

CHALLENGES RELATING ENVIRONMENTAL ISSUES IN POMMAIVELI OF JAFFNA CITY OF SRI LANKA.

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ABSTRACT

Settlement along with planning and management deficiencies severely affects the Jaffna city's livelihood and environmental quality. During post war period population density has been increasing and also population has been moving towards Jaffna city. The study area covered from 1st cross street to 9th cross street that included 160 families. Pommaiveli area is a formal settlement area but socio-economic and environmental conditions have shown like an informal settlement or slums. Primary data were used and analyzed for this study. Forty one samples were collected and used for the question aire. At the same time, wider spread direct interview data collection technique was done. Specilally, observation relating the field was observed keenly. Lack of water supply, improper and unplanned drainage system, flooding, air pollution, straying animals ,improper waste disposals are common environmental issues were identified in this study area. 80% of the samples were indicated the presence of dug wells but, salinity was commonly found in the whole study area. Lack of sufficient water supply creates social conflict among the people. Mainly, unplanned drainage system creates many social and health care issues. Major economic activity of this area led to airpollution. Generally, better designed, well planned and unpolluted environment must be an important factor for the sustainability of the settlers which help to develop the standared of the life of a community.

Keywords : *Settlement, environmental issues, drainage system planning*

1. INTRODUCTION

Proper and clean environment is important for sustainable human settlement. When man has deep connection and involvement with his environment, he can enrich his life. When he tries to change his environment suiting his needs, he has to face the impact of the nature. Regional and

community development of an area changes the infrastructure of the environment. Several factors have been influencing in socio-economic development of Jaffna peninsula. After the civil war, the population of Jaffna peninsula has increased greatly. Unplanned development and community planning of Jaffna peninsula have affected

the livelihood and living condition of the people. Many of people in slums areas cannot afford the services provided by the formal sector because of their educational background. The slum-dwellers make their livelihood by working as garbage handlers, cleaners, street vendors and other as pickpockets, prostitutes and petty thieves of the migrant population of the main city and people who visit Jaffna for various reasons. The informal sector, which is predominantly owned and run by the people in the low-income areas, provides the necessary services and goods needed by the majority of the city in parallel with the formal sector. There are some informal or slum settlement appears in some places of Jaffna peninsula. Nithyaoli, Saaminagar, Vasanthapuram are some of the places for example. The settlement in these areas are hindered by social economic condition and livelihood conditions. The people in these areas do not have their own plot of land. So, their livelihood is behind the expected level. But, there are some settlements appears to be formal settlements. Living conditions, pattern or shape of the settlement and livelihood of the people are resembling with slum settlement. Pommaiveli settlement is an example to it. The people in this area faces lot of problems in relating to social, economic and environment. The major objective of the research is to identify the environmental issues of the Pommaiveli area. This paper want to give important place to their environmental problems. The Pommaiveli area indicates as a formal settlement area but their socio-economic and

environmental dimensions are difficult than other formal settlements in Jaffna peninsula. So that, this study area has included into research.

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2. STUDY AREA

Problems relating Pommaiveli is different from other problems. J/87 Grama nilathari division was selected as the Research area.

Major all land use is covered by the settlements where we consider economic activities that do not have agricultural activities, only fishing plays as a primary economic activity in this area. The study area includes 160 families, one of the settlement has $\frac{3}{4}$ extent of land for their living that settlers have their own deeds relating ownership of land and other people have permit to live there. 95% of the of this study area are Muslims. 5% of Tamil people are also found in this area. The following figure 2.1 shows study area.

