Chapter III

SPECIAL PROBLEMS OF BIG CITIES IN THE INDUSTRIAL AREAS

The industrial areas of the big cities have some special problems, viz., urbanisation, housing, clearance of slum and the ecology of the pollution, etc. There are two main reasons for the complexity of these problems. Firstly, urban population is multiplying rapidly due to the natural increase due to the excess of birth over deaths. Secondly, a net influx into the towns or industrial centres from rural areas. These days, both factors are more or less equally responsible but the second factor is predominant. The standard of living of rural population is in no way better, so the poor people migrate from these centres in the hope of getting better jobs with higher salaries. Consequently, they create numerous problems in these areas.

It is quite obvious that the problems born of these factors are multiplying so fast that measures for reform can hardly cope with these problems. Adequate steps become inadequate in view to these evergrowing shortcomings. Reforms
in the urban sector are difficult to achieve due to multifaceted difficulties. Means of bringing about reforms are limited and the self-generating multi-dimensional issues are legion. In India over-populated cities are a source of botheration. Their administration is placed under different political and administrative structures.

Urbanisation

Urbanisation is a process by which villages are getting converted into towns and towns are converted into cities. It is a visible indication of fast economic growth in India which is more than set off by growing population in the cities.

Criteria of defining urbanisation are different from country to country, and in India the concept 'urban' applies to places within corporation, municipality, town area, notified area and all the places with a minimum population of 5,000, where at least 75 per cent of the male population should be engaged in non-agricultural activities, when the density of population is at least 1,000 per square mile.¹

India is the second largest populous country in the world, but has very low percentage of urban population as compared to other countries of the world. In India the urban population is 20 per cent of the total population, while in England urban

¹ Census of India 1971, Series I (India), Paper I of 1971, Supplement, Provisional Population Totals, Chapter II, p.3.
population is 80 per cent, in Japan the urban population is 64 per cent. According to an estimate the urban population of India is 4 times less than that of the United Kingdom, 2.5 times less than in the U.S.S.R. and 2 times less than in U.S.A.

Industrial facilities constitute the main cause of the flow of population from rural areas to urban areas. It is an indicator of the decline in the percentage of rural population and increase in the urban population. The rate at which urbanisation is taking place is obvious from the fact that:

"Between 1800 and 1950, the population of the world, living in cities with 20,000 or more inhabitants, increased from about 21.7 million to 505.2 million, expanding 23 times in 150 years, while the total world population expanded about 2.6 times in the same period, 2.4 per cent of the world's population lived in urban centres of 20,000 or more in 1800, 20.9 per cent in 1950."\(^1\)

In developing countries like India, urbanisation has increased from the lack of man power demand in rural areas. The young people of the rural areas or small towns migrate to the big cities with this hope to get better jobs with higher salary. They have little interest in agriculture or in rural industries. Due to the fast growth of urban areas, rural population looks nowhere to diminish. The framers of policies in developing

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1 Gerald Breese, Urbanisation in newly developing countries, Bureau of urban research, Princeton University, p.14, quoting report on the World Social Situation including studies of urbanisation in underdeveloped areas (New York, United Nations), 1957, p.113.
countries started industrialisation and urbanisation are inter-
dependent, the spread of industrialisation is healthy sign. In
the last few years, several industrial towns in different parts
of the country have been established, but the flow of population
on big towns and cities is continued. The migration of the un-
employed from the rural areas or small towns to big cities or
industrial centres is another factor responsible for the increase
in population. Thus urbanisation has taken place against a
background of a static occupational structure.

India is facing a tremendous increase in urbanisation "an
over all growth rate of 2.20 per cent per year with a total popu-
lation of 440 million, indicates massive problem India faces at
present". The problem is again complicated due to uneven
regional distribution of urban centres and rapid growth of larger
cities. Continuous development of urban areas resulted in
chaotic conditions like the growth of areas, increase in land
values, shortage of housing and other problems. The flow of
population in India is not as high as in other developed
countries. But in recent years, migration has become a dominat-
ing factor of population redistribution in the country.

The urban areas continue to be the focus of economic and
industrial concentration in developing countries. The census
of India 1971 revealed that the total population of India is
547 million out of which 109 million live in urban areas. In
India there are nine metropolitan cities which have already
crossed one million mark. The result is that local administration

1 J.J. Manickam and B. Misra, "Urban to regional planning", The
Indian Jour. of Public Administration (New Delhi), July-
September, 1968, p.596.
Table 1

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the city</th>
<th>Population in million</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Calcutta</td>
<td>7.0</td>
</tr>
<tr>
<td>2.</td>
<td>Bombay</td>
<td>6.0</td>
</tr>
<tr>
<td>3.</td>
<td>Delhi</td>
<td>3.6</td>
</tr>
<tr>
<td>4.</td>
<td>Madras</td>
<td>3.1</td>
</tr>
<tr>
<td>5.</td>
<td>Hyderabad</td>
<td>1.7</td>
</tr>
<tr>
<td>6.</td>
<td>Bangalore</td>
<td>1.6</td>
</tr>
<tr>
<td>7.</td>
<td>Ahmadabad</td>
<td>1.7</td>
</tr>
<tr>
<td>8.</td>
<td>Kanpur</td>
<td>1.2</td>
</tr>
<tr>
<td>9.</td>
<td>Poona</td>
<td>1.1</td>
</tr>
</tbody>
</table>

In these centres has failed to cope with the fast growth in population and industrial activity and failed to regulate this growth in a planned manner. It is interesting to note that "the place of Calcutta is 7th, Bombay 12th and Delhi 21st out of the 24 cities of the world."

In the urban areas the forms of local government are municipal corporations and municipalities. A special system of the municipal corporation is the separation of executive from the deliberative or policy making functions, urban administration has become a difficult work and the part-time duty performed by the elected representatives is perhaps unequal to the task. The separation of municipal affairs has been considered necessary and in one form or another this method is evident in all the states.

The process of urbanisation has its impact on the economic, social and cultural life of the rural areas. Thus increasing urbanisation leads to urban development beyond the municipal limits - physical factors, legal difficulties, administrative techniques and the financial scarcities. Cities make it impossible for governmental administration to cope with the problem of expanding urbanisation. The result is the expansion of municipal autonomy and power.

