of Health and Family Planning stated:—

“You are perfectly correct that there is more than one department which is responsible for drinking water supply and the view of our Ministry is that there should be a standing coordinating authority which should comprise of members of all the Ministries concerned in this work and the overall coordination should be our Ministry because we have the largest programme.”

3.73. The representative stated that there was no coordination as such for the present. Asked what action had been taken to do the coordination work he stated:—

“We propose to set up such coordination authority. In fact it was brought to my notice when I prepared answers to your questionnaire. And it was decided in a meeting recently that we should have a coordination authority.”

3.74. Asked how it had not occurred to the Ministry earlier that the problem of water supply should be entrusted to only one Department both at the Central level and at the State level the representative stated that this was because the major slice of work was already with the Ministry of Health and Family Planning and the rest was only peripheral and whatever schemes had been entrusted to them they had been able to execute. In fact they had executed more schemes than envisaged in the Plan. He stated:

“Because we were spending more than we got, we did not think it necessary to make any organisational changes.”

The representative stated further:—

“Now that we are getting a larger plan or may be getting a larger plan, coordination may become necessary.”

**3.75. The Committee note that hardly any coordination exists at present amongst the different Central Ministries for the implementation of different programmes of water supply. The Committee need hardly emphasise the necessity of a coordinated effort in this field and welcome the decision for setting up a coordination authority for all the programmes connected with water supply. They would like to watch how successfully this coordination is effected in the interest of speedier implementation of water supply programme.**

### **B. State Level**

3.76. Execution of water supply schemes is generally done by the State Governments. In most cases it is the Public Health Engineering Department and in some cases, it is the Public Works Department. Some States have also set up Water Supply Boards but their functioning at present is limited. In Kerala for example, a Rural Development Board has been set up which would look after the rural water supply schemes though execution would be done by the P.H.E. Department of the State on behalf of Board. Similarly in Tamil Nadu there is Water Supply and Drainage Board which looks after the activity of water supply and drainage in the State but the actual implementation of the schemes is got done by the Board through State Departments. In certain States small works within prescribed limits are also executed by the local bodies.

#### *Independent P.H.E. Departments*

3.77. The National Water Supply and Sanitation Committee (1960-61) had emphasised the need of independent public health engineering departments in the various States with separate cadres, service rules and conditions of service. That Committee also attached special importance to the integration of municipal engineers as part and parcel of the public health engineering department to ensure inter-changeability and continuity of experience of personnel in all aspects of Water Supply and Sanitation Works.

3.78. It has been represented to the Committee that higher technical officers in this field are often drawn from both civil engineers and mechanical and even electrical engineers, with specialisation in this field. Besides there is a large body of subordinated technical staff as supervisors, plant operators and laboratory technicians. Integration of these various services will help in standardising pay scales in relation to qualifications and experience and ensure appropriate steps towards staff development and

training apart from providing new incentives and opportunities for promotion through inter-transferability.

3.79. A paper submitted to the Seminar on Financing and Management of Water Supply and Sewerage Works held in January, 1973 had commented on the subject as follows:—

“Ever since the inception of the National Water Supply and Sanitation Programme in 1954 the Central Ministry of Health has been repeatedly advising the State Government to constitute independent P.H. Engineering Departments for carrying out this programme on efficient lines. But in a few states, such departments are yet to be formed, presumably on account of inertia or resistance to progressive ideas. Though Public Health Engineering is admittedly a separate discipline of Engineering and has come to stay and be recognised as such in most of the States, in a few States, civil engineers of the Public Works Departments are still allowed to carry out Public Health Engineering works. Hence the need there is, for such Governments to realise that ‘Public Health Engineering is the application of the principles and techniques based upon biological data and deals essentially with the control of the environment for providing optimum conditions for health and well being’—as aptly defined by Mr. E. B. Phelps, the well known Public Health Engineer.”

3.80. The Committee have been informed that in as many as 13 States, there are independent Public Health Engineering Departments. In 2 States namely Andhra Pradesh and Gujarat, there are separate Public Health Engineering Departments for urban water supply and rural water supply. In 4 States namely Haryana, Punjab, Mysore and Meghalaya, Public Health Engineering Departments are separate identified branches of the P.W.D. headed by qualified Public Health Engineers.

3.81. It has been stated by the Ministry that the question of integration of Municipal Engineers as part and parcel of the Public Health Engineering Departments or establishing State level cadres for such officers, has been considered by the various expert Committees and has also been discussed in the meetings of the Central Council of Local-Self Government. The matter was last discussed in the 13th Meeting of the Central Council held at New Delhi, in November, 1970, on agenda items sponsored by the Government of Orissa and Rajasthan. The Central Council passed a detailed resolution on the subject which was circulated among the State Governments for implementation.

*Rationalisation of subordinate Municipal Engineering Services*

3.82. Besides the Municipal Engineer, there is a large subordinate technical staff of different categories, who will be working under him and assisting him in his several duties. Apart from Supervisors, Overseers, draftsmen, plumbers and mechanics on the executive side, the maintenance of the installation would call for the employment of water and sewerage plant operators and laboratory technicians like bacteriologists, biologists, chemists and the like. The National Water Supply and Sanitation Committee 1960-61 had noted that there was no standard qualification or experience prescribed for most of these staff and municipal bodies seemed to exercise their own discretion in making appointment to these posts. That Committee had, therefore, recommended that "all subordinate Municipal Engineering Services should be brought under a rationalised system establishing some uniformity in the qualifications and experience prescribed for such personnel and in the service rules and prospects applicable to them through their service in municipalities. Provision should also be made for their absorption in the State Public Health Engineering Department wherever their qualifications and experience benefit them for the purpose."

3.83. It has been stated by the Ministry in a written note that this had been commended to the States. During evidence the Committee were informed that in Tamil Nadu and Andhra Pradesh public health engineering services had been provincialised and the personnel were interchangeable between the municipalities and health engineering departments. In Punjab and U.P. Public health engineers of the Government Department were sent on deputation.

3.84. The Committee note that the position as regards the setting up of independent Public Health Engineering Departments has improved to some extent since the recommendation of the National Water Supply and Sanitation Committee in 1961. However in most States separate independent Public Health Departments have yet to be formed. Further there has been little improvement in regard to the rationalisation of municipal services in most States. Partly this may be due to limited workload so far. The Committee feel that in view of the larger allocations envisaged for the Fifth Plan and also in view of the coming into operation of the Accelerated Rural Water Supply Programme the remaining States should also be persuaded in their own interest to take steps to put the organisation of their respective Departments on more rational footing as recommended by the National Water Supply and Sanitation Committee.

*Maintenance*

3.85. It has been observed in a paper submitted in the All India Seminar on Financing and Management of Water Supply and Sewerage Works held in January, 1973 that in the case of essential services like water supply and waster disposal facilities there can be no room for any complacency even after the commissioning of the concerned schemes. It is essential that these systems are operated and maintained on efficient lines, as otherwise the facilities which may be adequate at the initial stages after commissioning may rapidly deteriorate and cease to be much of a public utility. This warrants the establishment of a proper machinery for the management of the schemes. But unfortunately, there is neither uniformity nor a rational approach in this matter in most of the States. Fundamentally, a specialised job needs a specialised agency for execution as well as maintenance of the schemes. But in the present system, each State Government follows its own pattern of management. The system of spending substantial amounts by Government towards construction of water supply and sewerage schemes and leaving them to be managed by local authorities have led to very unsatisfactory results. This view was shared by the representatives of the Ministry of Health and Family Planning. During evidence the representative of the Ministry of Health and Family Planning remarked:—

“Then you said that very little is done for maintenance. How can we check this. These problems undoubtedly exist. But since it is a State Sector, all we can do is to draw their attention to deficits. We cannot exercise very much control, as much as we can do even under the family planning programme, because this is neither earmarked nor is it a centrally-sponsored scheme. If it were the latter, we could exercise some further control.”

3.86. When pointed out that allocations for rural water supply were earmarked the representative stated:—

“Rural water supply is earmarked, but it only means that if they do not spend, they surrender. If it is a centrally-sponsored scheme, that gives us a little more control.”

3.87. On the question of maintenance the representative of the Planning Commission also stated during evidence:—

“So far as the maintenance of rural water supply I think you made a very pertinent remark that some of the wells are not working and I think the Ministry is also aware of the fact that maintenance of rural water supply is not upto the desired standards and the Planning Commission has also been stressing this point.”

3.88. The Committee are unhappy to note that the system of spending substantial amounts by Government towards construction of water supply and sewerage schemes leaving them to be managed by local authorities without making proper arrangements for their maintenance have led in some cases to very unsatisfactory results. The Committee desire that the Central Government should take up this matter with State Governments to ensure effective and efficient maintenance of all water supply in the interest of long life of plants, low maintenance cost, quality control and above all continuity of services.

*Perspective Plans.*

3.89. The Committee have been informed that some States have prepared perspective plans on water supply and sanitation. In a few States such perspective plans have been given the title of Master Plan. On the basis of information available in the Ministry, the States of Gujarat, Tamil Nadu, Uttar Pradesh, Rajasthan, Punjab and West Bengal have prepared perspective/master plans on certain aspects of water supply and sanitation of programme.

3.90. Apart from the regional schemes mentioned above the concerned State Governments have also prepared long term water supply and sewerage schemes for the cities of Bombay, Madras, Bangalore and Cochin at an estimated cost of Rs. 447 crores (at current prices) Rs. 21.30 crores, Rs. 34.19 crores and Rs. 53.00 crores respectively. During evidence the representative of the Ministry of Health and Family Planning stated:—

“The need for preparing master plans has been impressed on all State Governments. The Planning Commission has also on a number of times emphasised this. With the setting up of independent public health engineering departments and acquisition of proper personnel and techniques, the States are now increasingly taking up preparation of master plans.”

The representative stated that in urban areas the work regarding preparation of perspective plans had been taken up by State Government in earnest and they should be ready with plans soon. He further informed the committee that this work had been taken up in earnest in large cities over 1 million population but as the city size got smaller, the earnestness was not quite there. The Committee were informed that no guidelines for the preparation of Master Plan had been issued by the Central Ministry in this regard. The representative stated that if the States prepared a good plan, they would get more money and get it quickly.

3.91. The Committee note that perspective plans have already been prepared by a States viz. Gujarat, Tamil Nadu, Uttar Pradesh, Rajasthan and West Bengal on certain aspects of the water supply and sanitation programmes. The Committee also note that the State Governments have

prepared long term water supply and sewerage schemes for larger cities. Keeping in view the advantage of perspective planning in implementation of the programmes, the Committee recommend that the Central Public Health Engineering Organisation should persuade other State Governments also to prepare similar plans. The Committee would like Government to lay down broad guidelines for formulating the perspective plan for guidance of the State Departments.

(iii) *Materials and Equipment*

3.92. It has been represented to the Committee that "a very serious bottleneck in the implementation of schemes and execution of works has been the short supply of critical materials required for water supply and sewerage programme. Funds will not be completed unless an uninterrupted smooth supply of pipes, pumps, motors and other water works and sewerage disposal works equipment is assured. Delay in execution and final commissioning of projects results in additional financial burdens on the local authorities part from postponing the availability of services.

3.93. It has also been pointed out that "There is no coordinated effort between the manufacturer and the consumer. In fact this should be started at the Government level and should be taken down to the level of engineers who are using the products. In other words Government should come with long range programme to communicate to the manufacturer the further requirement of materials and equipments. The manufacturer in turn should have his own programme of manufacturing then to suit the yearly budgetary provision of the Government. The study of manufacturers' progress and the quantity of finished materials available should be channelised in such a way to effect a smooth flow to the consumer. If manufacture of materials and equipment are planned and rationalised and timely supply of them will be made available, the men at work could also plan their work accordingly and thereby the work will not suffer for want of materials and equipment."

3.94. The Drinking Water Board had in their interim Report (1963) recommended that "the State and Central Board should prepare a realistic list of the several materials required and coordinate all efforts to secure them from all available indigenous sources and also to utilise the assistance of the international agencies for the import of any materials and equipment to the extent possible. Side by side with the sanction of the schemes, the State Government should pursue advance action to procure the materials required for their execution."

3.95. In the statement showing action taken on his Report the Ministry of Health and Family Planning have stated that:

“This at present is being done by the State Public Engineering Departments.”

3.96. The Committee wanted to know as to what were the various requirements listed by the States/Centre in implementation of the recommendation and what concrete steps were taken towards producing/procuring the materials in implementation of the recommendation of the Board. It has been stated by the Ministry in reply:

“These recommendations were made as far back as 1965. Since then several steps have been taken from time to time by the State and the Central Government for devising ways and means to insure supply of the required material for water supply and sanitation schemes including their import. Some of the steps are as follows:

- (i) For several materials the DGS&D have already entered into rate contract on the indents made by the State Governments:
- (ii) Special agreement was entered into with the UNICEF for supply of about 100 rigs so that water supply schemes in hard rock areas could be taken up. The rigs received under this programme have been supplied to State Governments.
- (iii) Additional rigs were procured to implement special programmes under drought relief measures. Import of rigs on the request of the State Governments has also been arranged.
- (iv) Constraint on supply of material like pipes was also removed as a result of efforts made by this Ministry.
- (v) Allocation of railway wagons to move these materials has sometimes been arranged by this Ministry in special emergencies. Steps are afoot to get higher priorities from the Railway for movement of material required for water supply scheme.

3.97. It has further been stated by the Ministry that for the V Plan exercises are under way for estimating the needs of material and equipment that would be needed for the Fifth Five Year Plan. This includes the requirement of rigs. The steps are also stated to be afoot to involve all the concerned Ministries for finalising measures to be adopted for increasing production, etc. so that the V Plan requirements of materials and equipment could be met.”



### *Future Requirements and Availabilities*

3.98. Some of the difficulties felt by most of the States are in regard to the availability of C.I. Pipes, G.I. Pipes, A.C. Pipes, P.V.C. Pipes, railway wagons for transport, and drilling rigs. Future requirements and availabilities in regard to these items are indicated in following paragraphs.

#### *C.I. Pipes*

3.99. The most important single item in the water supply scheme is Cast Iron Pipes which according to an unofficial estimate accounts for 60 to 70 per cent of the cost of such projects. It has been pointed out to the Committee that "The existing installed capacities have been considered adequate in the light of current requirements. But it is not always that the existing capacities are fully utilised due to the shortage of pig iron. Another difficulty has been the relative shortage of pipes in the sizes 3-inch to 10-inches, which offer a relatively lower margin to the producer, and available supplies of pig iron are directed preferably towards spinning out large size pipes. The position is still worse in regard to C.I. specials which often hold up completion over long periods."

3.100. It has been stated by the Ministry that the main reason of shortage is the reluctance of manufacturers to produce pipes of smaller sizes in view of the lower profits. Asked if the desirability of allowing reasonable margin to the manufacturers to persuade them to produce C.I. Pipes in required sizes had been examined in the past, the representative of the Ministry of Health and Family Planning stated during evidence that even when the rates were fixed, there was a definite advantage to manufacturers producing pipes of larger diameter because the tonnage produced was more with the same amount of labour and supervision. The Committee were informed during evidence that the D.G.S. & D. had planned cost analysis through costing and accounting Department. That had not been taken up as yet. The representative stated that the entire question of availability was being discussed with the Ministry of Industrial Development. One way of achieving this objective was to fix a higher price for lower diameter cast pipes. The other way was to use materials like P.V.C. pipes.

