

**INDUSTRIAL EFFLUENTS FROM DYEING AND BLEACHING
INDUSTRIES AND THEIR IMPLICATIONS FOR HEALTH
A CASE STUDY OF A VILLAGE PANCHAYAT IN
KARUR DISTRICT OF TAMIL NADU**

*Dissertation submitted to the Jawaharlal Nehru University in partial
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CERTIFICATE

This dissertation entitled, "INDUSTRIAL EFFLUENTS FROM DYEING AND BLEACHING INDUSTRIES AND THEIR IMPLICATIONS FOR HEALTH: A CASE STUDY OF A VILLAGE PANCHAYAT IN KARUR DISTRICT OF TAMIL NADU" is submitted in partial fulfillment of the requirements for award of the degree of MASTER OF PHILOSOPHY, of Jawaharlal Nehru University. This dissertation has not been submitted for any other degree of this university or any other university and is my original work.

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Dedicated to
The farmer's of Karur District.....

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Chapter – 1

INTRODUCTION

INTRODUCTION

Colours are inescapably embedded in every day life. So it is important to understand that the way it has been under operation and regulation. Of all the dyes produced across the world, almost 11 percent goes out as effluents, almost two percent from manufacturing and nine percent from colouring. Each year, India produces 64,000 tonnes of dyes, 7,040 tonnes of which are directly discharged into the environment. The huge growth, by over 50 percent of the Indian dye stuff industry during the last decade makes it the second largest producer of dyes and intermediates in Asia¹.

Most of these dyeing units are in the unorganized sector and are located in the states of Gujarat, Maharashtra, Rajasthan and Tamil Nadu. In India, dye stuffs are consumed mainly by textile, dyeing and printing ink industries. Among them textile industries consumes the major portion of it. The largest producer of dyes in the world is Germany followed by the United States. Till recent times, global players such as American colour, Atlantis Chemicals, Bayer AG and Hoechst AG controlled majority of the global dyes

¹ Yadav Singh Kushal(2005) "United colours of industry", *Down to Earth*.Feb.28

output. But there is a gradual shift in global dye production. The number of large scale dye manufacturers in the United States has reduced drastically and the overall share of developed nations has dropped. Faced with the social and environmental costs, developed countries are slowly disengaging themselves from the manufacture of dyestuffs. Hence, the Third World countries have emerged as new large producers of dyestuffs².

Because of the enormous production of knitted garments, Tamil Nadu is one of India's major export-oriented garments manufacturing state. The towns located in *Kongu* region of Tamil Nadu, which includes the districts of Coimbatore, Erode, Karur, Dindigul, Salem and Namakkal and its surrounding villages have grown rapidly in terms of production in recent years. The dyeing and bleaching process constitutes only one step in the chain of activities in these manufacturing centres. In order to feed the textile industries, a large number of dyeing and bleaching units are concentrated in these districts. These units have attracted thousands of people for their employment opportunities from other parts of Tamil Nadu and largely from the southern districts. As the obvious reason is that the various increasing problems of the labours affects the limited available natural resources of these parts of the region. Water is one of the most important and integral part of natural resources is at the stake of primary consumption, scarcity, and all along with production of the dyeing industries leads to pollution.

Water pollution and its implications on people's life and health

Water is essential for all forms of life and is therefore invaluable. Although a renewable natural resource, water is exhaustible and has multiple uses and hence multiple demands. The demand of water for domestic, agriculture and industrial use significantly exceeds the quantity of water available. This has led to the conflicts among various uses as well as

² Yadav Singh Kushal(2005) "United colours of industry", *Down to Earth*.Feb.28

users of water. Growing industrialization in general, the textile, dyeing and bleaching units in particular has led to the pollution of the river Cauvery and its tributaries (Amaravathy River) which in turn have adversely affected the health of the rural people and the crop yields in the affected areas. The nature of conflicts, the problem of pollution and other problems interlinked are explored in this dissertation through a case study of Karuppampalayam village Panchayat in Karur district of Tamil Nadu.

With the economic growth that the garment and textile industry has achieved, there has been accompanying social, economic environmental and health problems. There is a drastic change that took place in the living and working conditions of the people in the last two decades. Hence, studying the health implications has a greater relevance in the present context of socio economic transformation.

A popularly accepted definition of health is the one given by WHO-‘a state of complete of physical, mental and social being and just absence of disease and illness’. But based on our theoretical understanding, we consider that health as an outcome of interacting social, economic, political and ecological forces. It is rooted in the environment in which people live and work. Our concern is the social dimension which focuses more on environment that creates or destroys health.

Qadeer has shown that the social roots of ill-health do not lie within the marginalized access to the resources or health services alone. There is a matrix which is created by the socio-economic and political factors in a given biological and physical context. According to her, in this concept of environment, man –made social realities play a vital role by influencing the objective and subjective conditions. Further the variations within these environmental conditions are largely a function of the social structure, the modes of production and the ideologies that they generate³.

³ Qadeer, Imrana(1990), “Beyond Medicine: An analysis of Health status of Indian People” *Think India*, . . . vol.2 No.1, P.no.93-107

In short, the social and economic conditions of people become determinants of their health. Our proposition, therefore, is that for the poor people in the country who are struggling for survival, the social and economic coordinators become key determinants of their health. Therefore our study focuses on the nature of development itself and its impact on the rural life in general, the changing living and working conditions of the rural people in particular and their implications for health.

There are a number of studies available on environmental and specific health problems in Coimbatore and Tiruppur region, but surprisingly very few studies available focusing on the Karur region. Though there have been a few studies which have attempted to explore the social processes through inter-disciplinary framework, most of the studies available in this area are reduced to environmental or bio-medical frameworks.

Keeping in view the need to understand the macro and micro level linkages emphasis is given to the qualitative dimensions of the study. The interviews and group discussions provided us with the data, allowing us to understand the situation in relation to the context and especially the different sections of the population; broadly those who are benefiting from the industrial development process and those who, on the other hand are being the victims. Case study as a methodology helps us to address linkages to some extent from a theoretical angle rather than statistical interpretations. In our attempt to understand the implications of industrial effluents from dyeing and bleaching units for the health of the villagers in Karuppampalayam, we have tried to understand their socio-economic conditions, the changing living and working conditions like the nature and type of work, their perception of health problem and its impact on the overall well being of the people.

Chapterisation:

The study is divided into six chapters. Immediately following this introductory chapter, in chapter 2, we have reviewed some of the literature in order to develop a perspective on the linkages between environment, health and development. Social science literature on

health was also reviewed. A few studies specifically on dyeing industries were also reviewed, based on the review; the conceptual framework is evolved for the study.

The methodology that has been followed in the study is stated in chapter 3. A brief description of the Karur district, the pollution problem and an over view of Karuppampalayam village Panchayat is also presented in this chapter.

Chapter 4 deals with the primary data collected for the study. The socio-economic condition of the households are analysed in this section. This helps in generating an overview of the social and economic composition of the villagers in terms of caste, landownership pattern, occupational pattern, educational status, livestock and other possessions of families.

Chapter 5 focuses on the changing living and working conditions and their overall implications for the health of the villagers. In this section, we have presented an analysis of the qualitative primary data through some of the themes such as; the changing occupational and livelihood patterns, small scale industries and casualisation of labour, social conflicts, environmental degradation and the health problems are developed for the study.

Finally Chapter 6 presents the concluding observations of the study.

Limitations and Scope for Further Research

Since the study is a part of M.Phil dissertation, there was a time constraint for data collection. There was an outbreak of chickungunya in the Study village during the time of field work (November 2006 to January 2007). Hence any health related discussion with the villagers finally ended up with chickungunya. Basically no government official was willing to provide us with those official figures available, often giving of 'official secret' as the reason. Similarly, the workers of the dyeing and bleaching units were obviously

reluctant to speak sincerely about their working conditions in the presence of their employers.

The focus of the study is not quantification or epidemiological assessment but to explore the social processes and their implications for health. The study makes an attempt to explore the interlinkages between the various factors operating at the global level and their collective implications on the health of the villagers; however prolonged field work would help to probe various aspects of the problem. This is purely an exploratory study and there is much scope for further research in this area.

Chapter – 2

LINKAGES BETWEEN ENVIRONMENT, HEALTH AND DEVELOPMENT

Linkages between Environment, Health and Development

Several bibliographical sources were reviewed in order to develop a perspective on the linkages between environment, health and development. Field studies and literature dealing with specific environmental and health problems were also reviewed. Based on the literature, a brief description of the perspective is presented here. The relationship between environment, health and development is quite complex. Interdisciplinary approach provides us with the better understanding of this many patterned nexus. It is necessary here to understand their interlinkages in order to contextualize the ecological and health problems of developing countries.

More often than not, issues and concerns that exist within India's borders as a nation state, have close linkages with the land and people beyond. Part of this is inevitable. The world may be divided into many nation states that vary greatly in military and economic capability, population size and resource endowment. Ecological Phenomena does not respect the bounds of territory drawn. It is normal to say we ought to think of what is good for the planet or the future of the land. It is much more difficult to specify who will define quite what those interests are. Much hinges on 'whose interests one rate higher than others'¹.

Environment, in a dominant world-view is a term, which may represent anything in the immediate surroundings. Anything, which exists outside the person, is treated as environment. Man is separated from the external world in this dualistic conception. This dualism, an inherent characteristic of all class societies, lends the philosophical basis for the overexploitation of nature². When human beings are considered as a part of nature, it provides us with the better insights to look into the current ecological problems.

¹ As quoted by Rengarajan Mahesh in "*Environmental Issues in India*" (2007) Pearson Education in South Asia. New Delhi.p.no.517-518.

² As quoted by Nayar K.R. in "*Ecology and Health*" (1998) APH publishing company, New Delhi.p.no.9.

If we examine the global ecological problems in a philosophical perspective, it has to be recognized that the key to a cardinal solution of the problem lies in a social reconstruction of the existence and practice of the inhabitants of our planet, in ending the exploitation of one part of society by another. Rachel Carson in her pioneering work argues that living forms exist as a highly integrated web and not as a hierarchy provides a conceptual basis for our understanding³.

It is important to mention the words of Fredric Engel's in this context. According to him, in nature nothing takes place in isolation. Everything affects and is affected by every other thing. He notes that "Let us not, however flatter ourselves overmuch on account of our human victories over nature. For each such victory nature takes its revenge on us. Each victory it is true, in the first place brings about the results we expected, but in the second and third places it has different, unforeseen effects which only too often cancel the first., Thus at every step we are reminded that we by no means rule over nature like a conqueror over a foreign people, like someone standing outside nature – but that we, with flesh, blood and brain, belong to nature, and exist in its midst, and that all our mastery of it consists in the fact that we have the advantage over all other creatures of being able to learn its laws and apply them correctly."⁴

Today's ecological problems include deterioration of the natural environment through industrialization and urbanization. We have built a scientific and technical civilization that is encroaching heavily on nature. In his pioneering work E.F. Schumacher notes that, "Modern man does not experience himself as a part of nature but as an outside force destined to dominate and conquer nature. He even talks of a battle with nature forgetting that, if he won the battle, he would himself be on the losing side." In other words, the changes in the last fifty years both in quantity and in the quality of man's industrial processes have produced an entirely new situation – a situation resulting not from our failures but what we thought were our greatest successes⁵.

³ As quoted by Nayar K.R. in "*Ecology and Health*"(1998) APH publishing company, New Delhi.p.no.11.

⁴ Engels Frederich, "*Dialectics of Nature*" (1934) Progress Publishers, Moscow. p.no. 180.

⁵ Schumacher, E.F. "*Small is Beautiful*" (1973) Harper & Row publishers. New York. p.no. 14-18.

Some Paradigms of Development

Today most of the countries tend to follow a trajectory laid down by the so called 'developed' countries. To understand this, it has to be located in the larger context of development paradigm. The meaning of 'development' is heavily contested and subjected to extensive debate. Several connotations are attached to this term, but unfortunately most of the times its meaning is reduced to economic growth. The dominant arguments of the capitalist school are embodied in what is known as the modernization theory, or the free world model of development. The essence of the theory was the transfer of western technology and rationality, without changing class structure as a means of development. It envisages that development can be only achieved through industrialization and urbanization.⁶

On the other hand, the Marxists argued that imperialism rather than being a benign political outgrowth of European civilization was an exploitative system of economic, social and political relations. The system changed the colonized nations into sources of cheap inputs to production in the capitalist nations, as well as market for their finished products. This was the basis of the Marxist school of thought, which came to be known as the dependency theory. Andre Gunter Frank asserted that the relation between the rich and the poor was not only beneficial to the latter, but positively destructive, hindering and distorting their development. The main argument of the dependency theory is that the developed countries could not have achieved the level of development that they have, without the systematic exploitation of the developing countries.⁷

⁶ O.P.Gauba, "*An Introduction to Political Theory*" 4th Edition, Macmillan India Ltd. New Delhi

⁷ Ibid.

Immanuel Wallerstein in his world system thesis proposes the new capitalist world system based on an international division of labour that determined relationship between different regions, he locates four different categories, core, semi-periphery, periphery and external in which all the regions of the world can be placed. He identifies each regions relative position within the world economy and concludes that the core regions as the major beneficiary⁸.

Though there are alternatives in conceptualizing development, the dominant paradigm existing in reality is along the path of capitalist development. This idea of development has its roots in the enlightenment ideal of rational society of free and responsible citizens, (i.e.) ultimately a society governed by scientific principles and managed accordingly. Industrial development came to be seen as a means. Unfortunately, the means turned into an end, development became a goal in itself⁹. The ruling philosophy of development has been: "what is best for the rich must be best for the poor". This belief has been carried to astonishing lengths.

It was after Second World War the term development assumed a new connotation; When the American President Harry S. Truman declared for the first time in his inauguration speech in 1949, the southern hemisphere as 'underdeveloped areas', and considered United States as the top of the social evolutionary scale with other industrialized countries.¹⁰ The aggressive reconstruction of the Western Europe became the model for the industrialization of the entire world. Development is now clearly the goal and the development process of the North, to be replicated by the South¹¹. The world is becoming too uniform, too standardized, too dominated by a single conception of life and its meaning with little scope for other available options. The dominant idea is of a uniform end product to be achieved by all societies. Even today-despite decades of misery and

⁸ Kothari Rajni, "Rethinking Development" (1988) Ajanta publications, Delhi, p.no.125-130.

⁹ Chatterjee partha and Finger matthias, "the earth brokers; power, politics and world development"(1994) Routledge, New York.p.no 3.

¹⁰ Michael.P.J. "Developmental Strategies and Environmental Implications; A Case Study of a Fishing Community in Alleppey District" (1998) M.Phil dissertation, CSMCH, JNU, New Delhi.

¹¹ South-refers to the majority of world's countries, which do not have the opportunity to play a significant role in global rule making & policy formulation(where majority of the poor reside).

exploitation engendered by this model- the notion of catching up with those who are seen to be more 'developed' and along the same course continues with uncommon persistence.

It is important to mention the views of Dudley Seers in this context, According to him, Development is synonymous with improvement or progress and what forms the normative aspects of development is the ensuring of necessary conditions such as food, employment, health, education, equalization of income distribution and participation in the political process. He notes that "From a long-term view point, economic growth is for a poor country a necessary condition of reducing poverty. But it is not a sufficient condition. A country where economic growth is slow or negligible may be involved in reshaping its political institutions so that, when growth comes, it will mean development; such a country could develop faster in the long run than one at present enjoying fast growth but with political power remaining very firmly in the hands of rich minority."¹²

International World Views

Concern over the health of the global environment continued to rise in the late 1960's and early 1970's. The first systematic attempt to influence international worldviews on environment comes from the Club of Rome through a series of reports and world models.¹³ "The Limits to Growth" is the most important work from the Club of Rome. One of the major conclusions arrived by the authors is , "If the present growth trends in world population, industrialization, pollution, food production, and resource depletion continue unchanged, the limits to growth of this planet will be reached sometimes within the next one hundred years."¹⁴ The major concern was the population growth in Third World countries.

¹² Seers Dudley, "The Meaning of Development"(1979) David Lehmann ed., *Development theory: Four critical Studies*. London: Frank Case,PP.9-30

¹³ Nayar K.R., "Environment and International Worldviews; Two step backwards" *Economic and Political Weekly*, Vol.25, 1990.

¹⁴ As quoted by Nayar K.R. in "*Ecology and Health*" (1998) APH publishing company, New Delhi.

Experts met in 1968 at the United Nations Biosphere Conference to discuss global environmental problems. The Stockholm Conference (1972), organized by Canada's Maurice Strong, was the first global United Nations conference for state officials on the environment. The North was interested in addressing industrial pollution, nature conservation and population growth. Many Southern Delegates saw global capitalism as the core reason for poverty and there was general anger that global economic institutions were pushing developing countries to export raw materials on declining terms of trade. The phrase 'the pollution of poverty' was coined at Stockholm, to express the idea that poverty was the greatest global environmental threat.¹⁵ The Eco-development strategy, which was one of the offshoots of the Stockholm Conference stressed that satisfaction to the basic needs is essential for ecological balance. Self-reliance was considered a strategy for an environmentally sound production system. Despite its focus on carrying capacity, a neo-Malthusian hangover, it had a positive element because of its emphasis on self-reliance and the recognition of linkages between ecological balance and international power structures.¹⁶

The term 'sustainable development' entered the environmental debate in 1980 when the international union for conservation of nature and natural resources (IUCN) launched the world conservation strategy.¹⁷ The Brundtland Commission or the World Commission on Environment and Development (1987) elaborates the approach of sustainable development which according to it implies meeting the needs of the present without compromising the ability of future generations to meet their own needs. Policies such as eco-development or sustainable development originate at the international network whose members themselves practice policies which are unsustainable.¹⁸

¹⁵ John Ravenhill. *"Global Political Economy"* (2005) Oxford University Press, New York.