The major policy emphasis for the urbanisation is to check the influx of population to urban areas, and the recurrent problems that it entails. The problems are large in number and their dimension are not to be under estimated. The following table shows the magnitude of the process (Table 2).

**Growth of Population in India between 1901-1971**

Facilities of housing and the related facilities for the increasing population is universal. The remedies for the urban problems has been made difficult by the rapid pace of urbanisation and the lack of resources. For this purpose a number of committees and commissions should be set up to increase financial assistance to local governments. Moreover, little has been done in this direction and local governments are themselves responsible for it.

Many of the ills of urban areas have resulted from a neglect of the requirements of careful planning. Improvements
<table>
<thead>
<tr>
<th>Census year</th>
<th>Total population (in million)</th>
<th>Percentage variation</th>
<th>Urban Population</th>
<th>P.C. Variation</th>
<th>Urban population percentage of total</th>
<th>No. of cities</th>
<th>Percentage of Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901</td>
<td>238.40</td>
<td>-</td>
<td>25.85</td>
<td>-</td>
<td>10.8</td>
<td>1917</td>
<td>-</td>
</tr>
<tr>
<td>1911</td>
<td>252.09</td>
<td>+ 5.7</td>
<td>25.94</td>
<td>+ 0.3</td>
<td>10.3</td>
<td>1909</td>
<td>+ 0.4</td>
</tr>
<tr>
<td>1921</td>
<td>251.32</td>
<td>- 0.3</td>
<td>28.09</td>
<td>+ 8.3</td>
<td>11.2</td>
<td>2047</td>
<td>+ 7.2</td>
</tr>
<tr>
<td>1931</td>
<td>278.98</td>
<td>+ 11.0</td>
<td>33.46</td>
<td>+ 19.2</td>
<td>12.0</td>
<td>2219</td>
<td>+ 8.4</td>
</tr>
<tr>
<td>1941</td>
<td>318.66</td>
<td>+ 14.2</td>
<td>44.15</td>
<td>+ 33.2</td>
<td>13.9</td>
<td>2424</td>
<td>+ 9.2</td>
</tr>
<tr>
<td>1951</td>
<td>361.09</td>
<td>+ 13.3</td>
<td>62.44</td>
<td>+ 41.4</td>
<td>17.3</td>
<td>3060</td>
<td>+ 26.2</td>
</tr>
<tr>
<td>1961</td>
<td>439.23</td>
<td>+ 21.6</td>
<td>78.04</td>
<td>+ 26.4</td>
<td>18.0</td>
<td>2700</td>
<td>- 11.8</td>
</tr>
<tr>
<td>1971</td>
<td>547.40</td>
<td>+ 24.6</td>
<td>108.90</td>
<td>+ 37.8</td>
<td>18.8</td>
<td>2921</td>
<td>+ 8.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Census year</th>
<th>Total population</th>
<th>Decadal percentage variation</th>
<th>Urban Population</th>
<th>Urban decadal percentage variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901</td>
<td>48,627,655</td>
<td>-</td>
<td>5,390,611</td>
<td>-</td>
</tr>
<tr>
<td>1911</td>
<td>48,154,908</td>
<td>- 0.97</td>
<td>4,906,673</td>
<td>- 8.98</td>
</tr>
<tr>
<td>1921</td>
<td>46,672,398</td>
<td>- 0.38</td>
<td>4,936,416</td>
<td>+ 0.61</td>
</tr>
<tr>
<td>1931</td>
<td>49,779,538</td>
<td>+ 6.66</td>
<td>5,568,789</td>
<td>+ 12.81</td>
</tr>
<tr>
<td>1941</td>
<td>56,535,154</td>
<td>+ 13.57</td>
<td>7,016,490</td>
<td>+ 26.00</td>
</tr>
<tr>
<td>1951</td>
<td>63,219,655</td>
<td>+ 11.82</td>
<td>8,625,699</td>
<td>+ 22.93</td>
</tr>
<tr>
<td>1961</td>
<td>73,754,554</td>
<td>+ 16.66</td>
<td>9,479,895</td>
<td>+ 9.90</td>
</tr>
<tr>
<td>1971</td>
<td>88,341,144</td>
<td>+ 19.78</td>
<td>12,388,596</td>
<td>+ 30.68</td>
</tr>
</tbody>
</table>

of these conditions can be achieved only through planned development in a suitable manner. Further expansion of big cities should be discouraged and the new towns should be developed on modern lines. At the same time, pressure upon the already strained urban areas must be lightened through a dispersal of industrial activity and light programme of rural civic development.

Slum Problem

Slums may be defined as the dirty and densely populated areas of a city. Slums are not only found in India but they are also found in developed and developing countries. The kinds and degree of slums may be dissimilar in different countries. The slums of developed countries are much better than the under-developed countries. For example, the slums of U.S.A. are better than the good colonies of India and other developing countries.

The slums originate due to the collection of industries and commercial centres in a few urban areas, which attract the people from rural areas or small urban areas to these centres. In Western countries, the problem of slum came to the forefront after the Industrial Revolution. In Britain, with the rapid establishment of industrial units and mechanisation of agriculture, there was sudden flow from rural to urban areas.¹

In India, slums are found particularly in the big industrial cities and towns and have become a characteristic feature of our urban areas. The people from rural areas migrate to these centres with the hope to get better job with higher salary. These migrants develop the housing and slum problem. Those who have a good job and are financially sound acquire accommodation or construct new house. But those who do not have a good job and whose income is low, face serious problem of housing accommodation. They cannot even pay rents of houses, and find shelter in the areas which have either no rent or with very low rent. These areas generally present a very dirty picture. Out of these migrants those who are comparatively better off, take shelter in single roomed accommodation and abandoned houses, etc., and others settle on marshy land near railway lines, roads and in huts made up of rejected material. This is the process by which slums start and they spread as the number of this type of migrants increases. Their surroundings are unhealthy and they constitute the nerve centre of serious diseases in the form of recurring epidemics.

