

CHAPTER - III

RESEARCH

METHODOLOGY

3. RESEARCH METHODOLOGY

This chapter focusses on the ways in which the present study is being carried out. This chapter covers various aspects of this research investigation like Statement of the Problem, research questions, Need for the study, Significance of the study, Scope of the study, objectives, Hypotheses, Research Design, Universe and Sampling, Profile of areas, Methods and Tools used for data Collection, Pilot study, Interview Process, Validity and reliability, Operational Definition, and Limitation of the study.

3.1. STATEMENT OF THE PROBLEM

Environment problems are one of the most significant and challenging problems of modern society. Virtually, industrialization and commercial activities, mining production and energy production, food and agriculture enterprises generate solid or liquid waste, which destroy equilibrium of environment. Any alteration or change in physical factors will bring about a concomitant effect on living creatures. Environment must be protected at all costs. Environmental challenge that lies before the country is large and complex. It is generally related to the living organism and particularly to man. Environment and the human health are related is an established fact. Clean air, water and soil are the vital ingredients for a happy life. Environmental degradation is progressing at a frightening pace. Man has become the prime victim of this environmental degradation. Considering the high stakes-the difference between life and death-urgent steps are required to bring back to life of our dying air, water and soil to make leaves green, the water blue, the air pure to breathe and the humanity to live and lead healthy life. The all-encompassing nature of the environment cannot be stressed adequately. The quality of water being consumed for drinking or personal and household tasks, the soil in which our food is grown and on which waste material is being disposed around, the air that is being breathed in rural and the urban setting in which we dwell or work determines to a large extent the levels of our physical, mental and social well being. Environmental degradation undermines development and also damages human health. Ill health on the other hand affects the work force, hinders

development and leads to environmental degradation. Environment development and health are thus closely interlinked with proper development, improving the environment, sustaining development and increasing community health, making possible sustainable development. The role of each and every individual in the maintenance of a clean and healthy environment is therefore indispensable. Thus man is a part and parcel of his environment. Due to his interaction with nature on a large scale, the balance of nature has been upset and environmental decadence occurred in most parts of the world. This might be because of environmental pollution or improper and unscientific exploitation of natural resources. It has posed a great problem to the existence of man and threatens the quality of man's life and his survival. So, there is a need to increase awareness and understanding of those environments and man's impact upon them and to find out effective ways to manage them. A concerted effort has to be made to keep our environment clean. It will lead to betterment of our lives and peaceful coexistence. Thus there is need for research to study the condition of environmental problem in rural area, so as to enable the Government and the Village Panchayats to draw their kind attention towards rural environmental preservation.

Thus along with other specifications, the researcher wishes to highlight the present condition of rural environmental problems and the process involved in it and its impact on the lives of rural people, the relationship between the various institutions involved in environmental preservation at grass-root level. The attitudes of village panchayat, Tamil Nadu pollution control board, Non-Governmental organization and Primary health center groups with regard to a) the level of beneficiaries' participation in the environmental preservation programme b) Awareness on modern technique (methods) c) attitude on rural environmental preservation was framed and it should be comprehensible by all the groups involved including the benefactors and beneficiaries in order to ensure total commitment and involvement in environment preservation needs of rural people. These form the main focus of the study.

3.2. THE RESEARCH QUESTIONS

The Present work focuses on the following specific research questions.

- 1) What are the socio-economic conditions of the respondents at grass root level?
- 2) What are the major reasons for the health affects of the grass root people?
- 3) What type of institutions play? Which kind(s) of role to preserve the environment at grass root level?

The first issue of socio- economic background includes age, caste, education, and nature / type of work. The second issue tries to elucidate why people health affected and the third issue highlights the type of institutions and their functions play in preserving the environment at grass root level.

These issues would be studied in the context of villages in Tiruchirappalli district of Tamil Nadu.

3.3. NEED FOR THE STUDY

Since villages are considered as the backbone of the country, improvement in the environmental conditions of the village is vital to the overall development of the Nation's Health. Environmental pollution and preservation have mutually supportive roles. Hence an improvement in environmental conditions in the villages has manifold significance. Environmental preservation encourages healthy and hygienic living. Keeping in view the magnitude of the problem and its inherent difficulties, the task of improving environmental conditions in rural areas has to be viewed not as isolated objectives, but an integral part of a programme for the overall development of the village.