3.101. Other main causes of shortage in the C.I. Pipes are stated to be shortage of raw materials and also lack of proper distribution. Moulds in some of the factories are also stated to be worn out and need replacement. Because of this, higher production targets could not be achieved. It has been stated that the pipe manufacturing industry is treated on a special category and import of moulds is given prompt attention. Final issue of import licence for moulds is, however, subject to the availability of foreign exchange. Shortage of gaskets used for joining is another reason for shortage of pipes.

3.102. The requirements of C.I. Pipes by the end of the Fourth Five Year Plan were estimated to be 5.0 lakh tonnes. The total capacity so far approved for Cast Iron spun pipes is to the extent of about 6.0 lakhs tonnes per annum. The present total installed capacity for C.I. pipes is 4,47,000 tonnes and actual production during the last 3 years has been as under:—

1969	..	1,25,000 tonnes.
1970	.. ..	1,62,000 tonnes.
1971	.. ..	1,99,000 tonnes.

3.103. The estimated requirement for C.I. Pipes during 1972-73, 1973-74 and during fifth plan will be as follows:—

1972-73	.. .. .	3,78,000
1973-74	..	4,10,000
Fifth Plan	.. ..	25,70,000

3.104. In addition C.I. Pipes will also be required for irrigation works, industries and for private works. Production of C.I. Pipes for 1972 is estimated to be about 2,10,000 tonnes.

#### G. 1. Pipes

3.105. G.I. Pipes are the main requirement for rural water supply schemes. It has been represented that any large scale expansion of rural programme will create scarcity conditions unless production and supplies are stepped up considerably.

3.106. It has been stated by the Ministry of Health and Family Planning that several States reported non-availability of G.I. Pipes for executing their rural Water supply projects. The question was examined in detail by the Ministry of Health and Family Planning in consultation with the Ministry of Industrial Development. It was found that even though there was sufficient installed capacity there was gross shortage of raw materials for the manufacture of these pipes. At the instance of the Ministry of Health and Family Planning, necessary arrangements were made to import raw materials for the manufacture of G.I. Pipes. The Ministry of Health and Family Planning also advised the States to switch over to polythene pipes wherever found feasible and it is stated to have been reported by many States that they have removed their difficulties by using polythene pipes.

3.107. The licenced capacity for G.I. Pipes is 6 lakh metric tonnes. The installed capacity and actual production during the last three years has been as follows:—

Year	Installed capacity	Production
1970	4,83,960	2,15,518 tonnes
1971	6,20,460	2,34,133 tonnes
1972	6,20,460	1,48,703 tonnes

3.108. The requirement for water supply and Sewerage Programme during 1972-73, 1973-74 and during the Fifth Plan would be of the following order:—

1972-73	2,00,000
1973-74	2,77,000
Fifth Plan	19,13,000

3.109. In addition to water supply requirements, the State Governments also require G.I. Pipes for irrigation projects like tube-wells etc. It has been stated by the Ministry that considering all these, the production appears to be inadequate even though the installed capacity is very much high. One of the reasons for the low production is stated to be shortage of raw materials for the manufacture of G.I. Pipes. The Committee have been informed that the matter has already been taken up with D.G.S. & D. and the Ministry of Industrial Development.

#### *Asbestos Cement Pipes*

3.110. The licenced capacity for A.C. Pipes is 1.02 lakh tonnes. The production in the year 1971 was reported to be of the order of 56,000 tonnes. The estimated requirement for 1972-73, 1973-74 and Fifth Plan is as under:—

1972-73	..	1,68,000
1973-74	.. ..	1,87,000
Fifth Plan	.. ..	6,80,000

It has been stated that the main reason for the low production of cement pressure pipes is due to the non-availability of special Asbestos from indigenous sources.

*P.V.C. Pipes*

3.111. The licenced capacity of P.V.C. Pipes is 8,000 tonnes and against this the installed capacity is 4,100 tonnes. The production in 1971 was reported to be 4,100 tonnes. The Committee have been informed that there are expansion proposals for the manufacture of P.V.C. Pipes and it is hoped that the current target of about 20,000 tonnes would be reached by the year 1974-75. The requirements for water supply and sewerage works estimated for 1972-73, 1973-74 and Fifth Plan is as follows:—

1972—73	28,000
1973—74	35,000
Fifth Plan	2,43,000

3.112. The Table below gives the estimated requirements for various types of pipes during 1972-73, 1973-74 and during the Fifth Plan at a glance:—

1. Cast Iron Pipes	3,78,000	4,10,000	25,70,000
2. Asbestos Cement Pressure Pipes	1,68,000	1,87,000	6,80,000
3. Prestressed Concrete Pipes	75,000	75,000	7,50,000
4. P.V.C. (High Density) Pipes	25,000	30,000	1,93,000
5. Galvanised Iron Pipes	2,00,000	2,77,000	19,13,000
6. Steel Pipes	15,000	15,000	85,000
7. Stoneware Pipes	86,000	1,30,000	13,00,000
8. Concrete (Non-Pressure)	1,00,000	1,50,000	15,00,000
9. P.V.C. (low density) Pipes	3,000	5,000	50,000
10. Brick Sewers	(These are constructed at site with bricks, cement etc.)		

3.113. The estimates are based on the financial requirements indicated in the Approach Paper to the Fifth Plan of the Ministry of Health and Family Planning.

*Rigs*

3.114. In regard to well drilling rigs, there are 5 firms manufacturing rigs. These firms manufacture rigs only when orders are placed firmly with them. These firms do not manufacture rigs of the same specification. The present production capacity would be of the order of about 100 rigs per annum. During 1972-73, it has been estimated that the requirement would be of the order of 50 rigs and in 1973-74, it would be 100 rigs.

3.115. The Committee were informed during evidence that special agreements had been entered into with UNICEF for supply of 100 rigs. Additional rigs had been procured in the country to implement special programme. Import of rigs was stated to have been arranged outside the UNICEF also.

3.116. Requirements of different type of rigs during the Fifth Plan, their indigenous availability and import requirements are indicated below:—

	Hard rock rigs	Rotary rigs	Perus- sion rigs	Combi- nation rigs.
1. Gross No. of rigs required, . . . . .	573	173	194	33
2. No. of rigs to be made available indigenously and the No. of rigs already with the States .	350	243	144	20
3. No. of rigs required to be imported . . . . .	223	—	50	15

3.117. Regarding the availability of materials for water supply works during the Fourth Plan, the representative of the Ministry of Health and Family stated during evidence:—

“We are of the view that, in the water supply sector, there have not been such serious shortfalls. In fact, since we have spent more money and we have achieved higher targets than what we have set for ourselves, we can say that all these items were available in the Fourth Plan.”

3.118. In regard to Fifth Plan the representative stated during evidence:—

“At the moment, there is a grave shortage of the material. We do anticipate shortage in Fifth Plan.”

3.119. It has also been stated by the Ministry that the Sixth Plan requirements had not been worked out in the absence of any idea of the size of the programme.

3.120. The Committee feel that apart from lack of adequate financial resources for implementing the programme for making available safe water supply and sanitation the greatest constraint has been constituted by lack of availability in requisite quantities and in time of essential materials like rigs and pipes for implementation of the programmes. The Committee have recommended elsewhere that there should be a perspective plan for making available safe water and sanitation in all parts of the country by a specified date, at any rate before the end of the next decade. The Committee feel that Government should work out a corresponding perspective plan in respect of materials. The Committee need hardly point out that unless there is integrated planning, there is no hope of the programme being implemented fully by the target date.

3.121. The Committee are greatly concerned to find that rigs of the requisite capacity and quantity are not available within the country with the result that Government had to enter into a special agreement with UNICEF for importing 100 rigs in connection with water supply schemes in hard rock areas as also for meeting the requirements of areas hit by drought conditions. The Committee would like to point out that both the Heavy Engineering Corporation and the Hindustan Machine Tools which have been set up at heavy cost from the public exchequer have surplus capacity. The Committee see no reason why with the advanced planning and proper coordination the manufacture of rigs could not be undertaken in these public sector undertakings and other industries so as to meet in full the requirements of the country. The Committee would like the Government to set up a high-powered task force to work out urgently the requirements for rigs and to plan their production within the country. The Committee should, however, not be understood as ruling out import of rigs to meet emergent requirements but what the Committee are keen to point out is that maximum effort should be made to put our manufacturing capacity to full use in the interest of meeting the urgent requirements of our country for rigs and such other essential equipment required for public service.

3.122. As regards the C.I. pipes the Committee find that while the licensed capacity is 6 lakh tonnes, the installed capacity achieved so far is not more than 4.47 lakhs tonnes while the production has been only 2 lakh tonnes. It is therefore only natural that acute difficulty is being experienced all over the country in getting pipes for water supply. The Committee would like the Government to study urgently the reasons why it has not been possible to achieve the full production capacity of at least 4.47 lakh tonnes as per installed capacity. The Committee also find that the estimated requirements of C.I. pipes for Water Supply Schemes alone during the Fifth Plan is estimated at 2-1/2 times the actual total annual production attained so far. It is obvious that if we have to develop a capacity of this order, no time should be lost in preparing detailed

schemes for implementation as a crash programme. This would need not only thorough investigation with reference to availability of raw materials power supply and other infrastructures but also coordinated action for procurement of the requisite machinery for the manufacture. The Committee would also like to point out that the requirements of galvanised iron pipe for the Fifth Plan is estimated at 19 lakh tonnes as compared to 2.77 lakh tonnes of annual total present production, this envisaging atleast double the present manufacturing programme. As pointed out in the case of C.I. pipes, this can only be achieved if there is a fully worked out detailed scheme for implementation in an integrated manner.

3.123. The Committee would also like to draw attention to Asbestos Cement pressure pipes and other stoneware pipes which are required for sanitation works. Here too the water supply requirements in the Fifth Plan is double the present production and therefore it is imperative that detailed planning should be done without delay so that the manufacturing capacity can be established and brought into effect by the Plan target dates. The Committee would like the government to realise the serious implications of the targets envisaged so that they press into service all their organisational and entrepreneurial skill to bring about the increase in the manufacturing capacity. The Committee need hardly point out that decision should be taken at the highest level about the setting up of these factories in the public and private sectors and the location of these units so as to save time, and clear guide lines given for implementation.

3.124. The Committee would also like the Government to take note of the advances which have been made in the other countries particularly in the use of P.V.C. pipes so that consistent with its proven qualities it can be put to service in the interest of reducing the cost and speeding up the implementation programme.

3.125. The Committee would also like the Government to intensify the research in a coordinated manner on all these materials particularly the pipes so as to reduce the cost of production and find alternative substitutes which would bring down the cost.

3.126. The Committee would suggest that in the Fifth Plan document Government should clearly indicate the concrete measures which they are taking to ensure the supply of materials particularly the pipes required for implementation of water supply and sanitation programmes so that the Members of Parliament and the public know the earnestness with which the Government are proposing to implement the scheme in a systematic and rational manner.

### *Railway Wagons*

3.127. It has been stated by the Ministry that inadequacy of wagons is also one of the reasons for the delay in sending the pipes to various public Health Engineering Departments of the country and this results in delay of the proper execution of water supply projects. During evidence the representative of the Ministry of Health and Family Planning stated that the matter had been taken up with the Railways. He stated that the Ministry wanted 'C' priority for allotment of wagons for transportation of pipes etc. for water supply as against 'E' priority.

3.128. The Committee note that inadequacy of wagons has been one of the reasons for delay in sending the pipes to various Health Engineering Departments. They also note that the matter has already been taken up with the Ministry of Railways for allotment of priority 'C' instead of priority 'E' for allotment of wagons for transportation of pipes etc. The Committee hope that an early decision will be reached and a higher priority will be allotted for the transportation of materials required for water supply.

#### (iv) *Research*

##### *A. Resume*

3.129. Researches have been carried out through the various organisations and academic institutions in the country. The subjects of investigation have been Water Treatment, Sewage Treatment, Stream Surveys, Industrial Waste Treatment, Solid Wastes and Air Pollution.

##### *Water Treatment*

3.130. Studies have been conducted with respect to the several water treatment processes. In coagulation, the use of suitable coagulant aids for increasing the efficiency as well as making it more economical has been successfully completed. Investigations of the various filtration techniques to evaluate their efficiency are stated to be under progress. A special type of synthetic resin capable of removing flourids has already been completed and is available. Chlorine tablets useful for emergency disinfection have also been evolved. Iodine tablets, in a readily applicable form has been fabricated. The feasibility of chlorination of the unfiltered water supply in Calcutta has also been established. Studies on the pot method of continuous disinfection of wells in rural areas have also proved successful. Model units for Iron removal have been thoroughly studied so that areas which are facing the problem of Iron in water supplies could make use of the units.

##### *Sewage Treatment*

3.131. The design criteria for oxidation ponds and waste stabilisation ponds for sewage treatment has been formulated as a result of the studies already carried out. Other low cost waste treatment systems like Aeration



logoons and oxidation ditch have also received considerable attention and the parameters of design have been put out. Studies relating to sewage irrigation have led to the profitable use of the fertilising value of sewage. Investigations have also been carried out on the efficiency of sewage treatment processes on the fate of pathogens.

#### *Stream Surveys*

3.132. Considerable amount of work has been carried out by different agencies in the country to prove that stretches of several big rivers as well as small rivers are grossly polluted by the discharge of industrial wastes. A Water Pollution Prevention Bill is in the offing which will establish suitable Boards, both at the Central and State levels to combat this menace.

#### *Industrial Waste*

3.133. Wastes from almost all the industries have been characterised. Suitable waste treatment processes have been evolved based on the research studies and some of the industries have adopted the treatment procedures available from the vast resources of research. Serious attention is being given to some of the intractable wastes like lignin from paper mill so that the colour problem posed by this industry could be solved.

#### *Solid Wastes*

3.134. Serious attention is being given to the problem of characterising the refuse from big cities so that suitable procedures for their proper disposal could be solved.

#### *Air Pollution*

3.135. Studies carried out by several agencies have brought to the fore the high level of air pollutants that prevail in certain pockets of several major cities of the country. The levels of pollutants like carbon-monoxide, sulphur-di-oxide, smoke, soot, oxides of nitrogen, particulates have proved that Calcutta is the most polluted city in the country and the pollution level in other cities is comparable to any other city like London or New York. More intensive monitoring is being undertaken by the several agencies.

#### *Organisation for Research*

3.136. Research in Public Health Engineering is carried out by the following institutions in the country—

- (1) Central Public Health Engineering Research Institute. Nagpur with its various zonal and field centres at Delhi, Calcutta, Madras, Bombay, Kanpur, Ahmedabad, Hyderabad and Jaipur.

- (2) All India Institute of Hygiene and Public Health, Calcutta.
- (3) National Institute of Occupational Health, Ahmedabad.
- (4) Bhabha Atomic Research Centre, Bombay.
- (5) King Institute Guindy, Madras.
- (6) Public Health and Rural Engineering Research Division of Maharashtra State.
- (7) Public Health Engineering Research Division under the Tamil-nadu Water and Drainage Board.
- (8) Guindy Engineering College, Madras.
- (9) Indian Institute of Technology, Kanpur and Khargpur.
- (10) Visveswarayya College of Engineering, Nagpur.
- (11) Visveswarayya College of Engineering, Bangalore.
- (12) Maharaja Sayaji Rao University of Baroda.
- (13) Banaras Hindu University.
- (14) University of Roorkee.
- (15) College of Engineering, Andhra University.
- (16) Jadavpur University, Calcutta.
- (17) V.J.T.I., Bombay.
- (18) Indian Institute of Sciences, Bangalore.
- (19) Walchand College of Engineering, Sangli.
- (20) Jabalpur Engineering College (M.P.).