¹⁶ Nayar, K.R. "Changing International Gaze on Environment and Health Issues", *Social Action*, Jan- Mar 1991.

¹⁷ IUCN (1980) *World Conservation Strategy Living Resource Conservation for Sustainable Development*: IUCN, UNEP and WWF, Switzerland.

¹⁸ Nayar, K.R. "Changing International Gaze on Environment and Health Issues", *Social Action*, Jan- Mar 1991

The content of the Brundtland report is an ingenious compromise. The report calls for a transfer of environmental technologies and economic assistance to support sustainable development in the south. It calls too, for more effective controls on population growth, as well as better education and food security in the south. Sustainable development has been conceived as a strategy for sustaining 'development' i.e. to stimulate-not slow – economic growth. The recommendations in the Brundtland report and the notion of sustainable development formed the core of the debate in the United Nations Conference on Environment and Development (UNCED, 1992: popularly known as Rio or Earth summit). The Rio summit put environment and development on the agendas of global leaders. It reinforced the assumption that more growth was compatible with a better global environment. In particular, its support is for more economic growth and industrialization.¹⁹

Population, Environment and development

The interrelationship between population, environment and development is complex. Population concerns range from high growth rate in less developed countries to low rate of growth in the developed countries. It is often suggested that rapid population growth, especially in developing countries, correspondingly intensifies environmental degradation, which must therefore be mitigated by reducing the rate of population growth.²⁰ The ecological school has been instrumental in spreading a 'doomsday' syndrome regarding population growth. The main propositions of this school which circle around the issue of population growth and its impact on the environment. According to the authors, population growth is a major hindrance for solving all conceivable human problems.²¹

¹⁹ John Ravenhill. "*Global Political Economy*" (2005) Oxford University Press, New York. p.no.378-379.

²⁰ Barry Commoner. "Rapid Population Growth and Environmental Stress" *International Journal of Health Services*, Vol.21 (2), 1991, p.no.199-227.

²¹ As quoted by Nayar K.R. in "*Ecology and Health*" (1998)-APH publishing company, New Delhi. p.no.12.

There are many Malthusian environmentalists who argue in favor of reduction in population growth. Paul Ehrlich in his work titled 'Population Bomb' predicted that "The bottle to feed all of humanity is over. In the 1970's and 1980's hundreds of people will starve to death in spite of any crash programme embarked upon now... No changes in behavior or technology can save us unless we can achieve control over the size of the human population."²² This view got an immediate acceptance in academic circles, international discussions and the national level policy makers.

Many economists tend to approach 'overpopulation' as a 'developmental problem' which threatens market expansion, rather than simply a resource scarcity problem. To understand the modern 'ecological crisis', it is essential to move beyond the Malthusian focus on population size and density and to examine the social determinants of the population-environment relationship. The greatest threat to environmental sustainability comes from the top 20% of the global population in the North than the bottom 20% in the South. According to estimates revealed in UNICEF's the state of the World's children 1994;....The impact of the average American (US) citizen on the environment is approximately 3 times that of the average Italian, 13 times that of the average Brazilian, 35 times that of the average Indian, 140 times that of the average Bangladeshi, and more than 250 times that of a citizen born into one of the least developed nations of sub-saharan Africa.²³

²² Ehrlich, Paul,R , "*The population Bomb*"(1971) Ballentine Books, New York. pp. xi-xiii.

²³ Bandarage Asoka , "*Women, Population and Global Crises; A Political Economic Analysis*" (1997) Zed Books;-London. p.no.233.

The lesson here is that the World needs to move towards a more balanced redistribution and consumption of resources which is both socially and environmentally sustainable; the poor need to consume more and the rich need to consume less. It is only then that the problem of 'overpopulation' can be redressed. In other words, overconsumption in the North and overpopulation in the south are inextricably interlinked. The policy makers in the North continue to push population control in the South rather than control of environmentally harmful technologies of production and over consumption in the North.²⁴

The Indian Experience

The Indian experience provides us with the clear picture of the developmental strategy prescribed by the North. It has its implications in every aspect of the policies framed in the country, including the health and environmental policies. The influence of population bomb was so powerful that in the national health planning, an important share of the health budget was eaten up by family planning programmes.²⁵

Sen mentions that, "The preoccupation with the family planning arises partly from widespread recognition of a real need, but also reflects an obsessive fear of the 'population bomb' among political leaders, policy makers and health administrators...It is interesting, for instance, that in contrast with the general pattern of apathy and neglect in public health institutions, close supervision and exact incentives have ensured levels of activity among 'auxiliary nurse midwives'(ANMs) who are the foot soldiers of the battle against population growth."²⁶ Rao notes that, "the result of it is that the entire public health infrastructure, neglected, starved of funds, almost dysfunctional, has been suborned for family planning"²⁷

²⁴ Bandarage Asoka, "Women, Population and Global Crises; A Political Economic Analysis"(1997) Zed Books, London. p.no.233.

²⁵ Rao, Mohan. "From Population Control to Reproductive Health" (2004) Sage Publications, New Delhi.

²⁶ Sen, Amartya and Dreze, Jean, "India Development and Participation" (2002) Oxford University Press, New Delhi. p.no.209

²⁷ Rao, Mohan. "From Population-Control to Reproductive Health" (2004) Sage Publications, New Delhi. p.no15.

Guha argues that when the process of development formally got underway after Indian independence, it was viewed above all as a collective national endeavor to reduce the gap between India and the industrialized countries of the west. In the circumstances, any talk of ecological constraints to economic activity would have been regarded at best as irrelevant, and at worst, as a deviation from the primary task of rapid industrialization. Here the intellectual dominance of economics has been a major factor behind the neglect of ecological variables in development planning.²⁸

There is a rich ideological debate on development options in contemporary India. At one end of the spectrum stand technological optimists who reject the notion of ecological limits to growth; at the other end, romantic environmentalists who wish India to turn its back on economic development altogether. There is in between a vast middle ground, occupied by those who would try to reconcile, through technical and institutional means, the often competing claims of environmental sustainability and rapid economic growth²⁹

Industrialisation in India

The industrialization process in India began with the formation of National Planning commission and continues through successive five year plans. The path of industrial development adopted by India since independence, while following the approach of mixed economy gave impetus to the growth of small industries to provide employment to many. The unorganized sector forms the bulk of these small industries, and it persists with lower level of technological inputs into production and decentralization process.

The process of development as envisaged in the five year plans till the 1970's was based on the strategy of import substitution. However the trends changed with the growth of export oriented model and it resulted in large scale policy structural adjustment program, greater emphasis was laid on globalization and liberalization of the economy.

²⁸ Guha Ramachandra, "*Social Ecology*" (1994) Oxford University Press, New Delhi.

²⁹ Ibid, p.no.1to 9.

The promise that was held out by the government was that the liberalization would enhance India's competitiveness, trigger a boom in exports and foreign investments and raise the rate of growth of output and employment. Such a process would lead to substantial improvement in the quality of the people including the poorest³⁰.

As a result of it, India has had strong policies to promote the small-scale industrial sector; it is labor intensive which creates more jobs and contributes to decentralized industrial development. Small scale units are flexible and able to quickly reorient themselves to emerging demands. It has led to the intensification of the process of casualisation of labour which has been reported as a global trend. In these units western technological systems are getting adopted far and wide which produce enormous gaseous, liquid and solid wastes.

Most of these units buy their inputs from local markets and therefore lack detailed information about eco-standards and possible substitutes, technical know-how and financial resources to invest in pollution control measures. All developing countries as they begin to industrialize based on western models find an important segment of their industries using outdated and highly polluting technologies. The problem has largely to do with the highly toxic model of western industrialization.

As mentioned earlier, the beginning of 1980s marked a very significant shift in development policy from state led to market led. The overwhelming need of many states in the South for immediate and long term external finance was so great that it had no effective bargaining power vis-à-vis the first world. This weakness coincides with the ascendancy of a neo-liberal agenda within the domestic policy of the United States and United Kingdom. The post war liberal principle of a state guided market gave way to neo-liberalism: the scene was set for the expansion of market fundamentalism across the south³¹. The post-1991 intensification of the process of economic globalization has

³⁰ Gopal Meena, "*Labour Processes and its Impact on the Lives of Women Workers; A Case Study of the Beedi industry in Keelapavaloor block of Tirunelveli District, Tamil Nadu*" (1997), CSMCH, JNU, New Delhi.

³¹ John Ravenhill, "*Global Political Economy*" (2005) Oxford University Press, New York.P.no.328.

exacerbated these trends while contributing to the widening of the debate on the viability and sustainability of India's plural ecosystems in a regime of increasing privatization, expanding extraction, reorganization of production systems to satisfy export orientation³².

The Role of TNC's and MNC's

The emergence of Transnational and Multinational corporations has to be taken into account, as they feed into the assembly line of global production system. Much of the environmental and social destruction today is attributable to the Transnational Corporations, the biggest actors in the global economy. The consolidations of the world factory system spun giant web of exchanges across the world. Global production systems are hierarchically ordered. The transnational corporations subdivide production sequences according to technological, ecological or labour skill levels, moving labour intensive and dirty activities to third world export platforms.

The global production system depends on a technological division of labour within industrial sub sectors rather than a social division. Under colonialism, economic relationship were ordered by the social division of labor –whether within the colonizing countries, or between them and their colonies. In the later case this colonial division of labour was in the form of a town/country relationship on a world scale. That is why we are able to find huge metropolis draining the resources of the countryside in a parasitic manner.³³

The developed countries do not want to keep the dirty industries within their boundaries. Today there is a trend of export of hazardous industries that threatens the health and environment of the ordinary citizens of the world over. Mostly it is carried out by transnational corporations to locate their most dangerous industrial activities outside North, in countries where regulatory controls may be less strict. They tend to have an

³² Smitu Kothari, Imtiaz Ahmed & Helmut Reifeld, "*The Value of Nature: Ecological Politics in India*" (2003) Rainbow Publishers Ltd. Noida. p.no.14.

³³ Kothari Rajni, "*Rethinking Development*" (1988) Ajanta publications, Delhi.

attitude which could be termed as NIMBY (Not in My Backyard) i.e. not to have the polluting industrial units with in their locality.³⁴ Hence the developing countries of the South have to pay the huge ecological costs for the development in the North.

Nayar argues that the existing path of development that countries like India has chosen for itself is detrimental to the principles of sustainable development. He notes that, "Lack of stringent environmental control and standards would lead to more and more of government in favour of market forces may increase the difficulty of ensuring effective control over polluting industries. Transboundary movement of hazardous products and wastes to the developing countries would be further accelerated³⁵". Hence he raises serious questions on the macroeconomic policies which govern the present pattern of development.

Several US based economists and public health experts have documented the flight certain particularly dangerous industries (e.g. asbestos textiles and benzidine-based dyes) from the relatively highly regulated environments of the developed countries. By shifting hazardous production process to less developed countries where a little or no environmental regulations exists, these manufacturers avoid investing capital in equipment necessary to control hazardous exposures. As a result of lower capital investment, wages and energy costs, profits are substantially higher. At the same time, workers in these countries are exposed to disease-producing levels of toxic substances, and unemployment increases in the developed countries. The final products of the relocated industries are then exported back to the industrialized countries³⁶.

³⁴ Michael.P.J. "*Developmental Strategies and Environmental Implications; A Case Study of a Fishing Community in Alleppey District*" (1998) M.Phil Dissertation, CSMCH, JNU, New Delhi.

³⁵ Nayar, K.R.. "Sustainable Development: Conceptual Issues and Linkages with Environment and Health" in '*Environment and Health in Developing Countries*' (1998) edited by Chatterji, Manas Musansinghe Mohan and Ganguly. Rabin. A.P.H. Publishing Corporation . New Delhi. p.no.81-86.

³⁶ Jane H.Ivis, "*the export of hazard*" (1985)Routledge & Kegan Paul, London. p.no106.

There are serious health effects because of the transfer of technology to the developing world. According to the 1983 report of the executive director of the United Nations Environment Programme, *The status of the world environment: 1983*, “there is a threat that some chemical processes and some hazardous waste may be moved to less demanding locations, including developing countries which may not be fully equipped to control these polluting activities. Lesley Doyal and Samuel Epstein (1983) stated in their book, *the politics of cancer: Great Britain*, “Multinational corporations exploit people in the less regulated countries of the world, while securing gains for people in countries no longer exposed to the hazards. The victims of such a policy are often in underdeveloped countries where standards of health are already low. In addition, manufacturers are able to continue producing dangerous substances without regard to their social usefulness.”³⁷”

The toxic circles of industrial hazards spread in successive waves outward: from the workplace to the neighborhood, and to the community at large. Sheesan and Wedeen have focused on New Jersey, the heart of industrial America, where three centuries of experience with occupational and environmental disease offers lessons to rest of the world. They have documented how Corporations, government agencies, courts, unions, physicians, workers and citizens have tried to ignore, evade, and finally battle the terrible legacy of industrial disease. In their words,

“New Jersey’s conflict between economic growth and protection of health was a byproduct of industrial development and paralleled dilemmas encountered through out the nation –indeed, through out the world. Environmental damage and occupational disease were a little interest to entrepreneurs. A complex state bureaucracy was created in part to protect health, in part to encourage industrial expansion. Competing voices sounded; a vast cadre of experts of progressively increasing specialization, but narrowing vision, developed to address the divergent goals of productivity and health. Connection between occupational disease and environmental hazards remained remote.”³⁸

³⁷ Jane H.Ivis, “*the export of hazard*” (1985)Routledge & Kegan Paul, London.p.no.172 to 173.

³⁸ Sheen E. Helen and Wedeen P. Richard “*Toxic Circles- Environmental Hazards from the Workplace into the Community*” (1993) Rutgers University Press, New Jersey. p.no.1-23

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Millen, Irwin and Yong Kim in their book 'Dyeing for Growth' have examined the complex interactions between local, national and global policies and institutions and they have analyzed the effects of these interactions on poor people's health. They have scrutinized specific organizations, development approaches, and economic policy measures, arguing that many fail to relieve – and in some case actually exacerbate –the conditions of social, physical and economic adversity under which poor people worldwide struggle to survive. They have looked closely at strategies such as export-led growth, privatization, and trade liberalization linking the intended and unintended effects of these policies to declining health outcomes among vulnerable populations. Some of their concluding observations are:

“Even in industrialized countries with elaborate health infrastructures, increases in life expectancy and other public health advances can be reversed when social services are sacrificed as part of narrowly conceived hastily implemented economic measures to expand market and promote growth.

Public health and well being are not determined solely by the quantity of resources available to a country's government, or the size of its health budget. With the political determination to put health and equity private and corporate interests, even the poor countries with limited resources can achieve high health standards and excellent health outcomes.”³⁹

Vandana Shiva in her study notes that,“People, their environment and their society are not separable by rigid and insular boundaries. The boundaries between them are porous and flexible, allowing interchange and influence...the unity here...rests on the continuity of life in its interconnectedness, there are subtle and complex connections between diseases of the human body, the decay of ecosystems and the breakdown of civil society,

³⁹ Kim Jim Yong, Millen V. Joyce , Irwin Alec and Gerhman John ed., “Dyeing for Growth” (2000). Common Courage Press.Monroe.P.no.382-84.



just as there are interconnections in the search for health in all these levels”⁴⁰. It provides a conceptual basis for our understanding the linkages between environment, health and development.

The Empirical Context of Work and Health

The influence of environment on work and human health was studied by scholars like Engels and John Snow long ago. In Engel’s words, “Society places hundreds of proletarians in such a position that they inevitably meet a too early and an unnatural death, it has placed workers under conditions in which they can neither retain health nor live long, they are compelled to infect the region of their own dwellings”⁴¹. John Snow while investigating cholera in London identified that cholera rates were particularly high in areas supplied by specific company. It is an important landmark in the history of observational epidemiology⁴². The contributions of these scholars provide us with the conceptual basis for understanding the empirical context of work and health. In fact, there have been several studies pursued by many scholars in recent times. A few studies based on this framework need to be mentioned.

Goran Djurfeldt and Staffan Lindberg, based on their study on the introduction of western medicine in the village Thaiyur in Tamilnadu during 1969-70 have concluded that the health situation in village was a consequence of the prevailing economic and political order; while both the western and indogenous systems of medicine were equally important in dealing with health situation, only a profound transformation in the economic and political structure could give the people of Thaiyur the means to improve their health.⁴³

⁴⁰ Shiva Vandana. “Women, Ecology and Health. Rebuilding connections”(1994) in Vandana Shiva (ed) *Close to Home. Women reconnect Ecology, Health and Development world wide*. Philadelphia: New Society Publishers.

⁴¹ Engels, Frederick “The conditions of the working class in England” in Michael Purdy and David Banks Eds., *The sociology and Politics of Health*.(2001) Routledge London.p.no.8-13

⁴² Snow, John (1965) “*On the Mode of Communication of Cholera*”. London:John Churchill.