Unfortunately the problem of environment is seen only in terms of urban environment. The problem of rural environmental problem is never taken as a serious problem. This is the case not only in India but also in the whole world. The field of environment has not received the attention, it deserves. Thus Indian villages are mostly affected by environmental pollution. There is need for research to study the condition of

environmental problem in rural area, so as to enable the Government and Panchayat raj institutions to draw their kind attention towards rural environment. Hence the researcher is interested to highlight the inter-relations among the six major groups - Village panchayat (leaders), Non-Governmental organization, Tamil Nadu Pollution Control Board, Primary Health centre, villagers (the people/public) and Industrial administrators (owners/proprietors) involved in environmental preservation activities at the grass-root level.

3.4. SIGNIFICANCE OF THE STUDY

The rationale for undertaking any research study especially studies involving a specific social problem is always a measure of the extent of the problem, the impact of the problem, its social implications and its miserable manifestations. Environmental problem is considered as one of the major social problems. It becomes imperative to gather information from the groups (viz., Individual householder, village panchayat (leaders), Non-Governmental organization, Tamil Nadu Pollution control Board, and Primary Health Center and Industrial administrators) involved in environmental preservation at grass-root level.

This study which attempts to elicit the opinion of the four groups (Village panchayat leader, Non-Governmental organization, Tamil Nadu pollution Control Board and Primary Health center) regarding the environmental issue in rural areas, would yield major inputs to planners and policy makers attempting to find solution for the issue both at local level and the at the Government level. The Significance of the study lies therein

3.5. SCOPE OF THE STUDY

Though the study has been carried out in the rural area of Tiruchirappalli District, the findings can be generalized to the entire state of Tamil Nadu, since the respondents have been selected scientifically. The large size of the sampling and the sampling procedure followed provide ample scope for drawing reliable inferences and for their generalization. Thus the present study has vast scope of utilization in framing the procedure and action towards the issue of rural environmental preservation.

3.6. OBJECTIVES OF THE STUDY

Keeping the problem in mind, the following objectives are conceived for the study

- 1) To find out the inter-relationship between the socio-economic variables and the health Consequence of the respondents.
- 2) To understand the functions, pollution control measures and financial position of panchayat raj institutions in environmental preservation.
- 3) To study the environmental awareness through education at panchayat schools.
- 4) To know the functioning of Pollution Control Board in the study area for protecting environment.
- 5) To study the activities of primary health center with regard to environmental preservation
- 6) To learn the role and functioning of a Non-Governmental Organization in Environmental Awareness and preservation.

3.7. HYPOTHESES

1. There is no significant association between the age and health consequences
2. There is a significant association between sex and health consequences
3. Higher the level of education higher the knowledge of environmental awareness
4. Lower the level of income, the problem of health consequences increases
5. Higher the level of education higher the level of seeking health assistance during illness.
6. As the income increases, the ability to solve health consequences increases.
7. Pucca Dwellers are more likely to feel better environmental condition than those in thatched roof inhabitants.
8. There is a significant association between occupation and health consequences.
9. There is a significant association between caste and health consequences.
10. There is a significant association between type of family and health consequences.
- 11.** Increase in the number of Industries, will increase the problem of environmental contamination

12. Increasing number of Institutions will increase the awareness of environmental problem.

3.8. RESEARCH DESIGN

The design of the study is basically descriptive in nature. It attempts to describe the present condition of environmental problem in rural areas and to analyze the inter-relationship of the institutions involved in environmental preservation. In this study, the methods adopted by the researcher vary according to the nature of data analysis required for the study. This descriptive part provided information about the environmental pollution and health problem of people. Thus the descriptive design incorporates a multi method approach most suited to a study of such a nature involving multiple groups and multiple response patterns. The design allows for flexibility and more freedom of choice in the selection of research methods thus providing advantages to the researcher.

