CHAPTER EIGHT

Panchayats and Pollution Control
In the previous chapter an attempt was made to analyze the role of people and their participation in the Panchayati Raj Institutions of Kerala. The focus of attention in this chapter is on the role of panchayats in checking pollution, which is of vital significance in the context of rapid industrialisation and urbanization of the state.

The word 'pollution' is derived from the Latin word 'Pollutionem' meaning defilement. It has been defined differently and interpreted variously.

The environmental pollution panel of the U.S. President's Science Advisory Committee defines pollution as:
"the unfavourable alteration of our surroundings wholly or largely as a by product of man's action through direct or indirect effects of changes in energy patterns, radiation levels, chemical and physical constitution and abundance of organisms. These changes may affect man directly or through his supplies of water and of agricultural and other biological products, his physical objects or possessions or his opportunities for recreation and appreciation of nature"\(^1\).

According to the New Encyclopaedia Britannica

"Pollution is caused when a change in physical, chemical or biological conditions in the environment harmfully affects the quality of human life, including effects on other animals and plants, industries and cultural and aesthetic assets"\(^2\).

Warren defines water pollution as:

"any impairment of the suitability of water for any of its beneficial uses actual or potential by man caused changes in the quality of water"\(^3\).

**Picture in Kerala**

The preservation and improvement of public health is one of the obligatory functions of the panchayats in Kerala. As pointed out by the Health Survey and Development Committee\(^4\), (The Bhore Committee), the maintenance of public health requires
the fulfilment of certain fundamental conditions, which includes the provision of an environment conducive of healthful living, adequate nutrition, the availability of health protection, preventive and curative, to all the members of the community irrespective of their ability to pay for it and the active cooperation of the people in the maintenance of their own health.

The committee has rightly observed that the existing provisions in respect of these fundamental factors are quite inadequate. "Environmental sanitation is at a low level in most parts of the country. The existing health services are altogether inadequate to meet the needs of the people, while lack of general education and health education add materially to the difficulty of overcoming the indifference with which the people tolerate the sanitary conditions around them and large amount of sickness that prevails". Other social factors like unemployment, poverty and social customs also produce adverse effects on health, the committee pointed out. However, we shall confine our discussion to the part which can be played by the panchayats in respect of the main factors for the improvement and maintenance of public health and checking of pollution.

Small local bodies are better fitted to carry out preventive measures than to provide hospitals and dispensaries
for remedial treatment. A village panchayat, with the meagre financial resources at its command, normally cannot run a dispensary or a maternity home, but for working out the schemes of health improvement in the field of prevention, its cooperation is essential. The special value of the local people lies in the fact that their standing in the village, their local knowledge and intimate contact with the people enable them to influence the villagers to accept and help to carry out effectively any health measures that may be designed to promote general welfare.

A panchayat can play an important part in the fields of preventive medicine, by creating a small health committee out of its members. Each member of the health committee should be assigned definite task in the promotion of public health by dividing the work into suitable compartments like

(1) cleaning of roads and public places
(2) disposal of village refuse
(3) efficient water supply system
(4) health education etc.

I. VILLAGE SANITATION

(1) **Cleaning of roads and public places:**

In urban areas cleaning of public streets is a function to which the municipal or corporation staff has to attend every day. Removal of refuse and its disposal are also equally
important. In rural areas — specially in small villages — this item does not ordinarily cost anything to the panchayat. The villagers clean the streets in front of their cottages and the street sweepings are collected and removed by them to their fields along with the waste of their houses. However, when such sweepings are not useful for enriching the fertility of the soil, the villagers do not take care for their proper disposal. The houses in the villages are generally crowded together and are separated only by narrow lanes. Wide streets and open spaces are quite rare. It is therefore necessary that these lanes must be cleaned every day and the sweepings be removed to the proper places. A panchayat has only to attend to this part by arranging for constant supervision and instructions.