⁴³ Djurfeld, Goran and Lindberg, Staffan(1975), “ *Pills Against Poverty; A Study of the Introduction of Western Medicin”e in a Tamil Village*” Oxford and Zex publishers, New Delhi.

Debabar Banerji's study spread over 9 years (1972-1981), carried out in 19 villages from different parts of the country which was an in-depth study of poverty conditions. The dimensions of rural life and also provides data base for making a more detailed analysis of poverty and ecological conditions and health problems. While mentioning the implications of the study he notes that,

"The study thus provided data on various aspects of most overwhelming health problem faced by rural populations in India: the problem of hunger. Poverty leads to further disintegration and deterioration of the environment and of living conditions-of sanitation, of the quality of drinking water, of shelter, of clothing, and being forced to eat wild roots, grass, seeds, leaves, and even garbage."⁴⁴,

Sheila Zurbrigg while analyzing ill-health has taken into consideration the socio-economic factors that influence the health behavior of the people. Her analysis looks at the much broader social and political conditions which appear to be the foundation upon which significant health improvement can occur. It gives the wider perspective of how economic factors like compulsion to work, and the risk of loss of wage which in effect means inability to feed her own family force her to ignore health. While seeking solution to ill-health she notes that, the broader relationship must be addressed: that is, the link between Rakku's mud hut and laboring existence and the entire of structure of society in which it is located.⁴⁵

The socio-economic factors like caste, class, income, education and working conditions have a definite impact on the health status of the people. Qadeer and Roy in their study point out the social coordinates of workers health. They found that "the social coordinates of workers health, reveal it to be not merely dependent on medical technology but in fact related to various socio-economic parameters. What is important is the way in which these ordered. Workers health is thus strongly affected by decisions about the choice of product, the choice of technology and the choice of workforce to operate the technology

⁴⁴ Banerji, Debabar " *Poverty, Class and Health Culture in India*"(1982) volume I. New Delhi. Prachi Prakashan

⁴⁵ Zurbrigg Shiela, "*Rakku's Story. Structure of ill-health and the source of change*" (1984). New Delhi: Voluntary Health Association of India.

on one hand, on the other, by social processes like welfare movements and legal interventions, all ultimately linked to the nature of social stratification and the demands of profit motive and private ownership". The study highlights that a person's place in the social hierarchy determines their access to basic amenities for life like housing, drinking water, medical facilities, education etc⁴⁶.

Nayar in his study provides an integrated understanding of environment, health and development. His study presents the environmental and health concerns in the agrarian sector by taking the case of Kuttanad region in Kerala. He has conceptualized environment as a system comprising of sub-systems like the natural, physical, psychological and social environment. The study has attempted to understand the socio-economic and physical environment and brought out the inter-relationship between the ecosystem and the living and working context. The study focuses on number of indicators like occupation, education, housing, water supply and sanitation.

The study concludes that there exists a disharmony in the structure of the environmental systems in Kuttanad. While mentioning the effects of the environmental system he notes that, "The disharmony becomes meaningful when placed in an eco-societal context. The environmental imbalance reproduced in the pollution of water, environmentally induced diseases and the frustration evident from the responses are the result of contradictions that exist between the different socio-economic formations."⁴⁷

Ramila Bisht in her study has also conceptualized environment as a system comprising subsystems like the natural, physical and social environment. It is based on the case study of 5 villages in Pauri Garhwal district in Uttarpradesh. Household surveys were conducted in 161 households and analysis on caste stratification, land owning patterns, migration patterns and peoples perception on common diseases were carried out. She has argued that environmental degradation has to be understood within the context of reasons of underdevelopment of hill economies as microsystems within the larger macro systems

⁴⁶ Qadeer, Imrana and Roy, Dunu (1989). "Work, Wealth and Health: Sociology of Workers Health in India". *Social Scientist*, vol.17.No.5-6

⁴⁷ Nayar, K.R. in "*Ecology and Health*" (1998) APH publishing company, New Delhi.

of Capitalist economy. Based on her findings, she has emphasized the need to change from simple understanding of the causality of a disease in terms of particular environmental condition towards a 'complex' set of conditions which collectively affect health.⁴⁸

Bindu Nair has conducted a study in a village in Cherthala Taluk, Alleppey District. Her focus was on the living and working conditions of coir workers. She has identified four categories of workers based on their activities with respect to coir yarn production. Based on the household surveys and in-depth case reports, the socio-economic and working patterns were analyzed. The study has shown the interlinkages between living and working conditions and their interaction in producing marginalized life patterns, which results in low standard of living, hard nature of work, long working hours, and low wages coupled with unhygienic working environment that makes the workers susceptible to different kinds of illnesses.⁴⁹

Studies specifically on dyeing units

Specific studies on Dyeing units and their linkages with environment and health were also reviewed. While majority of them tries to substantiate the argument through water testing, some of them highlight specific medical and developmental issues. A few studies are mentioned here.

Govindarajalu has explained the Industrial effluents and health status of people in Noyyal river basin in Tamil Nadu. In his work, he took industrial pollution as a major factor causing the degradation of the environment. The main focus of the study is on the health status of villagers, agriculture and the livestock population. In his study he has identified specific medical problems such as skin allergy, respiratory infections, general allergy, gastritis and ulcer based on three health camps conducted. But the study fails to look into

⁴⁸ Ramila Bisht. "*Understanding Environmental Health: A Case Study of some Villages in Pauri Garhwal, Uttar Pradesh*" (1993). M.Phil Dissertation, CSMCH, JNU, New Delhi.

⁴⁹ Nair B.Bindu "*Living and Working Conditions of Coir workers and their Implications for Health- A Case Study of Alleppey District*" (1993). M.Phil Dissertation, CSMCH, JNU, New Delhi.

the social, economic and political dimensions of health. The significant observation made in his study was that most of the villagers were avoiding the use of polluted water in the system tanks and wells otherwise the percentage of persons affected from different diseases could have been at higher rate⁵⁰.

Prithiviraj has concentrated on suppliers working for Dutch garment retailers in Tirupur region. He has investigated sixteen factories in the field of textile dyeing, textile bleaching and garment production by means of interviews with factory owners, trade unions and workers. The research also includes water sample analysis. The study concludes that the textile bleaching production processes are a serious threat to human health and the environment in the wider region of Tirupur. The study also notes that the workers in these units handle chemicals without proper protection measures. Chronic health problems and skin diseases of workers were also identified. But the major limitation is that the study tries to reduce its scope in terms of corporate responsibility⁵¹.

A few studies using natural scientific approach were also reviewed, in a way such studies reassert the arguments of the studies mentioned earlier, Nupur Mathur, Pradeep Bhatnaga, Pankaj Nagar and Mahendra Kumar Bijarnia from the University of Rajasthan has conducted a case study on Sanganer town, part of Jaipur (Rajasthan, India), which is famous worldwide for its dyeing and printing industries. They have collected water samples from six different locations in the town. Based on statistical analysis and Mutagenicity assessment of effluents from textile/dye industries, the data was obtained. The study clearly indicates that the industrial effluents that are directly discharged into the Amani Shah Ka Nallah drainage contain highly mutagenic compounds. According to them if the water from this drainage is used for agriculture, it would lead to major ecological and health-related problems not only for residents of the town, but also for the populations of other nearby cities who consume the agricultural products of the area.

50 Govindarajulu .K. "*Industrial Effluents and Health status-A case study of Noyyal River basin*" in Martin J.Bunch, V.Medha Suresh and T.Vasantha Kumaran,eds.,*Proceedings of the Third International Conference on Environment and Health, Chennai 15-17 Dec 2003* p.no.150-157.

51 Prithiviraj.S.M. "*Dirty Shirts-A study of health, Safety and environmental concerns in the context of the Garment Industry in Tirupur region, India*". CARE, Coimbatore.2003.

These compounds contaminate the surface and even underground water, thereby making it unfit for irrigation and drinking⁵².

Kristina Furn has focused on the effects of dyeing and bleaching industries on the area around the Orathupalayam Dam in southern India. The study has been carried out in the most polluted areas around the Dam. Water Sampling, Soil sampling, GIS system and Interviews were the methods used to determine the extent and impact of pollution on water, soil and people around the dam. Based on the synthesis of chemical analysis and the interviews made at the sampling locations, the study strongly indicates that many hamlets have been affected by the polluted water from the Orathupalayam dam, which originates from the dyeing and bleaching units. The study also brings out the struggle of rural population for water and land compensation. Though the study lacks a sociological approach, it is implicit in the findings.

An interesting aspect of the study is that, in the concluding pages, the author notes that “A large part of the textiles in the dyeing and bleaching factories is exported to Europe and North America. It is cheaper to produce, bleach and dye clothes in India where the labour costs are much less and the Environmental laws are weaker. However, through their imports, the importing countries are exporting the huge environmental problems involved in this trade. The foreign buyers and consumers should therefore take responsibility for the unsustainable impact of the textile industry”⁵³.

Salwa M. Abdullah & Fawzy M. Kishk has studied Egypt's ecological situation with regard to the textile sector. Their study area is Kafr-Eldawar district of the Northern delta which represents a rural ecosystem with extensive industrial and agricultural activities. It is composed of textile, chemical and organic dye-making factories. They have used participatory rural appraisal (PRA) approach for their study. Their study concludes that

⁵² Nupur Mathur, Bhatnagar Pradeep, Nagar Pankaj and Kumar Mahendra Bijarnia “Mutagenicity assessment of effluents from textile/dye industries of Sanganer, Jaipur (India): a case study”, *Science Direct*, May-2005. P.no.105-113

⁵³ Furn Kristina, “*Effects of Dyeing and Bleaching Industries on the Area around the Orathupalayam Dam in Southern India*”, Uppsala University. September-2004.

rural communities have been subjected to severe environmental injustice mainly by industry generated air and water pollution. They have pointed out that pollution has degraded the ecosystem and affected the health and livelihood status of inhabitants adversely. It has also resulted in problems such as poor access to safe drinking water and sanitary sewage disposal system. The study brings out the links between poverty, poor health, decline of sustainability and productivity of the ecosystem through empirical findings⁵⁴.

Though some interest has developed in this area of research, most of the literatures available in this topic are reduced to environmental or biomedical frameworks. From a public health perspective, it is important to look at the socio-economic condition of the study population, their living conditions and the way people perceive the disease and its causes. This is important given the impact of such a developmental process on the population.

The literatures reviewed provide us with a broader perspective of the linkages between environment, health and development. The present study focuses on the health implications of industrial effluents released from the dyeing and bleaching units. The Karur Industrial District is the typical example of the growth-oriented developmental model. In our study, the dyeing and bleaching units and the industrial effluents are visualized as the products of the growth oriented developmental model, whereas health of the people is conceptualized as the product of their living and working conditions.

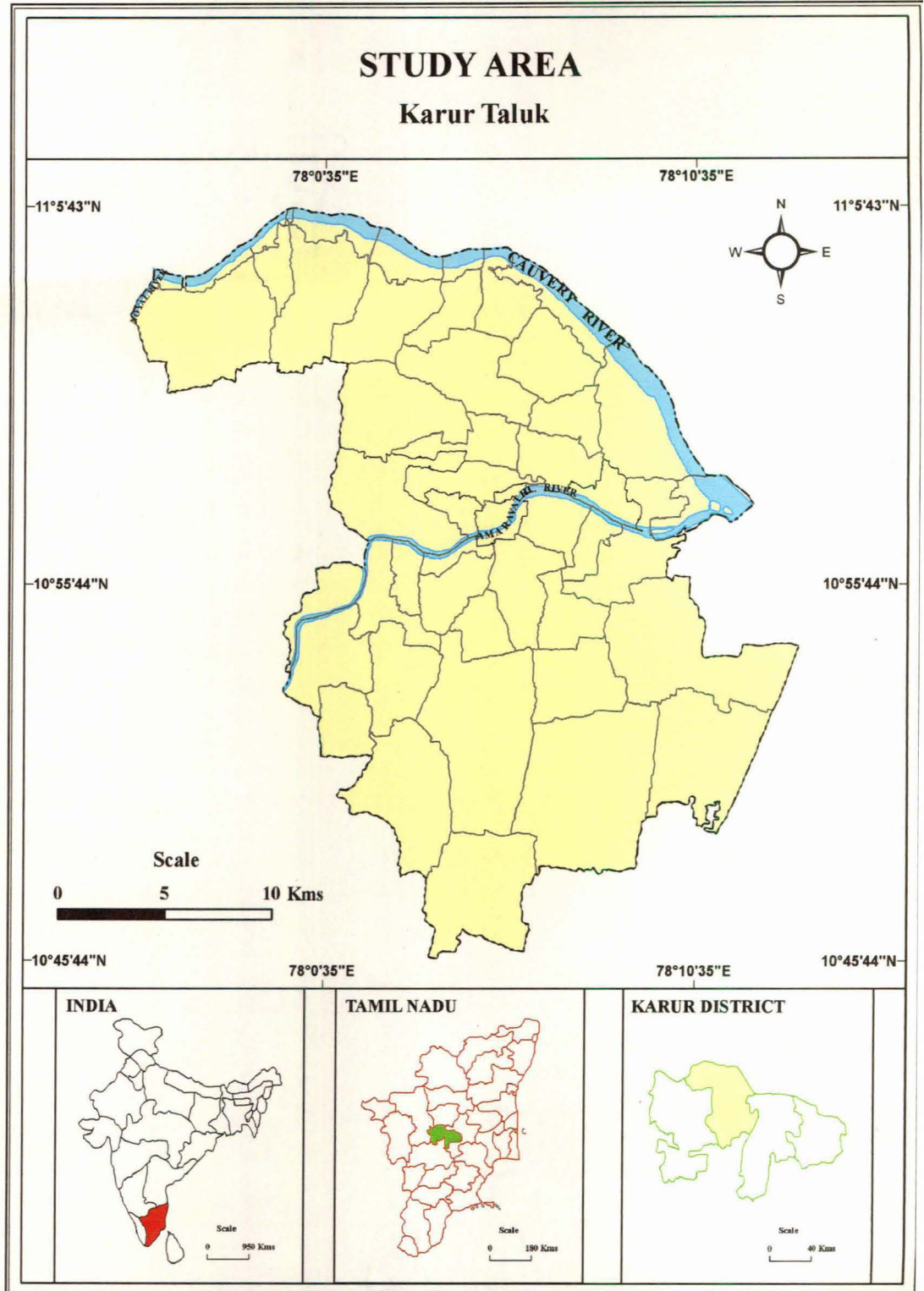
⁵⁴ Salwa M. Abdullah & Fawzy M. kishk “ Impacts of ecosystem degradation on livelihood: A case study of Northern Nile Delta, Egypt. in Vineetha Menon, P.R.Gopinathan Nair and K.N.Nair eds., *Alleviating poverty-Case studies of local level linkages and processes in the Developing World*, Centre for Development studies, 2005. Rainbow Publishers, Noida. p.no.51-75.

Apart from studying the living and working conditions and their possible impact on health, the study recognizes the need to understand the local context in terms of the macro level forces operating at the global level. The basic assumption is that the changes in the developmental policies of the government and its consequent changes in a particular industrial sector have brought about changes in the organization of production and structure of the Karur textile industry. The study makes an attempt to explore the interlinkages between various factors that are operating at the regional, national and international level and their collective implications for health within an interdisciplinary framework.