In India, generally, three kinds of slums are found. The first type is one room accommodation in one story to six or more story buildings. In these 5 to 10 or more persons live in a single room. This type of slums are also found in U.S.A. and other developed and underdeveloped countries. In India, there are dark single rooms accommodating five to 10 persons in each room in the cities like Ahmadabad, Kanpur, Delhi, Calcutta and
bombay. However, the sanitary and health facilities in slums of this type are much better in U.S.A. than that of India.

The second type of slums is, old forts, caves and war ruins. They are legally or illegally occupied and are inferior to that of the first type of slums. This type of slums are found in India, Pakistan, South America, etc.

The third type is huts, cardboard shelters, situated in marshy areas near railway lines, roads or behind factories and mills. This type of slums is of worst type. These are found in Bombay and Karachi. However, 'worst of this type is in Bombay'. There small huts are found in marshy areas with accumulates of refuse material around them 8 to 10 persons live in a single hut. A line of this kind huts are seen near railway line and roads in marshy areas opposite huge buildings with all luxuries. This shows a picture of disparity. Persons living in these areas are engaged in factories, mills and other productive activities.

According to a survey carried out in Delhi, showed that 66 per cent households were living in only one room while in Bombay it was found that one in every 66 persons was homeless. The density of per person per room, Kanpur occupies the second highest position in the State. In Lucknow it was seen that about 45 cent houses were located in slum areas, only 2 in civil lines and 53 in general areas. The average size of
urban households too increased\(^1\) and it may witness a further increase resulting in further set back of living standard.

In First Five Year Plan, no importance was given to the slum clearance. In Second Five Year Plan a provision was made for the slum clearance and housing scheme. In the initial stages the central government provided 75 per cent financial assistance and the rest 25 per cent was to be raised by the state government.\(^2\) The state government ordered to local bodies to contribute 12\(^{1}/2\) per cent for the slum clearance scheme. The total outlay for the housing in this plan was Rs. 120 crores out of which Rs. 20 crores were assigned for slum clearance.\(^3\)

In the Second Five Year Plan, for the state of Uttar Pradesh Rs. 196 lakhs were distributed among the municipal corporations of KAVAL cities. In the third Five Year Plan, total outlay for housing scheme was Rs. 202 crores out of which Rs. 28.6 crores were sanctioned for slum clearance and improvement scheme and increased provision of Rs. 3 crores was made in the state, but due to China War and national emergency, this amount was reduced to Rs. 93.199 lakhs.

Table 4 shows the financial position of slum clearance scheme

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1. Census of India, 1961, Vol.XV, U.P., Part XV-A, p.105. In the year 1911 the average rise of the urban household was 4.54. In 1961 it increased to 5.03.
2. Slum clearance scheme - A pamphlet ground of lean and subsidies to state government for clearance/improvement projects, Govt. of India, Ministry of Works, Housing and Supply, 1957.
for different local bodies in the state:

<table>
<thead>
<tr>
<th>Name of city</th>
<th>Amount of financial assistance</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Loan</td>
<td>Subsidy</td>
</tr>
<tr>
<td>1. Kanpur</td>
<td>112.89</td>
<td>108.32</td>
</tr>
<tr>
<td>2. Allahabad</td>
<td>5.57</td>
<td>3.34</td>
</tr>
<tr>
<td>3. Varanasi</td>
<td>6.59</td>
<td>3.95</td>
</tr>
<tr>
<td>4. Agra</td>
<td>2.60</td>
<td>0.88</td>
</tr>
<tr>
<td>5. Lucknow</td>
<td>26.49</td>
<td>14.76</td>
</tr>
<tr>
<td>Total</td>
<td>154.14</td>
<td>131.25</td>
</tr>
</tbody>
</table>


Slum clearance scheme have not succeeded in their objective and the movement was not a success. It was realised that the main difficulty which hampers large-scale clearance of slums is in adequate financial resources of local bodies and the improvement trust.\(^1\) The underdeveloped countries are also facing the lack of finance as a serious difficulty. In India, the importance is given to other sectors in the plan like agriculture, industry and defence, etc., and the housing gets a low priority. "In the First Five Year Plan public investment in housing was 16 per cent of the total public sector investment, in the Second Five Year Plan it was only 8 per cent and in the Third only 7 per cent. In the Fourth Five Year Plan, the percentage is still lower than 5 per cent."\(^2\) In India the

\(^1\) First Five Year Plan, Govt. of India, Chap. XXXV, p.605.
\(^2\) National Herald (New Delhi), August 19, 1968.
Income of about 50 per cent of the urban households is less than Rs. 100 per month and only 12 per cent have an income more than Rs. 300 per month.\(^1\)

The slum clearance scheme could not succeed due to various factors and a non-pragmatic approach is one of them. There was no correct assessment of the problem and the money was pooled, even though a small sum, without suitable planning. It also lacked proper execution on the part of the local authority and many of them are shy of taking up new projects for the same reason.

In Uttar Pradesh there was no legislation to supervise the slum clearance scheme till 1962. The Act that governed the working of different local bodies covered this too. The Second Five Year Plan, recommended that the state should have a separate legislation for slum clearance on the lines of central Slum Areas (Improvement and Clearance) Act, 1956, as amended in 1964. In 1962, a separate Act was passed to govern the slum areas.\(^2\)

The people who are living in slums obviously affect the economy of the country in two ways. Firstly, by diminishing the productivity of persons who are residing in slums. Secondly, by enlarging the demand on state exchequer for more free medical facilities including police protection from different kinds of crimes which are committed by the residents in the slums.

\(^1\) Census of India, 1961, Income Tables.
\(^2\) U.P. Slum Area (Improvement and Clearance) Act, 1962.
Persons living in the slums do not get proper rest and sleep because of unhygienic atmosphere and noise to which they are exposed, even after 6 to 8 hours of hard work due to lack of privacy, dirty surroundings and dingy atmosphere which make them struggle all the time with various odds. As a result of this, their desire for work almost get spoiled and they work because of certain hard pressing needs. Work done in these circumstances is always less than what a work can do if proper housing facilities is provided. Loss of productivity also results because of more frequent absence of workers due to their recurring illness or strikes, which, of course, are staged for improving their lot.