3.9. FIELD SETTING

UNIVERSE AND SAMPLING

A multi stage sampling method was adopted in delineating the population in the study. In the first stage, Trichirappalli District has been chosen for the study. Trichirappalli occupies the middle place (13th rank out of 30 districts) in terms of rural population. It has the same rank (13th) in literacy rate also. The number of persons per 100 occupied rural houses is 1003, which is neither a sprinkle nor overcrowded. Considering all these points, Trichirappalli District has been selected for the study.

Purposive sampling was used for the block level selection from Tiruchriappalli District, and for households, systematic random sampling was adopted.

Block Level:

Trichirappalli District consists of 14 blocks. Among them, Anthanallur Block has been purposively selected as the specific study area. This block is centrally located in Trichirappalli district. The total geographical area of this block is 445.17ha. The total population in this block as per 2001 census is 41,166 of which 28,020 are males and 13,146

are females. This block is bounded by Karur in the northwest, Namakkal in west, Sales in northeast, Perambalur in north, Thanjavur in east, Pudukottai in Southeast, Madurai district in the southwest and Dindigul in the South. This area soil is predominantly red and black soil, 55 percent of the people depend upon agriculture and other 45 percent are involved in Industrial work. The preferable marriage in this block is among relatives. Here are number of industrial units manufacturing soap and detergent, dye, pickles, camphor, candle, Ice Company etc. Handloom is another major activity well developed in this block. Mat weaving is another important activity providing employment to a large number of people both in the traditional and mechanized mat-weaving units. This block is famous for mulberry production. Considering all these points, Anthanallur block has been selected for the study. In Anthanallur block, Allure and Meakudi village panchayats have been purposively selected as the study area. The following are the reasons for selection.

Allur Panchayat

Allure panchayat is 33-Km distant from district Head quarters with educational facilities available upto tenth standard. Frequent transport facilities are available and also it has more accessibility to town. Allure panchayat is 75 percent electrified. Major cultivated crop is paddy, Coconut, Banana, and sugar cane. Allure has 42 industries. Allure village consists of infrastructure facilities like school, Primary health centre, communication facilities like post office and mechanization of farming with 10 pump sets and 3 tractors.

Meakudi village

Meakudi panchayat other wise called Melakudi panchayat. This panchayat is 57-Km distant from district Head quarters with education available only primary level. It is totally disconnected from other parts. It has no transport facilities. It is a remote area. Meakudi panchayat is 55 percent electrified. Major cultivated crop is Paddy, Banana and Groundnut. Meakudi has 32 industries. Meakudi village consists of infrastructure facilities like school, Primary health center, communication facilities like post office, electricity and mechanization of farming with 4 pump sets and 2 tractors.

A) Household level:

The list of houses was collected from the concerned village administrative officers. From the given list of both the panchayats have 1500 households (Allure 785, Meakudi 771). From each village 10 percent sample has been drawn from the study purpose, 160 respondents were selected by systematic random sampling method. The sample size is 160 i.e 80 from Allure panchayat and 80 from Meakudi panchayat. However out of 160 respondents who were interviewed, 154 interview schedules were complete in all aspects, which had been taken for analysis. The remaining 6 interview schedules were omitted due to lack of limpidness and lack of comprehensive answers.

(B) INDUSTRIES

Village industries located in the dwelling place also. The total number of industries functioning at Allur is 42 and in Meakudi it is 32. From each village industries 1 percent sample has been drawn from the study purpose. From the given list of 77 village industries. They are considered as the universe of the study. Census Sampling was adopted for the respondents (owners/ proprietors). However out of 77 Village industries that were interviewed, 60 interview schedules were complete in all aspects, which had been taken for analysis. The remaining 17 interview schedules were omitted due to lack of limpidness and lack of comprehensive answers.

C. INSTITUTIONS:

(i) Panchayats Leaders:

Census sampling technique was used to collect data from the Village panchayats. 23 village panchayats functioning actively in Anthanallur block. The list of 12 village panchayats involved in environmental programme had been identified from the given list. Allur and Meakudi village panchayats coming under this list. Thus the selected village panchayats elected leaders were interviewed to get information on rural environmental preservation in both the study areas. (President Allur(1) and Meakudi (1)(i.e, 2), Elected ward member one for each village)

(ii) Non-Governmental Organization

Data were collected from NGO (SEVAI). SEVAI is the only Non-governmental organization functioning in both villages. Thus the selected NGO Chairman and staff were interviewed to get information about the NGO (SEVAI) functions and environmental preservation in both the study areas.