(2) **Disposal of village refuse**

The general lack of cleanliness in villages is due to the absence of any organised effort to dispose of refuse in a manner which will render them innocuous to the health of the people. The general belief seems to be that what is undesirable in one's own premises can, without any compunction, be thrown into public drain or any open space. This lack of regard for community hygiene can no doubt be remedied solely by an awakening of health consciousness by means of health education and propaganda. However it is essential in the
first place to allocate places for the disposal of the village refuse. Specific duties must be imposed on the panchayats in this respect. Kerala village panchayat Act, 1960 contained a special provision in this connection, which we have discussed in chapter four.

(3) **Water supply**

The supply of water in a village is derived mostly from wells and sometimes from rivers, canals or from streams. In Kerala, except in the Malabar region the condition is satisfactory. Adequate supply of pure water is the first among the important services, that a community needs. Under the existing law, making reasonable provision for supply of water for domestic use is one of the compulsory duties of the panchayats. The state government sets apart every year certain amount for village water supply and the said amount is generally spent through district rural development agencies.

(4) **Health education**

The insanitary conditions associated with the village life are to a large extent due to the fact that the individual does not feel a sense of responsibility towards others. The development of civic consciousness is essential for effecting any improvement of environmental hygiene. Such civic consciousness can be created only by general and health
education. In order to secure a progressive improvement in respect of personal and environmental hygienic, all people, children and adults, must be so educated as to adopt and practice the hygienic mode of life and to refrain from doing what may prove harmful to their own health and to the health of others. In India, progress in respect of health education has so far been very slow. Though teaching of hygienic is introduced in all the schools and training institutions, the teaching of the subject is more theoretical than practical. It has to be made more practical by forming health clubs in schools and by celebrating health weeks. The main work in this connection with health education has to be carried out by persons with practical training in the subject say by the officers of the state health department. However panchayats can do a lot in the field by cooperating with the health department in this work in holding exhibitions, in organizing 'clean-up weeks' in the village and in opening health centres for imparting practical knowledge.

II. SOURCES AND AGENTS OF POLLUTION

(a) Drainage and sewer system

It is one of the most common but most neglected aspects of local administration. The Kerala Panchayat Act, 1960 have provisions for maintaining an efficient drainage system. However, reality tells a different story. Regulation of discharges by
private drains into public drains does not figure in people's priority. Public drains and sewer systems continue to get jeopardised because of a couple of facts - viz. ignorance and low priority for these things. Though there are provisions to deal with cases where a member of public violates regulatory orders, it is hardly invoked in practices. Dumping solid and insoluble wastes in the drains results into obstruction into the drainage and sewer lines which ultimately results into water logging and spilling of waste water which further gives rise to infections water borne epidemics. Epidemics like hepatitis, amoebosis, gastroentritis, typhoid etc. are not rare. For example, in certain coastal pockets in Kerala where hygienic conditions are worse compared to inland areas, gastroentritis breaks out more frequently. And unfortunately most of the local bodies concentrate on curative rather than preventive approach to these things. Some three decades back, Allepey, a central Kerala city used to frequently report cases of fileria, quite a few of them even becoming elephantisis cases. Situation has since changed because of awareness among people has increased and also there has been tremendous development in availability of medical attention even in relatively thinner agglomerations. But the fact remains that predisposing factors for fileria have not been removed completely. Pollution through drainage and sewer system can be in several ways a few of which are as follows:
(a) solid and insoluble waste being discharged in public drains either directly or through private drains.

(b) chemicals and toxic wastes in liquid form which may not obstruct the flow in the drain but might cause such nuisance and hazards as emission of gas, erosion of drain lining etc. and thereby pose danger to public health.

(c) dangerous liquids like petroleum which may be highly inflammable and may have disastrous consequences of human life.

(d) eroded and illmaintained drain and sewer course may pollute the sub surface water source also. Examples of drinking water becoming unpotable on account of passage of sewer and waste which are not washed off effectively are not rare. In a particular case a drinking water well had to be filled up because of emission of gas as a result of passage of an effluent stream nearby.