3.137. It has been represented to the Committee that 'Research facilities available in the country in respect of water pollution and health hazards are practically nil. In this connection it has been pointed out that one central Institution—Central Public Health Engineering Research Institute at Nagpur—cannot serve the whole of India. No doubt it has got zonal centres but without adequate staff, apparatus and chemicals. It has, therefore, been suggested that every State Government should have a separate institution like Central Public Health Engineering Research Institute and every University Department should be asked to teach special courses in water pollution as in western countries and to carry out research on these problems. It has been represented that no University is doing research or teaching in this respect now.

3.138. In this connection the Ministry of Health and Family Planning have stated in a written note that:—

"In view of the vastness of the country the domains that have to be covered, the inadequacy of equipment, it is felt that the machinery has to be geared up so that all the problems requiring investigations could be done on a more intensive and organised scale."

3.139. During evidence also the representative of the Ministry of Health and Family Planning stated:—

you are quite right that we have to have a much larger organisation.”

3.140. However, he was of the opinion that it might not be quite necessary for any State Government to have its own research organisation, but certainly many Universities could do this work. If any University was interested, it should be encouraged to do this work. He informed the Committee that many Universities were being assisted and more could be assisted if required.

3.141. Asked if any University had so far been assigned any task or any project the representative stated:—

“We help them in post-graduate research work. Four institutions— one in Bombay, one in Madras, and one in Calcutta are given facilities for buildings also by us, as also the Roorkee University in U.P. These are the four institutions to which we give facilities and financial assistance. These are also associated with research.”

3.142. Asked how the research work was initiated in the various institution engaged in this work and how coordination was being achieved among them it has been stated in a note submitted by the Ministry that:

“Institutions like CIPHERI, BARC, N.I.O.H. are autonomous bodies which have definite grants for research. Academic institutions have in addition to teaching, a part of the student programme as research studies and finances are made available from C.S.I.R., I.C.M.R. and Government. A few research organisations are part of the Government Department engaged in research on specific problems to help the departmental activities.

Coordination is achieved by means of symposia and meetings held by various agencies. Some funds are also available for research from foreign agencies like the WHO, UNDP etc.”

3.143. It has been represented to the Committee in this connection that the scope of the research laboratory under C.S.I.R. engaged in water treatment and sewage disposal is somewhat limited. Basic Research in the Universities has been negligible because of lack of finances and trained personnel. Continued research work on all aspects, physical, chemical, biological and engineering of the water pollution problem has to be encouraged. There should be close liaison between the field organisations and academic and research institutes.

3.144. Commenting on the above representation the representative of the Ministry stated during evidence:—

“.....we propose to take the activities of the Department of Family Planning as a model. The research in that Department is goal-oriented and related to specific means and there is much less stress on basic research. The goals and objectives are determined on the basis of the needs and then broken up into programmes and projects and these are then assigned for research and investigation by appropriate agencies like C.P.H.E.R.I., I.C.M.R., All India Public Health and Hygiene Institute, Calcutta, Universities, research organisations, etc. and there should be continuous feed back from research bodies from the coordinating authorities and the results can be evaluated and then made use of. It is proposed that this function may be performed by the Ministry through a suitable set up.”

3.145. The Committee find that as many as 20 institutions all over the country are already engaged in research problems pertaining to water supply. The Committee feel that the lessons the nation has learnt in the matter of organising agricultural research and other scientific research should be applied in the field of water and health problems as well. This would call for an identification of the primary problems requiring intensified research, determination of priorities and a well-coordinated programme for allocation of these research problems to the research institutions for a meaningful, intensified and coordinated effort to achieve the necessary break-through in the shortest period. The Committee would like to stress that there should be an effective and meaningful coordination at the Centre by a body which should have on it the best technical talent available in the field so as to provide proper guidance. The Committee would also suggest that the programme should be reviewed at least once a year and a well-documented account brought out for information of all concerned. The Committee would also like to stress that all these research centres should have close link with the extension centres so that practical solutions which can be applied are evolved. The Committee would also suggest that where there is need for foreign assistance for intensifying research, the help of United Nations organisations such as W.H.O. and U.N.D.P. may be taken in a systematic and urgent manner so as to put it to maximum use.

#### (V) Training

3.146. The Public Health Engineering Training Programme was taken up as part of the National Water Supply and Sanitation Programme in the year 1956. The Programme envisages training of in-service engineers, engineering subordinates, water works supervisors, sanitary inspectors, water

supply distribution system and analysis with computers etc., in different courses including Post-graduate courses of varying durations designed to meet the requirements of technical personnel for implementation of the Programme.

3.147. The Ministry holds the training courses departmentally, through the State Governments and through the following institutions:—

1. All India Institute of Hygiene and Public Health, Calcutta.
2. Engineering College, Guindy, Madras.
3. Victoria Jubilee Training Institute, Bombay.
4. University of Roorkee, Roorkee.
5. Training School of the Rajasthan Ground Water Board, Jodhpur.

3.148. The Ministry meets the expenditure towards stipends, fees and educational tours and trainees Grants-in-aid are given to the Institution towards building, equipment of the laboratory and augmentation of staff. These training schemes are being continued in the Fourth Plan and some new training courses are also planned to be started.

3.149. Before the Fourth Five Year Plan period, the Public Health Engineering Training Programme was part of the various training programmes operated by the Directorate General of Health Services. During the last fifteen years upto March, 1972 the following personnel have been trained in various categories:—

(i) Postgraduate Engineering course	610
(ii) Engineering Subordinates/Engineers in short-term courses	984
(iii) Water Works Plant Supervisors/Operators	433
(iv) Well-drillers	45
(v) Sanitary Inspectors	27
(vi) Refresher Courses	28
(vii) Water and Sewage analysis	18

3.150. An allocation of Rs. 25 lakhs has been made during the Fourth Plan and the following persons under various categories are anticipated to be trained:—

350	engineers in post-graduate course
750	engineering subordinates in short-term course
150	Water Works Supervisors
50	Water Analysts
50	Sewage Works Supervisors

## 75 In Service Engineers

## 400 Drillers/Supervisors in well drilling.

3.151. The budget allocations and the actual expenditure during the first three years of the Fourth Plan is as under:—

Budget Allocation (in lakhs)		
1969—70	1970—71	1971—72
2.00	2.15	1.5
Actuals Expenditure (in lakhs)		
1969—70	1970—71	1971—72
1.49	1.29	1.4 (Approx.)

3.152. Asked to state the reasons for the successive fall in the actual expenditure as compared to the allocations and lower allocations during 1971-72, the representative of the Ministry of Health and Family Planning stated:—

“The total number of candidates that are to be trained in Post-graduation courses is 55. Generally the target for people to be trained in short-term courses is 90 per annum but in reality we find that the number of trainees is getting reduced from year to year. The reason is that the candidates are not enthusiastic because of the low stipend rate which is not adequate to meet the actual expenditure while they are doing their training.”

3.153. He was of the view that the stipend must be increased. He informed the Committee that the matter had already been taken up with the Ministry of Finance but had been rejected. He stated that this matter definitely required a second thought. The representative of the Ministry of Finance, however, expressed the view that these people were getting full pay and allowances because it was in-service training and the scholarship/stipend of Rs. 150 per month was intended to supplement the same. He stated that the matter would be reconsidered but added that it was likely to generate a chain of reactions elsewhere as it was not the only scheme which could be singled out.

3.154. It has been stated in Approach Paper to the Fifth Plan that to undertake a highly expanded programme of the kind envisaged in the Fifth Plan a large number of trained personnel would be required. The trainees of public health engineers and personnel engaged in the water supply and sanitation sector would have to be expanded and newer courses introduced. An allocation of Rs. 4 crores has been proposed in the Approach Paper for the Fifth Plan.

3.155. It has also been pointed out in a memorandum submitted to the Committee that considering the back-log of work that remains to be cleared there is an immediate need for a fairly large number of trained personnel in the country. Once this back-log is cleared the normal programme may require the usual turnover to be trained. The existing teaching facilities should with minor adjustments be able to meet this demand. It will not be wise to increase the number of teaching centres at post-graduate level in this field without considering the need of such trained personnel in the country on a regular basis. An unplanned expansion of the training facilities may result in over production of such trained hands causing a great deal of frustration amongst the trainees. Moreover, the cost of training a student at the post-graduate level is fairly high and the country can hardly afford an investment which does not have a useful return.

3.156. The table below gives the requirement of trained personnel in different categories during the next ten years, namely 1974—84:—

	No. of people required to be trained in 1974- 84
1. Post graduate training for graduate engineers . . . . .	5,225
2. Short-term course for diploma holders. . . . .	2,686
3. Water Works Supervisors. . . . .	9,500
4. Sewage Works Supervisors . . . . .	450
5. Water and Sewage Analysts . . . . .	2,000
6. Well Drillers . . . . .	2,000
7. Refresher Course for Senior Engineers . . . . .	2,000

3.157. It has been stated that the State Government have not made any separate assessment of requirements of trained personnel. The requirements for trained personnel have, however, been arrived at after discussion with State P.H.E. Departments from time to time. The State-wise break-up of the people trained in each category has not been compiled. However, the State Governments are actively participating in the P.H.E. Training Programme by deputing their candidates for post-graduate course, short-term course as well as refresher courses. The State Governments are also fully aware of the needs of the training programme. It is proposed to decentralise the training programme and some courses will be conducted by the State Governments to meet their and regional needs in future.

3.158. The following institutional arrangements are proposed during the Fifth Plan:—

- (i) Post-graduate course in public health engineering shall be started in at least one of the existing Engineering Colleges of each and every State. The State Government shall regularly depute candidates in their States with a view to achieve that at least 25 per cent of the graduates in the PHE Department should be given post-graduate training by the end of the 5th Five Year Plan period.
- (ii) Short-term course of three months duration for diploma holders will be conducted in all institutions where post-graduate courses are started during the 5th Plan period. The States should aim at training at least 25 per cent of the diploma holders by the end of 5th Plan period.
- (iii) In each State, the State Government should have the facility either in the Department or in an institution to give in service training for a period of 3 months to all new entrants who are graduates.
- (iv) Proposals have already been initiated by the Ministry of Health to hand over the responsibility of running the Water Works Supervisors course at regional centres. So far only 3 State Governments have expressed their willingness to start the course in one of their water works. It is expected that a policy decision will be taken during the next year on this issue.

#### *Standardisation of Qualifications and Training of Plant Operators*

3.159. The Committee on Plan Projects had in their Report (1961) on National Water Supply and Sanitation Programme considered it necessary to standardise the qualifications and training of plant operators of different grades in order to bring them under National Certificate Scheme. That Committee had recommended that the Ministry of Health should take necessary measures in this behalf in consultation with the State Governments. It has been stated in a written reply submitted to the Committee that this has received the consideration of the Ministry of Health and Certificate of operators is likely to be introduced in the Fifth Five Year Plan.

3.160. Asked why the implementation of this recommendation required 11 years time, the representative of the Ministry of Health and Family Planning stated during evidence that as there were not adequate number of Plant operators of different grades available in the country, the certificate programme could not be planned. However, he agreed with the view that the start should now be made. He informed the Committee that minimum



qualifications for admission to the water Plan operators' course had been fixed and the syllabus drawn and the course had been conducted by the Ministry of Health.

*Assessment regarding adequacy of existing courses in Public Health Engineering*

3.161. It has been pointed out to the Committee that:—

“It is also very important that all such courses offered at different centres are of comparable standard. A course in public health engineering at post graduate level requires the blending of several disciplines many of which are not readily available in an engineering institution. Supplementation of staff and equipment is quite expensive and is not always justified. It is not desirable to allow a large number of institutions to offer the course without making adequate provision of staff and equipment.

The existing facilities are meeting the present needs. There is still scope of enlarging the capacities of these institutions to increase the intake temporarily thereby meeting an extra demand, which may last for 5 to 6 years. It is, however, desirable to have an assessment of the existing courses to obtain a comparable standard of training at all centres. The C.P.H.E.O. may arrange for such an assessment. The Centre through the C.P.H.E.O. may supplement facilities wanting in these institutions. All these institutions should come under the assistance of the centre. A student may be encouraged to undertake the course and financial assistance in the form of stipend, free tuition etc. may be offered as good incentives.”

3.162. The representative of the Ministry of Health and Family Planning stated that no careful or detailed assessment regarding the adequacy of the existing course or facilities had been made by the Ministry.

3.163. The Committee are greatly disappointed to note that during the 15 years that the training programme has been in vogue only a fraction of the target has been achieved. The Committee feel that inadequacy of the stipend which is said to be only Rs. 150 can only be a part of the reason. They feel that the whole curricula of the training programme should be thoroughly gone into in consultation with the State Governments so as to make it of practical use in everyday work to the officers who are deputed for it. The Committee would also suggest that the training should be dispersed over various parts of the country so as to facilitate its implementation. The Committee would also suggest that the training programme for the Fifth Plan should be worked out on a realistic basis

for various categories of staff laying special emphasis on problems which they would have to face in the execution of the Plan schemes and in the maintenance of the water supply and sanitation equipment which would be installed. The Committee would like to be informed of the action taken in the matter within the next three months.

3.164. The Committee note that it has not been possible so far to standardise the qualifications and training of plant operators of different grades in order to bring them under National Certificate Scheme recommended by the National Water Supply and Sanitation Committee in 1961 as there were not a sufficient number of trainees available in the country. The Committee feel that it is high time that a beginning is made for proper organisation of training in this vital field so that properly trained operators are available to operate the various water and sewerage plants with maximum economy and efficiency.

3.165. The Committee note that no careful or detailed assessment has so far been made as to the adequacy of the existing courses of study for Public Health Engineers to meet the needs of implementation of the National Water Supply Programme and to see whether the existing courses attain a comparable standard of training at all Centres and whether the facilities wanting in the institutions have been made up. The Committee recommend that necessary steps should be taken to make such an assessment early and initiate suitable measures to bring the standard up to the mark.

## CHAPTER IV

### CONCLUSION

4.1. Wholesome and adequate supply of drinking water to the general public is now generally accepted as an essential civic amenity. As the position stands today, in rural areas piped water supply has so far been brought within the reach of only 22,000 villages comprising a just 3.07 per cent of the rural population which constitutes about 80 per cent of the total population of the country. In urban areas protected water has been made available only to 1282 towns out of 2921 towns in the country. Even in these towns the supply has been partial. Further, even at the end of the Fourth Plan there will still be 1274 towns in the country without this basic amenity. Only 186 towns have so far been connected by sewerage full or partial. Considering the magnitude of the problem viz., making available this basic necessity to a population of 55 crores and considering the back-log in the field, the pace of progress is too slow.