As a result of living in unhygienic conditions, workers and their families contract different kinds of chronic diseases. To cure them or prevent further spread of these diseases, state exchequer is required to provide free medical services. This expenditure could be avoided if proper housing facilities are provided to them. This would, in fact, remove the very source of diseases. The young boys who are living in this atmosphere, learn theft, pickpocketing and gambling etc. To do away these evils government has to incur considerable amount of expenditure. Apart from economic effects of living in slums, there are other sociological and political implications.

Those persons who are migrated from rural areas and small towns, they find difficulty to adjust with urban life. This
uncompromising situation leads to social conflict among themselves. On political side they are easily exploited by short term benefits offered by any party. They would even sell their vote for paltry sums of money.

How to remove slums is itself a tremendously difficult problem. There is a wide-spread feeling that slum dwellers are not keen to leave their huts even though better houses are offered to them. According to our knowledge a very few persons were offered houses at a cost which they cannot afford. Also at places which are at a great distance from their working places that involves a heavy transportation cost. Obviously in these circumstances they would not prefer leaving slum areas.

Here are some of the suggestions to improve the lot of slum dwellers:

1. As far as possible improved residences for slum dwellers are required to be provided in proximity of their working places.

2. A legislation should be made it compulsory for the factory and mill owners to provide housing facilities to their workers.

3. Government should permit the establishment of industries in smaller towns so as to check the flow of migrants to big
cities where the rents are high, and there is a tendency to establish slums free of cost. The factory workers usually prefer to live in free thatched huts close to the working sites rather than pay rent in cleaner localities. All kinds of diseases are spread by these slums and dirty habits are developed as juvenile delinquency. These slums are nerve centres and schools for training criminals. It becomes law and order problem. Bootlegging is their favourite vocation. The population in these areas is multiplying fast and demographic problems balk all attempts to solve them.

Pollution Problem

Pollution may be described as the indiscriminate discharge of sewage and unhygienic, harmful chemicals, gases and wastes materials into water or atmosphere by the industries or media of transport. Today, human society is facing the biggest challenges of pollution in the following manners:

1. Water pollution
2. Air pollution
3. Noise pollution

Pollution problem is not a new problem. It is as old as human life. It is not only found in India, but is also present in developed countries. This problem is created by the industrialisation, urbanisation and transportation. In developing
countries, poverty, inadequate food and over-population are some causes of this problem.

(1) **Water pollution**

Water pollution may be defined as any change in its character, resulting in its becoming harmful for human as well as animal use.

As we know, human life is largely dependent on water. Industrialisation has caused water pollution as well as air pollution. In developed countries, water pollution is a big problem and they are paying serious attention to prevent the water pollution. In India, before industrialization, water pollution was not so acute as it is today. Because the water and sewage facilities were limited and the industrial growth was very slow. But soon after independence, there has been a remarkable growth and concentration of industries as well as increase in population. Today the condition is that, if all the sewage that people in Bombay discharged in a year were allowed to accumulate, we will soon have another Mount Everest.¹ It is a natural phenomenon that the industries attracted the rural workers to the urban centres, resulting in an urban population increase greatly. As the inhabitants and industries use the water, they need some place to discharge the used dirty water. It is easiest and cheapest to discharge

¹ *The Hindustan Times* (New Delhi), June 9, 1977.
such wastes and water into the nearest river, lake or nullah. It is all right from the point of view of industry that is disposing of its waste but it is dangerous from the point of view of health because the town is trying to pull water from the same river, lake a little downstream. "Nearly 75 to 90 per cent of people in developing countries are exposed to unsafe drinking water."\(^1\)

Different industries discharge different type of wastes. Industrial wastes have some mineral and organic substances like acid, salt, alkalies and oil including some poisonous substances which are highly poisonous for human and plant life. Chemical and organic pollutants may make water undrinkable without treatment for industrial use or crop irrigation, they may poison fish or cause their exhaust. "In 1973 effluent from a sugar factory near Lucknow caused death of fishes in abundance in river Gomti."\(^2\)

Community waste contain organic substances which give rise to offensive odours and pathogenic germs which cause many gastro-intestinal diseases. The incident of per capita pollution is more common and widespread in big corporations.

Industrial development in U.P. has not been as rapid as in some other states. A big number of sugar factories, distillaries, tanneries and textile mills were set up in the state in early

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1 Ibid., June 9, 1977.
2 Ibid., November 13, 1975.
decades of the century and during last twenty years, there has been a rapid growth of many other kinds of industries. "In U.P. there are 76 sugar factories, the highest number amongst all the states of India, 60 textile mills, 32 tanneries and 24 distillaries."¹ These are the principle industries which are creating water pollution problem in the state. The KAVAL corporations happen to face this problem in a larger measure.

U.P. is the most densely populated state of our country. Ganga river survey carried out near Kanpur has disclosed that the city's water front is totally polluted by sewage and industrial wastes. A survey at Varanasi disclosed that the water near some ghats is near about as dirty as raw sewage diluted with equal amount of plain water. Pollution studies of the Yamuna by the Central Public Health Engineering Research Institute (CPHERI) Laboratory at Delhi disclosed that the river water at Agra is highly polluted by domestic and industrial wastes from large communities of Delhi, Mathura, Agra and Virandavan filth from Villages. The Gomati is another significant river in U.P. and is the principle source of water supply to Lucknow. During the course of its travel the river receives heavy load of pollution from the communities and industries located on its banks.

Another important aspect of water pollution, which may be

described as characteristic of India, is that there exists a sentiment amongst the Hindus to acquire piety by bathing in the rivers which are to be considered to be very sacred. Largely due to the lack of information about the nature and extent of pollution of the many rivers and streams and also due to the lack of information about specific method of treatment of the effluents, little progress could be made in regard to the control of stream pollution in different areas.

A large amount of work has already been made done in the developed countries to prevent water pollution. In our country this problem is being taken very seriously. To prevent the water pollution, the central government passed the water (Prevention and Control of Pollution) Act in 1974. Under this Act, a central board has been constituted. Its main work is to promote cleanliness of streams and wells. Besides, this coordinating activities of the state, Boards are being set up in term of the Act. The Central Board will provide technical assistance and guidance to state Boards and sponsor investigations and research relating to problem of water pollution. It will also plan a country wide programme for the prevention, control and abatement of water pollution. The Act was adopted by the state government of U.P. in August, 1974, and a Board was set up in 1975 under the caption of "Uttar Pradesh Jal Pradushan Nir Waran Tatha Niyantan Board". The Board met in April 1975, incidentally the world health day.
It is interesting that U.P. has the benefit of some activity in the field of water pollution control in the last decades. Under the provision of Factories Act, the state government constituted a state Effluent Board as early as 1958.