(e) obstruction and blockage in closed sewer courses resulting into sewer seepage, logging and sub surface leakage at times becomes an extremely ticklish problem which is normally not noticed in formative days. A block which can obstruct a main sub channel cannot develop in a day or so. It is a problem essentially because of insufficient flow of sewer on whatever possible account (like lack of sufficient slope, increase in rate of flow, sudden turnings. Unplanned and unauthorised discharges
through illegal connections to main sewer lines etc.). It however, cannot be lost sight of that pressure on cities on account of rapid expansion of urban habitates with virtually stagnant drainage and sewer systems has aggregated the problems.

(f) frequent digging of public thorough fare by different departments in uncoordinated manner often results into obstruction to public drains and sewer lines. It is in fact, a darker aspect of functioning of too many agencies in totally isolated manner where even the minimum coordination is not ensured.

(g) sub surface water pollution is the most natural consequence of uncoordinated efforts on part of public as well as agencies executing developmental works. Dumping of garbage in absolutely careless manner not only obstructs the thorough fare, it also creates perpetual problems. The saprophytic and organic matters in the garbage contribute in decaying of part of the dump, which when left in open acts as a dangerous source of pollution resulting into spread of epidemics, pollution of water resources and even atmospheric pollution. In a developing area where construction of houses on large scale goes on. Such garbage spots are not far from slum settlements. In fact, the slums subsequently become nuclei of garbage dumping spots. It then results into
geometric progression of garbage dumps with multiple ill effects. It is therefore imperative on part of tower planners to take into account the problems of slums while preparing for pollution control measures. Unplanned construction of public latrines particularly with inefficient service ability only adds to the problems.

(b). Slaughter houses and markets

The civic bodies acts, particularly the Kerala Panchayat Act, 1960 contains special provisions on, slaughter houses, regulation of markets for meat products, removal of carcasses etc. The health hazards of an ill maintained slaughter house may become alarmingly multiplied. As an industry, slaughter activities do provide a sizeable portion of employment. Also from the point of view of social service, slaughter house and meat vending spots are important. But irrespective of provisions in the act, the vending of fish, meat and poultry items and road side slaughtering is a common scene in both rural and urban areas in Kerala. In fact such spontaneous bazars are most in hygienic spots which acts as inter phase for carriers for several infections diseases. Though the above act says that the slaughter houses should be kept clean, the water supply should be sufficient, the carcasses should be washed before disposal and the effluents should be discharged in the approved way, in practices it is not so. Passage of
open drains through such vending spots pollutes the substances. Effluents from slaughter spots may play havoc with the public life. Spread of slaughter remains by birds and animals also pose a problem. In a particular case, neglect of slaughter house resulted into spread of rabies. The inhygienic remains of slaughter house were enjoyed by small birds, fowls and small animals. Seeing this, dogs and jackals started frequenting the area. The number of rabies dogs increases. Dog bites cases increased later it was controlled by improving the slaughter house and liquidating stray dogs.

The stray meat and fish markets are not uncommon in Kerala. In approved vending places, local bodies provide water for proper cleaning and also lime etc. to instantly disinfect the place. But due to tremendous expansion in population in general and in urban agglomeration in particular, the pressure on space approved for vending increases beyond expectations. Scattered vending only adds to the problem.

(c). Burial Grounds

The Kerala panchayat Act, 1960 contains specific provisions on disposal of dead bodies. The act also contains provisions regarding places of disposal of dead bodies and related requirements. In Kerala, some Hindu sects dispose their deads by burrial. In certain places, burrial is done in closed earthen medium with outlets for smoke etc. Of late,
there has been a tendency to make adjustments in graveyards because these places have now become over crowded. But usually these cases turns into serious social problems. There was an interesting case happend in Choranadu, of Anchal panchayat in Quilon district, two years back. A mosque was situated there. It was exclusively meant for conducting prayers and other religious programmes. It was constructed within a small area. When the mosque authorities tried to convert the land for burrial purpose, people opposed it, finally it turned to a law and order issue and later through the timely interference of the state government, district authorities, panchayat authorities and voluntary organisations the mosque authorities were forced to wind up the programme.