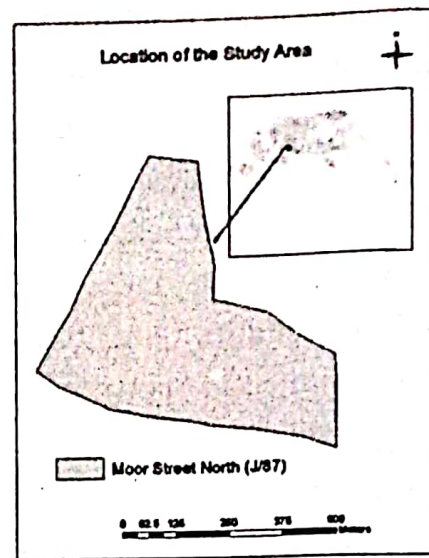


Figure 2.1 the study area in the Jaffna peninsula

3. METHODOLOGY AND DATA COLLECTION

Data are important to identify the problem of the research. Primary data were collected and used for data analyzing. Collecting questionnaires were used as a data collection technique. Before questionnaire were prepared, pre-visit was made to the field and environmental issues were identified by pre-test. Then, questionnaires were prepared according to the collected information. In questions, formation of answer was made by the way of trichotomus. The questionnaires were gathered through random sampling technique and forty one samples were collected. Random sampling selection process consist of nine cross streets with one house to four houses and data were collected. More over, "Direct Interview" data collection technique was used to gather futher detailed information about socio-economic and environmental issues which helped to curry out the research in

Pommaiveli area. The direct interview was conducted from the same person who engaged in sampling activities. This direct interview techniques was not pre-planned which is known as non-structured interview. By this techniques, previously uncollected data could be included into the research. In connection with a context, questions were raised about environmental problems and data were gathered. This direct interview techniques (non-structured interview) provided more opportunities to samples for giving proper explanation. Many questions relating to improper drainage system, environmental pollution by burning wires, improper solid waste management and problems of inhaling noxious gases were approached critically. More over, these questions helped to gather the experience, attitude and background of the people. From this direct interview, the questionnaire data were directed towards the path of reliability. Specially, the research conclusion could be strengthened by gathering quality data.

Qualitative, quantitative data were the primary data which were used for research analysis. The quantitative data were included into some statistical treatment. When the other qualitative data were analysed, data description, data classification, data connection analysis were taken into consideration. When data classification analysis, pommaiveli people were grouped according to their attitude and environmental problems and their deeply connected problems were given considerable importance to the research activities. Data description had

the words told in sample sentences. Connection data analysis had suitable matters connecting with each other. In this paper, problems regarding environmental issues only were analysed to great extent for the purpose of identifying the environmental problems. In addition, environment of the area was watched keenly to get field notes.

4. RESULTS AND DISCUSSION.

Settlers of the Pommaiveli face lot of environmental and socio-economic problems. Environment of the whole study area is unsuitable for settlers where people face many environmental challenges. Area is unsuitable for settlers where people face many environmental challenges.

4.1 Lack of drinking water supply.

There are no perennial river in Jaffna district. One of the seasonal river (Valukkai Aru) is found in Jaffna area where the people depend on only groundwater source for their consumptive values, productive values and in-situ values. Since water is the basic necessity, the sufficiency and quality of its supply directly affects the wellbeing of the society living in that particular city. (Dubbale & Tsutsami, 2010) In Study area, groundwater appears to be saline. 80% of samples consist dug wells, at the same time 20% of the samples do not have dug wells. Although 80% of samples's well are found, but they are unfit for drinking and cooking purposes. So the people of the area face challenges towards getting pure water. Although necessary action are taken by Jaffna Municipal Council which can not

satisfy the need of the drinking water of the people. The challenges of the people for getting pure water in the research area can be observed during field study. The following figure 4.1.1 and 4.1.2 (at 1st Cross street and 9th Cross street) gives brief explanation.