(i) Pollution Control Board:

Since the only Government institution involved in rural environmental preservation in Tiruchirappalli District being the Tamil Nadu Pollution Control Board (TNPCB), it has been selected for this study.

TNPCB staff was interviewed to get information about the TNPCB functions and environmental preservation in both the study areas.

(iv) Primary Health Centre:

Allur and Meakudi Primary health center were selected for the study. Each village has separate health center. Data were collected from concern Primary health centre doctors and nurses were interviewed to get information about the activities and environmental preservation in both the study areas.

Profile of the study population

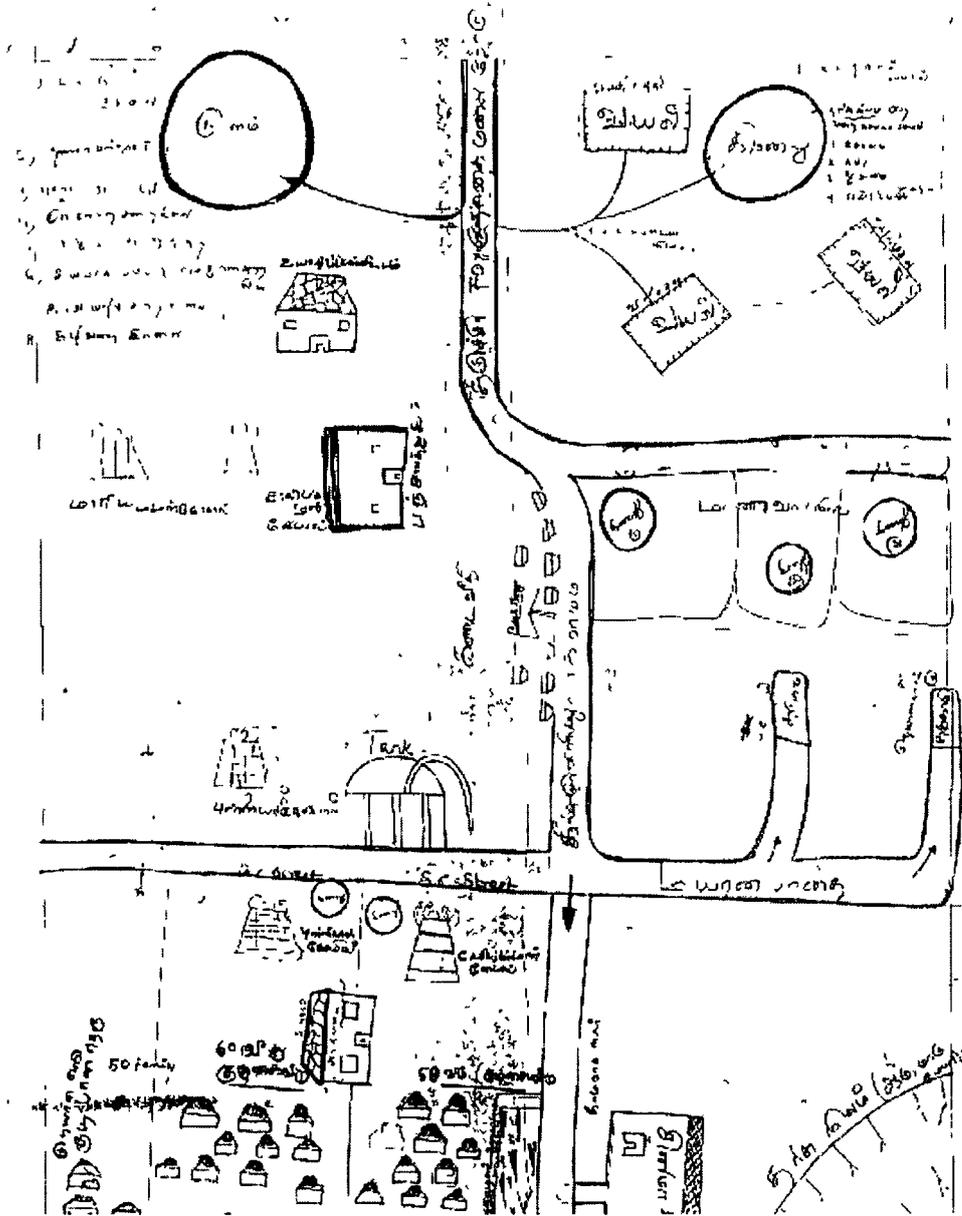
GROUPS	SAMPLE	SAMPLE SIZE
1.	VILLAGE RESPONDENTS	154
2	INDUSTRIES (OWNERS/PROPRIETORS)	60
3.	PANCHAYAT LEADERS	4
4.	NON-GOVERNMENTAL ORANISATION	8
5.	POLLUTION CONTROL BOARD	6
6.	PRIMARY HEALTH CENTER	6