The government of U.P. established an effluent board in the state in 1958 by amending the U.P. Factories Rule. The effluent board has been provided with statutory powers under the U.P. Factories Act 1948, for making an industry treat its effluent so as to comply with the standards recommended by the Factory Effluent Enquiry Committee or as may be amended by the Board.

On the municipal side, water pollution in the state has been partly abated by the implementation of sewerage utilisation scheme which has particularly been taken up in the larger towns and pilgrim centres. The sewage costs very high and municipal bodies could afford little more than skeletons of such scheme.

(2) **Air Pollution**

Air pollution may be defined as the foul air of the atmosphere which is being polluted by the industries or by heavy transportation.

Today, there are so many sources of air pollution, viz., big factories, transportation, emitting gases and raising dust,
urbanisation, nuclear explosions and commercial and domestic heat. The human life is facing a serious health challenge due to this problem. It has been said that 'the air has never been pure'. That may be so. Thousands of years before the industrial revolution, dust storms were producing the haze and volcanoes belching lava that blackened the skies. Nature in those days had time to make adjustments. It could evolve an atmosphere that was self-cleansing. Today man in his thirst for physical comforts are so arrogantly misusing the environment that he is quite close to the stage of suffocation.

Drg. Hansjorg Oetzschver who visited India recently said in a talk on waste disposal that the waste is the biggest pollutant in the world today. Some Western countries like U.S.A. and Japan are facing acute air pollution problem. The people of Tokyo are called upon to wear masks when the extent of pollution crosses a particular limit.

It is the primary duty of a welfare state to provide neat and clean environment which may lead to a healthier life, mainly depend upon the air in which we breath. It is necessary for good health that we take breath in hygienic atmosphere. And air pollution problem is more serious in industrial/highly urbanised cities or centres. Because the air in these cities is polluted due to discharge of gaseous matter from the industries. "According to a survey conducted by the Calcutta Metropolitan Development Authority said that over 50 per cent
of the residents of Calcutta are suffering from respiratory diseases."\(^1\)

The other source such as domestic fuel consumption, dhobighats and local incineration also play an important role in the air pollution. Recently in a survey, "Kanpur one of the India’s heavily industrial city has got maximum number of T.B. patients.\(^2\) Big industrial cities enjoy a good ventilation of air due to land and sea breezes. But due to some local geographical features like tall buildings, and continuous discharge of pollutants by the industries, heavy transportation and from other sources, even these excellent natural ventilations are unable to dispose and dilute the pollutants and to prevent building up of their concentration to a level at which they are tending to be harmful for human and plant life. Among the most offenders is the pollutant sulphur dioxide \((SO_\text{2})\) which is discharged by the almost all the factories using fossil fuel.

(3) **Noise Pollution**

Noise pollution is due to heavy transportation and loudspeaker playing at the loudest-pitch on various occasions in residential and commercial areas needs special attention of higher and local bodies authorities. No permission should

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2. *Indian Express* (New Delhi), November 16, 1975.
be given for playing loudspeakers in this way, or at least the sound level and direction that they cause least noise, this of course may not apply to public meetings and other occasions.

India is still in an early stage of industrialization, but its harmful effects on the environment have already started showing signs. Prevention of pollution is cheaper than paying its price once it has warned the situation. The pollution menace in India is still largely considered a local problem and municipal bodies are called upon to take necessary action under the Acts passed by them. Maharashtra is the only state which passed a prevention of water pollution Act in 1969, safeguarding its streams and rivers.

The Indian Parliament has already enacted the prevention of Water Pollution Act, 1974, and the Government of India proposes to bring up legislation for an Air pollution control.

It would perhaps be necessary for individual nation to compromise with some of their national interests and to check this menace. The younger generation particularly has a great stock in the future and therefore, government must endeavour to involve them in any programme for environmental conservation. Some years ago addressing the U.N. Conference of Environment at Stockholm, Mrs. Indira Gandhi said, "that only when the inequalities between the rich and the poor were substantially
minimised could the menace of pollution be effectively tackled.\footnote{1 The Hindustan Times (New Delhi), June 9, 1977.} Unfortunately, municipal organisation, which are required to enforce existing provisions against pollution, are themselves the major polluters. Their outdated methods of solid waste management, crude dumping grounds, inadequate water sources, their polluted water sources, their inadequate administrative machinery to control chimneys, belching black smoke throughout the day and their power-houses pouring outfly ash in tons are some of the glaring examples of how the controlling authorities help spread pollution in cities often blame is placed on inadequate finance available.

Information on environment should form an integral part of the school curriculum so as to enable children to understand the inter-dependence of various components of the system of which they form a part. Mass media could be used for publishing the facts and providing information of the environment situation to build up an aesthetical defence of the environment.

Pollution does not restrict itself to local or regional boundaries. In fact, the problem has so many factors that the lead must come from the centre and regions and local areas must be involved in tackling the problem.
responsibility in this field assumes importance in the face of multiplicity of authorities and conflicting jurisdiction prevailing in our cities and regional areas. The decisions about locating industrial units are taken by authorities other than local and pollutants travel across jurisdictional boundaries. The centre must provide the lead to combat the pollution nuisance at the national level and the states and local boundaries must come forward to share and shoulder responsibility in this common cause.

It is true that the problem of pollution has not yet reached that alarming state in India as in the west. It is however, always safer to take preventive measures in advance, as the proverb goes that a stitch in time saves nine.

Housing Problem in KAVAL Towns

The housing problem in our country has reached the top but it is more serious in big cities particularly in the large urban centres. There is an acute shortage of housing in the urban areas today. It is estimated that it may become worse in future. In the Fourth Five Year Plan, it is estimated that there was a shortage of 12 million houses in the country. At the close of 1976 it is likely to increase by another 12 million houses as the population in big cities is increasing at the rate of 4 per cent per year. It means an amount of
Rs. 30,000 crores would be needed at the close of 1976. In the IV Five Year Plan, an amount of Rs. 2,460 crores was granted for the housing. As the time is being passed the gap is widening as the construction of the urban housing has not kept pace with the overall growth. An overall rate of new construction is 3.5 units per 1,000 persons. After food and clothing, the housing is the next important need. All the developed and developing countries are trying to provide adequate housing facilities to meet their growing requirements.