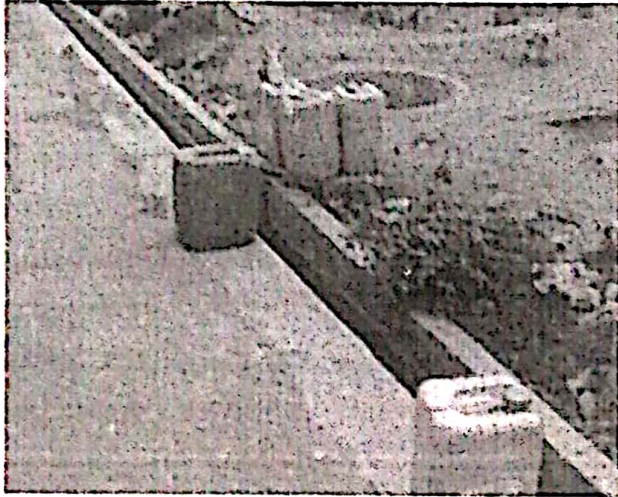


Figure. 4.1.1 Challenges related getting drinking water in 1st cross street.



Source : Field study.

Figure 4.1.2 Challenges related getting drinking water in 9th cross street.

Table 4.1.1 Availability of getting drinking water in the study area.

Source: Field study.

Name of the cross street	Number of taps for drinking water supply
1 st Cross Street	01
2 nd Cross Street	02
3 rd Cross Street	02
4 th Cross Street	01
5 th Cross Street	01
6 th Cross Street	01
7 th Cross Street	01
8 th Cross Street	02
9 th Cross Street	01

Table 4.1.1 shows number of the taps in cross streets for getting pure water. There is only one tap in 1,5,6,7,8,9th cross streets. It creates social tension among the people of this area. People who live close to the tap get tap water immediately. So, inner conflict are found among the people. In pommaiveli area, the availability of water supply for the settlers are only one hour.

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4.2 Improper Drainage System

Proper planned drained system helps to remove the excess water immediately. The drainage system in pommaiveli is not properly designed to meet the requirements. Slope gradient is not found for the water to flow quickly. So the stagnant of water is common scene in this area. It is the breeding ground of mosquitoes and spreading of "dengu fever" which is assured from the research.

Sarma says "There is fighting due to the dirty water of the canal. We do not allow the bathing water to go into the canal. When the water go and collect in front of the other houses, they come to fight with us" and a woman named Bathima says "There is stagnant water in the canal in front of the houses, mosquitoes give us problems. I had to admit my child in the hospital due to dengue fever"

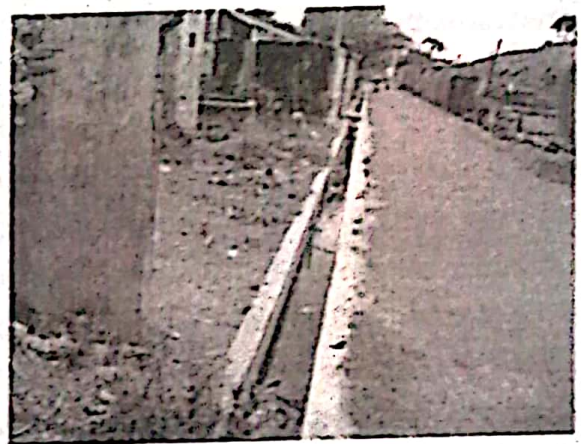
Mainly, Unplanned drainage system gives problem to the area. There are crossing across the 1st, 2nd, 3rd etc. cross streets where the canals are blocked in cross streets and the water flow is not maintained properly. Stagnant of water is commonly found in these canals. The figure 4.2.1 and 4.2.2 express it clearly. All these unplanned canals give lot of problems to people. The main cause like this problems are unplanned community based implementation. Authority concern do not play attention to the problem of the people. 4.2.2 express it clearly. All these unplanned canals give lot of problems to people. The main cause like this

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Source: Field study.

Figure 4.2.1 Blocked canals in the study area.



Source: Field study.

Figure 4.2.2 Stagnated water by blocked canals.