The basic reason behind the mass opposition was due to the lack of proper land area as per rules for cremation. Another interesting case of a proposal for shelf type burrial ground reported in one of the churches in Taliparamba taluk of Cannanore district. Technically there was no objection to permit them to start it. Later there was certain amount of resistance because of the fear of pollution of drinking water. But actually the resistance was greater because of its un­orthodox method of disposal. This problem was sorted out by proper extension work among the people who are likely to be affected by this type of project.
Burrial or cremation under the set rules, does not create pollution problems. But the related practices do. Particularly when the corpses are burnt on the river bank and the remains are straight away discharged into the stream. It does pollute the river water. Even disposal of dead bodies in the river straight away is not uncommon. Now this has assumed alarming proportions mainly because of tremendous increase in number of such incidents where the flow of the river is no longer capable to wash the remains away and the chemical oxygen demand of the river water exceeds approved limits. One method could be to settle the remains before being discharged into the river. Another could be to increase the number of burning spots. Use of electric crematorium could be an excellent answer to this problem.

(d). Air and water pollution

Industrial units may create serious problems of pollution particularly at places where industrial estates are developed or big units are erected. Discharge of gaseous materials into atmosphere or even large scale burning of inflammable gases do pose a great threat of air pollution. Similarly, discharge of affluents into river without treating them creates twin problem of polluting the river as well as polluting the sub surface water. Although permissions from state pollution control board is necessary before starting any unit and the
industries are bound to comply with directions of state pollution board in this regard, cases of violation are not rare. River pollution is the most usual form where the biological oxygen demand of the river water exceeds the permissible limits.

More than 500 million litres of industrial effluent are being dumped daily into the rivers of Kerala, besides untreated human wastes. Rotting coconut husks in back waters and stagnant ponds add to the pollution.

Waters in Kuttanad, the rice bow of Kerala, have been severely polluted by massive application of pesticides in paddy fields. "In one crop season, 1,000 tonnes of pesticides of 46 different formulations were used and they were leached out into the water ways".

Five of the ten major rivers—Chaliyar, Chalakkudy, Periyar, Pampa and Kallada are affected by pollution. Chaliyar river, which supplies drinking water to Calicut city was the worst polluted, until the state government ordered the closing of the Gwalior Rayons factory at Mavoor, that was letting out 548 lakhs litres of waste per day into the river turning the water dark brown.
III. AREAS OF POLLUTION CONTROL

(a). Scavanging

The Kerala panchayat Act contains elaborate provisions regarding regulation of deposits of garbage, removal of filth and rubbish and their disposal in dumping grounds. Local bodies can call upon the general public to dump their domestic garbage in specific places or receptacles from where it could be lifted by the panchayat vessels. In this regard, two aspects are of utmost importance. Firstly, the people in general have to be aware about safe practices of dumping of household garbage. The panchayats can formulate rules and regulations in this regard, secondly the local bodies have to be efficient in prompt removal of garbage and its proper disposal.

One possible area needing immediate concentration could be to educate people to dump the decomposable domestic garbage and non decomposable rubbish and hard materials in separate bins. The garbage which contains organic and biotic rejects may be converted into manure or organic fertilisers whereas substances like bottles, tin, plastic materials etc. could be recycled or burnt under controlled conditions.

Controlled burning of filth and rubbish is another possible solution. The method can give additional source of energy also.
But in a few cases this could be a cost intensive venture and local bodies may not find it financially viable to go ahead. For smaller panchayats, it would be preferable and also feasible to have common burning centres. Proper disposal of garbage can avoid consequent evils like pollution of subsurface waters spread of endemic etc.