4.2. Viewing from the angle of progress achieved in the industrial and technological fields, the country is still lagging far behind in the matter of availability of safe water supply to its citizens. As would be seen from facts given later realisation of the imperative necessity of ensuring supply of safe and wholesome water has been slow to come in. Allocations for water supply have been low, and implementations of various recommendations for organisational and procedural reforms made at several forums and by several bodies have been half-hearted for which both the Central and State Governments have to share the responsibility. Government should take concerted and positive measures atleast from now onwards to ensure that this basic requirement of wholesome and adequate drinking water is made available to every village and hamlet in accordance with a persptive plan in the shortest possible and specified period.

4.3. There has been a steady increase in water supply in urban areas of the country during the last two decades. The percentage of urban population served by water supply has risen from 48.5 per cent in 1944 to 60 per cent in 1961 and to 77 per cent in 1971. 1274 towns where there are no arrangements for safe water supply are intended to be covered with water supply during the Fifth Plan covering by and large the entire urban population. Further, slum improvement schemes have been launched in 11 cities which will also take care of the water supply needs of these cities. However, no figures are available regarding the actual

coverage of the urban population in different towns where water supply is available only partially. Thus while there would be as many as 1274 towns in the country without any organised system of water supply at the end of the Fourth Plan there may be large sections in other urban areas without water supply. Whereas such sections are likely to increase further in view of the tendency of expansion of the cities and towns necessary data in this regard also should be collected and adequate provisions made to cover such population simultaneously.

4.4. It is distressing to note the dismal situation of water supply prevailing in the rural areas of the country today. Even twenty-five years after independence 4.55 lakh villages out of 5.67 lakh villages in the country are still dependent on ancient means of water supply such as hand-pumps, tanks, wells, rivers, streams and springs. What is most deplorable is that there are still about 90,000 "scarcity" villages where water is not available within a depth of 50 feet or within a distance of one mile and there are still about 61,000 "health problem" villages where water is infected with various health hazards.

4.5. Although National Water Supply and Sanitation Programme is working for the last 18 years about 22,000 villages only have so far been covered with piped water supply benefiting a population of just 3.07 per cent of the rural population. It has yet to be fully realised that with 80 per cent of the country's population living in the rural areas, water supply forms the most important single factor for improving nation's health. Considering the long neglect in the past, it is urged that this subject should hence forward be allotted special importance and urgency in the National plans.

4.6. The Scheme of Special Investigation Divisions was initiated in 1962 to investigate the problem of rural water supply in difficult and scarcity areas of the country so that priorities could be determined. It is disturbing to note that according to initial investigations about 13 crores of rural population should be either without a source of water within a reasonable distance or depth or if water was available it would not be safe to drink.

4.7. There is a difference of opinion in regard to the number of scarcity and problem villages between the Central Health Ministry (now Works and Housing) and some of the State Governments. In some cases such as in the case of Rajasthan there is wide disparity in the assessment. The matter should be re-examined in all its aspects and agreed conclusions arrived at and priorities determined accordingly. This assessment work should be completed before the end of the Fourth Plan so that necessary steps could be initiated in time to make safe water available to the remaining areas during the Fifth Plan.

4.8. Special difficulties are being experienced by Hilly regions of Meghalaya. It is noted that a new working definition of scarcity villages has been adopted in the case of Meghalaya viz. absence of a perennial source of water within a hundred metre vertical distance.

4.9. This definition should be adopted in other hilly regions also.

4.10. According to the findings of the Central Water and Power Commission that construction of large reservoirs was not always safe in the seismic zones. Apart from that the economics of pumping water from storage reservoirs to individual communities may not prove favourable. Further, in view of economic conditions of the people in these regions and high costs of these works, the provision of drinking water had to be linked with the overall development of the region. The suggestion of constructing storage tanks for a group of rural communities at suitable places in the Hilly regions is welcome. It is suggested that comprehensive proposals may be drawn up for implementation not only under the Accelerated Water supply Programme but also under the regular programmes for execution during the Fifth Plan for the hilly regions.

4.11. The National Water Supply and Sanitation Committee (1960-61) of the Ministry of Health had recommended the highest priority to the provision of safe water supply to the rural population as in their opinion this could be one positive step for eradication of water-borne and filth borne diseases. That Committee had desired that safe water should be Third Plan if possible, and before the end of the Fourth Plan in any case." provided within the reach of "every village and hamlet by the end of the The Drinking Water Board (1963) had also given the highest priority to the provision of water supply in the difficult and scarcity areas. In view of the importance of the matter the Board had chosen to give an interim report on the subject and had stipulated a period of five years for implementation of this phase of the programme. It is, however, disappointing to note that this programme continued to be overlooked for want of funds.

4.12. The Approach Paper of the Planning Commission envisages an allocation of Rs. 550 crores as against Rs. 650 crores asked for by the Ministry of Health and Family Planning (now Works and Housing), for providing safe water supply in scarcity and health problem villages. More than the financial provision, there has to be a greater stress on physical achievement of the target, as what the Plan sets out achieve, is the provision of safe water supply to as many as 1,24,000 villages, as compared to only 22,000 villages which have been provided piped water during the last 20 years. The Planning Commission and Government should at all levels prepare, without delay, plans and designs for implementation of the pro-

gramme. There would also have to be careful planning of material resources, particularly water pipes and pump sets etc., so that these do not become a constraint in the implementation of the programme. Also, a detailed annual plan should be prepared indicating, *inter alia*, the complete schemes which are to be taken up and the relative priorities. This would enable Government at various levels, not only to ensure timely implementation, but would also facilitate the task of monitoring and taking remedial measures where necessary, to ensure that the Plan targets do not slip.

4.13. It is greatly distressing to find that the Special investigation Divisions which were set up as early as 1962, have been able to cover only 65,000 villages so far, out of about 1,52,000 scarcity and problem villages in the country. However it is understood that the remaining villages totalling 87,000 would be surveyed before the end of the Fourth Plan. This statement is amazing as it is proposed to achieve within the course of a few months, the survey of 87,000 villages, which is practically one and half times of what had been done in the earlier ten years. There has been obviously no close watch kept on the progress made by the Special Investigation Divisions in carrying out their work from year to year, and to take active measures to see that the work was speeded up. Apart from the speed, what has caused great concern is the view expressed by knowledgeable authorities that the data collected through these surveys in many cases is not accurate or reliable. This could and should have been avoided by issuing suitable guidelines for investigation work, right in the beginning, by contemporaneous review of the work carried out and by taking effective measures to bring about improvement. Even now where the data is not complete or accurate or reliable, no time should be lost in correcting it.

4.14. On the one hand, a plea is put forward by several State Authorities that the staff sanctioned for the Special Investigation Divisions is inadequate and, on the other it is the view of the Central Ministry that the staff for the investigation work are diverted to other assignments. There should be an agreed approach in this matter and both the Centre and the States should ensure, not only that the work of investigation is completed according to a detailed programme to be drawn up in that behalf but that the data collected and thrown up are completely reliable, to provide the basis for detailed planning and designing.

4.15. The merit of establishing a separate planning and design unit since 1972, for working out details of rural water supply, for implementation is not convincing. The work of planning and designing should be made an integral part of the investigation units, which should be suitably strengthened where necessary, for this work.

4.16. It is noted that Government are determined to ensure that safe water supply becomes available at least to all the 1,52,000 scarcity and problem villages. This task can be performed only if there is detailed planning and designing, in advance. This under-scores the need for strengthening suitably, the Special Investigation Divisions to perform this work, according to a prescribed time-schedule. There should be a contemporaneous watch at high levels, to see that the work proceeds on the right lines to throw up reliable data and that correct remedial measures are taken where necessary, in time.

4.17. A centrally sponsored scheme of Planning and Design Units, has been put into operation during 1972 to ensure that at the beginning of the Fifth Plan an adequate number of properly investigated and designed schemes are available for being taken up for implementation without any loss of time. These units should be ready with a sufficient number of schemes in advance for implementation towards the end of the Fourth Plan and the beginning of the Fifth Plan.

4.18. The norms prescribed for preparation of these schemes should be re-examined to ensure that they are realistic.

4.19. Sewerage facilities in urban areas do not exist in several States like Assam, Jammu & Kashmir, Meghalaya, Nagaland, Tripura, Manipur, and Andaman and Nicobar Islands. In some other States such as Andhra Pradesh, Bihar, Himachal Pradesh, Kerala, Orissa and Rajasthan the facilities are only nominal. None of these States has more than 3 cities which have any sewerage arrangements even partially. In all, there are 186 towns in the country today which are seweraged out of a total number of 2921 towns. Even in these cities there are areas which are unsewered. Considering the fact that the number of towns and cities covered by the facilities of water supply has reached 1282 in March, 1971 benefiting a population of 841.71 lakhs and another 500 towns are targetted to be covered during the Fourth Plan period further benefiting about a crore of people and there is further a proposal to cover all the remaining towns in the country with water supply during the Fifth Plan, it is high time that adequate steps are taken to provide sewerage facilities to the towns which are already covered by water supply. According to the Ministry of Health and Family Planning the total cost of covering 2735 towns with sewerage facilities will amount to Rs. 1346 crores. That Ministry have in their Approach paper for the Fifth Plan proposed to cover 83 towns with a population of one lakh by sewerage facilities at an estimated cost of Rs. 970 crores. In addition the Ministry have asked for Rs. 400 crores to cover about 150 towns with solid waste disposal arrangements during the Plan Period. Realising the magnitude of the task ahead and considering the financial difficulties of the municipalities, it is not wish-

ed to recommend that the progress of water supply programmes should be stalled to meet the sewerage needs. However, time-lag between water supply and sewerage facilities has to be reduced and care has to be taken to ensure that the slums are not allowed to spread. It is, therefore, suggested that a phased programme may now be chalked out to make available this facility early, beginning with cities endemic to fifth-born diseases like filariasis and cholera etc.

4.20. While the setting up of the Water and Sewerage Boards will go a long-way in making these operations self-paying, ways and means have to be devised to find finances at the local levels also.

4.21. The Public Health Engineering Research Institute as well as other national health laboratories should address themselves urgently to the problem of evolving suitable equipment for sewage digestion, so as to do away with the need for importing Sewage Digesters. Some progress has already been made in this direction by evolving Oxidation Ponds, Oxidation Ditch and lagoons etc. It need hardly be stressed that if these processes are efficacious, they should be pressed into service without delay and improvements effected, in the light of experience. Also, continued research should be made, with a view to simplify and reduce the cost of treating the sewage, so as to keep the economic burden within the reach of the local population.

4.22. A comprehensive Water Pollution Bill is pending before a Joint Select Committee of Parliament. No doubt the Bill would take care of all aspects of water pollution, with particular reference to the health hazard which is being created at an increasing pace, by rapid industrialization of the country. With the advance in modern technology, there is no reason why we should not be able to eliminate this health hazard and pollution right in the beginning, instead of letting it become a problem of gigantic proportions, as is the case in some of the advanced countries. The legislation is as effective as its implementation. The Ministry of Health and Family Planning (now Works and Housing) should work out in detail, the machinery which would be required to implement the legislation on water pollution, so as to ensure that it is effectively administered in the interests of public health.

4.23. As has been mentioned earlier, out of 5.67 lakh villages, a mere 22000 have been provided with piped water supply and an overwhelming majority have to make do with traditional sources of supply, viz. dug-wells, pumps, ponds, tanks etc. The least that can be done by Government, is to ensure that the water actually being used by these villages is periodically tested, in order to determine its suitability for human consumption, and remedial measures taken as necessary, to improve its quality till safe water



supply can be provided on assured basis. The Central/State Governments should draw up pilot schemes in this behalf which, after being tested in the field, could be extended to other areas in the shortest possible time. It need hardly be pointed out that the tests for checking the quality of water should be simplified to the extent possible, with the help of research institutes, so as to enable the local civic authorities to undertake this task of testing.

4.24. It is of the utmost importance that the factors which cause pollution, should be thoroughly investigated by research and other allied institutions, so as to find efficacious remedies to pollution which results from industrial processes, particularly from the discharge of their wastes and effluents. It causes concern to find that out of 12 problems listed for urgent research in the context of preventing pollution, work is at present going on only in respect of 4 or 5 aspects, while the remaining have not received attention. Government should review the matter comprehensively, in consultation with the research institutions and all others concerned and draw up a meaningful and time-bound programme with proper priorities, for intensifying research to find efficacious answers to the problem of pollution, so that this could be given effect to, in the interests of public health.

4.25. At present 178 million gallons of drinking water is available to a population of 36 lakhs in the Capital which works out to 49.8 gallons per capita per day. It would appear from the available facts that so far all efforts towards water supply in Delhi have been based on an average supply of about 50 gallons per capita per day. In this connection it is pointed out that the Naskar Committee appointed by the Government of India to give recommendations regarding augmentation of water supply in Delhi had recommended in their Report in 1965 an average per capita per day supply of about 70 gallons. Calculated on the basis of the recommendations of the Naskar Committee, the present day requirement for Delhi would work out to about 300 m.g.d. Thus Delhi is short of the requirements by about 120 m.g.d. The considerations for which action for augmentation of water supply in Delhi is based on 50 gallons per capita/per day are not known. Further in some colonies of Delhi and in cantonment area 100 gallons of water is being consumed on an average per capita/per day; and in some places in New Delhi adding both filtered and unfiltered water average consumption ranges to 180 gallons a day. Government should keep these consideration in view while formulating future plans in regard to augmentation of water supply in Delhi.

4.26. There are localities in Delhi and New Delhi where the per capita per day water supply is 100 gallons and more and consequently there are colonies where water supply is less than the average of 50 gallons per head per day. This has happened as stated by Government on account of the distance of the colonies from the main headworks which are at the northern

end of the city and the expansion is going on towards southern and western areas. Further, there are many old areas like the old city, Sadar and Paharganj where the distribution systems are stated to be very old and require remodelling. Whatever may be the reason, whether for want of proper planning or for want of remodelling at appropriate stage of distribution systems, the citizen is hardly concerned and it is the duty of the planners and engineers to foresee such eventualities. In any case it is noted that some steps are already in hand such as putting up of regional overhead tanks in South Delhi and Rajouri Garden and installation of booster pumping stations at Ramlila-grounds and other places. It is hoped that these programmes would be expedited so as to bring about early relief to the citizens.

4.27. The decision to set up a statutory autonomous Board by amalgamating the Delhi Water Supply and Sewage Disposal Undertaking, the Water and Sewage Disposal Wings of the New Delhi Municipal Committee and the Cantonment Board is in the right direction. The setting up of this Board should help solve distribution and other problems and also help in bringing about an integrated approach towards augmentation of water supply in Delhi. Necessary legislation in this regard should be brought before Parliament early.

4.28. It is noted that the Government of India has set up a Committee to prepare a master plan for the development of water supply in Delhi during the next 30 years to be completed by three stages. It is suggested that a time schedule may be drawn for the completion of this plan which may be adhered to.

4.29. A number of organisations/Departments are concerned with Water supply in Delhi in one way or the other, such as the Health Ministry (now Works and Housing) the Planning Commission, the Ministry of Irrigation and Power, the Ministry of Home Affairs, the Delhi Municipal Committee, the New Delhi Municipal Committee and the C.P.W.D. It is surprising to note that coordination should be lacking among these bodies even in the Capital. However, though much belated, some coordinating efforts have been initiated in this direction since June, 1972 and it is hoped that these efforts will bring in the desired results.