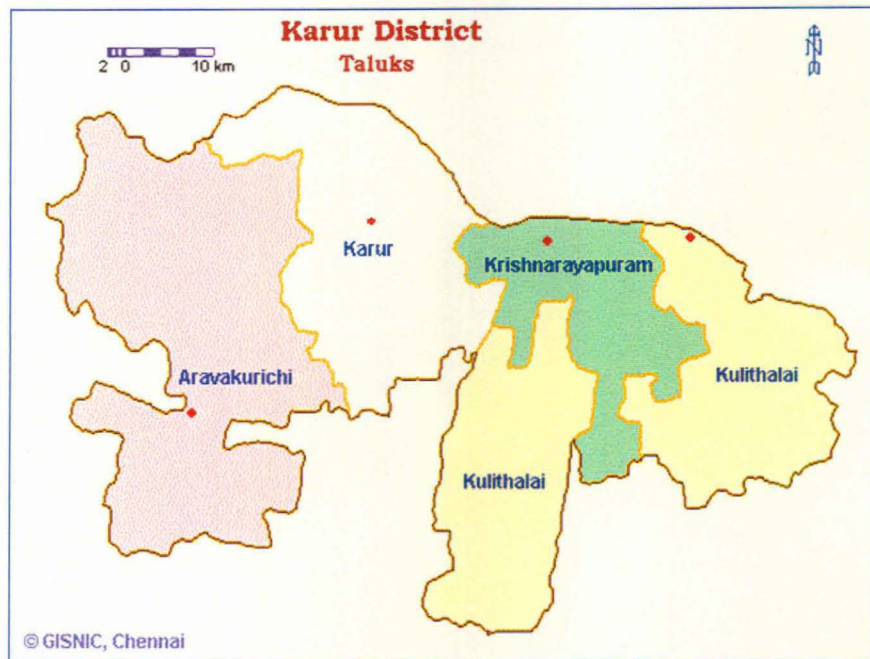
Chapter - 3

METHODOLOGY

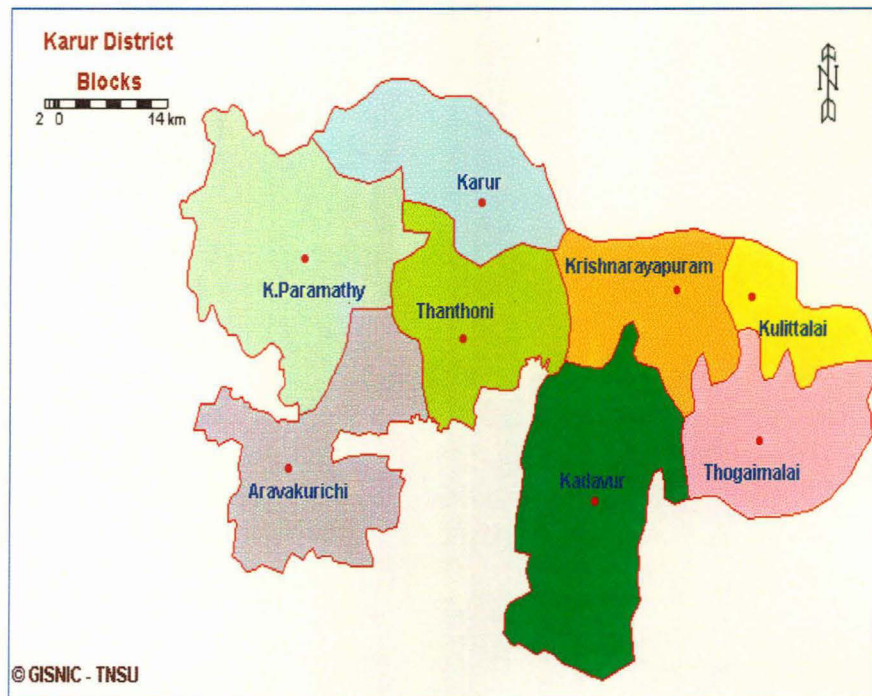
Map 1



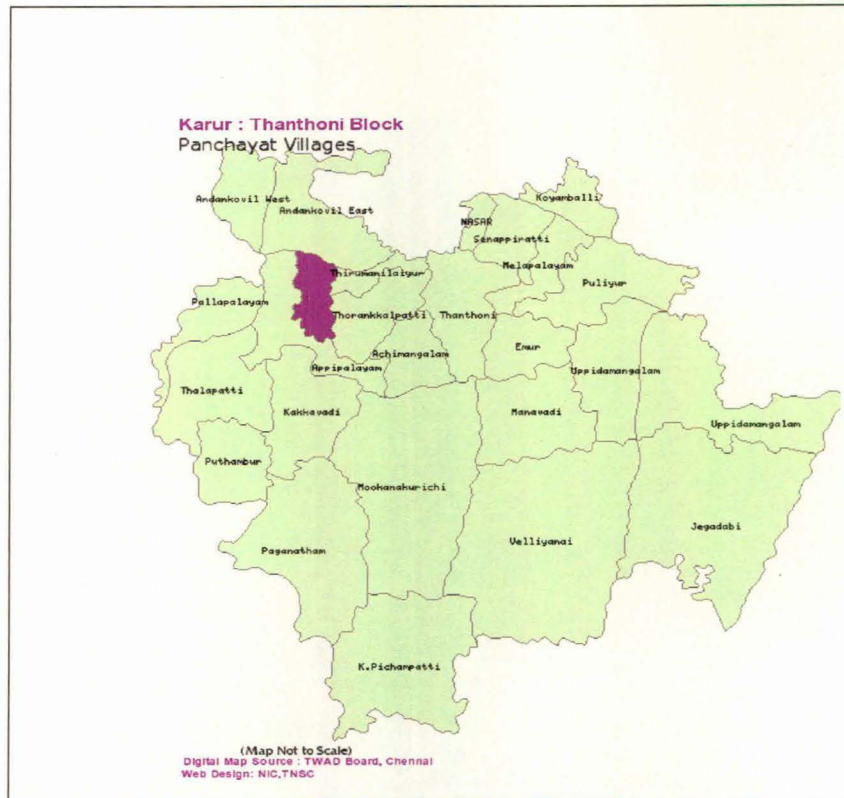
Map 2



Map 3



Map 4



KARUPPAMPALAYAM VILLAGE PANCHAYAT

Karur-An Overview

Karur district is the centrally located district in Tamil Nadu. It is bounded on the north by Namakkal district, the Dindigul district in the south, the Tiruchirappalli district on the west and Erode district on the east. The administrative headquarter of this district and taluk is located at Karur. In September 1995 Tiruchirappalli district was divided into three districts namely Tiruchirappalli, Karur and Perambalur districts. According to the said trifurcation, Karur revenue division of 1981 Census, which comprised of three taluks namely Karur, Manapparai and Kulithalai were detached from the erstwhile Tiruchirappalli district to form this district.

Karur is one of the ancient towns in Tamil Nadu and has played a significant role in the history and culture of Tamils. Its history dates back over 2000 years, and has been a flourishing trading centre even in the early *sangam* days. It was called *Karuvoor* or *vanji* during *sangam* days. The district has a very rich cultural heritage.

Karur District covers an area of 2895.57 Sq.kms. As per 2001 census there are 9, 35,686 persons residing in this district (Statistical Handbook 2003, Tamil Nadu). The District shows a density of 323 persons per sq.km. It includes four Taluks namely Karur, Aravakurichi, Kulithalai and Krishnarayapuram. It is divided into eight Development blocks. There are 158 village Panchayats and 203 Revenue villages.

The topography of the district is almost plain except Rengamalai hills in extreme south of Aravakurichi Taluk, Tipasamimalai and vellimalai hills in Kulithalai taluk. Cauvery is the major river flowing on northern and eastern boundaries. Amaravathy is another river that runs through the district and confluences with Cauvery. There are *Kudaganaru* known as *Kattaru* (Wild River), *Nanganchi* rivers which flow during rainy days.

Karur is one of the major textile towns in Tamil Nadu. Karur generates around \$300 million dollars a year in foreign exchange through direct and indirect exports. The industries like ginning, spinning, dyeing, weaving etc employs around 2 lakh people in and around karur. There are about 1000 units along a 17km stretch of river Amaravathy, which undertake dyeing, bleaching, tailoring, knitting, knotting and packaging.

Karur is noted for products like-bed linens, kitchen linens, toilet linens, table linens, wall hangings and mosquito nets. Karur Textile Manufactures Association plays major role in establishing Karur in the textile map of India as well as local politics. It is a renowned centre for bus body building, also the home to Chettinad cements. The Agro-industries such as EID-Parry has a sugar factory in Pugalur, and The Tamil Nadu Newsprint and Papers Limited (TNPL) is within Karur and it is the second largest producer of bagasse based paper in the world.

The Pollution Problem

Of the 11,01,522.66 tones of hazardous waste generated in the state every year Karur contributes about 85,263 tones and ranks second next to Coimbatore.¹ For the present study, it is important to understand the pollution problem of the entire district. The following is a brief description of it.

In Karur district there were totally 34 Red category and 8 Orange category industries in 1995-96, which are classified based on the nature of hazardous waste by Tamil Nadu Pollution Control Board (TNPCB). Most of the industries are situated in Karur town. Red category industries are mostly textiles, chemicals and pharmaceutical industries.

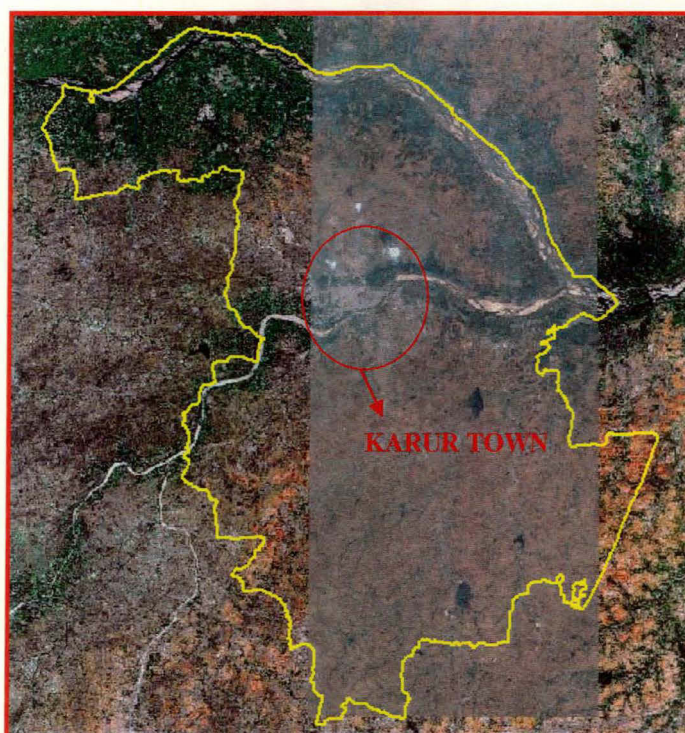
The dyeing units discharging the effluents in the irrigation canals are the major problem in Karur taluk. Clean water is the critical requirement of these dyeing units, as the quality of the water largely affects the quality of dyeing and bleaching. While these industries use clean water for processing, the chemicals used by these industries *viz.*, wetting agents, soda ash, caustic soda, peroxides, sodium hypochlorite, bleaching powder, common salt, acids, dye stuffs, soap oil and, fixing and finishing agents lead to pollution of water.

The dyeing and bleaching units use a variety of toxic chemicals, including hydroxides, hydrochloric acid, sulphuric acid and sodium nitrate. The toxic content of the effluents increased in the 1990s with dyers switching to vat and reactive dyes such as prozine from Naphthol after European countries banned the import of textiles treated with azo-dyes. Little was done to correct the situation until May 1993, the residents of about 20 villages approached TNPCB seeking the closure of the polluting units. The state government announced plans to set up Common Effluent Treatment Plants. (CETPs) and it also provided subsidies.

¹ *The Hindu* dated 05/07/2005 based on TNPCB report.

As per the directives of TNPCB, on July 1997, out of the 608 units 434 were attached to CETPs, 167 set up their own treatment plants and seven had stopped their operations². Noyyal Irrigation Farmer's Association's President of Karur taluk, filed a Public Interest Litigation before the Green bench of the Madras High Court seeking the closure of all polluting units. The court directed the TNPCB to ensure that in the next three months those units which released untreated effluents into the water sources to be closed down³.

Dyeing Owners Association has been set up a Karur Taluk Dyeing and Bleaching Effluent Treatment Plant Company Limited. As per this association 8 treatment plants have been initiated and this association controls its functions and maintenance.



Karur taluk Highlighted by Yellow line on Google Earth Image

² As quoted by Krishnakumar Asha (1998), "A pollution challenge" *Frontline*, vol.15. June-July 03.

³ Ibid.



Location of an Effluent Treatment Plant Nearer to Karuppampalayam Canal.

The bleaching, dyeing, and printing processes are water intensive industrial activities. The ground water level in Karur is sinking down every year. The industrial use of ground water is intensified to a greater extent. The flow of Amaravathy is not recharging the ground water as much as in the past, as continuous sand mining has almost completely removed the river's sand bed. The availability of drinking water has become a major problem and the municipality is tapping water from the Cauvery River which is flowing 15 kms away.

The problem of pollution continues even after the establishment of Common Effluent Treatment Plants. While most of them question the inefficiency of these plants in terms of their functioning, some of them have raised serious questions on the pollution control technologies i.e., whether they are up to the standard of quality control. Recently, the committee of experts set up by the Madras High Court to investigate the damage to River Amaravathy through pollution caused by dyeing and bleaching units, has urged the units in Karur to prepare a road map to establish an advanced pollution control measures such as Reverse Osmosis and Nano-membrane technologies. Officials also have underlined the

need to move away from the dangerous reactive dyes to organic or natural dyes that are less harmful⁴.

Within the local context, it is interesting to see there are groups of divergent views and each has formed their own associations and they have approached the problem within their own perspective. Though everyone accepts the high degree of environmental degradation that is happening, there are different dimensions to the problem.

The bleaching and dyeing process constitutes only one step in the chain of activities in the hosiery industry. There are different kinds of units ranging from large dyeing units (which use about 5 to 6 lakh litres of water per day) to small units (which use less than 1 lakh litre of water a day) there are about 150 smaller units. The bleaching units number about 200. Most segment of the industry including the dyers themselves says that the courts decision to club bleachers is unfair. They point out that the bleaching process uses mainly chlorine, which is certainly not as hazardous as the chemical dyes and they voice out the recent problem of establishing Reverse Osmosis plants (Ro plants) for attaining zero effluent discharge⁵. The Dyers and Bleachers Association and Tirupur Exporter Association argue that it is not possible to pay huge costs for treatment process by all the owners.

The trade unions like CITU have focused on the livelihood issues and the working conditions of the labourers. Their argument is that at least 60% of the dyeing units will close down if they are forced to install Ro plants without any assistance from the State and Union Governments. The livelihoods of lakhs of families were affected, when the dyeing units were closed for releasing untreated effluents in 1998. If the same is repeated now, the problem will be much worse.

⁴ *The Hindu* dated 13/05/07.

⁵ Sridhar. V(2005), " Tirupur's crises", *Frontline* vol.22 issue 17 aug.13-26.

The Farmers Associations have taken up the issue in terms of their loss in productivity of the soil and they have claimed compensation from the dyeing and bleaching units. They argue in terms of their loss in soil fertility due to the pollution ground water. There is a serious agrarian crisis in this region which can not be merely attached to monsoon failures. They voice out the ecological dimension of the problem. The Farmers Association has taken initiatives; they have filed Public Interest Litigations and have organized many protests.

The Study Area

Most of textile related factories like dyeing and bleaching units are placed in and around of Karur town and they discharge their effluents into Amaravathi River which flows in the study area. Thanthoni block of Karur taluk has been selected for this study, and the specific Village Panchayat selected for the study is Karuppampalayam. Thanthoni block is noted for industries like textile, dyeing and bleaching. Besides this, Thanthoni block is very well known for its contamination of both surface and groundwater through discharges of effluent from these types of industries. Karur is one of the major urban center which is worst affected by water pollution in Tamil Nadu.

Karuppampalayam –An Overview

Karuppampalayam village Panchayat lies close to the Dindigul-Bangalore national highway, 8 kms away from Karur town on the banks of the river Amaravathy. The Panchayat is administratively functioning under Thanthoni block and Karur taluk. Karuppampalayam is a panchayat comprising of four hamlets namely Karuppampalayam, Sukkaliyoor, Mattaparai puthoor and Pothiyampallam of which Karuppampalayam is the mother village. Its population is 2502 as per 2001 census which includes 1232 men and 1270 women. The Scheduled caste population is 486(242 male and 244 female).The total number of households in Karuppampalayam as per the Panchayat office is 512, but the count would definitely increase because of the migrant workers.

The Panchayat consists of *Kongu Vellala Gounders* as a dominant social group. The other major communities include *Devandrakula Pallars*, *Muthurajas* and *Nadars*. Most of the streets have at its entrance with welcome board proclaiming its caste affiliation. The Panchayat is divided into four wards. The Panchayat council consists of nine ward members, seven men and two women.

The major occupations include agriculture, dyeing and bleaching, textiles and construction works. The principal crops of this region are paddy, millets, pulses, oilseeds, sugarcane, banana and turmeric. In the recent times with the growth of textile exports, the dyeing and bleaching units have gained momentum in this region. There are about 55 dyeing units in and around the village Panchayat. As the nature work demands many manual labourers, many local landless labourers get work regularly in these units. A Common Effluent Treatment Plant is located within the Panchayat limit. In recent years few textile units are emerging much close to the Panchayat limits.

There is a Primary health centre which is located in the Karuppampalayam hamlet. There are two primary schools and a high school in the Panchayat. A PDS ration shop is functioning in the Sukkaliyoor hamlet and the Panchayat has a self help group building and a community hall. The Panchayat office and the village administrative office are located in the interior portion of the Karuppampalayam hamlet.

The most important festival celebrated is the *Bagavathi Amman* temple festival, which is celebrated during the Tamil month of *Panguni* (March-April). This particular local diety has spread over most of the villages in the entire district. Though it is considered as the village festival, almost all the caste groups have their own festivals to celebrate and their own deities too. They also celebrate all other Hindu festivals; however, *Pongal* is one of the important harvest festival. Most of the festivals are in connection with agriculture in one way or the other. The important deities include *Bagavathi Amman*, *Pukkurandi Amman* and *Mari Amman*. They also worship *Pasupatheeswara*, *Murugan*, *Ganesh* and *Thirumal*. Goat sacrifice or *Kida-vettu* is a common ritual among the villagers especially *Gounders*.

The village is covered by the irrigation system of Amaravathy dam. A check dam is constructed near by the village, from which the Thirumanilayur Rajavaikal, the main channel is used to irrigate the 900 acres of ayacut spread across Karuppampalayam and nearby village Panchayats of Appipalayam and Sanapiratti.

The Drought and the Drinking water crisis in 2002

In the year 2002, Karuppampalayam witnessed a severe drought. The summer of the year 2001 was a period of deficient rainfall of southwest monsoon to this region. It was repeated in the year 2002. There was no flow of water from Amaravathy dam from February 2002 to August 2002. Similar situation existed in the nearby villages like Appipalayam. This had not happened in the past 65 years. Drinking water was not available for human beings and cattle in all the villages along the river Amaravathy in this region. The drought continued also in the year 2003.