The housing problem has created due to the rapid growth of population and the urbanisation. Urban migration is not a new phenomenon. Industrial developments and concentration of employment in big cities and towns have acted as population magnets. According to the last census, our urban population has increased by 3 crores in a decade to about 11 crores. Its impact has naturally been felt on housing. Rapid and unplanned growth of towns and cities and the lack of municipal control over the building activities has led to deterioration, of even the quality of existing stock. Slum have grown in the big cities in Kanpur slum dwellers number is near about 5 lakhs and there are about 800 small and big slums, where life becomes a nightmare and pavement living a truth.

According to an estimate based on the kind of material

which is used for the construction, 1/3 of the urban houses have Kacha walls and remaining 2/3 have pucca walls, 1/5 have kaccha roofs and rest have pucca roofs. This shows the extents of housing shortage.  

At the beginning of IV Plan, the shortage was near about 120 lakhs units in urban areas, the shortage, due to the construction programmes, is enlarging by about 3 lakhs units every year. It is therefore, proposed to grant about Rs. 20 crores to eleven cities having a population of over 8 lakhs under the recently central scheme for the improvement of slum areas. Like many other developmental activities, housing programme in a planned manner started with the first plan. However, it was, designed for industrial workers and low income groups. The programme was enlarged during the II Plan when the slum-clearance scheme was introduced greater significance was laid on 'Social housing' and fruitful results were achieved. During the II Plan, for instance over 61.5 thousand houses were built for industrial workers — 96.5% of the physical targets and over 55 thousand units were provided for the low income groups — 33% of the physical targets.  

The total investment in housing by the public sector has


been increasing in coming Plans. In the III Plan, it has reached Rs. 425 crores when compared to Rs. 300 crores in the Second and Rs. 250 crores in the First Plan. The expenditure in housing and private construction as a percentage of total lay has, however, been declined from about 34% in the First Plan to 19% in the Second Plan and 15% in the Third Plan. Similarly in the private sector although investment of housing has been increasing from Rs. 900 crores in the First Plan to Rs. 1,000 crores in the Second and Rs. 1,125 crores in the Third Plan, the percentage like the public sector, has been going down from 50% in the first Plan to 32% in the Second and 26% in the Third Plan. The following table shows the Plan-wise allocation for the housing.

<table>
<thead>
<tr>
<th>Plan</th>
<th>Public Sector outlay (Rs. in crores)</th>
<th>Outlay on Social housing scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Plan</td>
<td>2,356</td>
<td>38.50</td>
</tr>
<tr>
<td>Second Plan</td>
<td>4,600</td>
<td>84.00</td>
</tr>
<tr>
<td>Third Plan</td>
<td>7,500</td>
<td>122.00</td>
</tr>
<tr>
<td>Fourth Plan</td>
<td>15,902</td>
<td>193.00</td>
</tr>
</tbody>
</table>

*Source: Respective Five Year Plans, Planning Commission, Government of India.*

It is disclosing that 83.7 million families in India are house lessor without proper housing facilities.¹ The total

¹ U.N.I., Backgrounder, Vol. III, No. 24, June 17, 1971
number of families without a house is estimated to be over 1.5 crores. In other words, three out of every four families have no house or their houses are in worst condition. The Fourth Five Year Plan began with an amount of 837 lakh housing and it may increase by more than 20 lakhs houses annually.\(^1\) It has been stressed that, "On the First Five Year Plan, public investment on housing was 16\% of the total public sector investment, in the second it was only 8\% and in the third only 7\%. The draft outline for the Fourth Five Year Plan brings the figures still lower to 5 per cent."\(^2\)

The urban housing position in Uttar Pradesh is not satisfactory. According to census 1971, the total residential houses reported were 16,33,158 against a total number of 23,29,277 households thus leaving a shortage of 6,96,119 houses. In Class I towns reported for 73.4\% of the total housing shortage. 62.4\% persons in Kanpur, 49.4\% persons in Lucknow, 43.9\% persons in Varanasi and 38\% persons in Allahabad were living in a single room.\(^3\)

The housing problem is increased by the economic condition of the households. A vast majority of household collects a very low wages resulting their inability to pay the economic

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1. Ibid.
2. *National Herald* (New Delhi), August 19, 1968
TABLE 6

The following Table shows the housing shortage in different categories of towns in Uttar Pradesh

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Class I</td>
<td>22</td>
<td>13,55,220</td>
<td>843,964</td>
<td>511,256</td>
<td>73.4</td>
</tr>
<tr>
<td>2</td>
<td>Class II</td>
<td>20</td>
<td>236,721</td>
<td>186,562</td>
<td>50,159</td>
<td>7.2</td>
</tr>
<tr>
<td>3</td>
<td>Class III</td>
<td>67</td>
<td>376,737</td>
<td>304,203</td>
<td>72,534</td>
<td>10.4</td>
</tr>
<tr>
<td>4</td>
<td>Class IV</td>
<td>90</td>
<td>241,959</td>
<td>200,094</td>
<td>41,865</td>
<td>6.0</td>
</tr>
<tr>
<td>5</td>
<td>Class V</td>
<td>81</td>
<td>111,845</td>
<td>93,278</td>
<td>18,567</td>
<td>2.7</td>
</tr>
<tr>
<td>6</td>
<td>Class VI</td>
<td>13</td>
<td>6,795</td>
<td>5,057</td>
<td>1,738</td>
<td>0.3</td>
</tr>
</tbody>
</table>

293 2,329,277 16,33,158 696,119 100.0


Rent. In our country 85 per cent of the households are financially weak, the remaining cannot be expected to subsidize such a large majority towards meeting the house cost. The situation again worsened by less facilities given for housing in the National Plans, as in First Plan 1.6%. The remedy for the solving of this huge problem lies in its entirety.

