

URBAN ENVIRONMENTAL ISSUES AND ITS CHALLENGE TOWARDS SUSTAINABILITY IN MADURAI REGION

Dr. B. Poornimasethupathi

*Assistant Professor, Department of History
Fatima College (Autonomous), Madurai, Tamil Nadu, India*

Dr. S. Mercy Packiam

*Associate Professor, Department of History
Lady Doak College, Madurai, Tamil Nadu, India*

Abstract

Due to the increase the global population more so in India serious problem have emerged. These more serious problems include poverty, health hazards, food shortages, global climate changes freshwater shortages, loss of forest over exploitations of natural resources and disease epidemics. The role of social, political and economic factors in the degradation of the environment has become a serious concern and the pollution of water, air, soil leads to loss of valuable natural wealth besides causing health hazards. The environment has been one of the major issues that attract the global attention in the last three to four decades. The social-economic and environment problems ranging from housing problems, congestion, the threat to biodiversity and power shortage, urban poverty, has deteriorated the urban environment and paved the way for many health hazard problems too. In the name of urbanisation and industrial development, buildings in Madurai have been demolishing ecological values and major threatening to the environment. The Present study focuses on urban environmental problems in Madurai and it leads to sustainable development approaches implies that the environmental resources are conserved for continuous use in the future, while still bringing benefits to the present society.

Keywords: *Environmental Resources, Conservation, Natural Degradation, Urbanisation, Sustainability, Schemes.*

Introduction

Environment has been one of the major issues that attract the global attention in the last three to four decades. The population of any of these organisms are limited in size due to these environmental factors and the limiting size is regarded as “carrying capacity”. The science of ecology helps to understand the interactions among organisms, their population and their distribution. From 1960 all countries in the world, particularly industrialised countries became concerned about environmental problems. Since most forms of pollution spread across natural boundaries, the environmental effects are fact in other countries also. The environmental effects due to pollution and deforestation are also experienced by developing countries that are already under stress due to high population growth rates and poverty. Thus basically, while the environmental threats from developed countries are from unsustainable use of natural resources and development without protection the environmental concerns of developing countries arise from lack of development and poverty. The present study deals with urbanization development in Madurai have been demolishing ecological values and major threatening to the environment. The Present study focuses on urban environmental problems in Madurai and it leads to sustainable

development approaches implies that the environmental resources are conserved for continuous use in the future, while still bringing benefits to the present society.

Aims & Objectives

The aim of this study is urban development leads to environmental degradation in Madurai by conserving the natural environment through the means of environment integrity, social justice and economic development. The following are some of the objectives,

- To trace the urban environment in Madurai.
- To analyse the consequences of the environment issues in the Madurai region.
- To create awareness about the conservation of the natural resources in Madurai for sustainability.

Area of Study

The study area of research is environmental resources in Madurai and identity with urbanisation in Madurai.

Methodology

In this research, we will be using three methods to collect data. They are,

- **Historical method:** Historical method was used to trace the urbanisation in Madurai. It comprises an accounts of the historians who used primary sources and other evidences. It is used to research and then to write histories in the form of the past.
- **Survey method:** The random survey method gave data directly from the people. We use this method by questionnaire in a random sampling technique to the local community.
- **Interview method:** This can be used to collect data by way of discussion and interviews with the people. This encourages the local community be deeply involved in the conserved and sustainable efforts taken by the research. The research was done by visiting various government and private organisations, the Madurai corporations.

Statement of the Problem

To preserve the environmental resources of the Madurai region. Since the resident of Madurai did not have awareness about the importance of their environment, both government and educated community wanted to teach the public about the importance of sustainability and bring awareness among the people about the quality of the urban environment and its preservation, as it is the main duty of everyone.

Urban Environmental Issues in Madurai Region

The urbanization has resulted in environmental degradation in a several of ways, such as encroachment of agricultural and fertile land for housing, industries, construction of roads and dams etc. Depletion of water resources due to an increase in the water requirement. Pollution from the industrial and other urban activity and the emergence of slums, which deteriorate the surrounding areas.

Impact of Encroachment of Agricultural Fields and Tanks in Madurai

Madurai saw a fast urbanization that led to a real estate boom. Some of the stretches that are witnessing farmlands being converted into late residential colonies are on the Madurai Alagar Koil road, Madurai Natham road, Madurai – Melur Road. The ring road connecting Mattuthavani with Kappalur and the four lining of Madurai- Trichy, Madurai Dindigul and Madurai – Virdhunagar too have added to the loss of farmland. The new residential areas have come up in seven to ten km streets in various roads.