3.10. PROFILE OF AREAS

ALLUR

Allur panchayat is 33-Km distant from district Head quarters with educational facilities available upto tenth standard. Allur village has 785 households and 2746 people in 2002. Frequent transport facilities available and also it has more accessibility to town. Allur panchayat is 75 percent electrified. Major cultivated crop is paddy Coconut, Banana, and sugar cane. Allure has 42 industries like soap & detergent manufacturing, camphor, Ice Company etc. Allur village has 5 groceries, 3 tea/coffee stalls, 3 tailoring shops and 3 hair-cutting saloons. The village has infrastructure facilities like school, Primary health center (1 kms away by walk), communication facilities like post office and mechanization of farming with 10 pump sets and 3 tractors. Well provided the main source of drinking water. There were about 3 public and 5 private wells used for the purpose. A tank too was used for drinking water. The scheduled castes had separate settlements and also separate facilities for drinking water, with one pond (both for drinking and washing) and have no well or bore well. The village has electricity, used both for lighting and irrigation. Only 75 percent of the houses had electric connections. Elephantiasis was reported to be recurrent here in epidemic. According to village records, there were 127 cows, buffaloes 170, goats and sheep 350 and other animals 190 (pig, hen, etc) .The village had veterinary hospital, Artificial insemination and dairy cooperative were functioning, which had been started only in 1982. A few rich people have private lavatories, but not others. There were no public lavatories, nor any civic drainage system. It may still be inadequate in proper drainage and sanitation facilities and a clean environment. Probably, that is because it needs community interest and help. Even the village panchayat elected leaders have no particularly keen interest in community sanitation. Reddiyar caste formed the largest part of the population here.

MEAKUDI VILLAGE



MEAKUDI

Meakudi panchayat otherwise called Melakudi panchayat. This village is 57-Km distant from district Head quarters with education available only primary level. . Meakudi village has 771 households and 2106 people in 2002 It is totally disconnected from other parts. It has no transport facilities. It is a remote area. Mekudi panchayat is 55 percent electrified. Major cultivated crops are Paddy, Banana and Groundnut. Meakudi has 32 industries. Meakudi village consists of infrastructure facilities like school, Primary health center (10 km away by walk), communication facilities like post office, electricity and mechanization of farming with 4 pump sets and 2 tractors. Well provided the main source of drinking water. There were about 1 public and 2 private wells used for the purpose. A tank too was used for drinking water. The scheduled castes had separate settlements and also separate facilities for drinking water, with one pond (both for drinking and washing) and have no well or bore well. Cholera and T.B were reported to be recurrent here in epidemic. According to village records, there were 178 cows, buffaloes 110, goats and sheep 150 and other animals 134 (pig, hen etc) .The village has veterinary hospital, artificial insemination and dairy cooperative were functioning, which had been started only in 1987. Meakudi village sanitation was not quite satisfactory on the whole. A few rich people have private lavatories, but not others. There were no public lavatories. Muthriyar caste formed the largest part of the population here.