4.3 Burning of wire and air pollution.

According to the 73.1% samples, the daily earning of the workers is between 500-1000 rupees. They collect unwanted iron materials and copper wires. They burn the copper wires in the evening to remove

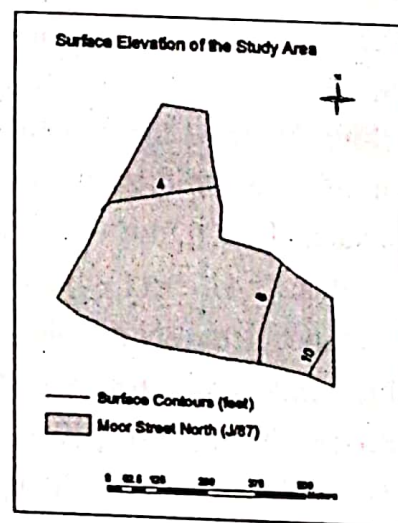
copper from it. Noxious gases are emitted from the burning wires. It can be observed in the field study. The ash and dust from the burning wires precipitate on the uniform of the school children. The study confirmed it. Nifrah says "We are unable to live here as they burn wire in the evening time, there is black spots in the white uniform of the children." Another woman safrina in the 7th cross street says "The burning of wire and the improper canals are the two important problems to us. She went to say that her son was admitted to Jaffna general hospital on 31.01.2014 because of the problem of lower respiratory track infection". So, this is the biggest environmental issues of the people. They have to suffer from liver and lung problems. Poor education of the people, lack of awareness about the problem and little attention paid by the social institutions and health care units can be the reason for it.

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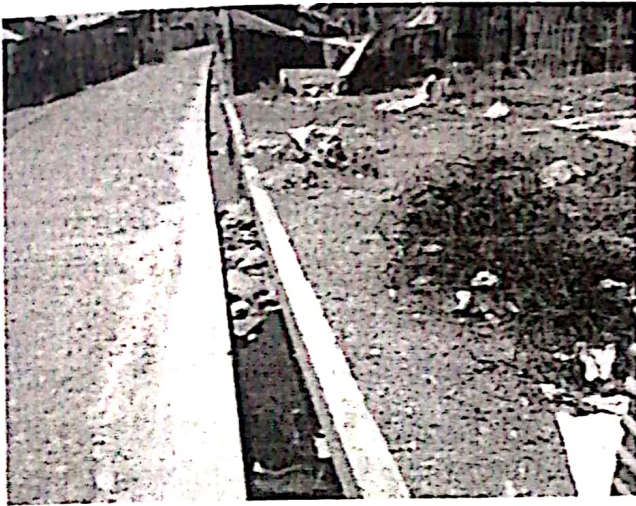
problems. Poor education of the people, lack of awareness about the problem and little attention paid by the social institutions and health care units can be the reason for it.

4.4 Flooding

The Study area is near the sea side. It is naturally a low level surface elevation area. According to one of the research literature, Haphazard construction of houses has blocked many natural water ways and has led to frequent floods during the rainy seasons. Soil erosion is strongly related to flooding which destroy houses as well as footpaths and unpaved roads (Ameyibor & et.al, 2003). In this study area, there are unplanned drainage canals and improper solid waste management systems led to stagnation of the water and flooding during rainy seasons. It is the main source of the flooding in this area. The following figure 4.4.1 shows surface contour (in feet) of the study area. stagnation of the water and flooding during rainy seasons. It is the main source of the flooding in this area. The following figure 4.4.1 shows surface contour (in feet) of the study area.



Source: Field study.
Figure 4.4.1 surface contours of pommaiveli area



Source :Field study

Figure 4.6.1 Solid waste into the channel.

The people who live in the 1st cross street are mostly affected by the flooding. The people who call the 1st cross street as a named of "Atthipeddi" which is affected greatly by flooding 98% of the samples confirmed it. In atthipeddi, not only environmental problems but also socio-economic problems are different than from other cross street settlers.