Encroachment is another major threat to land and water bodies. Encroachment of rivers, channels and tanks is a common phenomenon observed everywhere. Especially the rivers and channels which run in the middle are close to the towns or villages are very much affected by encroachments. Due to population explosion to find houses to live in. The easiest way for to encroach the banks of the river and construct. Small thatched house, Waterbodies are one such standing example of human encroachments. Encroachment an agricultural land and open spaces. Urbanization has expanded in an Adhoc manner often to the green areas and open spaces. Most of the agricultural land upon spaces are occupied/ encroached by commercial vendors and government bodies. The rural areas are also under tremendous development pressure due to non-availability of developable lands within the existing settlement boundaries.

Impact of Population of Madurai

For the past 60 years that the process of Urbanization and industrialization was slowly accelerated in Madurai district. The important attributes to understand the demographic characteristic of the population. Many changes in the structure and composition of this attribute will affects on the harmony of the district. Then, Due to the large influx of people for food and employment, there is a considerable increase in the urban poor population, which counts for about 21 lakhs people. They have encroached upon the vacant lands, Government lands, filled in tanks, temple lands and along the major roads in the fringes of the district. The number of slums increased from 31 in 1961 to 193 in 1992. The high growth urban poor dwellings is rooted from 1977 to 1983 (92 in 1977 to 147 in 1983). So in the name of modernisation and industrialisation the rural population migrated to urban for job opportunities and socio-economic conditions also improved. One side the formation of habitation, settled for betterment of life, but another side, it totally affect environment in Madurai.

Environmental Pollution in Water Bodies

During Sangam period Vaigai is the most important river in Tamilnadu. At present, Vaigai is a river in Madurai, Tamilnadu state of Southern India. The actual name is Vaigai in Tamil, and the name has been referred as Vaigai. Vaigai catchment was the lifeline of the entire Madurai City and District. The river Vaigai is also important in another aspect on the full moon day of Tamil month of Chithirai “Alagar” of Alagar Koil visits the Vaigai river which is a famous festival of Tamilnadu. Thus Vaigai culturally, religiously, economically is associated with the life of Tamil people, especially of Madurai. Such a sacred river nowadays or poses a health hazard. The river is contaminated directly or indirectly by

domestic sewage and to a certain extent by small industrial wastes and the river is now polluted.

Regarding industrial efficiency the effects are not considerable. Fenner India, Sundaram industries, Madura coats, Automobiles, Chemical and dying industries are located in the Madurai district. The major industries let out the effluents into their own farm and therefore no considerable industrial sewer reaches the river except the effluents of small auto workshops boundaries, dying units, tea shops, which are located on either side of the river bank. From the bridge across Vaigai river in Dindigul road in the west of the bridge near Theppakulam in the east, automobiles, like lorry, autos are parked. Further bullock carts also have their parking on the bank.

In some places, especially from Arapalayam to Theppakulam the slum dwellers have put up their cattle sheds in the river. Hence fodder wastes of cattle and dung are deposited in the river. The slum dwellers and low-income groups moving population are using the river for open defecation. The slum dwellers i.e. people of low income group residing near the river banks take a bath, wash their clothes, utensils etc. Which the foul water of the river which affects their health and is likely to spread disease to other people. The abandoned irrigation channels have turned into filthy spots with the collection of the untreated and raw sewer. The river is collecting sewage and sludge. The ponds in the river bed contain sewage effluents with a foul odour. There are much such filthy water seafront locations in the river bed.

The breed mosquitoes besides pollute the groundwater. Here it is worth mentioning that the ground water near Avaniapuram has been polluted and not potable because the discharge from the sewer stabilisation pond for farm irrigation spoiled the groundwater through seepage as per the test reports of groundwater wing of the public work department. Laboratory test water samples, collected from the river by the environment cell division, Madurai of the WRO (Water Resources Organisation) have been tested in the laboratory by them. The tests of surface water so collected with respect of P. H conductivity, total solids and chlorides indicated that the locations in Madurai that are not good i.e. not up to the standard. Though the people living on the tank side are aware of the reason for the pollution of the river, they go on polluting the river, unmindful of the dangerous effects their action. The authorities who manage the river and manage the public health of the district simply turn a blind eye on this.

Threat to Biodiversity in Madurai

Sacred groves are one of the most essential bio-resources of the country. It presents an ancient Indian consecration tradition protected by the local people out of reverence and respect, fear and sentiment for nature and incarnation of nature. They are home to local flora and faunas, a veritable gene-poor and mini biosphere reserve. The literature of the Nayaks mentioned that the Alagar hills, generated through the centuries because of the vast sacred grove, harboured a wealth of medicinal plants. These hills become an important source of raw materials for Ayurvedic and Siddha medicine.