4.30. However such half-hearted measures could not be of permanent value and much more drastic measures are absolutely essential for the Capital for an effective, and overall coordination among all the organisations concerned not only with water supply but with all civic amenities such as electricity, transport, medical facilities, education etc. under a high power coordinating authority. It is noted that in Calcutta, Calcutta Metropolitan Development Authority has been formed with a view to achieve such coordination under the Health Ministry (now Works and Housing). In this connection the Estimates Committee have in their report on "Housing"

commended the suggestion in regard to vesting in the Lt. Governor all necessary powers of the Central Government for bringing about coordination among the different organisations engaged in providing various civic amenities in Delhi. It is hoped this suggestion will also receive serious consideration by Government.

4.31. It has been assured during evidence before the Estimates Committee that water supplied to Delhi is quite potable. It is, however, noted that River Jamuna is being grossly polluted in Delhi and that an Action Group is already on the job to take suitable steps to prevent pollution of the river with the help of Central Public Health Engineering Research Institute. The nature and sources of pollution should be identified expeditiously and suitable measures taken to prevent water pollution in Delhi.

4.32. It is noted that water supply and sanitation has not received the attention it deserved in the Five Year Plans in spite of the fact that its importance had been emphasised early by the expert bodies like Health Survey and Development Committee, 1945 and by the Planning Commission itself. During the first two Plans meagre allocations were made and even these were not fully utilised. Lower allocations were made in the Third Plan as compared to the needs indicated by expert bodies like Third and Fourth Conferences of Public Health Engineers in 1958 and 1960 and by the National Water Supply and Sanitation Committee in 1961 and even though the Health Ministry (now Works and Housing) had all along been pressing for higher allocation for water supply. It is surprising to note that in this vital sector of nation building activity no specific targets physical or financial were fixed before the Fourth Plan. Naturally not much progress could have been expected.

4.33. However an encouraging trend in this regard is noted since the beginning of the Fourth Plan in which Rs. 400 crores have been allocated for water supply and sanitation sectors out of which Rs. 123 crores have been earmarked for the Rural Sector. According to the indications against this allocation of Rs. 123 crores, for the rural sector, expenditure is likely to be of the order of Rs. 140 to 150 crores. It is also noted in particular that the States have been giving an increasingly higher priority to this Programme.

4.34. It is hoped that this sector of the Programme will henceforward receive appropriate place in the Plans and the allocations will be such as to ensure that the basic facilities of safe water supply and sanitation are made available throughout the country in a phased manner by a specified date, at any rate before the end of the next decade.

4.35. The difficulties are being experienced by the Public Health Engineering Departments in the States in regard to the procedures involved in getting the amounts released through local bodies. Even though the

amounts are provided in the budget and vote on account of the legislature is obtained in the beginning of the year itself, the amounts are actually released to local bodies towards the middle or fag-end of the year as they have to go through a number of procedural formalities. Consequently, the Departments concerned are not able to sustain the tempo of work right through the year. Ways and means should be devised to place funds in time in the hands of the executing authorities in order to sustain the tempo in the implementation of programmes.

4.36. Even though the cost of water supply has been steadily rising consequent to the rising capital investments for setting up new high cost projects and for augmenting existing water supply systems there has been a general reluctance on the part of local bodies to raise correspondingly the water charges with a view to make the water supply schemes viable. There is a demonstrated reluctance on the part of the local bodies who are operating water supply to depart from flat rates to metre rates because of administrative difficulties and apprehensions of unpopularity. Consequently there is hardly a major local authority in the country with the exception of Madras and New Delhi Municipal Committee that has not been incurring deficits which have to be made up from general revenues. This has in turn inhibited the initiative of the local bodies towards assuming responsibility for operating, maintaining and extending water works.

4.37. It is hoped that with the setting up of Water and Sewerage Boards the problem of financing and management of water works would be solved to a great extent.

4.38. A study of losses incurred by local bodies on account of prescription of flat rates and non-metering should also be taken up early. Such a study, will be helpful in bringing home to all concerned the real implications of adhering to the policy of flat rates and non-metering.

4.39. A number of expert bodies have from time to time recommended the setting up of autonomous statutory water and sewerage boards on a Statewise or regionwise basis as an effective means for increasing efficiency of financing and operating municipal water supply and sewerage services. It is, however, unfortunate that even though the proposal was first put forth over a decade ago, very little has been done in most of the States to implement the recommendations of such bodies as the Technical Cooperation Mission Team in 1960 and the Seminar of 1964. Such a Board has so far been set up only in Tamil Nadu.

4.40. Even the Central Government hardly evinced any interest in this important aspect of the problem. A high power Committee was set up in 1965 on the lines indicated by the National Water Supply and Sanitation Committee, 1960-61 and as reiterated by the Seminar in 1964, for setting out concrete measures to be taken by State Government and to draft

model enactment for setting up Statutory Boards, defining their powers and duties and recommend appropriate methods of fund raising. It is indeed very sad to learn that this Committee never met and in 1968 it was even decided that this body need not be reconstituted.

4.41. Again, even though the working of the Board in Tamil Nadu has been considered to be on the right lines by the Central Government, they have not circulated any paper to the States apprising them of the experiences of the working of this Board.

4.42. At the moment the country is on the threshold of the Fifth Five Year Plan, which envisages provision of basic facilities to the people and amongst these water supply is of paramount importance. It is about time that the necessary administrative machinery is geared up to implement the programme envisaged in the Plan. The proposal in regard to the setting up of the Water and Sewerage Boards may help in finding a satisfactory solution to the whole problem of financing and management of the Water and Sewerage Works. Central Government/Central Public Health Engineering Organisation should assume the leading role in this matter and persuade the State Governments to set up these Boards.

4.43. Hardly any coordination exists at present amongst the different Central Ministries for the implementation of different programmes of water supply. The decision for setting up a coordination authority for all the programmes connected with water supply is welcome.

4.44. The system of spending substantial amounts by Government towards construction of water supply and sewerage schemes leaving them to be managed by local authorities without making proper arrangements for their maintenance have led in some cases to very unsatisfactory results is not a happy state of affairs. The Central Government should take up this matter with State Governments to ensure effective and efficient maintenance of all water supply in the interest of long life of plants, low maintenance cost, quality control and above all continuity of services.

4.45. Apart from lack of adequate financial resources for implementing the programme for making available safe water supply and sanitation, the greatest constraint has been constituted by lack of availability in requisite quantities and in time of essential materials like rigs and pipes for implementation of the programme. It has already been recommended that there should be a perspective plan for making available safe water and sanitation in all parts of the country by a specified date, at any rate before the end of the next decade. Government should also work out a corresponding perspective plan in respect of materials. It need hardly be pointed out that unless there is integrated planning, there is no hope of the programme being implemented fully by the target date.

4.46. It is a matter of great concern to find that rigs of the requisite capacity and quantity are not available within the country with the result that Government had to enter into a special agreement with UNICEF for importing 100 rigs in connection with water supply schemes in hard rock areas as also for meeting the requirements of areas hit by drought conditions. It is pointed out that both the Heavy Engineering Corporation and the Hindustan Machine Tools which have been set up at heavy cost from the public exchequer have surplus capacity. There is no reason why with the advanced planning and proper coordination the manufacture of rigs could not be undertaken in these public sector undertakings and other industries so as to meet in full the requirements of the country. The Government should set up a high-powered task force to work out urgently the requirements for rigs and to plan their production within the country. This should, however, not be understood as ruling out import of rigs to meet emergent requirements but maximum effort should be made to put our manufacturing capacity to full use in the interest of meeting the urgent requirements of our country for rigs and such other essential equipment required for public service.

4.47. As regards the C.I. pipes, while the licensed capacity is 6 lakh tonnes, the installed capacity achieved so far is not more than 4.47 lakhs tonnes while the production has been only 2 lakhs tonnes. It is, therefore, only natural that acute difficulty is being experienced all over the country in getting pipes for water supply. Government should study urgently the reasons why it has not been possible to achieve the full production capacity of at least 4.47 lakh tonnes as per installed capacity. The requirement of C.I. pipes for the Fifth Plan is estimated at 25.70 lakh tonnes which is  $2\frac{1}{2}$  times the actual total annual production attained so far. It is obvious that if we have to develop a capacity of this order, no time should be lost in preparing detailed schemes for implementation as a crash programme. This would need not only thorough investigation with reference to availability of raw materials, power supply and other infra-structures but also coordinated action for procurement of the requisite machinery for the manufacture. Also, the requirements of galvanised iron pipe for the Fifth Plan is estimated at 19 lakh tonnes as compared to 2.77 lakh tonnes which we are at present producing, thus envisaging at least double the present manufacturing programme. As pointed out in the case of C.I. pipes, this can only be achieved if there is a fully worked out detailed scheme for implementation in an integrated manner.

4.48. In the case of Asbestos Cement pressure pipes and other stoneware pipes too which are required for sanitation works the increase in the Fifth Plan, as compared to the present production, is double and therefore it is imperative that detailed planning should be done without delay so that the manufacturing capacity can be established and brought into effect by the Plan target dates. Government should realise the serious implications of

the targets envisaged so that they press into service all their organisational and entrepreneurial skill to bring about the increase in the manufacturing capacity. It need hardly be pointed out that decision should be taken at the highest level about the setting up of these factories in the public and private sectors and the location of these units so as to save time, and clear guide lines given for implementation.

4.49. Government should take note of the advances which have been made in the other countries particularly in the use of P.V.C. pipes so that consistent with its proven qualities it can be put to service in the interest of reducing the cost and speeding up the implementation programme.

4.50. Government should intensify the research in a coordinated manner on all these materials particularly the pipes so as to reduce the cost of production and find alternative substitutes which would bring down the cost.

4.51. Government should clearly indicate in the Fifth Plan document the concrete measures which they are taking to ensure the supply of materials particularly the pipes required for implementation of water supply and sanitation programmes so that the Members of Parliament and the public know the earnestness with which the Government are proposing to implement the scheme in a systematic and rational manner.

4.52. The lessons the nation has learnt in the matter of organising agricultural research and other scientific research should be applied in the field of water and health problems as well. This would call for an identification of the primary problems requiring intensified research, determination of priorities and a well-coordinated programme for allocation of these research problems to the research institutions for a meaningful, intensified and co-ordinated effort to achieve the necessary break-through in the shortest period. There should be an effective and meaningful coordination at the Centre by a body which should have on it the best technical talent available in the field so as to provide guidance. Programme should be reviewed at least once a year and a well-documented account brought out for information of all concerned. These research centres should have close link with the extension centres so that practical solutions which can be applied are evolved. Where there is need for foreign assistance for intensifying research, the help of United Nations Organisations such as W.H.O. and U.N.D.P. may be taken in a systematic and urgent manner so as to put it to maximum use.

4.53. It is disappointing to note that during the 15 years that the training programme has been in vogue only a fraction of the target has been achieved. Inadequacy of the stipend which is said to be only Rs. 150/- can only be a part of the reason. The whole curricula of the training programme should be thoroughly gone into in consultation with the State Governments so as to make it of practical use in every day work to the officers

who are deputed for it. Also, the training should be dispersed over various parts of the country so as to facilitate its implementation. Further, the training programme for the Fifth Plan should be worked out on a realistic basis for various categories of staff laying special emphasis on problems which they would have to face in the execution of the Plan schemes and in the maintenance of the water supply and sanitation equipment which would be installed.

4.54. No careful or detailed assessment has so far been made as to the adequacy of the existing courses of study for Public Health Engineers to meet the needs of implementation of the National Water Supply Programme and to see whether the existing courses attain a comparable standard of training at all Centres and whether the facilities wanting in the institutions have been made up. Necessary steps should be taken to make such an assessment early and initiate suitable measures to bring the standard up to the mark.

NEW DELHI

KAMAL NATH TEWARI

April 21, 1973.

Chairman

Vaisakha 1, 1895 (Saka).

Estimates Committee.



APPENDIX I  
(Vide para 2.17)

Statement showing the Number of Villages, Population and percentage Rural Population covered by Water Supply in March, 1960, March, 1970 & March, 1972

S. No.	I		II				III		
	Name of State/Union Territory	March, 1960	No. of villages covered	Population covered (in lakhs)	Percentage of rural population covered (based on 1961 census)	No. of villages covered	Population covered (in lakhs)	Percentage of rural population covered (based on 1971 census)	
		Villages covered under National Water Supply & Sanitation Programme with piped w.s. tubewells etc.							
1	2	3	4	5	6	7	8	9	
1	Andhra Pradesh	780	160	8.0	2.70	252	10.6	3.03	
2	Assam	1947	83	0.38	0.35	123	0.54	0.40	
3	Bihar	584	808	10.00	2.40	865	10.5	2.06	
4	Gujarat	NA	223	NA	NA	2289*	14.0	7.29	
5	Haryana	NA	34	3.80	NA	454	5.45	6.65	
6	Himachal Pradesh	NA	2086	5.0	38.46	2574	5.00	15.63	
7	Jammu & Kashmir	7	2800	10.0	33.33	1073	11.12	29.26	
8	Kerala	31	290	13.72	9.59	350	16.95	9.52	

1	2	3	4	5	6	7	8	9
9	Madhya Pradesh . . . . .	671	1501	5.0	1.80	260	1.00	0.29
10	Maharashtra . . . . .	858	328	3.87	1.36	780	10.00	2.89
11	Meghalaya . . . . .	Included in Assam				88	0.20	2.33
12	Mysore . . . . .	183	384	8.62	4.71	554	13.25	6.00
13	Nagaland . . . . .	NA			NA	213	0.37	8.10
14	Orissa . . . . .	1141	104	3.00	1.83	145	3.34	1.66
15	Punjab . . . . .	346	173	2.23	1.38	233	2.63	2.55
16	Tripura . . . . .	—	NA	—	NA	—	NA	—
17	Rajasthan . . . . .	4597	257	8.59	5.08	537	17.0	8.01
18	Tamil Nadu . . . . .	518	86	3.01	1.22	2750	13.00	4.53
19	Uttar Pradesh . . . . .	1563	2935	14.36	2.23	7976	20.48	2.69
20	Manipur . . . . .	NA	NA	NA	NA	40*	0.20	2.15
21	West Bengal . . . . .	1357	NA	NA	NA	266	3.00	0.90
22	Arunachal . . . . .		NA	NA	NA	39	0.08	1.86
23	Andaman & Nicobar Islands . . . . .		41	0.15	30.61	42	0.16	18.00
24	Chandigarh . . . . .		8	0.24	NA	12	0.18	75.00
25	Dadar & Nagar Haveli . . . . .				NA	1	0.10	13.51
26	Delhi . . . . .			NA	NA	30	0.75	18.75

27	Goa, Diu & Daman	130	25	0.63	—	29	0.66	14.76
28	Laccadive & Minicoy Is.		NA]	—	—	—	—	—
29	Pondicherry		191	2.32	22.86	196	2.38	87.18
30	Mizoram			included in Assam				
	Total :	14713	14832	102.92	—	22171	162.94	3.07

\*Figures available upto 1970-71 only.

Col.(I)—Details as per page 21 of National Water Supply & Sanitation Committee Report.  
Col.II & III—Details relate to mostly piped water supply schemes only (report ending 3/70, 3/72).

(i) Population coverage for March, 1960 is not available  
*Item.XVI, XVII & XVIII*

(ii) Partial coverage figures not available.