The drought forced the farmers in the region to adjust their cropping pattern to match the availability of water. The drought began to affect the area severely. Many farmers allowed their annual crops, especially sugarcane and banana, to wither away losing their entire investment. Hundreds of coconut palms dried up. In the same period the demand for water from the dyers began to increase with the increase of export. As villagers (farmers in particular) resisted tapping the river water, the dyers began to dig deep bore wells along the riverbank. Though the drinking water problem was settled by means of water supply schemes, obtaining water from Cauvery (*Cauvery kootu kudineer Thittam*), the prolonged occasional clashes and conflicts between the dyers and the farmers intensified during the drought period.

A Peace Committee meeting was held on 26 and 27 september 2002 at RDO office as there were clashes that took place before this dates. The representatives of Karuppampalayam and Appipalayam Panchayats, Dyeing factory owners and the MLA

of Karur Constituency, and authorities of revenue, police and pollution control departments participated in the meeting, where the pollution and contamination of drinking water was seriously discussed. The establishment of Reverse Osmosis (RO) plant was suggested as the solution to deal with the problem. But still there have been many practical difficulties in its implementation. As mentioned earlier in May 2007, the Madras High Court has provided directions regarding establishment of reverse osmosis plants, and nano membrane technologies; however the problem of pollution continues in this region.

Research Issues

With this backdrop, the study makes an attempt to explore and understand the environment and health problems related to the industrial effluents from dyeing and bleaching units in Karuppampalayam Panchayat. The environment of Karur is changing at a tremendous pace due to industrialization and urbanization. With the growth of textile exports, the dyeing and bleaching units of Karur has expanded rapidly over recent decades, following increased integration of global economic networks. This sector has been flourishing at a fast rate as a response to rising consumption demand and burgeoning export markets. Based on our theoretical understanding, it is conceded that the research problem has not to be only understood within the context of the regional and national level, but within the global framework.

A number of questions emerging about the growth oriented developmental pattern of Karur District. Whether this growth is for development, a basic question still remains. Understanding the linkages between environment, health and development from a third world perspective is highly relevant in this context. Some of the questions of this study are-

- (1) What are the socio-economic implications of the growth of dyeing and bleaching units for the people living in Karuppampalayam?
- (2) Which section of the population in the village is the major beneficiary?

- (3) What are the conflicts and issues related to land and water that have been affected by industrial effluents?
- (4) What are the major changes in the occupational and livelihood pattern of the people in the village?
- (5) What is the overall impact of the industrial effluents on the life and health of the rural population?

OBJECTIVES

The broad objective of the study is to critically capture the nature of development in the Karur Industrial District in general, the dyeing and bleaching units in particular and their implication for health of the people living in Karuppampalayam.

The specific objectives include,

- To understand the socio-economic structure and living conditions of the study population.
- To examine the changes in occupational and livelihood pattern of the people in the village.
- To critically analyse the conflicts between different socio-economic groups in the village.
- To understand the health problems of the people in the village.

RESEARCH DESIGN

Exploratory research design

The study investigated the health implications of industrial effluents from dyeing and bleaching units. Both Qualitative and Quantitative methods such as Household Surveys, Non-Participant Observation, Informal Group Discussions, In-depth interviews and Focus

Group Discussion were utilized for collecting the data. Importance is given to the qualitative dimension of the problem.

Selection of the study village

As mentioned earlier there are eight Development Blocks and four Taluks in Karur District. The area of study falls under Thanthoni Block of Karur Taluk. The study village is selected, based on the concentration of the dyeing and bleaching units in and around the village. Our selection therefore is purposive. Efforts have been made to ensure that the health services are within the reach of the study population. Our study, hence, is not representative of the District, but it definitely is indicative of the pattern of industrial development in the district and the conditions of life and work of the people.

In the initial stage, the researcher decided to conduct the study in Senappiratti Panchayat of Thanthoni Block. But after understanding the concentration of dyeing and bleaching units in the entire region and the location of Common Effluent Treatment Plants Karuppampalyam Panchayat was finally selected.

Selection of the Study Population

Among the 512 households of the village Panchayat (as per the Panchayat list), household survey was carried out in 10 percent of the households. The first household was selected randomly and from it every 10th household was studied. In case, when the researcher was unable to access the 10th household, the 11th one was taken into the sample. The household survey was aimed at generating an overview of the social and economic composition of the villagers in terms of caste, landownership pattern, occupational pattern, educational status, livestock and other possessions of families.

Tools of Data Collection

Primary data

Information gathered through fieldwork from the study population is constituted as the primary data of this study. It was generated through the following ways.

- Non Participant Observation
- Informal Group Discussions
- Semi-structured interview schedule
- In-depth Interviews and
- Focus Group Discussions.

Non Participant Observation:

During the fieldwork period, the researcher stayed along with the people of Karuppampalayam and collected relevant information required for this study. Considerable time had been spent in the field for building rapport with the villagers and for gaining their confidence. In our exploratory study, observation has been an important method of data collection mainly at the village level. The environmental conditions in which people live, their day-to-day activities, the nature of work, the village structure and other preliminary information were collected using this method.

Informal Group Discussions:

Informal Discussions in the village were carried out during different occasions especially in the evening with different groups of people in the village. Though there were problems in managing the situation, these informal discussions provided chance to explore the problem from different dimensions. Sometimes only the group found very much

interesting in interaction without much effort from the part of researcher but it was not always the same.

Semi-Structured Interview Schedule

This was carried out in 52 households to collect socio-economic and health data. The Schedule included both quantitative and qualitative data. Data on age, sex, caste, education, occupation, and ownership of land, monthly income of households, sources of drinking water, toilet facilities, housing type, livestock and other possessions were collected. People's perception on environment and health problems were also collected using this method.

In-Depth Interviews

In-depth interviews were carried out with the key informants to collect majority of the qualitative primary data. In-depth interviews were carried out with the farmers, dyeing and bleaching unit owners, workers, dalits, government authorities and local political leaders to collect majority of the primary data. In-depth interviews helped us to understand the interlinkages between different factors such as the growth of dyeing and bleaching units, employment opportunities, pollution problems, agricultural crises, social conflicts in the village, health problems etc.

Focus Group Discussion

A general focus group discussion (FGD) checklist was prepared to collect information well in advance. The checklist included the growth of dyeing and bleaching units and their impact on rural life such as favourable and unfavourable effects, health conditions such as housing, sanitation, drinking water, status of women, education, availability and accessibility of health services, occupation, employment opportunities, agricultural crises, pollution problems, social conflicts in the village, the role of state machinery, health

problems etc. FGD's were conducted among groups of varied interest such as members of farmers association, dyeing and bleaching unit owners, workers and dalits. Efforts were made to include homogenous key respondents within each group.

Secondary Data

Secondary sources of data collection included review of literature from different libraries, reports and documents collected from various institutions like Offices of the Panchayat, Block Development, The District Collectorate and The Health Department. Information relevant to the research and study population is also collected through books and journals.

Chapter - 4

SOCIO-ECONOMIC CONDITIONS

SOCIO-ECONOMIC CONDITIONS

The socio-economic conditions of the study population as mentioned in the methodology has been studied by considering the caste structure, the monthly income of the households, the landholding pattern, the housing and the occupational pattern. The data presented here are based on the household survey of 52 households. Efforts have been taken to draw insights, based on the field experiences, household surveys, group discussions, interviews and literature.

Caste Background

If caste is losing its hold in one way, it is strengthening its hold in other directions. Now caste associations are becoming stronger in this region. The ownership of livestock and other possessions are also linked to the caste background and educational status. Caste occupies an important position in the social structure of Karuppampalayam village. It determines the social, political and economic conditions of a person to a large extent.

Kongu Vellala Goundars

Goundar is a special name which refers to those who have converted the forest lands into agricultural lands and *kongu* is the name of the region. This area was traditionally known as *Kongunad*, one of the five big sub-divisions of the Tamil-speaking country, prior to the arrival of the British. *Kongunad* is believed to have been occupied by the *Vellala Gounders*. Within *Goundars* there are 32 sub divisions and *Kongu Vellala goundar* is one among them. They are the dominant caste group in this village both in numbers and also in the power equation. The term '*Vellalar*' refers to people who are involved in agriculture production.

There are two groups of *Kongu Vellala Gounders* in Karuppampalayam - one owns the dyeing and bleaching units and the other depends on agriculture. As the local economy depends on textile industry to a large extent, the former is in a better position both financially as well as in terms of power equation. The local political establishment is largely influenced by the *Gounder* business group of the region. There is a farmers association formed by *Gounder Agriculturalists*. The conflicts between these two groups are explained in the next chapter. But broadly it could be mentioned that *Gounders* have an advantage with respect to 'politically provided inputs' (roads, electricity, water, etc.), since they are much more closely tied up with the local political establishment through family connections.

Earlier there was a system of *voor* panchayat to settle the disputes and problems among the villagers. Though everyone is free to suggest their views, *Gounders* have dominated the scene. In Karuppampalayam, till recent times two persons (*Athina karar and kothu karar*) have played crucial role. (Now they are with the dyeing unit group). Usually *voor* panchayat is conducted in a common place called '*mandhai*'. If found guilty the person is punished by means of a fine or village restrictions (*voor kattupadu*) sometimes even they are forced to leave the village. With the entry of Panchayati Raj, police and Judiciary *voor* panchayat has faded away but still its traces remain to some extent.

Dalits

The more visible castes among Dalits of Karuppampalayam village are *pallars and parayars*. There are about 80 households of *Pallar* community who are referred as *devandrakula pallars*. *Pallar* caste is considered as the high caste among the Scheduled Castes. The *Pallar* caste is said to be the ancient community of Tamil Nadu. The people of this caste are considered to be the great cultivators especially of wet land of Tamil Country. The term *Pallar* seems to have been derived from the word *pallam*, meaning a pit or low-lying region. Since wet land is usually found in low lying area and the *Pallars* were often engaged in cultivation of such land, they came to be known as *Pallam* and

latter as *Pallan* and *Pallar*. It is argued with sufficient support of literature that the *Pallars* of today were actually known as *Mallar* belonging to the Dravidian race.

The *parayars* are very few in number in the study village. Traditionally they were the untouchable agricultural workers, or serfs. Most of them used to take care of animal carcasses, tan their skin, and make sandals out of it. They have also served as sweepers and cleaners of the village. The term *parayan* is derived from the Tamil word *parai* (drum) as certain *Parayars* act as drummers at funerals and village festivals. They are also engaged in cultivation, grass cutting and weaving. Their houses are concentrated in Sukkaliyoor hamlet. The magnitude of caste discrimination and untouchability as experienced by the dalits in general and *Devandrakula pallars* in particular is explained in the next chapter.

The more visible middle level castes in Karuppampalayam include the *Muthuraja*, *Nadars*, the artisan castes like *Kusavar* or *Kuyavan* (Potter), *Kotthan*(mason), *Thachan* (carpenter), *Kollan* (blacksmith), *Thattans* or *Nahai Aasari* (goldsmith); and the servicing caste such as *navithar* (barber), *Vannan* (washermen) and *andi pandaram* (Prohit).

Castes found in Karuppampalayam may broadly be grouped under three social categories recognized by the Tamil Nadu Government. The Backward Caste, Most Backward Caste and the Scheduled Caste (as per the list of Tamil Nadu Government). While *Kongu Vellala Gounders* are considered highest in the caste hierarchy, *Muthuraja* and *Nadars* are also included in the first category. Among the households surveyed *vannan* (washerman), *navithar*(Barber), *pandaram* and the artisan caste belong to the Most backward caste category. The castes among the scheduled caste in Karuppampalayam village are the *Pallars* and *Parayars*. These categories are used only for the sake of description and analysis.

The *Muthuraja* caste group mentioned in this study has its origin in the Cauvery delta region of nearby Trichy District. There are many sub castes within this caste group and the people of Karuppampalayam belong to '*kavakara*' sub caste which means people who protect the agricultural lands. They claim that they belong to the most backward caste category, but in our study it is categorized under backward caste, according to the list of Tamil Nadu Government.

The *Nadars* of Karuppampalayam Panchayat have migrated from southern districts of Tamil Nadu. Earlier they were referred as *sanans* (the unseeable caste). They were palm tree climbers (*maram eruthal*) noted for tapping toddy (*kallu*) from the palmyra tree. It was considered as a polluting job earlier, but in the past 50 years (after independence) they have shown better economic and upward social mobility and now they are listed under backward caste category of Tamil Nadu Government. In case of Karuppampalayam their position is much weaker both numerically and also in the power equation. Their houses are located in the interior portion of the Sukkaliyoor hamlet.

Table 4.1

Castes in Karuppampalayam Panchayat

(Based on the household survey of 52 households)

Name of the caste	No of households	Categorisation as per Tamil Nadu Government
Kongu Vellala Gounders	28	Backward caste 33
Nadars	3	
Muthuraja	2	
Vannanmurai	2	Most Backward caste 6
Navithar	1	
Pandaram	1	
Artisian caste	2	
Pallars	10	Scheduled caste 13
Parayars	3	

(Categorised as per the list of Tamil Nadu Government GO dated 24/11/97)

Land holding and Housing pattern

The household survey reveals that the backward castes own the agricultural land of the entire village especially the *Kongu vellala Gounders*. Among Dalits it could be observed that only two persons hold one and a half acres of land with paddy cultivation. Three have taken cultivable lands for lease and only one household belonging to the most backward caste category owns one acre of land.

The *Kongu Vellala Gounders* are the land owning caste group in the village. Nine households own more than five acres of land and only three households are landless. All others own between one to five acres of land. *Gounders* are the main owners of livestock in the village. They enjoy much better ownership status than any other caste in the village. Among the sampled houses only three lived in rented buildings, all others have their own houses. The types of houses owned by *Gounders* reflect their better social status. Most of the houses are located in the middle of the hamlet; they are *pukka* houses with 20 having concrete roofing and eight tiled roofing. They enjoy better housing standards than any other caste group and few houses have neatly constructed toilets too. The *Kongu Gounders* are privileged in terms of their living space and other infrastructural facilities.

Among the Scheduled castes, *Devandrakula Pallars* are living in a colony where in almost all the houses are constructed under government schemes i.e. *Indira Ninaivu Kudiyiruppu Thittam*. (Indira Awaraj Yojana Scheme) They stay much close to the river in the interior portion of the Karuppampalyam hamlet. The cremation grounds are located nearby and the residential area almost ends with the colony. They are *pukka* houses with a single room and a kitchen attached to it. The roof is tiled and there are no bathrooms or toilets facility. They defecate along the banks of the river. As far as *parayars* are concerned, their houses are also located in the interior portion of Sukkaliyoor hamlet. The major difference in housing standards between backward caste and scheduled caste is the size and privacy of the house plot. In colony the houses are closely arranged with

minimal space for privacy. Among 13 households sampled, nine have less than two rooms, three households have three rooms each and there is only one household that has more than five rooms and it is located in the middle of the Sukkaliyoor hamlet.

Among the six sampled houses of most backward caste, five are *pukka* houses with tiled roofing and one of that is a thatched hut. Except two *Nadar* households others live in their own houses. Three houses have a single room with a kitchen located in the corner of the room. Based on the in-depth study of 52 households, it could be observed that housing standards of most backward caste is poorer when compared with other castes of the village.

Occupation and Household Income

The major occupations include agriculture, textiles, dyeing, bleaching, construction works, etc. Among the backward caste, the *Kongu Vellala Gounders* are the owners of dyeing and bleaching units and also agricultural lands. Based on the household survey, it could be observed that the monthly income of nine *gounder* families exceeds Rs.4000 whereas only one household from the scheduled caste falls under this category.

Among *Devandrakula pallars*, a few are involved in agriculture. All others are landless daily wage laborers or contract laborers working in textiles or dyeing units or as construction workers. They are also involved in sand mining activities. Two are government employees. The monthly income of one family exceeds Rs.4000 and for seven families, it ranges between Rs.2000 and Rs.4000 and two families earn less than Rs.2000.

As far as the most backward caste is concerned, their household incomes are comparatively less than that of the other caste groups. Among the sampled houses most of them are working in textiles, dyeing and bleaching units. This research revealed that farmers are an ageing population. Agriculture is no longer attractive to young people in this region, it could be observed that there is a shift from agriculture to textile, dyeing and

bleaching units across all caste groups. It is more visible among the younger generation. Most of the businessmen in the study village belong to the *Gounder* caste group or backward caste category. The class pattern reflects the caste pattern. However, it is not the case with most backward caste category as they lag behind the dalits in terms of their monthly income.

A brief description of the land holding pattern, housing type and monthly income of households is presented in the form of a table.