Scavanging the drains sewer lines etc. and their expansion could help to maintain efficiency in drainage and sewage systems. Regular cleaning of settlement tanks or oxidation ponds or trickling filter basins in sewer system could also give additional amount of biotic manure as well as water in limited quantity for irrigation purposes. City outfalls and sewer treatment plants can also provide additional energy by putting up biogas plants. But action in this area is yet to take off.

(b). Sanitary care and management of slums

It is one of the most important areas where local bodies can contribute significantly in pollution control.

Spreading line and disinfectants where domestic garbage is dumped, spraying DDT and such other chemicals in ponds and similar places where stagnant water acts as breeding ground for infections carriers like mosquitos, tape-worm etc. covering the filth both at temporary deposit units and also while removing,
liquidation of stray animals, precautionary vaccination, regular cleaning and sewer lines and repairs wherever necessary, exercising regulations and compulsions regarding construction of private latrines and hygienic exercises like putting nets on exist pipes of septic tanks are the general sanitary services which the local bodies should render without fail. Besides ensuring proper checks and coordinations, the local bodies have to devise methods where emergency arrangements are made in the case of snag in any of these services.

Management of slums is a great challenge for the local bodies. To an extent, development of slums near large scale construction or excavation sites is inevitable. But perpetual slums have to be attended to. Eviction of slum dwellers is not a solution because, it will come up again at a new site. Therefore extension of sanitary services in these settlements would be in own interest of municipalities. Particularly, provision for drinking water, public latrines, covering the open drains and prompt removal of garbage would be badly required in slum areas. The basic reason is very simple. Slums are the most natural harbourer of infections and endemic agents.

Adequate provisions of public conveniences at proper places will be a great guard against city pollution. Such public latrines could be connected with biogas plants which would
also be an unconventional source of energy. The capital cost of such plants is not very high and local bodies could well afford it.

One of the most difficult tasks would be to provide pollution control measures during rainy season. Comprehensive action plan has to be made to deal with the aspect on emergency basis because its neglect during rains would only leave the agglomerations in the thick of endemics.

Similarly the slaughter houses, meat, fish and vegetable vending places etc. have to be regulated in strict manner.

(c). Management of effluents

Control of effluents discharged from industrial and non-industrial units (like disposal of deads, dumping burnt materials in river etc.) is an area of major concern particularly in urban and industrial agglomeration.

The local bodies should have clear say in pollution control measures adopted by individual industrial units. Generally it is the state pollution board that acts as quasi-judicial or executive authority to call for explanation etc. in cases where the industrial units have not complied with its directions regarding pollution control measures. Power to call for explanation in such cases to hear them and to decide should also be delegated to the local bodies.
stringent penalty should be prescribed in all cases of violation of directions.

To achieve the above objective, there has to be a close coordination between the local bodies and the state pollution board. Functioning of these agencies in isolation would only aggravate the problems. It would not be bad idea to prescribe prior clearance from local bodies regarding pollution control in cases where new industrial units are set up.

Responsibilities to construct pollution control plants and treat the effluents before discharging in the rivers have to be enjoined upon industrial units in mandatory faction. The local bodies can provide for machinery to check and ensure that the chemical oxygen demand of the river or such other stream does not exceed the permissible unit.

IV. SOME RECENT ATTEMPTS

Recently some attempts were made by government of Kerala and panchayat directorate jointly, to check pollution with the financial assistance of world bank. An attempt is made here to review the major activities in this connection.

World bank has agreed to finance the construction of 18,000 latrines in 37 world bank project villages comprised in 32 panchayats in Trivandrum, Quilon, Pathananthitta, Kottayam and Ernakulam district during 1986-87 to 1989-90.
The project is aimed at controlling and eradicating, contagious diseases prevailing in the state due to the lack of proper sanitation facilities. The project was supposed to be a step in the right direction in achieving the target of "sanitation for 25% of the rural population" during the international drinking water supply and sanitation decade (1981-90). The total outlay for this project was estimated to be around rupees four crores.