## APPENDIX II

(Vide para 2.26)

*National Water Supply and Sanitation Programme Preliminary Assessment of the Rural Water Supply Problem at the end of IV Five Year Plan*

S. No.	State/U.T.	Total No of villages as per 1961 census	Total population (1971 census)	5	6	7	8	9	10	11	12	DIFFICULT, SCARCITY & HEALTH PROBLEM VILLAGES	
												With sources deep & 1 mile distance	Cholera endemic
1	Andhra Pradesh	27084	34999146	5233	713	72	115	6133	3240	2893	1504		
2	Assam	20602	13412609	2599	834	6	4180	7619	160	7459	4470		
3	Bihar	67665	50678457	10000	25000			35000	900	34100	4774		
4	Gujarat	18584	19180094	3000	—			3000	1000	2000	3000		
5	Haryana	6800	8197829	3138	31		1022	4191	300	3891	4550		
6	Himachal Pradesh	10438	3182703	9400	—			9400	2456	6944	3330		
7	Jammu & Kashmir	6559	3772417	4000	—			400	1534	2466	2448		
8	Kerala	1574	17814983	1200	—		314	1514	800	714	2100		
9	Madhya Pradesh	70414	34880361	7000	4181	2839		14020	7000	7020	1931		

10	Maharashtra	.	.	35851	34632089	4507	726		5233	2200	3233	3611
11	Meghalaya	.	.	4407	855325	1549	45	1712	3306	225	3081	605
12	Mysore	.	.	26377	22148627	6584	1503	165	8252	1000	7252	5058
13	Nagaland	.	.	814	464490	814	..	..	814	536	278	288
14	Orissa	.	.	46466	20120336	4328	282	9	4619	200	4419	1416
15	Punjab	.	.	11937	10263827	644	..	1696	2340	386	1954	1860
16	Rajasthan	.	.	32240	21194817	4277	..	..	4277	1021	3256	3710
17	Tripura	.	.	4932	1435047	1800	..	1596	3396	500	2896	840
18	Tamil Nadu	.	.	14124	28656265	1315	542	93	2585	200	2385	3816
19	Uttar Pradesh	.	.	112624	75996292	14334	..	1244	15478	3171	12307	8450
20	Manipur	.	.	1866	927860	700	..	400	1100	..	1100	750
21	West Bengal	.	.	38530	33511696	900	N/A	11551	12451	400	12051	4820
22	Andaman Nicobar	.	.	399	88878	70	..	..	70	14	56	11
23	Arunachal	.	.	2451	430885	2451	..	..	2451	400	2051	664
24	Chandigarh	.	.	23	23975	..	..	..	..	..	..	..
25	Dadra & Nagar Haveli	.	.	72	74165	..	..	72	72	72	..	..
26	Delhi	.	.	220	414496	145	..	..	145	84	61	122
27	Goa Daman & Diu	.	.	275	613781	N/A	..	241	241	173	68	759
28	Laccadive Minicoy Is.	.	.	10	31798	..	(only simple measures are done)			..	..	..
29	Pondicherry	.	.	338	723076	75	..	..	75	25	50	28
30	Mizoram	.	.	693	284520	693	..	..	693	33	660	360
TOTAL		.	.	567169	438580844	90556	33857	3184	24778	27830	124645	65275
Say		.	.	5.67	lakhs 43.86	crores.						

### APPENDIX III

(Vide para 2·26)

*Villages in the permanently disadvantageous areas of the country compiled State and districtwise respectively*

State	Name of Districts	Total No. of villages
Bihar	Districts of Patna, Gaya, Sahabad, Ranchi, Hazaribagh, Palamu, Singhbhum, Dhanbad, Bhagalpur, Monghyr (South of Ganges) and Santhal Paraganas.	10,000
Punjab	Hoshiarpur, Ruper, Gurdaspur, Ferozpur, Bhatinda.	644
Tamilnadu	Chingleput, North Arcot, Thiruchurupalli, Coimbatore, Ramnad, Madhurai, Salem Tirunelveli and Kanyakumari.	1,315
Madhya Pradesh	Almost all Districts, Jhabua, Raigarh, Bastar, Khargaon, Balgarhs, Shadol, Bilaspur, Panna, Jabalpur, Mandla, Vidisha, Mandasore, Raipur, Chatterpur and Durg.	7,000
Uttar Pradesh	Nainital, Almora, Allahabad, Mirzapur, Varanasi, Dehradun, Pauri, Tehri, Jhansi, Banda, Saharanpur, Jaloun, Agra, Hamidpur, Mathura, Utterkashi, Chamoli, Pithoragarh.	14,234
Kerala	Quilon, Alleppy, Palghat, Khozikode, Cannanore.	1,200
West Bengal	Jalpaiguri, Midnapur, Darjeeling, Bankura, Birbhum, Malda, Burdwan, 24 Paraganas and Purulia.	900
Assam & Meghalaya.	Darrang, Kamrup, Cachar, North Cachar, Goalpara, Garo Hills, Lakimpur, Nowgong.	2,599 + 1,549
Haryana	Hissar, Rohtak, Gurgaon, Karnal, Ambala, Jind, Mohindergarh.	3,138
Gujarat	Broach, Surat, Banaskantha, Pachmahal, Rajkot, Sur-endranagar, Junagarh, Jamnagar, Kutch.	3,000
Mysore	Mysore, Hassan, Shimoga, Dharwar, Gulberga, Bidar.	6,584
Andhra Pradesh	Srikakalam, Vishakapatnam, East Godavari, Guntur, Nellore, Cuddapah, Kurnool, Ananthapur, Hyderabad, Warangal, Mahabubhnagar, Nizamabad, Nalagonda, Khammam, Medak and Adilabad.	5,233

State	Name of Districts	Total No. of villages
Rajasthan	Bikaner, Churu, Nagour, Barmer, Jaisalmer, Ganganagar, Jhunjhnu, Sikar, Jaipur, Tonk, Sawaimadhopur, Alwar, Bharatpur, Pali, Jodhpur and Jalore.	4,277
Maharashtra	(District being resurveyed).	4,507
Himachal Pradesh	(All Districts)	9,400
J. & K.	(All Districts)	4,000
Nagaland	(All Districts)	814
Orissa	(All Districts not yet surveyed)	4,328
Tripura	(Most of the Districts)	1,800
Manipur	(Most of the Districts)	700
A. & N. Islands	.	70
Arunachal	(All Districts)	2,451
Delhi	.	145
Pondicherry	.	75
Mizoram	(All Districts)	693
Goa, Daman and Diu.		N.A.
		90,656

## APPENDIX IV

(Vide para 3.10)

### Statement showing Financial outlay and Physical Targets for IV Plan

S.No.	Name of State	Total outlay	Outlay on Urban W/S and Sanitation	Outlay on Rural W/S	No. of Towns.	Physical Targets (Rural Water Supply)	Piped Water Supply No. of Villages.
1	2	3	4	5	6	7	7
1	Andhra Pradesh . . . . .	2160	1460	700	50	350	
2	Assam . . . . .	695	611	84	4	73	
3	Bihar . . . . .	1750	1384	366	9	425	
4	Gujarat . . . . .	1600	965	635	50	800	
5	Haryana . . . . .	850	230	620	16	597	
6	Himachal Pradesh . . . . .	235	..	235	Nil	1186	
7	Jammu & Kashmir . . . . .	696	242	454	11	530	
8	Kerala . . . . .	1075	375	700	24	140	
9	Madhya Pradesh . . . . .	1950	1150	800	38	200	
10	Maharashtra . . . . .	10295	8795	1500	75	573	
11	Meghalaya . . . . .	195	25	170	Nil	151	
12	Mysore . . . . .	2300	1400	900	66	600	



13	Nagaland	3	•	•	•	•	•	•	310	209	101	Nil	NA
14	Orissa	5	•	•	•	•	•	800	514	286	286	11	19C
15	Punjab	•	•	•	•	•	•	700	360	340	340	25	548
16	Tripura	•	•	•	•	•	•	35	25	10	10	60	NA
17	Rajasthan	•	•	•	•	•	•	3033	1033	2000	2000	2	798
18	Tamil Nadu	•	•	•	•	•	•	4000	3150	850	850	26	1271
19	Uttar Pradesh	•	•	•	•	•	•	2175	1175	1000	1000	2	1102
20	Manipur	•	•	•	•	•	•	54.38	26.63	27.75	27.75	0	17
21	West Bengal	•	•	•	•	•	•	667	334	353	353	17	594
22	Arunachal Pradesh	•	•	•	•	•	•	54	15	30	30	0	500
23	Andaman & Nicobar Islands	•	•	•	•	•	•	235	225	10	10	0	14
24	Chandigarh	•	•	•	•	•	•	4	•	4	4	0	9
25	Dadar & Nagar Haveli	•	•	•	•	•	•	10	3	7	7	0	1
26	Delhi	•	•	•	•	•	•	3200	3100	100	100	0	234
27	Goa, Daman & Diu	•	•	•	•	•	•	411	361	50	50	1	23
28	Laccadive & Minicoy Islands	•	•	•	•	•	•	•	•	•	•	•	•
29	Pondicherry	•	•	•	•	•	•	104	84	20	20	2	43
30	Mizoram	•	•	•	•	•	•	with Assam	with Assam	with Assam	with Assam	1	•
Grand Total										12352.75	28095.63	508	10369

## APPENDIX V

### *Statement showing the Summary of Recommendations*

Sl. No.	Ref. to Para No. of the Report	Summary of Recommendations
1	2	3
1	1.16	Wholesome and adequate supply of drinking water to the general public is now generally accepted as an essential civic amenity. As the position stands today, in rural areas piped water supply has so far been brought within the reach of only 22,000 villages comprising a just 3.07 per cent of the rural population which constitutes about 80 per cent of the total population of the country. In urban areas protected water has been made available only to 1282 towns out of 2921 towns in the country. Even in these towns the supply has been partial. Further, even at the end of the Fourth Plan there will still be 1274 towns in the country without this basic amenity. Only 186 towns have so far been connected by sewerage full or partial. Considering the magnitude of the problem viz., making available this basic necessity to a population of 55 crores and considering the backlog in the field, the Committee consider the pace of progress too slow.
2	1.17	Viewing from the angle of progress achieved in the industrial and technological fields, the country is still lagging far behind in the matter of availability of safe water supply to its citizens. As would be seen from facts given in the later Chapters of this report, realisation of the imperative necessity of ensuring supply of safe and wholesome water has been slow to come in. Allocations for water supply have been

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low, and implementations of various recommendations for organisational and procedural reforms made at several forums and by several bodies have been half-hearted for which both the Central and State Governments have to share the responsibility. The Committee cannot but strongly urge Government to take concerted and positive measures atleast from now onwards to ensure that this basic requirement of wholesome and adequate drinking water is made available to every village and hamlet in accordance with a perspective plan in the shortest possible and specified period.

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2.11

The Committee note that there has been a steady increase in water supply in urban areas of the country during the last two decades. The percentage of urban population served by water supply has risen from 48.5 per cent in 1944 to 60 per cent in 1961 and to 77 per cent in 1971. The Committee also note that 1274 towns where there are no arrangements for safe water supply are intended to be covered with water supply during the Fifth Plan covering by and large the entire urban population. They further note that slum improvement schemes have been launched in 11 cities which will also take care of the water supply needs of these cities. However, the Committee are given to understand that no figures are available regarding the actual coverage of the urban population in different towns where water supply is available only partially. Thus while there would be as many as 1274 towns in the country without any organised system of water supply at the end of the Fourth Plan there may be large sections in other urban areas without water supply. Whereas such sections are likely to increase further in view of the tendency of expansion of the cities and towns, the Committee hope that necessary data in this regard also will be collected and adequate provisions made to cover such population simultaneously.

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2.19

The Committee are distressed to note the dismal situation of water supply prevailing in the rural areas of the country today. Even twenty-five years after independence 4.55 lakh villages out of 5.67 lakh villages in the country are still dependent on ancient means of water supply such as hand-pumps, tanks, wells, rivers, streams and springs. What is most deplorable is that there are still about 90,000 "scarcity" villages where water is not available within a depth of 50 feet or within a distance of one mile and there are still about 61,000 "health problem" villages where water is infected with various health hazards.

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2.20

The Committee observe that although National Water Supply and Sanitation Programme is working for the last 18 years about 22,000 villages only have so far been covered with piped water supply benefitting a population of just 3.07 per cent of the rural population. It has yet to be fully realised that with 80 per cent of the country's population living in the rural areas, water supply forms the most important single factor for improving nation's health. Considering the long neglect in the past, the Committee urge that this subject will henceforward be allotted special importance and urgency in the National Plans.

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2.30

The Committee note that the scheme of Special Investigation Divisions was initiated in 1962 to investigate the problem of rural water supply in difficult and scarcity areas of the country so that priorities could be determined. It is disturbing to note that according to initial investigations about 13 crores of rural population should be either without a source of water within a reasonable distance or depth or if water was available it would not be safe to drink.

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2.31

The Committee note further that there is a difference of opinion in regard to the number of scarcity and problem villages between the Central Health Ministry now Works and Housing and some of the State Governments. In some cases such as in the

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		<p>case of Rajasthan there is wide disparity in the assessment. The Committee, therefore, suggest that the matter should be re-examined in all its aspects and agreed conclusions arrived at and priorities determined accordingly. The Committee hope that this assessment work will be completed before the end of the Fourth Plan so that necessary steps could be initiated in time to make safe water available to the remaining areas during the Fifth Plan.</p>
8	2.33	<p>The Committee take note of Special difficulties experience by Hilly regions of Meghalaya. They also note that a new working definition of scarcity villages has been adopted in the case of Meghalaya viz. absence of a perennial sources of water within a hundred metre vertical distance.</p>
9	2.34	<p>The Committee suggest that this definition should be adopted in other hilly regions also.</p>
10	2.35	<p>The Committee also take note of the findings of the Central Water and Power Commission that in the seismic zones, construction of large reservoirs was not always safe. Apart from that the economies of pumping water from storage reservoirs to individual communities may not prove favourable. They further note that in view of economic conditions of the people in these regions and high costs of these works, the provision of drinking water had to be linked with the overall development of the region. The Committee welcome the suggestion of constructing storage tanks for a group of rural communities at suitable places in the Hilly regions. The Committee suggest that comprehensive proposals may be drawn up for implementation not only under the Accelerated Water Supply Programme but also under the regular programmes for execution during the Fifth Plan for the hilly regions.</p>
11	2.41	<p>The Committee note that the Drinking Water Board had in their interim Report in 1963 made a specific reference to the problem of Guinea-worm infested areas and had recommended adequate</p>

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		<p>provision in 1964-65 budget to cover all these villages. In the absence of figures indicating the steps taken in implementation of the positive recommendations made by the Drinking Water Board in regard to guinea-worm infested areas the Committee are inclined to conclude that either no follow-up action was taken to implement the recommendation or there is no mechanism to gauge the progress actually made in the execution of the different programmes. Even though the Committee are given to understand that these areas will now be covered by the end of the Fifth Plan, the Committee feel that if some steps had been initiated in 1964-65, by this time the sufferings of the people in the guinea-worm infested areas could have been mitigated to a great extent.</p>
12	2.42	<p>The Committee desire that necessary mechanism should be evolved to keep a watch on the progress made in the execution of the schemes under the National Water Supply Programme.</p>
13	2.52	<p>The Committee note that the National Water Supply and Sanitation Committee (1960-61) of the Ministry of Health had recommended the highest priority to the provision of safe water supply to the rural population as in their opinion this could be on positive step for eradication of water-borne and filth borne diseases. That Committee had desired that safe water should be provided within the reach of "every village and hamlet by the end of the Third Plan if possible, and before the end of the Fourth Plan in any case." The Drinking Water Board (1963) had also given the highest priority to the provision of water supply in the difficult and scarcity areas. In view of the importance of the matter the Board had chosen to give an interim report on the subject and had stipulated a period of five years for implementation of this phase of the programme. The Committee are, however disappointed to note that this programme continued to be overlooked for want of funds.</p>