Table 4.2

No of Households Based on caste	Backward caste (33 households)	Most backward (6 households)	Scheduled caste (13 households)
Land Holding pattern			
Landless	7(21.21)	5(83.33)	11(84.61)
2 Acres & Less	13(39.39)	1(16.66)	2(15.38)
Above 2 Acres	13(39.39)	Nil	Nil
Monthly income of Households			
Less than Rs.2000	6(18.18)	3(50.00)	4(30.76)
Between 2000-4000	18(54.54)	3(50.00)	8(61.53)
Above Rs.4000	9(27.27)	Nil	1(7.69)
Housing type			
Pukka (concrete)	20(60.60)	Nil	2(15.38)
Pukka (Tiled)	10(30.30)	5(83.33)	10(76.92)
Kutchra (Thatched)	3(9.09)	1(16.66)	1(16.66)
No. of Rooms			
Less than 2 rooms	4(12.12)	3(50.00)	9(69.29)
Between 2&5 rooms	24(72.72)	3(50.00)	3(23.07)
More than 5 rooms	5(15.15)	Nil	1(7.69)

Livestock and other possessions

Livestock is one of the main sources of income for the villagers in Karuppampalayam Panchayat. The trends are changing in recent times. Among the sampled households, 20 houses of *Gounder* agriculturalists were owners of livestock. The major livestock include cow, buffaloes, goat and hen. It is interesting to note that two houses of dyers also owned livestock. Based on the household survey it could be noted that *Kongu Vellala Gounders* are the only owners of livestock of the entire village.

Since most of the local water sources are polluted, livestock in the village are also facing serious health problems. The *Cauvery Kootu Kudineer Thittam* (water supply Scheme from Cauvery) has only partially solved the drinking water problem. Hence the livestock in the village are forced to depend on polluted water and graze on contaminated grasses. It was reported by the villagers (*Gounder* agriculturalists) that a majority of the cattle have fallen sick over the years. Another serious problem reported was the loss of reproductive capacity (*senai-pidithal*). Reduction in milk productivity of buffaloes and cows is also reported.

Questions about the household possessions like the television, mobile, gas stove, radio and vehicles were asked. During the time of field visit Tamil Nadu Government was distributing free colour television to all the households, hence possession of television becomes irrelevant in the local context for considering it as a measure of the socioeconomic status of the households. Three of the surveyed households have cars (textile and dyeing partners) and could be termed the affluent.

In Tamil Nadu the usage of mobile phones is rapidly increasing. Among the sampled households 71.42 percent of the *Gounders* owned mobile phones (20 households), and in the case of *pallars* 60 percent (6 households) of them owned it. Whereas only one

household from the *Muthuraja* caste owned mobile, all other households surveyed do not possess both Telephone as well as mobile.

Cooking fuel is another variable that helps us to give an idea of the family's economic condition. For 11 *Gounder* families (39.28 percent) LPG is the only fuel used for cooking, others also use kerosene and wood. Only three households (10.71 percent) of *Gounders* do not possess gas stove. In case of *Pallars*, only three households (30 percent) do not possess gas stove, where as 50 percent (3 households) of the most backward caste category do not possess gas stove; they purely depend on kerosene and wood. This when linked to the household income and housing type provides similar distribution.

Position of women in the village

Tamil Nadu state has reserved 33 percent of the post of Panchayat Presidents for women. Karuppampalayam falls within the reservation quota in 2006. 'But for reservation I would never have become the Panchayat president', Says Vasanthi Balasubramani, the President of Karuppampalayam Panchayat. The researcher attended two gram Sabah meetings, one on November-14(2006) and the other on January-26(2007). Based on the observations it could be noted that there was very minimal women's representation during the meetings.

The women ward members including the president did not enjoy much space to voice their own opinions. Based on the field experiences, it could be stated that the president's husband is the acting president of the village. Though the patriarchal mode is still dominant, women in the village are showing better educational mobility. It is visible in terms of *Gounder* women. There are number of women graduates among them.

But both among *Gounders* and other caste groups, the practice of dowry has increased. As a result, girl children are considered as a 'burden' to be disposed off. Though there is educational mobility, dowry has become deeply entrenched into their tradition in the name of '*seer varisai*'. Based on the in-depth study of households, it could be noted that the educated women prefer to move to the towns. Participation of women in economic activities often depends on socio-economic and cultural factors. Their work in households include mainly cooking, taking care of children and livestock management. In the study village, most of the women actively take part in economic activities. But they have a minimal say in decision making process. There are also few Self Help Groups that are functioning in the village. They are involved in micro-credit activities.

With the growth of textiles, dyeing and bleaching units in and around the Panchayat, women form the important workforce. Women are double burdened with familial responsibility and work; they are involved both in agricultural activities as well as textile and dyeing work. The researcher could not interact with the migrant women labourers, their situation seems to be much worse as they are in poor living conditions.

Based on the FGD with the women workers who are staying within the village it could be observed that mostly women are employed in jobs which are considered as unskilled or semi-skilled such as coloring (threading, drying, checking etc) where as men are employed in those jobs which are considered as skilled (For example- dyeing machine operators). As women workers have less access to skilled work, they earn lower wages. There is a difference of Rs.30 to Rs. 40 per day between the wages of men and women.

Education

There is a drastic change in the field of education. As already mentioned there are two primary schools and a high school in the Panchayat. The educational status of *Kongu Vellalars* in recent times is remarkable in this village. There are many graduates and post

graduates and women are also showing better improvements in this caste group. Apart from a few, most of the parents are sending their children to matriculation schools.

Earlier only the children of rich landlords went out of the village for high-school education to Karur. For the rest, education stopped at the primary school level. But there is a sea change now. Almost all the families are sending their children to study at least up to middle-school level and many to the high-school level. A few graduates also come from the artisan class and marginal farmers. The same is the case with scheduled caste also. Most of them except a few *Gounders* are first generation in terms of their college education. In *Devandrakula pallars*, only five men and a woman have entered into college education.

'Let our children study and achieve something.' This is the most often repeated statement among workers of daily wages. Most of them opt for matriculation schools for their children though the schools are far away; they are ready to spend money for it. The schools have buses or vans which pick up and drop the children in specific locations. They are not satisfied with the quality of education in Government schools in general and the importance given to English medium in particular. Some of the *Gounder* agriculturalists have even sold their land to meet the educational expenditure of higher education.

Migrant workers

With the growth of textile, dyeing and bleaching units, a large number of workers have migrated from the nearby districts of Trichy, Dindigul, Pondy, Erode and the southern districts of Tamil Nadu. There are also families who have migrated from Orissa. Most of them live in temporary settlements which are not included in the Panchayat list. Some of their houses are located within the walls of the dyeing units, while some are located much close to the units. Mostly the walls of their houses are made of hollow blocks with asbestos roofing. Most of them rely on their working units for drinking water and electricity. Their houses do not have toilet facilities. The researcher was unable to conduct household survey or in-depth interview with this section of the population.

Their living conditions are poorer than any other caste groups or natives of the village. Though they live within the village boundary, they are treated only as outsiders. They do not have any say in the village gatherings or meetings. They are under the supervision of their managements through out the day. Hence most of their lives are confined to their working place. Almost all of them are contract labourers with no benefits except daily wages.

‘A ration card can make a huge difference. Because wherever we go they ask for a residential proof. We are staying here for the past two and a half years still; we are unable to get a card. This is our situation’ this was the statement of a migrant woman from Dindigul. It reveals the insecure position of the migrant workers in the village, as they do not have any permanent address accessibility to any government facilities becomes impossible.

When the textile and dyeing units fall short of orders, their livelihood options are threatened and they are forced to go back to their native lands. But this is not always the case; based on observations it could be noted that a few workers who have developed better relationship with the management (owners) are able to climb up the ladder.

To sum up, *Kongu Vellala Gounders* are the dominant caste group both numerically and also in terms of power equation. They are the main owners of land and livestock in the village. *Gounders* of this village are polarized into two groups; the one owns the dyeing units and other who depends on agriculture. As the local economy depends on Textile industries to a large extent, the former group enjoys better position. More details regarding this are presented in the next chapter.

With the entry of textile, dyeing and bleaching units *Pallars* and *parayars* have shown better economic mobility in recent times, but still they remain underprivileged in terms of their social status; living space and other infrastructural facilities. In general, the class

pattern of the study population reflects the caste pattern. However, it is not the case with most backward caste category as they lag behind the dalits in terms of their monthly income. But they enjoy better living space and social status than dalits.

The women in the village are showing better educational mobility in recent times. As the patriarchy is still dominant, the women ward members including the president have minimal say in any decision making processes of the village. The living conditions of migrant workers are poorer than any other caste groups or natives of the village. In the next chapter the researcher have tried to present the changing living and working conditions of the people in Karuppampalayam Panchayat and their implications for health.

Chapter - 5

CONDITIONS OF LIFE AND WORK AND THEIR IMPLICATIONS FOR HEALTH

Conditions of life and work and their implications for health

In this chapter, we move on to look at the implications that this export oriented sector i.e., the dyeing and bleaching units have for the health of the villagers. The study does not intend to quantify or assess disease or illness status of the population. It attempts to look at the links between basic socio-economic conditions, the entry of dyeing and bleaching units into the village and their implications for health. These links operate through changing occupational and livelihood patterns, casualization of labour, specific health problems, social conflicts in the village, environmental degradation and abysmal living conditions in the village. This Chapter tries to explore these interlinkages with an interdisciplinary framework.

The in-depth interviews and focus group discussions provides a better understanding of the situation. It could be broadly stated that there are two sections of the population, those who are benefiting from the industrial development process and those who are adversely affected by it. But there are exceptions as well. Within the village there are groups of varied interest; with each group having their own points to substantiate.

Perception of Farmers

In Karuppampalayam the *Kongu Vellala Goundars* are polarized into two groups, one owns the Dyeing and bleaching units and the other relying on Agriculture.

Till 1990, it could be safely said that most of the surface flow water in Amaravathy river as well as the ground water of this region was used exclusively for domestic and agricultural purpose. But after 1990, there has been a very rapid increase in the industrial use mainly from dyeing and bleaching units. This has become the basis for a few personal and social conflicts.

The most important among the conflicts is the issue of disposal of polluted water used up in the dyeing process. From 1995 onwards there were occasional clashes in the

Sukkaliyoor-Karuppampalayam belt regarding letting out of dyeing factory effluents into the Thirumanilayur Raja *vaikal*(channel).

Kandasamy a farmer who owns 3 acres of land expresses,

“...Agriculture is not just our occupation; it’s our way of life. My family is practicing it for the past three generations but today, we are loosing hope on agriculture. After the entry of dyeing units, we are facing lot of problems. Over the last seven years there has been a rapid decline in the productivity and there has been decrease in yielding capacity of sugarcane, paddy, turmeric and cotton. Now millets and maize are only grown just to feed the livestock. On account of close proximity of our lands to the Amaravathy River our entire livelihood has been undermined and our family has been reduced to penury...”

He further adds,

“...Till 1996, the dyeing units were using less toxic coloring materials (Kai colour) but after that they have started using prozine chemical which is highly toxic in nature. and we the farmers are specifically affected as it has contaminated the water in our wells and the fertility of soil is completely lost. Earlier we go to market for selling the vegetables. but today we are unable to produce even for our own domestic usage...”

Ramasamy, The President of Farmers Association (*Nilathadineer Matrum Sayapattarai Kalivugalal Pathikkapatta Vivasayigal Sangam*) in an in-depth interview narrates,

“...We about 70 families are united together along with the farmers of nearby Panchayat (Appipalayam) and we have the farmers association to fight legally against the managements of the dyeing units and the sand mafia. We have filed two cases. in the green bench of the High Court, Chennai. One for getting the compensation from the proprietor’s of the dyeing units and other case is to prevent the emission of the industrial effluents into the water sources...”

He further narrates,

“...We have submitted petitions to the District Collector, Pollution Control Board and Chief Minister’s grievance hearing cell and we have organized three protests and our problems are still continuing. Governments have changed but our problems are not addressed seriously by any of the government. Even the Newspapers, magazines and the visual media are not ready to speak the reality and they are not paying much attention for our problem which is very important for the present and the future generations of not only this village but for the entire area around the village. Even today, the dyeing unit which is located north of my field has released its effluent into my open fields, I am planning to take photos and submit petition to the District Collector and the higher officials of the Pollution Control Board and other government authorities...”

Rajendran a farmer who owns 4 acres of land narrates,

“...We have spent our time, money and energy against this mafia but nothing has happened, and day by day we are losing the hope, I have even spent some time in prison because of this issue, those pains can not be explained right now but I am sure that they can buy anyone with their money and create their own stories so that they could carry on this injustice and right now I have almost given up this issue its not only me, everyone loses hope after some point of time...”

A focused group discussion was conducted among the members of the farmers association; it helps us to understand the situation from the perspective of the land owning agricultural families. Based on the focused group discussion and informal interviews with the members of the association, it could be observed that the village itself is polarized into two groups among the same dominant caste group *Kongu vellalla Gounders*; one group is in favour of the dyeing units and other group protesting against it.

It was highlighted in the focused group discussion that many of the dyeing units in Karuppampalayam and Sukkaliyoor purchased small plots of land adjacent to the river and established pumpset-pipelines to their units to obtain water for their use. In summers,...

there is a competition among agriculturalist and dyers to obtain water for their use. The persons who dig wider and deeper wells are likely to get more water. Since the dyers have more financial resources they are relatively in a better position. There are also reported cases of uterine cancer, skin allergy, and loss of fertility in livestock in and around the village. They mentioned that the members of this association are not allowed to get job in any of the textiles and dyeing units.

Perception of the owners of Dyeing units

The dyeing and bleaching units are also owned by *kongu vellala* goundars, their agricultural lands are now used for industrial purpose. They have formed the dyeing owners association and have set up the karur taluk dyeing and bleaching treatment Plant Company Limited. Most of the dyers in karur district are members of this association.

In an in-depth interview, Gunasekaran (councilor) owner of a dyeing unit narrates,

“...Though there are some problems related to agriculture, the entry of dyeing units has brought in lot of positive changes in Karuppampalayam. The dyeing and bleaching units are providing job opportunities to lots of people in and around the village through out the year; it was not the case with agriculture. Now they are paid with better wages and the people from service caste are enjoying better standard of living. The dyeing and bleaching units are a part of chain of textile industries which ultimately feed into the foreign exchange of the country, this factor has to be taken into consideration. I would like to mention that Karuppampalayam has gained importance only because of the presence of these units...”

He further narrates,

“...we can not stop the dyeing units or textiles all of a sudden as there are no alternative job opportunities and the only way is to manage the pollution problem efficiently through modern technologies and I would like to mention that, we are strictly following the specifications of Pollution Control Board in Karuppampalayam effluent treatment plant and its functioning is

up to the mark. Unfortunately, the TDS levels of ground water has increased due to the failure of monsoons and it can not be merely attached to the dyeing units...”

Murugesan owner of a dyeing unit mentions,

“...With the entry of Textiles, dyeing and bleaching units into this village, there is a remarkable change in the village infrastructure. We have got better roads, better transportation and communication facilities. The usage of two wheelers and cell phones has dramatically increased. there are some problems in this village after the entry of dyeing units but these are created problems mainly because of individual egos, if people come together the problem can be handled in a better way...”

He further narrates,

“...It is not easy to do this business today, we have to face the competition from local and international markets, we have to meet the pollution standards, and we have to deal with the labor issues and at the same time deal with farmers, government authorities, and some times even NGO's. We have invested lakhs of money in this business just by getting loans and if we loose, we can not get back and it needs lot of courage to deal with the situation. There are small units which are run by those who take on lease a unit owned by some one else. The operations are also carried on leased lands, where the operator makes all the investment for the dyeing activity and it is not a simple task. This is the situation of most of the dyers here; the situation of bleachers is much worse than ours...”

Perception of Dalits

Earlier Karrupampalyam village was noted for illicit liquor preparation, particularly the colony. Formally people in the colony worked as agricultural labourers. But their earning was very less and most of the times they were provided only with grains, and that too the work was not available through out the year. Hence people in the colony were forced to take up illicit and polluting jobs.

In 1950's and 60's the dalits were not permitted to tie the towel around the head. Water had to be poured from above, which they had to drink in cupped hands. They were not permitted to enter the courtyards of many households. They could not cycle along the streets and could not smoke in the presence of upper caste men. Untouchability was in practice until a few years ago. The upper caste men provided water to dalits in coconut shells and there were discrimination for temple entry and festivals.

Mahendran who belongs to dalit community describes,

“...Right now I am pursuing my M.Phil degree; I have experienced the pains of discrimination during my school days. The people from the upper caste have provided me water in coconut shells. Though visible forms of discrimination are not in practice today, still we are not allowed to perform the major rituals during the festival in *Bagavathi Amman* temple which is considered as common festival for the entire village. We have our own temple (*Mallankoil*) and in which we make our own decisions and enjoy celebrations...”

Satyanarayanan a ward member from dalit community narrates,

“...This part of the village lacks many facilities including drainage, transportation, road and other basic infrastructures. Though I am a ward member I have a very minimal say during the Panchayat meetings. And even the funds allotted to this portion of the village are somehow diverted and enjoyed by the upper caste people...”

Rajendran, Government servant who belongs to dalit community held the view that,

“...Today we are in a better position when compared to the earlier times, but now the people in the colony are lacking their vision and they are carried away by financial gains. As we are landless we are not directly affected by the serious problems of environmental pollution. Once we faced the problem of drinking water crises which was managed by *Kaveri Kootu Kudineer Thittam* (Cauvery Integrated Drinking Water Scheme). And hence our people are not concerned with the seriousness of the problem. But it has to be noted that we are the people who were treated inhumanly and hence this young generation needs little comfort...”