The government should change its attitude towards housing and invite proper participation from private sector as it is doing in other problems. Housing programme should not given to one organisation with monopolistic powers. These programmes should be given to different organisations or agencies. The agencies should be cooperative housing societies and private colonies. Land which is the primary need for the housing should be given
to the agencies by the government and master plans for all major urban concentrations need to be urgently prepared.

It is clear that the state resources being insufficient and the problem is going on. As cities grow the land values increase even at the fringe areas. The State should invest money in building the social housing to check unprincipled sections exploiting the situation. The housing problem is the challenge of our time.

**Housing shortage in the next decade**

The following table shows that by the end of 1981 there will be a shortage of 12.84 lakhs houses in urban areas of U.P.:

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1961</th>
<th>1971</th>
<th>1981</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Total urban population</td>
<td>94.80</td>
<td>123.68</td>
<td>154.60</td>
</tr>
<tr>
<td>2. Average size of the household</td>
<td>5.00</td>
<td>5.30</td>
<td>5.30</td>
</tr>
<tr>
<td>3. Total number of urban households</td>
<td>16.97</td>
<td>23.29</td>
<td>29.17</td>
</tr>
<tr>
<td>4. Total number of residential houses</td>
<td>15.07</td>
<td>16.33</td>
<td>-</td>
</tr>
<tr>
<td>5. Total housing shortage</td>
<td>3.90</td>
<td>6.96</td>
<td>-</td>
</tr>
<tr>
<td>6. Additional houses required in 1981</td>
<td>-</td>
<td>-</td>
<td>12.84</td>
</tr>
</tbody>
</table>


There is apparent that huge sums of money will be required to solve the housing shortage and to supply the housing by the end of 1981. The calculations of financial requirements for the
Housing for different income groups is shown below:

<table>
<thead>
<tr>
<th>Monthly income group of household</th>
<th>Average cost of dwelling unit (Rupees)</th>
<th>Total cash increase of rupees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upto Rs. 300</td>
<td>7,000</td>
<td>194</td>
</tr>
<tr>
<td>301 - 599</td>
<td>12,500</td>
<td>20</td>
</tr>
<tr>
<td>600 and above</td>
<td>25,000</td>
<td>25</td>
</tr>
</tbody>
</table>

Source: Civic Affairs (Kanpur), September 1972, Vol. 20, No. 2, p. 15.

The above table indicates that a total sum of Rs. 806 crores will be required for provision of houses to all the households in 1981 and clearly there is no possibility of the mobilisation of resources of this extent in public and private sector both.

Problem of Water Supply and Sewerage in KAVAL Towns

Water is a very essential commodity without which men cannot live. But polluted water is the greatest scourge of life which takes a big toll of lives or spreads diseases.

Provision of the adequate water supply to their inhabitants is one of the obligatory functions of the municipal corporation which is guaranteed in the Corporation Act, Section 114(2). Water is the prime necessity of life. The present system of water through pipe supply came into existence in the last decades of the 19th century. Before the independence the progress was not satisfactory. In big cities with the increase
in population the old sources of water supply like wells and ponds become insufficient to fulfil the demands and water borne diseases take a heavy toll of life.  

In urban areas the strain on water resources is very heavy due to the increasing in population and advancement in industrialisation. "Some districts of the world are suffering from an absolute scarcity of water resources."

In India, according to the government report, the position of the urban water supply and sanitation is not satisfactory. In our country, the problem of water supply and sanitations was a neglected subject and it makes a haphazard progress without any organised planning. A few towns in each state succeeded in securing a partly satisfactory water supply and sewerage system during the past few decades mostly with financial help from the state government. The facilities so completed were being operated and maintained by the local bodies, without any timely measures being taken to provide further improvements to expand the scheme periodically and to suit the needs of increasing population.

In the report of the national water supply and sanitation programme (1960-1961) the details are given quite challenging.

It estimated that out of 1,736 local urban bodies which data

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available 1,056 local bodies had no facilities for protected water supply, out of the remaining 680 only 245 have the sufficient water supply for drinking purposes. It is also estimated that 60 per cent of urban population has no facility of wholesome water. The same is the case with sewerage system, before independence only five towns had sewerage system and in 1973 it rose to 36.

It may be mentioned that Agra, Allahabad, Lucknow, Kanpur and Varanasi get their raw water for public supply from rivers running nearest to the cities and these cities provide more water supply per capita than the other cities. Many of the cities and towns and a large rural area of the Northern India is facing through one of the worst periods of water scarcity almost bordering on water famine. The drinking water problem in our country will continue challenging if the efforts of to attain the objective are not increased manifold. This view was expressed by Prof. S.J. Argicwala of Bombay advisor to the World Health Organisation who attended the seminar on water pollution control, inaugurated by Dr. A. Zahara, WHO Director of the Health Service at Delhi. Prof. Argicwala said that Rs. one thousand crores would be needed to provide drinking water to people all over the country. With the present allocation, it would take 20 years to achieve the goal. By the

time the population would double itself and the problem would be as serious as today.¹

A comparative study of the water supply position in big cities was made to evaluate the operation of the system in practice. Kanpur, Varanasi and Lucknow have 24 hours water supply and the other cities like Agra gets 18 hours water supply. The survey gives the summary of total supply of water sources, hours of distribution demand for domestic and non-domestic uses and average supply per capita in major cities of India. The service standard of the city depends upon its ability to sustain the financial responsibility. The small urban towns do not require the same standard of service that a metropolitan city will need as in big cities, the use of water for industries and public use are much more than the requirements of the small towns. In some semi urban areas the non-essential uses could not be from non-protected sources like wells and ponds while in big cities, the requirements have to be met from piped and filtered water.

In the Four Five Year Plans the government sanctioned huge amounts for the water supply and sanitation programmes:

<table>
<thead>
<tr>
<th>Plan</th>
<th>...</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Five Year Plan</td>
<td></td>
<td>Rs. 49 crores</td>
</tr>
<tr>
<td>Second Five Year Plan</td>
<td></td>
<td>Rs. 76 crores</td>
</tr>
<tr>
<td>Third Five Year Plan</td>
<td></td>
<td>Rs. 105 crores</td>
</tr>
<tr>
<td>Fourth Five Year Plan</td>
<td></td>
<td>Rs. 375 crores</td>
</tr>
</tbody>
</table>

¹ Ibid, p.258.
It is the established fact that a safe and wholesome water supply is most essential for reduction of high mortality rates through water borne diseases and a sound system of water supply is necessary for the industrial advancement of a developing nation.