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14	2.53	<p>The Committee note that the Approach Paper of the Planning Commission envisages an allocation of Rs. 550 crores as against Rs. 650 crores asked for by the Ministry of Health and Family Planning (now Works and Housing), for providing safe water supply in scarcity and health problem villages. More than the financial provision, the Committee feel that there has to be a greater stress on physical achievement of the target, as what the Plan sets out to achieve, is the provision of safe water supply to as many as 1,24,000 villages, as compared to only 22,000 villages which have been provided piped water during the last 20 years. The Committee would like the Planning Commission and Government at all levels to prepare, without delay, plans and designs for implementation of the programme. There would also to be careful planning of material resources, particularly water pipes and pump sets etc., so that these do not become a constraint in the implementation of the programme. The Committee would also suggest that a detailed annual plan should be prepared indicating, <i>inter alia</i>, the complete schemes which are to be taken up and the relative priorities. This would enable Government at various levels, not only to ensure timely implementation, but would also facilitate the task of monitoring and taking remedial measures where necessary, to ensure that the Plan targets do not slip.</p>
15	2.62	<p>The Committee are greatly distressed to find that the Special Investigation Divisions which were set up as early as 1962, have been able to cover only 65,000 villages so far, out of about 1,52,000 scarcity and problem villages in the country. The Committee have, however, been given to understand that the remaining villages totalling 87,000 would be surveyed before the end of the Fourth Plan. This statement amazes the Committee, as it is proposed to achieve within the course of a few months, the survey of 87,000 villages, which is practically one and half times of what had been done in the earlier ten years. There has been obviously no close watch kept on</p>

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the progress made by the Special Investigation Divisions in carrying out their work from year to year, and to take active measures to see that the work was speeded up. Apart from the speed, what has caused great concern to the Committee is the view expressed by knowledgeable authorities that the data collected through these survey in many cases, is not accurate or reliable. The Committee feel that this could and should have been avoided by issuing suitable guidelines for investigation work, right in the beginning, by contemporaneous review of the work carried out and by taking effective measures to bring about improvement. Even now, the Committee feel that where the data is not complete or accurate or reliable, no time should be lost in correcting it.

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2.63

The Committee are also concerned to note, on the one hand, the plea put forward by several State authorities that the staff sanctioned for the Special Investigation Divisions is inadequate and, on the other, the view of the Central Ministry that the staff for the investigation work are diverted to other assignments. The Committee would like to stress that there should be an agreed approach in this matter and both the Centre and the States should ensure, not only that the work of investigation is completed according to a detailed programme to be drawn up in that behalf but that the data collected and collated are completely reliable, to provide the basis for detailed planning and designing.

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2.64

The Committee are not convinced of the merit of establishing a separate planning and design unit since 1972, for working out details of rural water supply, for implementation. The Committee feel that the work of planning and designing should be made an integral part of the investigation units, which should be suitably strengthened where necessary, for this work.



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- 18      2.65      Elsewhere, the Committee have noted Government's determination to ensure that safe water supply becomes available at least to all the 1,52,000 scarcity and problem villages. The Committee feel that this task can be performed only if there is detailed planning and designing, in advance. This underscores the need for strengthening suitably, the Special Investigation Divisions to perform this work, according to a prescribed time-schedule. The Committee would stress that there should be a contemporaneous watch at high levels, to see that the work proceeds on the right lines to throw up reliable data and that correct remedial measures are taken where necessary, in time.
- 19      2.70      The Committee note that a centrally-sponsored scheme of Planning and Design Units, has been put into operation during 1972 to ensure that at the beginning of the Fifth Plan an adequate number of properly investigated and designed schemes are available for being taken up for implementation without any loss of time. The Committee hope that these units will be ready with a sufficient number of schemes in advance for implementation towards the end of the Fourth Plan and the beginning of the Fifth Plan.
- 20      2.71      The Committee also hope that the norms prescribed for preparation of these schemes will be re-examined to ensure that they are realistic.
- 21      2.84      The Committee note that sewerage facilities in urban areas do not exist in several States like Assam, Jammu & Kashmir, Meghalaya, Nagaland, Tripura, Manipur and Andaman and Nicobar Islands. In some other States such as Andhra Pradesh, Bihar, Himachal Pradesh, Kerala, Orissa and Rajasthan the facilities are only nominal. None of these States has more than 3 cities which have any sewerage arrangements even partially. In all, there are 186 towns in the country today which are seweraged out of a total number of 2921 towns. Even in these cities there
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are areas which are unsewered. Considering the fact that the number of towns and cities covered by the facility of water supply has reached 1282 in March, 1971 benefiting a population of 841.71 lakhs and another 500 towns are targetted to be covered during the Fourth Plan period further benefiting about a crore of people and there is further a proposal to cover all the remaining towns in the country with water supply during the Fifth Plan, the Committee feel that it is high time that adequate steps are taken to provide sewerage facilities to the towns which are already covered by water supply. The Committee note that according to the Ministry of Health and Family Planning the total cost of covering 2735 towns with sewerage facilities will amount to Rs. 1346 crores. That Ministry have in their Approach paper for the Fifth Plan proposed to cover 83 towns with a population of one lakh by sewerage facilities at an estimated cost of Rs. 970 crores. In addition the Ministry have asked for Rs. 400 crores to cover about 150 towns with solid waste disposal arrangements during the Plan period. Realising the magnitude of the task ahead and considering the financial difficulties of the municipalities, the Committee, do not wish to recommend that the progress of water supply programmes should be stalled to meet the sewerage needs. They would, however, like to stress the point that time-lag between water supply and sewerage facilities has to be reduced and care has to be taken to ensure that the slums are not allowed to spread. The Committee, therefore suggest that a phased programme may now be chalked out to make available this facility early, beginning with cities endemic to filth-borne diseases like filariasis and cholera etc.

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2.85

While the setting up of the Water and Sewerage Boards recommended elsewhere in the Report will go a long-way in making these operations self-paying, ways and means have to be devised to find finances at the local levels also.

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23	2.86	<p>The Committee feel that the Public Health Engineering Research Institute as well as other national health laboratories should address themselves urgently to the problem of evolving suitable equipment for sewage digestion, so as to do away with the need for importing Sewage Digesters. The Committee note that some progress has already been made in this direction by evolving Oxidation Ponds, Oxidation Ditch and lagoons etc. The Committee need hardly stress that if these processes are efficacious, they should be pressed into service without delay and improvements effected, in the light of experience. The Committee would also stress that continued research should be made, with a view to simplify and reduce the cost of treating the sewage, so as to keep the economic burden within the reach of the local population.</p>
24	2.101	<p>The Committee note that a comprehensive Water Pollution Bill is pending before a Joint Select Committee of Parliament. The Committee have no doubt that the bill would take care of all aspects of water pollution, with particular reference to the health hazard which is being created at an increasing pace, by rapid industrialization of the country. With the advance in modern technology, there is no reason why we should not be able to eliminate this health hazard and pollution right in the beginning, instead of letting it become a problem of gigantic proportions, as is the case in some of the advanced countries. The legislation is as effective as its implementation. The Committee would, therefore, like the Ministry of Health and Family Planning (now Works and Housing) to work out in detail, the machinery which would be required to implement the legislation on water pollution, so as to ensure that it is effectively administered in the interests of public health.</p>
25	2.104	<p>As has been mentioned earlier, out of 5.67 lakh villages, a mere 22,000 have been provided with piped water supply and an overwhelming majority have to make do with traditional sources of supply, viz., dug-</p>

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wells, pumps, ponds, tanks etc. The Committee consider that the least that can be done by Government, is to ensure that the water actually being used by these villages is periodically tested, in order to determine its suitability for human consumption, and remedial measures taken as necessary, to improve its quality till safe water supply can be provided on assured basis. The Committee would like the Central|State Governments to draw up pilot schemes in this behalf which, after being tested in the field, could be extended to other areas in the shortest possible time. The Committee need hardly point out that the tests for checking the quality of water should be simplified to the extent possible, with the help of research institutes, so as to enable the local civic authorities to undertake this task of testing.

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2.109

The Committee have dealt, earlier in this Section, with the proposed legislation to prevent pollution. It is of the utmost importance that the factors which cause pollution, should be thoroughly investigated by research and other allied institutions, so as to find efficacious remedies to pollution which results from industrial processes, particularly from the discharge of their wastes and effluents. The Committee are concerned to find that out of 12 problems listed for urgent research in the context of preventing pollution, work is at present going on only in respect of 4 or 5 aspects, while the remaining have not received attention. The Committee would like Government to review the matter comprehensively, in consultation with the research institutions and all others concerned and draw up a meaningful and time-bound programme with proper priorities, for intensifying research to find efficacious answers to the problem of pollution, so that this could be given effect to, in the interests of public health.

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2.138

The Committee note that a present 178 million gallons of drinking water is available to a population of 36 lakhs in the Capital which works out to 49.8 gallons per capita per day. It would appear from

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the facts brought before the Committee that so far all efforts towards water supply in Delhi have been based on an average supply of about 50 gallons per capita per day. In this connection the Committee wish to point out that the Naskar Committee appointed by the Government of India to give recommendations regarding augmentation of water supply in Delhi had recommended in their Report in 1965 an average per capita per day supply of about 70 gallons. Calculated on the basis of the recommendations of the Naskar Committee, the present day requirement for Delhi would work out to about 300 m.g.d. Thus Delhi is short of the requirements by about 120 m.g.d. The Committee are not aware of the considerations for which action for augmentation of water supply in Delhi is based on 50 gallons per capita per day. Further in some colonies of Delhi and in cantonment area 100 gallons of water is being consumed on an average per capita per day; and in some places in New Delhi adding both filtered and unfiltered water average consumption ranges to 180 gallons a day. The Committee hope that Government will keep these consideration in view while formulating future plans in regard to augmentation of water supply in Delhi.

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2.139

The Committee further note that the current availability of water supply does not take into account the rural population of the Capital. With just 4.14 lakhs of population residing in rural areas the water supply problem in the Union Territory of Delhi, though predominantly an urban water supply problem but with the city expanding fast and the rural and urban areas getting progressively interspersed, it is hardly possible to exclude this population for the purposes of availability of safe water supply. The Committee therefore, feel that assessment of future requirements of water supply for Delhi should also take into account, the rural population of Delhi.

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29	2.140	<p>The Committee also note the difficulties being experienced by the people in Delhi on account of unequal distribution of water. The result is that there are localities in Delhi and New Delhi where the per capita per day water supply is 100 gallons and more and consequently there are colonies where water supply is less than the average of 50 gallons per head per day. This has happened as stated by Government on account of the distance of the colonies from the main headworks which are at the northern end of the city and the expansion is going on towards southern and western areas. Further, there are many old areas like the old city, Sadar and Paharganj where the distribution systems are stated to be very old and require remodelling. The Committee wish to observe that whatever may be the reason, whether for want of proper planning or for want of remodelling at appropriate stage of distribution systems, the citizen is hardly concerned and it is the duty of the planners and engineers to foresee such eventualities. In any case, the Committee note that some steps are already in hand such as putting up of regional overhead tanks in South Delhi and Rajouri Garden and installation of booster pumping stations at Ramlila-grounds and other places. The Committee hope that these programmes would be expedited so as to bring about early relief to the citizens.</p>
30	2.141	<p>The Committee feel that the decision to set up a statutory autonomous Board by amalgamating the Delhi Water Supply and Sewage Disposal Undertaking, the Water and Sewage Disposal Wings of the New Delhi Municipal Committee and the Cantonment Board is in the right direction. The setting up of this Board should help solve distribution and other problems and also help in bringing about an integrated approach towards augmentation of water supply in Delhi. The Committee hope that necessary legislation in this regard will be brought before the Parliament early.</p>

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- 31            2.142            The Committee note that some arrangements have been finalised with the State Governments of Uttar Pradesh and Haryana for 100 m. gallons of water and the treatment plant for this supply will also be ready by 1976. The Committee hope that necessary time schedule in putting into operation this plant will be adhered to. They also hope that further negotiations with State Government of Haryana for raw water in exchange of sewage and other schemes for requirements beyond 1981, such Lakhwar Dam Project in Uttar Pradesh and Dadahu Dam Project in Himachal Pradesh and the Dhauj and Kot Project in Haryana which are at present under consideration will also be finalised early so that necessary action for implementation of these programmes can be initiated at appropriate time.
- 32            2.143            The Committee also note in this connection that the Government of India has set up a Committee to prepare a master plan for the development of water supply in Delhi during the next 30 years to be completed by three stages. The Committee suggest that a time schedule may be drawn for the completion of this plan which may be adhered to.
- 33            2.144            The Committee note that a number of organizations|Departments are concerned with Water supply in Delhi in one way or the other, such as the Health Ministry (now Works and Housing) the Planning Commission, the Ministry of Irrigation and Power, the Ministry of Home Affairs, the Delhi Municipal Committee, the New Delhi Municipal Committee and the C.P.W.D. The Committee are surprised to note that coordination should be lacking among these bodies even in the Capital. The Committee, however, note that though much belated, some coordinating efforts have been initiated in this direction since June, 1972 had hope that these efforts will bring in the desired results.
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34	2.145	<p>The Committee, however, do not think such half-hearted measures could be of permanent value and feel that much more drastic measures are absolutely essential for the Capital for an effective, and overall coordination among all the organisations concerned not only with water supply but with all civic amenities such as electricity, transport, medical facilities, education etc. under a high power coordinating authority. The Committee note that in Calcutta, Calcutta Metropolitan Development Authority has been formed with a view to achieve such coordination under the Health Ministry now Works and Housing. In this connection the Committee have in their report on "Housing" commended the suggestion in regard to vesting in the Lt. Governor all necessary powers of the Central Government for bringing about coordination among the different organisations engaged in providing various civic amenities in Delhi. The Committee hope this suggestion will also receive serious consideration by Government.</p>
35	2.146	<p>The Committee have been assured during evidence that water supplied to Delhi is quite potable. They, however, note that River Jamuna is being grossly polluted in Delhi and that an Action Group is already on the job to take suitable steps to prevent pollution of the river with the help of Central Public Health Engineering Research Institute. The Committee hope that the nature and sources of pollution will be identified expeditiously and suitable measures taken to prevent water pollution in Delhi.</p>
36	3.19	<p>The Committee note that provision of safe water supply and sanitation has not received the attention it deserved in the Five Year Plans inspite of the fact that its importance had been emphasised early by the expert bodies like Health Survey and Development Committee, 1945 and by the Planning Commission itself. During the first two Plans meagre allocations were made and even these were not fully utilised. Lower allocations were made in the Third</p>



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Plan as compared to the needs indicated by expert bodies like Third and Fourth Conferences of Public Health Engineers in 1958 and 1960 and by the National Water Supply and Sanitation Committee in 1961 and even though the Health Ministry now Works and Housing had all along been pressing for higher allocation for water supply. The Committee are surprised to note that in this vital sector of nation building activity no specific targets physical or financial were fixed before the Fourth Plan. Naturally not much progress could have been expected.