Based on the focus group discussions with the members of Dalit community, it could be observed that there is a notable change in inter-caste relations, at present and the earlier forms of caste discrimination and consequent injustices have reduced. Though visible forms of discrimination have faded away, their traces still remains. They mentioned that the Government Schemes reaches the upper caste people first, and then it is delivered to the people in the colony. In recent years, people in the colony are enjoying better economic mobility. With the growth of textile units, dyeing and bleaching units, the livelihood problems of the colony people have improved to some extent due to the transformation took place in the labour form from landless agricultural labour to the informal industrial labour.

Perception of Workers

As mentioned earlier it could be broadly said that there are two sections of families that are working in dyeing and bleaching units, one staying much closer or within the walls of the units in which they are working and another section staying within the village. It was very difficult to get information from the workers, who stays much closer or within the walls of the units as they are under strict surveillance through out the day by the management. Hence focus group discussions and in-depth interviews were conducted with those who stay within the village.

In an in-depth interview Indumathi who is working in a dyeing unit narrates,

“...I am working in a dyeing unit for the past two years for daily wages, (Rs.80per day) and the salary is paid once in a week. The nature of work is correcting damages and packing and we have to be punctual always. The work starts at 9'o clock in the morning and ends around 6 or 6.30 depending upon the order. My husband is also working in textiles, we are working sincerely and my only concern is our children. Whether it is good or bad is another question, it addresses our survival problem, fulfills our day to day needs. We are sending our children to matriculation schools, and we are looking for a better future for them...”

She further narrates,

“...The families who are migrated have lots of problem, they don't have proper address and they are living in poor conditions. They are struggling even to get a ration card. When compared with their lives, we are in a better position...”

In an in-depth interview Periasamy who is working in a textile unit expresses,

“...I am working in textiles for the past three years and I receive monthly salary, earlier we had our own handlooms and we were supported by the cooperative society. They distributed threads (*nool*) and we sold our finished products through the society. But now they have stopped these activities and I tried to sustain it by my individual efforts. But I was unable to manage both the works simultaneously as textiles provide me with the regular income, I sold my handlooms recently...”

He further adds

“...We have our family. To support them we have no other options; we have to come in terms with the reality. Earlier I worked according to my own timings and had better autonomy. Now I have to follow the timings and the nature of job is getting highly monotonous and mechanical. Preparing stuffs for our own use in our handlooms gives a kind of pleasure which can't be explained in words. We are missing those days...”

The workers interviewed were not much concerned about workplace safety; the FGD reveals that the workers at the dyeing and bleaching units did not use gloves while handling chemicals and detergents. Sometimes gloves provided did not fit into their hands. They reported that they are not covered by any health insurance plan or social security schemes. Apart from the daily wages they have no other guarantees. As they stay in the interior part of the village; it is difficult for them to reach their work place in time as there is no transportation facility available to them.

Changing Living and Working Conditions - A Perspective

The following narrative is an attempt to explain some major themes in relation to the changes in living and working conditions of the people in Karuppampalayam village. It tries to describe the grass root realities by drawing insights from field experiences as well as literatures reviewed.

Occupational and livelihood patterns

In this section we have tried to understand the changes in the occupational and livelihood patterns of the village in terms of *Kongu Vellala Gounders* as they are the dominant caste group both in terms of number and also in the power equation. It provides us with better insights on the changing occupational trends in Karur and helps us to locate it within the local context of Karuppampalayam Panchayat.

Agriculture is the primary occupation of the people in the village. Now it is shifted to textile and dyeing units. One of the main characteristics of the local community was the ownership of livestock. It has its traditional roots and is considered as the symbol of pride especially among *Kongu Vellala Goundars*. Most land owners raised cattle and sheep. Animals were required for milk and for manure. Raising cattle and sheep was a profitable occupation also. The developmental change that has taken place since 1990 has brought in remarkable changes in the occupational pattern of the people in Karuppampalayam. Before two decade's handlooms played an important role next to agriculture, this view is supported by majority of the people who are interviewed.

Historically Karur has been known as a handloom centre and a market town. The handloom weaving here is said to be at least one century old. It consisted of cloth weaving by family units mainly involved in making bed sheets and towels. It is carried out as a home based activity and lots of women were engaged in it as a part of family labor.

With the growth of Power looms and shifts in textile policies in 1985, handlooms faced their tough times in Karur¹. The major item of production by the weavers of cooperative societies included cotton sarees and dhoties. Bedsheets woven in Karur area were popularly known as Karur “Bedsheets” and were famous for their designs and variety. When the cooperative societies gave up their support, the handloom weavers were unable to compete with the power looms and this became a major set back. The power loom units were neither household industry nor industrial Units, they were more like cottage industry that had grown out of handloom weaving households.

Majority of the people in the village held the view that the agrarian *Kongu Vellala Gounders* had also entered weaving in quite an extensive scale, mainly as a strategy to supplement unstable returns from agriculture because of monsoon failures. Until 1990, the home market determined the output of the powerlooms. The early 1990s changed this scenario, the focus shifted from domestic to international market. The introduction of modern technologies and the upgradation of looms to semi-automatic and automatic status have geared the mass production to cater the needs of the textile giants.

The expansion of textile industry has transformed the Karur town. Bus body building and manufacture of nylon nets became additional sectors. More and more dyeing and bleaching units were established to feed into the textile market. The owners searched for locations where land was relatively accessible and where water was available. They naturally chose the lands adjacent to the Thirumanilaiyoor *Raja Vaikal*.

¹ Vijaya.S, “*Factors Determining Health of Home-Based Women Weavers-A case study of Karur*”, M.Phil Dissertation, JNU, CSMCH.1997.p.no.34.

Ramasamy a farmer in Karuppampalayam says,

“...Nowadays, it is difficult to find agricultural wage labourers. Earlier they have to move to the town for getting urban wages. But now there is tremendous growth of dyeing units in this area. Many textile-buildings are emerging within the Panchayat limit. Hence it is difficult to find not only male labourers but women labourers too...”

The export-led market pattern started neglecting domestic markets by concentrating more on export goods. Notably the production of textile goods shifted from mere weaving of bed-sheets to tea-towels, Kitchen towels, napkins, gloves, aprons, quilts, quilt covers, curtains, bedsheets, pillow covers etc for exporting abroad. These products are marketed to countries like USA, UK, Germany and France². It is believed that Dyeing industry is responsible for the good quality of textiles. A variety of attractive colours give charm and quality to the textile goods. Hence the dyeing and bleaching units have gained momentum and it has become the major source of income for the people in the Karuppampalayam Panchayat.

In the past two decades Karur district has undergone remarkable changes in terms of infrastructure development to meet the needs of industrial growth. Large numbers of people from the nearby villages are involved in construction works. People from Karuppampalayam Panchayat also earn their living through construction works and sand mining activities. The riverbed of Amaravathy is located very close to the Panchayat. It is said that the sand of Amaravathy is of a higher quality than that of Cauvery, Hundreds of cartloads of sand are illegally quarried from the riverbed; the people who own bullock carts are actively involved in this business. The youths in the colony are involved in this activity as it provides them with better income.

² Vijaya, S. “*Factors Determining Health of Home-Based Women Weavers-A case study of Karur*”, M.Phil Dissertation, JNU, CSMCH.1997.p.no.50.

Small-Scale industries and casualisation of labour

Nowadays the local economy totally depends on the export-oriented sector. The industry in *Kongu* region produces knitted garments and is largely focused towards exporting. There are essentially three types of firms in the industry: direct exporters, indirect exporters, and job-workers. Direct exporters are the ones who receive orders from abroad. Once they have an order they often pass on a fraction of the order to one or more indirect exporters. Indirect exporters are independent garment producers who are entirely responsible for their share of the order, delivering the finished product to the direct exporter prior to shipment. Most of the exporters of Karur have no direct contact with the foreign buyers. This phase takes place through exporters based in metropolises such as Mumbai. Sometimes the western importers operate in such a way as to even have offices in India. The small-scale dyeing units, with which foreign importers indirectly do business, would not be able to trade directly, due to lack of capital and contacts³. There are number of small and medium sized dyeing and bleaching units which feed into textiles and the production is organized on a sub-contracting basis. There is system of job working and the labor is unorganized with no guarantees except the daily wages. Job working refers to a type of relation in which a 'mother' supplies the necessary raw material to the small scale units which return them after having transformed them into the form requested on the basis of prearranged agreement.

Sub contracting is a major mechanism in Karur district's industrial pattern. It could be defined as a situation in which a parent firm receives order from either domestic or international market, who instead of doing the work by them, requests another independent firm or a person who is called a middleman or contractor. 'Sub-contracting' refers to a type of relation between factories in which the great units procure components, material to be assembled and products of various kinds from small units. These transactions are not occasional or casual matters but form part of permanent relations. This system was born mainly to avoid the legislation in labour welfare, to fragment the bargaining power of labour, to control its processes by dividing the market, to

³ Marco Corsi. "*Modernity, Modernisation, Development. The Karur Industrial District*". Paper Presented at the workshop Asia-Pacific studies in Australia and Europe; A Research Agenda For the future, Canberra 5-6 July 2002.p.no.14.

evade trade union representation, to minimize and control labor costs, obtain flexibility, to assure an adequate supply of labour⁴.

Majority of the workers interviewed were less concerned about the workers union. Informal interviews were conducted among both members and non members of the association. Based on the interviews it could be observed that the union was much concerned with wages rather than working conditions.

Rajendran in an in-depth interview expresses,

“...I am a working partner in a dyeing unit. It’s not easy to reach this position here, we are not having much ancestral property and for many workers here it’s just hand to mouth existence. I have worked in all levels in these units and this experience has helped me through out my carrier. Earlier the works in these units were easier and the relation between the employer and his worker was based on trust and long term familiarity. Workers felt a kind of security as long as firm stays in business. But now the situations have changed drastically and every thing is getting impersonal nowadays and there is always middleman whose role becomes so crucial. Most of the workers here hangs on to some job and don’t take much effort to move forward. It needs lot of courage because workers have long term family commitments...”

He further narrates,

“...It’s not like government job to feel secured, to some extent it could be said that the main threat to security is beyond the employer’s control. Sometimes there may be a fall in the quantum of orders; it purely depends upon seasonal demand. Talking about job security of semi-skilled and unskilled labour becomes irrelevant here, when the single long term contracts come to an end. The owners of majority of the small units face their tough times to deal with, Nothing could be done in these situations: the only option is to wait for better times...”

⁴ Marco Corsi. "Modernity, Modernisation, Development. The Karur Industrial District", Paper Presented at the workshop Asia-Pacific studies in Australia and Europe; A Research Agenda For the future, Canberra 5-6 July 2002. p.no.16.

Selvi working in a dyeing unit expresses,

“...We have migrated from Erode and my husband is working as a machine operator in the same unit. The owner of this unit is our distant relative. We are having a friendly relationship with him (their residence is also located much close to the owner's) and we are working with him for the past four years. We came here, because of the closure of dyeing units in our (Erode) district due to pollution problem. But here we are in a better position. We get drinking water from the unit tap. We are also provided with medical expenses. It's not the same case with other migrant workers. They are living in houses made of hollow blocks and asbestos, apart from daily wages they don't enjoy any other facilities...”

It is important to note that the workers who are migrants (except the above interview) avoided any kind of interview with the researcher. They held the view that it is better to collect data from the workers who are staying within the village. This shows their feeling of insecurity and the powerlessness even to voice their problems.

Social conflicts in the village

The group discussions and interviews reveal that the entry of dyeing and bleaching units into this village has become the basis for the individual and social conflicts that are obvious in Karuppampalayam nowadays. Ten years ago Karuppampalayam was noted for its apparent unity and solidarity. This view was supported by majority of the people interviewed.

Neelakantan in his study on Chettipalayam hamlet mentions three types of conflicts⁵. The hamlet is located in Appipalayam Panchayat which is adjacent to Karuppampalayam. The first conflict that he mentions is the private conflict among pumpset-pipeline owners to obtain water for their industrial use. He notes that more and more resources were spent for digging deeper and deeper trenches in the river and this has become the basis for a few types of private and social conflicts.

⁵ Neelakantan S., “Change and continuity: A contrasting account of Urban Rural Transformation”, Madras Institute of Development Studies. MIDS working paper no139, Madras 1996.

The second conflict mentioned by him is the conflict over water for drinking and industrial purposes. According to him, the drinking water supply in the village was severely affected. The dyers attempted to use the caste card, as the majority of the people affected are *pallars*, a SC group. But the majority of dyers are *gounders*, a BC community. They were unable to succeed as the *gounder* agriculturalists refused to cooperate with the dyers.

The third type of conflict mentioned by him is the conflict over the issues of disposal of polluted water used up in the dyeing process and the consequent pollution of ground water. The conflicts in Karuppampalayam, also has a similar background. But it is manifested in a much more serious condition than Chettipalayam. As large numbers of dyeing units are located in Karuppampalayam Panchayat, the problem of pollution is severe in this village.

The farmers of Karuppampalayam, who own bore wells, got their water tested and in their report it was noted that the water was unfit to drink. The *Gounder* agriculturalists began to agitate and they have formed an association to fight for their cause. They are also fighting through legal means. As mentioned in the previous section, the village itself is polarized into two groups, one group in support of dyeing units and the other group (*Gounder* agriculturalists) protesting against it. Based on the field experiences it could be noted that the personal conflicts between members of these two opposite groups are manipulated into group conflicts and vice-versa.

The focus group discussion with the members of the farmers association reveals that the *Bagavathi Amman* temple festival which is considered as the village festival is not celebrated for the past three years due to the conflicts regarding dyeing units. The temple remains closed and the village has lost its liveliness during the festival times. The owners of the dyeing units use their money, muscle and political power to dictate terms in the village.

Based on the field experiences, it could be observed that occasional clashes are still continuing in the village, between the two groups. Here it is important to note that, sometimes the researcher had to pass through two intermediaries to get links with the members of the opposite groups though they belong to the same caste. (Close relatives within *Kongu Vellala Gounders*).

Environmental degradation

Till 1980s, pollution was not a major problem because the volume of flow of channel water was large and the amount of pollutants was relatively meager. The local farmers raised two crops every year with the channel water. The sand cover in the village was a delight to watch and the residents were not facing any problems of water pollution. After 1980's and 90's (with the shifts from import substituted industrialization to export oriented industrialization) more and more dyeing and bleaching units were established in and around Karuppampalayam Panchayat.

Today, these units use the river water of Amaravathy, ground water and also huge volume of chemicals every day and they release toxic effluents back into the river and other water sources. Majority of the people in the village supported this view. The toxic parameters had gone far above tolerable levels. Because of the efforts taken by the people of the village Common Effluent Treatment Plants were established. One plant is located within the Panchayat and the other lies much close to the Panchayat limit.

The focus group discussion conducted among the members of the farmers association highlighted the inefficiency of effluent treatment process. According to them, the managements of the dyeing units do not run the effluent treatment plant as per the specifications of the Pollution Control Board. The treatment process is carried out properly only during the times of factory inspections and the government authorities are not taking serious efforts to deal with the problem. Instead of insulating the solid waste (sludge) in the dyeing units with polythene to prevent the soiling of the land; they keep heaps of waste is open. This leads to pollution of ground water.

Sand mining activities have gained momentum with the development of Karur Industrial District. Nowadays many unemployed youths earn their living through sand mining activities. The contractors are entitled to mine only up to a depth of one meter, that too in specified areas. However, in reality they violated the rules and mining is carried out to a depth of three or four meters using earth moving machinery in all accessible areas. Majority of the people interviewed held the view that corruption plays an important role in illegal sand mining activity.

Based on the field experiences and people's perception, it could be noted that the colour and odour of the river and well water have changed (blackened) and at the same time the flow in the Amaravathy River is not recharging the ground water because of continuous sand mining. In 2001-2002 the entire Thanthoni Block has faced drinking water crises and the District Administration has handled this problem by tapping water from the Cauvery River. It is referred as *Cauvery Kootu Kudiineer thittam*. In Karuppampalayam the agricultural crop yields have dropped in recent years and the harvested crops are suspected to contain unacceptable levels of chemicals in it.

Health problems in the village

In this section, we have tried to understand the health and disease of Karuppampalayam Panchayat. However efforts have been made to describe the water- related disease of Karur taluk for the years 2004 & 2005. It provides us with better insights and helps us to locate the health problems within the local context of Karuppampalayam. In Karur taluk, there are eight Primary Health Centers and one Government Hospital (GH). These are directly under the control of Tamil Nadu Government. Among them a primary health centre is functioning in Karuppampalayam Panchayat. As already mentioned this study does not intend to quantify or assess health status of the study population. It attempts to briefly present the people's perception of the health problems. Though different kinds of diseases are prevalent in Karuppampalayam, water related diseases strike these people more often.

There was an out break of chickungunya through out Tamil Nadu during the second half of the year 2006. In Karuppampalayam, the burden of the disease was much higher. Majority of the surveyed households reported cases of chickungunya. Efforts were taken to understand the people's perception on causal factors of the disease.

According to World Health Organization, almost 80 percent of the diseases in the world are attributed to unsafe and inadequate water supply and due to poor sanitation. Infectious; water-related diseases are major cause of morbidity and mortality worldwide. The 34th World Health Assembly, in a resolution emphasized that safe drinking water as a prime element of Primary health care⁶. Hence water pollution becomes highly relevant in terms of health and disease.