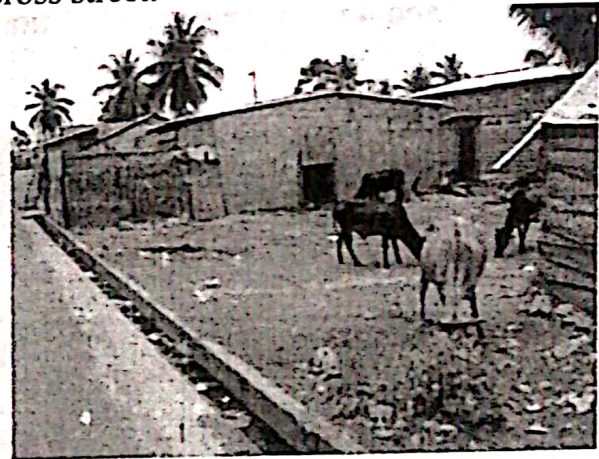
4.5 Straying Animals

There are stray dogs, goats, cows whose toilet waste are commonly found in this area. They pollute the environment and reduce the living standard of the people. We found a grinding machine which is used for making mixture for preparing "Vadai". Some stray goats removed the fur on the machine. It is a kind of health care issue of environmental pollution. It gives chance for lot of diseases spread among people. It shows the lack of awareness among people relating to their ignorance and poor education. This type of environmental problems are conformed by some figure 4.5.1, 4.5.2 and 4.5.3



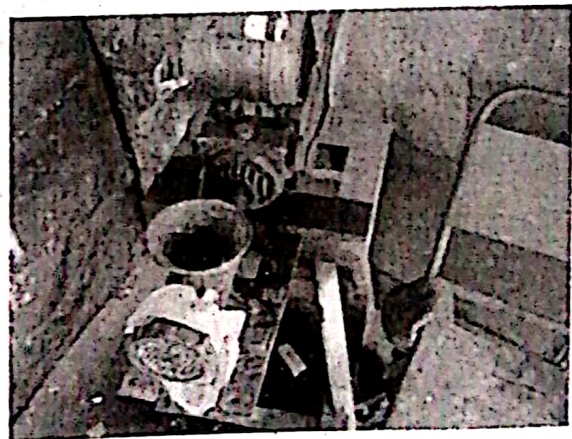
Source: Field study.

figure 4.5.1 Straying animals in the 5th cross street.



Source: Field study.

figure 4.5.2 Straying cows in study area.



Source:Field study

Figure 4.5.3 The Polluted grinding machine.

4.6 Lack of Solid Waste Management System

There is no proper management of solid wastes. People do not have awareness about protecting their environment. There are lot of waste put into the canals and road side. When they put the solid waste into the canals, there is no way to flow water. It creates flooding and spread of mosquitoes. In addition, lack of waste management system is followed by the municipal council in this study area that is conformed by samples and field study. Mainly, the attitude of the people is main role for this accumulation of the solid waste. There are some visual evidence given, in Figure 4.6.1 and 4.6.2 shows accumulation of the solid waste.



Source:Field study

Figure 4.6.2 Solid waste into the Araly road channel.

5. CONCLUSION AND RECOMMENDATION

In Pommaiveli area, there are many environmental issues carried out. Lack of drinking water supply, improper drainage system, airpollution, straying animals,

flooding and improper and unsystematic solid waste management system relating environmental issues are commonly found in this study area.80% of the samples have dug wells but total undergroundwater is found as saline water in this area. Mainly, the people face challenges getting pure water for their consumptive value. Major economic activity of this area, is the major source for the airpollution. Unplanned and improper project implementation creates lot of environmental and social problems in pommaiveli. More over, lack of education ,awareness about environmental problems , attitude of the people are main causes for deterioration of the environment. Although Pommaiveli is a formal settlement area, the socio economic and environmental dimensions appear as a informal settlement.

Environmental issues carried out by research but the problems should be reduced for the sustainability of the people. There are some ways to reduce the challenges of the people in pommaiveli, increasing level of education, better awareness of Government Organization and Non Government Organizations and also community based institutions about ever green and clean environment and protecting environment. Welplanned project should be implemented, the unplanned drainage system of this area should be reconstructed by the implimenters. When we reduce the environmental issues, the challenges of the people will reduce automatically. When the people live in green and clean environment, their sustainable standard of life will increase.

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