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The Committee, however, note an encouraging trend in this regard since the beginning of the Fourth Plan in which Rs. 400 crores have been allocated for water supply and sanitation sectors out of which Rs. 123 crores have been earmarked for the Rural Sector. According to the indications against this allocation of Rs. 123 crores, for the rural sector, expenditure is likely to be of the order of Rs. 140 to 150 crores. The Committee also note in particular that the States have been giving an increasingly higher priority to this Programme.

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The Committee hope that this sector of the Programme will henceforward receive appropriate place in the Plans and the allocations will be such as to ensure that the basic facilities of safe water supply and sanitation are made available throughout the country in a phased manner by a specified date, at any rate before the end of the next decade.

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3.24

The Committee note the difficulties experienced by the Public Health Engineering Departments in the States in regard to the procedures involved in getting the amounts released through local bodies. Even though the amounts are provided in the budget and vote on account of the legislature is obtained in the beginning of the year itself, the amounts are actually released to local bodies towards the middle of the year as they have to go through a number of procedural formalities. Consequently,

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the Departments concerned are not able to sustain the tempo of work right through the year. The Committee desire that ways and means should be devised to place funds in time in the hands of the executing authorities in order to sustain the tempo in the implementation of the programmes.

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3.27

The Committee note that delays are at present being experienced in getting the allotted amounts released from the Government. The Committee note that the suggestions mooted by the Ministry of Health and Family Planning (now Works and Housing) for setting up of a "Task Force" with a view to help release funds expeditiously is at present under consideration of Government. The Committee would like the problem to be identified and work like procedures evolved to ensure timely release of allotted funds. The committee would like to be informed within three months action taken or proposed to be taken to bring about the necessary improvement.

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3.31

The Committee note that Central assistance for water supply is available to the States uniformly under the existing pattern of block loans and grants irrespective of their respective stages of development. Assistance for water supply programmes is also available under the Accelerated Rural Water Supply Programme out of a total sum of Rs. 20 crores during 1972-73 and Rs. 40 crores during 1973-74 keeping in view the magnitude of the problem of the State, its stage of backwardness etc. Whereas the Committee agree that the States must exert themselves to make available this basic necessity to their people speedily they would also like the Central Government/CPHEO to play a more active role in respect of such States with a view to help them achieve the objective.

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3.37

The Committee note that no uniform pattern of local contribution in the financing of the water supply schemes is being followed in the country. The Committee also note that the trend is towards

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liberalisation of assistance to rural communities by the States. It is also appreciated that a common policy by the Central Government to be followed by the whole country would not be of much help as in some States villages have been able to raise local contribution and it will not be desirable to discourage local contribution by those who can make it. Nevertheless the Committee feel that suitable guidelines should be evolved for the States to follow, keeping in view the size of the community, their economic condition, the long delays in implementation of schemes often caused in an effort to raise such contributions and other relevant factors.

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3.45

The Committee note that even though the cost of water supply has been steadily rising consequent to the rising capital investments for setting up new high cost projects and for augmenting existing water supply systems there has been a general reluctance on the part of local bodies to raise correspondingly the water charges with a view to make the water supply schemes viable. The Committee note further that there is a demonstrated reluctance on the part of the local bodies who are operating water supply to depart from flat rates to meter rates because of administrative difficulties and apprehensions of unpopularity. Consequently there is hardly a major local authority in the country with the exception of Madras and New Delhi Municipal Committee that has not been incurring deficits which have to be made up from general revenues. This has in turn inhibited the initiative of the local bodies towards assuming responsibility for operating, maintaining and extending water works.

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3.46

The Committee hope that with the setting up of Water and Sewerage Boards the problem of financing and management of water works would be solved to a great extent.

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| 45 | 3.47 | The Committee suggest that a study of losses incurred by local bodies on account of prescription of flat rates and non-metering should also be taken up early. Such a study, will, in the opinion of the Committee, be helpful in bringing home to all concerned the real implications of adhering to the policy of flat rates and non-metering.  |
| 46 | 3.61 | The Committee note that a number of expert bodies have from time to time recommended the setting up of autonomous statutory water and sewerage boards on a Statewise or regionwise basis as an effective means for increasing efficiency of financing and operating municipal water supply and sewerage services. It is, however, unfortunate that even though the proposal was first put forth over a decade ago, very little has been done in most of the States to implement the recommendations of such bodies as the Technical Cooperation Mission Team in 1960 and the Seminar of 1964. Such a Board has so far been set up only in Tamil Nadu.               |
| 47 | 3.62 | The Committee also note that even the Central Government hardly evinced any interest in this important aspect of the problem. A high power Committee was set up in 1965 on the lines indicated by the National Water Supply and Sanitation Committee, 1960-61 and as reiterated by the Seminar in 1964, for setting out concrete measures to be taken by State Governments and to draft model enactment for setting up Statutory Boards, defining their powers and duties and recommend appropriate methods of fund raising. It is indeed very sad to learn that this Committee never met and in 1968 it was even decided that this body need not be reconstituted. |
| 48 | 3.63 | Again, even though the working of the Board in Tamil Nadu has been considered to be on the right lines by the Central Government, they have not circulated any paper to the States apprising them of the experiences of the working of this Board.  |
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49	3.64	<p>At the moment the country is on the threshold of the Fifth Five Year Plan, which envisaged provision of basic facilities to the people and amongst these water supply is of paramount importance. It is about time that the necessary administrative machinery is geared up to implement the programme envisaged in the Plan. In the opinion of the Committee, the proposal in regard to the setting up of the Water and Sewerage Boards may help in finding a satisfactory solution to the whole problem of financing and management of the Water and Sewerage works. They recommend that Central Government Central Public Health Engineering Organisation should assume the leading role in this matter and persuade the State Governments to set up these Boards.</p>
50	3.75	<p>The Committee note that hardly any coordination exists at present amongst the different Central Ministries for the implementation of different programmes of water supply. The Committee need hardly emphasise the necessity of a coordinated effort in this field and welcome the decision for setting up a coordination authority for all the programmes connected with water supply. They would like to watch now successfully this coordination is effected in the interest of speedier implementation of water supply Programme.</p>
51	3.84	<p>The Committee note that the position as regards the setting up of independent public Health Engineering Departments has improved to some extent since the recommendation of the National Water Supply and Sanitation Committee in 1961. However in most States separate independent Public Health Departments have yet to be formed. Further there has been little improvement in regard to the rationalisation of municipal services in most States. Partly this may be due to limited workload so far. The Committee feel that in view of the larger allocations envisaged for the Fifth Plan and also in view</p>

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of the coming into operation of the Accelerated Rural Water Supply Programme the remaining States should also be persuaded in their own interest to take steps to put the organisation of their respective Departments on a more rational footing as recommended by the National Water Supply and Sanitation Committee.

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3.88

The Committee are unhappy to note that the system of spending substantial amounts by Government towards construction of water supply and sewerage schemes leaving them to be managed by local authorities without making proper arrangements for their maintenance have led in some cases to very unsatisfactory results. The Committee desire that the Central Government should take up this matter with State Governments to ensure effective and efficient maintenance of all water supply in the interest of long life of plants low maintenance cost, quality control and above all continuity of services.

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3.91

The Committee note that perspective plans have already been prepared by a few States viz. Gujarat, Tamil Nadu, Uttar Pradesh, Rajasthan and West Bengal on certain aspects of the water supply and sanitation programmes. The Committee also note that the State Governments have prepared long term water supply and sewerage schemes for larger cities. Keeping in view the advantage of perspective planning in implementation of the programmes, the Committee recommend that the Central Public Health Engineering Organisation should persuade other State Government also to prepare similar plans. The Committee would like Government to lay down broad guidelines for formulating the perspective plan for guidance of the State Departments.

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3.120

The Committee feel that apart from lack of adequate financial resources for implementing the programme for making available safe water supply and sanitation, the greatest constraint has been constituted by lack of availability in requisite quantities

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and in time of essential materials like rigs and pipes for implementation of the programmes. The Committee have recommended elsewhere that there should be a perspective plan for making available safe water and sanitation in all parts of the country by a specified date, at any rate before the end of the next decade. The Committee feel that Government should work out a corresponding perspective plan in respect of materials. The Committee need hardly point out that unless there is integrated planning, there is no hope of the programme being implemented fully by the target date.

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3.121

The Committee are greatly concerned to find that rigs of the requisite capacity and quantity are not available within the country with the result that Government had to enter into a special agreement with UNICEF for importing 100 rigs in connection with water supply schemes in hard rock areas as also for meeting the requirements of areas hit by drought conditions. The Committee would like to point out that both the Heavy Engineering Corporation and the Hindustan Machine Tools which have been set up at heavy cost from the public exchequer have surplus capacity. The Committee see no reason why with the advanced planning and proper coordination the manufacture of rigs could not be undertaken in these public sector undertakings and other industries so as to meet in full the requirements of the country. The Committee would like the Government to set up a high-powered task force to work out urgently the requirements for rigs and to plan their production within the country. The Committee should, however, not be understood as ruling out import of rigs to meet emergent requirements but what the Committee are keen to point out is that maximum effort should be made to put our manufacturing capacity to full use in the interest of meeting the urgent requirements of our country for rigs and such other essential equipment required for public service.

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56	3.122	<p>As regards the C.I. pipes the Committee find that while the licensed capacity is 6 lakh tonnes, the installed capacity achieved so far is not more than 4.47 lakhs tonnes while the production has been only 2 lakh tonnes. It is therefore only natural that acute difficulty is being experienced all over the country in getting pipes for water supply. The Committee would like the Government to study urgently the reasons why it has not been possible to achieve the full production capacity of at least 4.47 lakh tonnes as per installed capacity. The Committee also find that the estimated requirement of C.I. pipes for water supply schemes alone during the Fifth Plan is estimated at <math>2\frac{1}{2}</math> times the actual total annual production attained so far. It is obvious that if we have to develop a capacity of this order, no time should be lost in preparing detailed schemes for implementation as a crash programme. This would need not only thorough investigation with reference to availability of raw materials, power supply and other infrastructures but also coordinated action for procurement of the requisite machinery for the manufacture. The Committee would also like to point out that the requirements of galvanised iron pipe for the Fifth Plan is estimated at 19 lakh tonnes as compared to 2.77 lakh tonnes of annual total present production, thus envisaging at least double the present manufacturing programme. As pointed out in the case of C.I. pipes, this can only be achieved if there is a fully worked out detailed scheme for implementation in an integrated manner.</p>
57	3.123	<p>The Committee would also like to draw attention to Asbestos Cement pressure pipes and other stone-ware pipes which are required for sanitation works. Here too the water supply requirement in the Fifth Plan is double the present production and therefore it is imperative that detailed planning should be done without delay so that the manufacturing capacity can be established and brought into effect by the Plan target dates. The Committee would like the Government to realise the serious implications of the targets envisaged so that</p>



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they press into service all their organisational and entrepreneurial skill to bring about the increase in the manufacturing capacity. The Committee need hardly point out that decision should be taken at the highest level about the setting up of these factories in the public and private sectors, and the location of these units so as to save time, and clear guide lines given for implementation.

- 58        3.124        The Committee would also like the Government to take note of the advances which have been made in the other countries particularly in the use of P.V.C. pipes so that consistent with its proven qualities it can be put to service in the interest of reducing the cost and speeding up the implementation programme.
- 59        3.125        The Committee would also like the Government to intensify the research in a coordinated manner on all these materials particularly the pipes so as to reduce the cost of production and find alternative substitute which would bring down the cost.
- 60        3.126        The Committee would suggest that in the Fifth Plan document Government should clearly indicate the concrete measures which they are taking to ensure the supply of materials particularly the pipes required for implementation of water supply and sanitation programmes so that the Members of Parliament and the public know the earnestness with which the Government are proposing to implement the scheme in a systematic and rational manner.
- 61        3.128        The Committee note that inadequacy of wagons has been one of the reasons for delay in sending the pipes to various Health Engineering Departments. They also note that the matter has already been taken up with the Ministry of Railways for allotment of priority 'C' instead of priority 'E' for allotment of
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wagons for transportation of pipes etc. The Committee hope that an early decision will be reached and a higher priority will be allotted for the transportation of materials required for water supply.

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3.145

The Committee find that as many as 20 institutions all over the country are already engaged in research problems pertaining to water supply. The Committee feel that the lessons the nation has learnt in the matter of organising agricultural research and other scientific research should be applied in the field of water and health problems as well. This would call for an identification of the primary problems requiring intensified research, determination of priorities and a well-coordinated programme for allocation of these research problems to the research institutions for a meaningful, intensified and coordinated effort to achieve the necessary break-through in the shortest period. The Committee would like to stress that there should be an effective and meaningful, coordination at the Centre by a body which should have on it the best technical talent available in the field so as to provide proper guidance. The Committee would also suggest that the programme should be reviewed at least once a year and a well-documented account brought out for information of all concerned. The Committee would also like to stress that all these research centres should have close link with the extension centres so that practical solutions which can be applied are evolved. The Committee would also suggest that where there is need for foreign assistance for intensifying research, the help of United Nations organisations such as W.H.O. and U.N.D.P. may be taken in a systematic and urgent manner so as to put it to maximum use.

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3.163

The Committee are greatly disappointed to note that during the 15 years that the training programme has been in vogue only a fraction of the target has

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been achieved. The Committee feel that inadequacy of the stipend which is said to be only Rs. 150 can only be a part of the reason. They feel that the whole curricula of the training programme should be thoroughly gone into in consultation with the State Governments so as to make it of practical use in every day work to the officers who are deputed for it. The Committee would also suggest that the training should be dispersed over various parts of the country so as to facilitate its implementation. The Committee would also suggest that the training programme for the Fifth Plan should be worked out on a realistic basis for various categories of staff laying special emphasis on problems which they would have to face in the execution of the Plan schemes and in the maintenance of the water supply and sanitation equipment which would be installed. The Committee would like to be informed of the action taken in the matter within the next three months.

64            3.164            The Committee note that it has not been possible so far to standardise the qualifications and training of plant operators of different grades in order to bring them under National Certificate Scheme recommended by the National Water Supply and Sanitation Committee in 1961 as there were not a sufficient number of trainees available in the country. The Committee feel that it is high time that a beginning is made for proper organisation of training in this vital field so that properly trained operators are available to operate the various water and sewerage plants with maximum economy and efficiency.

65            3.165            The Committee note that no careful or detailed assessment has so far been made as to the adequacy of the existing courses of study for Public Health Engineers to meet the needs of implementation of the National Water Supply Programme and to see whether the existing courses attain a comparable standard of training at all Centres and whether the facilities wanting in the institutions have been made

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up. The Committee recommend that necessary steps should be taken to make such an assessment early and initiate suitable measures to bring the standard up to the mark.

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## APPENDIX VI

(Vide Introduction)

*Analysis of Recommendations contained in the Report.*

### **Classification of recommendations**

A. *Recommendations for improving the organisation and working :*

Serial Nos. :

1—41, 51, 53—63, 65.

B. *Recommendations for effecting Economy :*

Serial Nos. :

42—50, 52, 64.