The researcher faced tough times while trying to collect official figures regarding water related diseases of Thanthoni Block. Basically no government official was spontaneously willing to provide the information. From the tables presented; it could be observed that the occurrence of water-related diseases like acute diarrheal disease, acute respiratory infection, Scabies and dysentery are very frequent in Karur taluk.

⁶ www.who.int/water_sanitation_health/diseases/emergingissues/index.html

The following table describes the reported cases of water-related diseases in Karur taluk in 2004. (Table 5.1)

Id	PHC / Diseases	ADD	Dysentery	Dengue	Leptospirosis	Typhoid	Malaria	ARI	Scabies	Hepatitis	Fluorosis
1	Manmangalam	1031	6	-	-	2	4	1194	45	4	16
2	Vangal	1725	10	1	2	2	-	1990	76	2	9
3	Olaipalayam	3239	17	2	3	6	12	3582	136	8	3
4	Uppidamangalam	1370	11	-	-	-	2	1592	62	-	-
5	Velliyani	1036	7	-	-	1	2	1220	47	-	4
6	Kodangipatti	1752	12	-	1	4	12	2010	76	4	8
7	Karuppampalayam	1366	16	-	-	2	8	1538	65	10	2
8	Govinthampalayam	1389	14	-	1	1	10	1605	67	6	-
9	Karur (GH)	4043	24	3	4	16	26	5174	195	22	7

PHC / GH – Primary Health Centre / Government Hospital

ADD – Acute Diarrheal Diseases

ARI – Acute Respiratory Infection

Water-related Diseases of Karur Taluk - 2005 (Persons Affected)

Id	PHC / Diseases	ADD	Dysentery	Dengue	Leptospirosis	Typhoid	Malaria	ARI	Scabies	Hepatitis	Fluorosis
1	Manmangalam	970	63	-	-	-	3	1062	30	4	18
2	Vangal	1518	107	2	-	3	2	1770	52	-	5
3	Olaippalayam	2808	188	4	2	4	16	3186	89	9	4
4	Uppidamangalam	1233	82	1	-	-	5	1416	43	1	-
5	Velliyantai	887	74	-	-	1	7	1098	34	2	4
6	Kodangipatti	1469	103	-	3	3	12	1768	54	5	6
7	Karuppampalayam	1258	83	2	-	2	19	1428	47	13	4
8	Govinthampalayam	1355	85	2	1	1	17	1508	43	12	2
9	Karur (GH)	3933	265	6	3	19	34	4602	130	24	8

Table 5.2

PHC / GH – Primary Health Centre / Government Hospital

ADD – Acute Diarrheal Diseases

ARI – Acute Respiratory Infection

The water-related diseases are found to be the major health problem in Karur taluk. The area covered by Karuppampalayam PHC is not only limited to the study village. Hence specifically locating Karuppampalayam Panchayat becomes difficult; moreover there was a change in the disease trends with the outbreak of chikungunya during the time of field work. Hence any health related discussion with the villagers finally ended up with chickungunya. Apart from it, the people keep falling ill with common ailments like fever, cold, etc. As revealed by the farmers of Karuppampalayam village (especially *Gounder* agriculturalists) the females usually suffer from various types of gynecological problems. In addition to these, skin allergy is also reported as a major health problem. Children of the sampled households suffer from all kinds of health problems like diarrhea, dysentery, cough and cold, warm infection, fever, skin diseases etc.

In Karuppampalayam 86.5 percent of the surveyed households reported at least one case of Chikungunya and 75 percent of the households reported two or more cases. In terms of treatment, people prefer allopathic medicine as it provides them with immediate relief. In general, the level of satisfaction of the villagers with the services offered by the primary health center was better. Interestingly 46.15 percent of the sampled households prefer private hospitals and clinics in karur town. This could be attributed to their class background although it is not always the case. For many of them, the timing of the health centre does not suit as it clashes with their work timings.

In an in-depth interview Baby a textile worker narrates,

“...We have migrated from Namakkal District before four years: we have two sons, my self and my husband are working in a textile unit. Everyone in our family was affected by chickungunya. There was fever for nearly a week and severe joint pains which are continuing even today. We went to the primary heath centre; they treated better and also provided us with medicines free of cost. Almost it was the case with most of the villagers at that time...”

She further narrates,

“... As we are daily wage labourers, we can not take leave for a long time. My husband stayed at home only for four days. I also started to work in spite of my joint pains and body tiredness. It was a bad time for everyone in the village. But the people like us suffered a lot not only in terms of physical ailments but also economic problems. We lost our savings and also borrowed money and it is amazing for me that we have somehow managed the situation...”

Nallusamy a Law Student in an in-depth interview expresses,

“...Here people are earning at the cost of their lives. It is not only the workers who are affected; it is a serious health problem for the entire region. Recently a kind of dental problem (fluorosis) is developing in the entire region. Loss of fertility among livestock's is quite common in this village. In addition to these; a few are also affected by diseases of the kidney in around the village Panchayat particularly, in the nearby hamlets...”

He further adds,

“...Once people agitated vigorously against the government authorities when there was a serious crisis for drinking water, the problem was temporarily solved by means of water supplied through tube wells. Such agitations are needed to save this region. People may not be aware of the seriousness of the problem right now, but those days are not too far....”

In an in-depth interview subburayalu says,

“...I am working as district extension health educator in the rural development department and mine is a kind of Liasoning position between health and the rural development departments. Now Chickungunya is the major disease of our concern. We are making frequent field visits to keep the disease under control. All the Primary Health Centers in the taluk are equipped well, to handle the situation better...”

He further narrates,

“...Water contamination is an important problem in Karur Taluk, Here the canals particularly Pugalur, Karur and Karuppampalayam are the main sources of contaminated water and that too stagnant at sometimes. This leads to the spread of mosquitoes, which are responsible for transmitting many diseases. It is not only Karupampalayam that is affected; in fact the problem is worse in villages like Chellandipalayam and Thirumanilayur. Though the Dyeing and Bleaching units are concentrated in Karuppampalayam, it is only the place of origin of polluted water with two Effluent Treatment Plants located nearby. The dyeing units are spread out and there are 6 other plants from which the polluted water enter into the canals...”

Based on the focus group discussion with the workers of dyeing and bleaching units, it could be observed that there was an overall dissatisfaction regarding the working hours of the PHC among the daily wage labourers working in textile, dyeing and bleaching units. Though it is expensive, they prefer to go to private hospitals and clinics in Karur town as it saves their time. According to them, a disease becomes problematic only when it stops their work and creates financial problems. Hence Chikungunya is more painful to them. Most of them reported tiredness and severe joint pains. They also reported allergic symptoms, giddiness, eye complaints and hair loss. Some of them felt that they had more frequent cold and less sense of smell as they began working with chemicals.

To summarize, the themes developed in this chapter help us to understand the health implications in relation to the overall living and working conditions. As a result of the entry of dyeing and bleaching units, the structure and functioning of the entire Karuppampalayam village has changed in the recent 20 years. As already mentioned, the village itself is polarized into two groups one in favour of the dyeing units and the other opposing it. It has resulted in serious social conflicts in the village.

The textile dying and bleaching units have replaced agriculture. These units are dominating the scene with little scope for alternate employment. More and more, farmers in the region are shifting to other professions. Some farmers are selling water to dyeing and bleaching units to earn money. Some have sold their lands and the real estate business is flourishing well in this region. This research revealed that farmers are an ageing population. Agriculture is no longer attractive to young people in this village, which in addition to the contamination of water, contributes to the agricultural crises of the region.

Due to the unorganized nature of the dyeing and bleaching units the conditions of life and work are much worse than in agriculture. The workers enjoy no benefits apart from daily wages. Falling ill, even for a day is a major disaster as they lose a day's earning. Comparatively and not surprisingly, the *Gounder* Agriculturalist complained more strongly than workers about the presence of the dyeing units as they are the direct victims.

One of the major findings of the study is that most of them interviewed identified serious problems of water pollution linked to these industries. The effluent treatment plants are not effective and the concern for disposing sludge (solid waste) is widely reflected in the opinion of farmers, workers, and dalits of the village.

Perceptions of causal factors regarding illnesses are many. However an important finding was that majority of the people of Karuppampalayam attributed their health problems to the water pollution. They perceived that the negative effects of pollution of water sources are degradation of soil, low agricultural yields, worsening of human and livestock health. Especially farmers of Karuppampalayam reported considerable decline in their land productivity and household income. But above all, lies the problem of survival of majority of the villagers.

Chapter - 6

SUMMARY AND CONCLUSIONS

SUMMARY AND CONCLUSIONS

In our attempt to understand the implications of industrial effluents from dyeing and bleaching units for the health of the villagers in Karuppampalayam, we have tried to study their socio-economic conditions, the changing living and working conditions like the nature and type of work, conflicts between different socio-economic groups, health problems and their impact on the overall well being of the people.

Primary and Secondary data was collected regarding the village and importance has been given to the qualitative dimensions. Since this is an exploratory case-study of a single village Panchayat, it will be incorrect to generalize the findings to the entire District. However, it definitely is indicative of the state of industrial development in the district and the conditions of life and work of the rural people.

Socio Economic condition of Sampled Households

An attempt has been made to analyse the socio-economic context of the village. The study is carried out by collecting data from 52 households of Karuppampalayam Panchayat. *Kongu Vellala Gounders* are the dominant caste group both numerically and also in terms of power equation. They are the main owners of land and livestock in the village. *Gounders* of this village are polarized into two groups; one owns the dyeing units and the other who depends on agriculture. As the local economy depends on Textile industries to a large extent, the former group enjoys better position.

Although with the entry of textile, dyeing and bleaching units *Pallars* and *parayars* have shown better economic mobility in recent times, they remain underprivileged in terms of their social status, living space and other infrastructural facilities. In general, there is an overlap between class and caste pattern in the study population. However it is

not the case with most backward caste category as they lag behind the dalits in terms of their monthly income. But they enjoy better living space and social status than dalits.

The women in the village are showing better educational mobility in recent times. As patriarchy is still dominant, the women ward members including the president have minimal say in any decision making processes off the village. The living conditions of migrant workers are poorer than any other caste groups or natives of the village.

Changing Occupational and Livelihood Patterns

Karur is witnessing a cluster of expansion 'the driving force' of which can be simultaneously traced to global trends. The Karur industrial development reproduces the paths of European type but with endogenous characteristics as reasserted by Marco Corsi¹. The textile, dyeing and bleaching units has been mushrooming at a fast rate as a response to rising export demand which has led to informalisation of industrial production and concomitant casualisation of labour. The changes in occupational pattern, livelihood pattern and wage rates are factors beyond the control of the people.

The dyeing and bleaching units have replaced agriculture, leaving little scope for any alternate employment. In recent years there has been a rapid decline in the production of sugarcane, paddy, turmeric and cotton. Now only millets and maize are grown in many agricultural lands due to the pollution of water sources. This region has converted from the one with agricultural labour surplus to agricultural labour scarcity as shown by Neelakandan². Agriculture is losing its primacy in the value system of villagers.

¹ Marco Corsi. Modernity, Modernisation, Development. The Karur Industrial District. Paper Presented at the workshop Asia-Pacific studies in Australia and Europe; A Research Agenda For the future, Canberra 5-6 July 2002.P.no.38.

² Neelakantan S., "Change and continuity: A contrasting account of Urban Rural Transformation" Madras Institute of Development Studies, MIDS working paper no139, Madras 1996.

Urban demand for industrial labour has increased in this region with Textile and dyeing and bleaching industries dominating the scene. It is reflected in the economic life of the village. Due to unorganised nature of the industry the conditions are much worse than in agriculture. There is no job guarantee through out the year. It purely depends on market demand. The workers have to spend long working hours, with low wages and they are forced to work in unhygienic working conditions which make them susceptible to different kinds of illness. They enjoy no benefits other than daily wages. There is wide gender discrimination in this sector, in terms of wages in this region. Women workers do not have equal access to skilled work with good wages.

Conflicts in the village

Once Karuppampalayam was noted for its unity, but now almost the village itself is polarized into two groups one in favour of the dyeing units and the other protesting against it. There are conflicts in everyday life, in every day social interaction. The *Bagavathi amman* temple festival which is considered as the village festival is not celebrated for the past 3 years due to the conflicts regarding dyeing units.

Some sections feel that since these industries generate a good deal of employment, both directly and indirectly, taking an extreme view of the matter might result in their economic misery. There is another section, who expresses their anguish and resentment over the damage caused to the environment, including ground water depletion and pollution, decline in agricultural productivity, and increasing health problems. Though there have been mixed responses from the people, majority of them are worried about the kind of environmental degradation that is continuing and about the ongoing social conflicts in the village.

Environmental Degradation and Problems in Drinking Water Supply

Many of the dyeing and bleaching units in Karuppampalayam are spread out, mainly along the canals flowing on the both sides of Amaravathy River. In most of the occasions the effluents are generally let out into the canals or private lands. In either case ground and river water are highly contaminated. It has resulted in serious drinking water crises in the region. The district administration has partially settled the problem by means of tapping water from the Cauvery water sources. Though Karuppampalayam Panchayat is on the banks of Amaravathy, the drinking water is tapped from a source which is almost 20 kms away. People are becoming increasingly aware of the emerging pollution problems of Cauvery River and its tributaries. Hence people, who could afford money, have started purchasing bottled water for their drinking and cooking needs.

The Common Effluent Treatment Plants which were established to deal with the pollution problem stills remains ineffective. The treatment process is carried out properly only during the time of factory inspections and the government authorities are not taking serious efforts to deal with the situation. The ways to deal with the 'sludge' (solid waste) which is released after the treatment still remains as an unanswered question.

On the whole, the pressure exerted by the people, Farmer's Association and the Court on the government has been quite enormous. But what effective measures the government will take to tackle the situation remains a question. At the moment, whatever measures the Government takes are through the Tamil Nadu Pollution Control Board. But the Board's role as a pollution control Agency is far from effective.

On the one hand, the government is not efficient in dealing with the pollution problems of this region in which its only motivation is to earn export dollars, on the other hand, the government under the threat of closure of these polluting industries has been trying to encourage and finance, through subsidies, the installation of Common Effluent Treatment

Plants. But it would not like to become unpopular by resorting to any drastic policy decision as that may lead to the loss of employment of huge mass of workers. The Government is in a dilemma and does not seem to have any long-term policy to handle the situation as reasserted by Janakarajan³.

Health problems of the village

For the people of Karuppampalayam, a disease becomes problematic only when it stops their work and creates financial problems. Hence the outbreak of Chickungunya was more painful to the villagers. In addition to these, skin allergy is also reported as a major health problem especially by the workers of dyeing units. As revealed by the farmers of Karuppampalayam, the females in and around the village usually suffer from various types of gynecological problems and there are also a few cases of kidney and dental problems. Perceptions of causal factors regarding illnesses are many. However an important finding was that majority of the people of Karuppampalayam attributed their health problems to the Water Pollution. Official figures on water-related diseases in Karur taluk also reassert peoples view.

Based on our exploratory study, the following conclusions can be drawn,

With the growth of textile, dyeing and bleaching industries, Karuppampalayam village has gained importance in relation to Karur textile market. There is increase in employment opportunities and the wage level of both men and women have increased (But the overall increase in the cost of living of the region has to be taken into account). Some sections of the population have shown better economic mobility. They have started enjoying comforts which were once available only to the dominant caste group in the village. They have access to education, health services, television, cell phones, better transportation facilities and more entertainment. Earlier forms of discrimination have disappeared to a large extent and it is a positive step towards secularization of the caste system. But this shows only one part of the social life.

³ Janakarajan, S. "*Avazha Nilayil Thamilaga Arugal*" (2003) Madras Institute of Development Studies, Chennai

With the entry of Textile, dyeing and bleaching units the village is almost polarized into two groups, one in favour of the dyeing units and the other opposing it. Karuppampalayam village was once noted for its apparent unity and solidarity of the people not with the standing forms of feudal elements that existed. Now the village is noted for its social conflicts.

Due to unorganized nature of the industry the conditions of work are much worse than in agriculture. The workers enjoy no other guarantees except the daily wages. Falling ill, even for a day is a major disaster as they lose a day's earning. Industrial effluents released from these dyeing and bleaching units is a serious threat to the living space of the people. Some of the negative effects of pollution of water sources are degradation of soil, low agricultural yields, worsening of human and livestock health. Especially farmers of Karuppampalayam reported considerable decline in their land productivity and household income.

Though establishing advanced pollution control measures such as reverse osmosis and nano membrane technologies sounds reasonable, they are only partial ways of dealing with the problem. Keeping in view of the present situation of the study area, there is a need to understand the larger social processes that influence the life of the people.

A large part of the textiles in the dyeing and bleaching factories is exported to Europe and North America. It is cheaper to produce, bleach and dye clothes in India where the labour costs are much less and the Environmental laws are weaker. However, through their imports, the importing countries are exporting the huge environmental problems involved in this trade as pointed out by many scholars.

In accordance with the policy guidelines, suggested by the Western world, India has liberalized its industrial policy, shifted from import substituted industrialization to export oriented growth thus allowing market forces to play a dominant role. And results of these policies are clear in the growth of environmentally undesired industries and dumping of pollutants and toxic wastes from North to the South and shifting of hazardous industries to the developing countries. This Case study of Karuppampalayam Panchayat shows that the overall paradigm that depends upon growth does not necessarily lead to better living and working conditions especially for the marginalised sections of the society.

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