The latrines constructed under this scheme is to pit pour flush type in accordance with U.N.D.B/U.N.I.C.E.F type design. The approximate cost of one unit was calculated to be Rs.1,840 in 1985-86. Out of which 75% will be provided as grant and the remaining 25% as soft term loan to be recovered within 25 years at an interest rate of 8.75%.

During the first year i.e, 1986-87 five panchayats, viz. Vilavoorkal, Kilikkollur, Adoor, Kumaranalloor and Chellanam were selected. The project was launched on 2nd October, 1986 with the aim of constructing 2,500 units. The project was a little delayed since the mansons were not familiar with the new design and due to the drought situations. However, the construction of 2,500 latrines were completed by the end of November, 1987.

A total number of 13,323 persons were benefitted by the scheme, out of which 2,932 belong to SC/ST categories. The total cost of construction was approximately rupees 46 lakhs.
The construction was carried out in three ways (1) through beneficiaries (2) through committees consisting of a group of beneficiaries and through (3) contractors.

In the second state of the project 12 panchayats viz. Vilappil (Trivandrum), Sakthikulangara (Quilon), Thrikkadavoor (Quilon), Ezhamkulam (Pathanamthitta), Vijayapuram, Nattakon, Panachikkad (Kottayam), Kumbalanghi, Maradu, Vadavucode-Putham Cruz, Thrikkakara, Keezhmad (Ernakulam) were selected for the construction of 6,000 latrines during 1987-88. As on 31 January, 1990, construction of 4,779 units have been completed and 567 are at different stages of construction. 26,696 persons have been hitherto benefitted by the scheme out of which, 3,301 belongs SC/ST categories. The total amount spent so far is Rs. 89,95,742.45. The implementation of the scheme undertaken during to be completed by 31 March, 1990. During to lack of funds, no works could be taken up afresh during 1988-89 and 1989-90^10.

In Short the construction of 7,279 units have been completed till 31 January, 1990 and the scheme covered a total population of 40,019 persons including SC/ST. The total expenditure is approximately Rs. 1,35,95,742.45.

A check back in certain panchayats showed that this scheme has been well appreciated and accepted. The ladies have been found to be very keen in maintaining the latrines as per
the instructions given to them by the authorities. Another point which came to notice during investigation was that, some other panchayats had started constructing this type of latrines using their own funds. Now the panchayat directorate is optimistic that had there been sufficient fund, the whole target of 18,000 latrines would have been achieved.

V. SUGGESTIONS FOR IMPROVEMENT

It is very important to educate general public about hygienic practices and pollution awareness habits. For this several tools are available to the local bodies like organising general information campaigns regarding pollution control activities, seminars, audio-visual demonstrations, handbills, advertisements, cleaning campaigns, hoardings, slides in cinema theatres, traffic regulations permanent notices for the information of the general public etc. Local bodies can organise information sessions by adopting any combination of these tools.

Different kinds of extension measures are needed in schools and colleges. Seminars aided with audio-visual guidance and campaigns by National Service Scheme, National Cadet Corps units of the schools and colleges would go to a long way in creating general awareness among student community. After this, the students can even undertake educating people in respective residential areas.
For aged, rural and illiterate people, particularly women folk and children, an entirely different kind of education campaign is needed. There the visuals would be more effective and repeated exposure to such visuals may result in greater retention of the message.

There is a great possibility of coordination with voluntary agencies for extension work. In fact proper public relations would not only result in proper education to people, it would also make the local administration more responsive where people would develop and sustain faith in it.

The existing provisions in the local bodies legislations are elaborate on certain aspects of civic services, but specific awareness of pollution and its control is not explicit. Punishments for violation of provisions are not stringent and very often, people get away with contravention of the provisions. However it would be ideal if the local administration ensures prompt services in discharging its responsibilities and makes necessary arrangements for being responsive to complaints of general public besides maintaining close liaison with other agencies like state pollution control board.
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4. Report of the Health Survey and Development Committee (Vol.I). Govt. of India, New Delhi, 1960, p.11


7. Ibid.


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