3.11 TOOLS OF DATA COLLECTION

The primary data for the study were collected through an interview schedule and observation technique was used to cross check the data. A relevant, appropriate and detailed interview schedule was developed for the purpose of data collection mostly with open-ended questions. In order to probe deep, six types of interview schedules were used for this study.

i) Primary data collected from Villagers (house holds) ii) Industrial Administrators (owners of village industries), iii) Panchayat elected leaders in Allure and Meakudi iv) Non-

governmental organization (SEVAI) v) PHC in Allure and Meakudi panchayats , vi) pollution control board (Tiruchirappalli). The interview schedule besides collecting information from selected officials and villagers, seeks also to reconstruct retrospectively the type of health effect to which respondents have had access, right from the beginning so as to identify the type and different kind of health consequences met with and study its awareness and other implications.

Relevant Secondary data have also been collected from records, registered documents and Annual reports of Panchayat Raj Institutions (Allure and Melakudi), Pollution Control Board (Tiruchirappalli) and Non-governmental organization (SEVAI) .

APPLYING OF STATISTICAL TOOLS:

Chi-square test

This was used to study the degree of association between attributes of qualitatively defined variables as well as to indicate significant differences between two or more qualitative groups.

3.12 PILOT STUDY

A.INDIVIDUAL HOUSEHOLDERS:

Before finalizing the interview schedule, the researcher conducted the pilot study with 30 respondents in order to determine the efficiency of the tool. Necessary modifications were made in the interview schedule after completing the pilot study.

B. INDUSTRIES:

Discussions were held with the owners of Industries regarding the feasibility of data collection. Affirming the cooperation of the owners and confirming their participation in the study, the researcher then decided to proceed with the study.

C.INSTITUTIONS:

Discussions were held with the Chairman and staff of NGO (SEVAI), Elected leaders of Village panchayats, Tamil Nadu Pollution Control Board staff and Doctors and nurses of Primary Health Centres regarding the feasibility of data collection. Affirming the cooperation

of the institutions and confirming their participation in the study, the researcher then decided to proceed with the study.

3.13 INTERVIEW PROCESS

With the help of the six types of schedule, groups were interviewed. Some of the questions in the schedule dealt with confidential information. It was therefore, necessary to have interview in privacy, and in strict confidence. Each interview took about 40 to 50 minutes. First 5 to 10 minutes were spent on introductory talks. The data were completed in a period of 6 months' time. The time chosen for the interview was in the morning from 9 a.m to 12 noon and in the afternoon from 2 p.m to 4 p.m. In many cases the researcher interviewed the respondents at the field where they work, yet the respondents spent some time for this and very patiently answered. The timings were chosen very carefully to see the availability and convenience of the respondents.

3.14. VALIDITY AND RELIABILITY

Social research does not guarantee cent percent validity. Every researcher faces problems of validity particularly by those who deal with personal views, attitudes and interactional processes. To study these aspects qualitative responses are also required and cent percent validity of qualitative responses cannot be guaranteed.

3.15. OPERATIONAL DEFINITION

ENVIRONMENT: The complex of biotic, climatic, edaphic and other conditions which comprise the immediate habitat of an organism; the physical, chemical and biological surroundings of an organism at any given time.

ENVIRONMENTAL POLLUTION: Undesirable change in the physical, chemical or biological characteristics of our air, water and land harmful for man, industrial progress, living conditions and cultural assets.

ENVIRONMENTAL PROTECTION (PRESERVATION): Evasive and Protective action against environmental hazards and means of checking the deterioration of our environment.

HEALTH: Health is not only an absence of disease but also a physical, mental and social well being of an individual

POLLUTANT: Something that pollutes the environment

POLLUTION: Effects of foreign material on the natural environment, which are harmful for organism including human beings.

3.16 LIMITATIONS OF THE STUDY

The findings of this study based on the information furnished by respondents, may have its own limitations. The objective of the researcher is naturally circumscribed by the extent of the respondent's readiness to give truthful information. Possibility of hiding certain factors on the part of the respondents cannot be ruled out, although every possible effort was made to elicit reliable information.

The technique for the collection of data was the interview schedule for which respondents furnished the necessary information in response to various items included in the schedule and the researcher observed to verify the validity of information obtained through cross checking the same with other than the respondents in the village.