In KAVAL towns alone, whose combined present population is 40 lakhs as expenditure to the extent of Rs. 800 lakhs per annum is required at least for the coming five years. It is not necessary to say that the present position of utility services in our state is not at all satisfactory. Further, in U.P., out of 293 towns (urban) only about 180 have water supply facilities. This is a major backlog for providing these facilities in towns where it does not exist. The availability of finances for the water supply and sewerage during the last five years has given as below:

**TABLE 9**

<table>
<thead>
<tr>
<th>Year</th>
<th>Water Supply State</th>
<th>L.I.C.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969-70</td>
<td>59.60</td>
<td>-</td>
<td>59.60</td>
</tr>
<tr>
<td>1970-71</td>
<td>144.68</td>
<td>215.76</td>
<td>360.44</td>
</tr>
<tr>
<td>1971-72</td>
<td>131.80</td>
<td>164.11</td>
<td>295.00</td>
</tr>
<tr>
<td>1972-73</td>
<td>86.37</td>
<td>112.40</td>
<td>198.77</td>
</tr>
<tr>
<td>1973-74</td>
<td>74.80</td>
<td>379.24</td>
<td>454.04</td>
</tr>
<tr>
<td>Total</td>
<td>497.25</td>
<td>871.51</td>
<td>1,368.76</td>
</tr>
</tbody>
</table>
TABLE 10

<table>
<thead>
<tr>
<th>Year</th>
<th>Sewerage</th>
<th>L.I.C.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>State</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1969-70</td>
<td>85.00</td>
<td>-</td>
<td>85.00</td>
</tr>
<tr>
<td>1970-71</td>
<td>136.60</td>
<td>-</td>
<td>136.60</td>
</tr>
<tr>
<td>1971-72</td>
<td>68.00</td>
<td>69.71</td>
<td>137.21</td>
</tr>
<tr>
<td>1972-73</td>
<td>30.23</td>
<td>10.04</td>
<td>49.27</td>
</tr>
<tr>
<td>1973-74</td>
<td>100.00</td>
<td>147.68</td>
<td>247.68</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>419.83</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>237.43</td>
</tr>
<tr>
<td>Total</td>
<td>100.00</td>
<td>147.68</td>
<td>655.76</td>
</tr>
</tbody>
</table>

Source: Civic Affairs (Kanpur), October 1975, Vol. 23, No.3, p. 15.

A summary of the population served and the proportion with house connections is given below.

TABLE 11

<table>
<thead>
<tr>
<th>Towns</th>
<th>1971 Population (1000s)</th>
<th>1971 % served house connections</th>
<th>Stand post</th>
<th>% of con. metered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kanpur</td>
<td>1,154</td>
<td>27</td>
<td>73</td>
<td>54</td>
</tr>
<tr>
<td>Allahabad</td>
<td>491</td>
<td>47</td>
<td>53</td>
<td>77</td>
</tr>
<tr>
<td>Varanasi</td>
<td>584</td>
<td>12</td>
<td>88</td>
<td>34</td>
</tr>
<tr>
<td>Agra</td>
<td>592</td>
<td>53</td>
<td>47</td>
<td>87</td>
</tr>
<tr>
<td>Lucknow</td>
<td>749</td>
<td>14</td>
<td>86</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>3,570</td>
<td>153</td>
<td>347</td>
<td>273</td>
</tr>
</tbody>
</table>

Remaining 16 towns (over 100,000 population)

<table>
<thead>
<tr>
<th>Population</th>
<th>% served</th>
<th>Stand post</th>
<th>% con. metered</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,229</td>
<td>34</td>
<td>66</td>
<td>(range 2 to 92 per cent)</td>
</tr>
</tbody>
</table>

Remaining towns 153 5,590

Only 35 towns with more than 50 per cent of total urban
population have some form of sewerage. In no case towns are fully serviced by sewers and in many areas few premises adjacent to sewers are connected. The huge backlog of connections is illustrated by the situation in KAVAL towns figures of which are given as:

<table>
<thead>
<tr>
<th>Towns</th>
<th>Water connection</th>
<th>Sewer connection</th>
<th>% of sewer to water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kanpur</td>
<td>44,000</td>
<td>800</td>
<td>2</td>
</tr>
<tr>
<td>Allahabad</td>
<td>33,300</td>
<td>8,000</td>
<td>34</td>
</tr>
<tr>
<td>Varanasi</td>
<td>29,200</td>
<td>25,000</td>
<td>86</td>
</tr>
<tr>
<td>Agra</td>
<td>18,900</td>
<td>1,300</td>
<td>7</td>
</tr>
<tr>
<td>Lucknow</td>
<td>40,000</td>
<td>2,200</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,65,400</strong></td>
<td><strong>37,300</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

Source: **Civic Affairs** (Kanpur), October 1975, Vol.23, No.3, p. 17.

It has been estimated that an average investment of Rs.100 per capita required for the utility services such as water supply and sewerage. During the last decade the urban population of the state has grown from 94.80 lakhs in 1961 to 123.68 lakhs in 1971 which indicates an increase of 3.05 per cent per annum. In future the urban population growth can easily be estimated at 4 per cent per annum. Such an addition roughly means an addition of 5 lakhs persons per annum to the existing population. For maintaining the position of the utility services an investment of about Rs. 500 lakhs per annum is necessary in urban areas for water supply and sewerage system. However, the fact that
quite a few of the water works in our state are very old, some as old as 1890, and require immediate replacement of various equipments, cannot be over looked.

Water supply to the people in commercial way caused the wastage on account of the non-metered consumers, which may be saved. It is also in public interest to charge for the consumption of water by measurement after the meters are provided otherwise leakage of filtered water will cause loss of revenue. The municipal corporation and municipalities which draw raw water from the nearby rivers should arrange for a separate supply for rough use. In this way the filtered water can be saved to fulfil the requirements of domestic supply.

The establishment of U.P. Jal Nigam by the U.P. Government is commendable step and will, it is hoped, go a long way in speedy execution of water supply and sewerage scheme.