The habitat for faunal life has also shrunk, resulting in a most total absence of large carnivores and herbivores except a few pockets holding the Bison population (Mettupatti in Sirumalai Hill, Kiluvamalai in Alagar hills). The deer population is conspicuously absent. Tiger is completely absent, while the pretence of the panther is very occasionally reported in the borders of wildlife sanctuary areas (Srivilliputhur).

Industrial Impact of Madurai

With the small scale advent of small-scale industries after 1991, the Industrialisation of Madurai increased employment in the sector across the district from 63-271 in 1992-93 to 1, 66, 121 persons in 2001-02. Madurai is one of the rubber growing areas in South India, and there are rubber-based industries in Madurai. Gloves, sporting goods, mats, other utility products and automobile rubber components are all the most produced items by these industries. TVS Srichakra (tyre manufacturing), Sundaram industries (Rubber division, coach division), Fenner India, Hi-tech Arai Ltd and Ixness India are some of the rubber-based industries in the city, automobile produces like general motors, Ford, Toyota are the major consumer of components produced in the District. Madurai is promoted as a second-tier city for IT and some software companies like Honeywell technology solutions have opened their offices in Madurai software technology parks of India and the agency of the Government of India, has authorised several such companies to receive benefits under its natural information technology development program. The State Government proposed two IT-based special economic zones in Madurai, these have been fully occupied by various IT companies.

Challenges Towards Sustainability in Madurai

City Development Plan

The environmentally friendly concept department of environment has prepared as 'eco-city plan' for city development for Madurai through national environmental engineering research considerations into urban planning and preparation and environmental management plan for improving the environment quality the specific objectives are.

- To map the environment profile of the study area and to identify the environmental pollution hotspots.
- To prepare an environment management plan that includes rehabilitation and mitigation measures.
- To recommend guidelines for environmentally compatible land use planning are ensured by the concerned. This project is in progress.

Ground Water Level and Controlling Measures

There is a need for special programmes focusing on specific target groups. The network of agencies that can tackle such a problem will have to involve colleges, voluntary agencies, students, people government departments.

The programmes liked rally/drama, exhibition, banner campaign are to be organized to cover the topics on waste land utilization, pesticide and soil socio- cultural changes, eco-

imbalances, soil degradation, land use, sound pollution, environmental toxicology, sanitation, purification of air and water, conservation of energy and environmental education.

Role of NGO

In 2008, Madurai Marathon was organized by Dhan foundation with the support of Madurai Corporation. Mainly to revival preservation of the heritage water bodies in the city and district too. This event which saw a massive gathering of people from all walks of life, will go a long way in the changing the mindset of the city populace towards the revival of the precious water bodies in shortly.

Madurai Heritage Development Plan

Heritage development plan takes an integrated approach with multi disciplinary nature with development of heritage a key focus. This approach is fruitful to address the complexity and plurality of Madurai in terms of cultural, historical, architectural, environmental, economic and ethical implications. Heritage is not contradictory to development, but development with proper information's base and considering the local dynamics of the place.

- The integrating heritage development the existing planning process and with the local community.
- Heritage aspects of Madurai were declared as heritage city under the JNNURM scheme.
- The historical city within the four outer concentric streets of Madurai.
- The region around the river vaigai and other water channels in the city.
- The archaeological tanks and other water bodies is within the LPA boundary (Local Planning Authority).

Conclusion

In the era of urbanization the Madurai is experiencing fast changes over the decades due to urban growth. The spatial structure of the district has become complex, with increasing pressure on each land use type according to the needs of the population. Based on the study the development of urbanization in Madurai region is growing fast. Because of Modernization and industrialization and commercial activity develop the city and district and its growth as a centre of administrative and judicial function resulted in the influx of migrants from nearby villages towards the district especially settled in the city for seeking employment in the newly started institutions. Simultaneously with the advent of the railways and roadways and airways contributed much towards further growth. So the Madurai has been developed on the one hand and the other hand it brought more environmental problems.

Through the analyses and available data and observation, the Major environmental degradation of Madurai has been the immediate emergence of urbanisation for the past five decades. The habitat faced the problems growth of population and uncontrolled of pollution level, and water scarcity and also health hazard problems. Because of the emergence of

urbanization there has been of the large influx of people for employment. There is a considerable increase in the urban poor population and they have encroached upon the vacant lands. It led for the increase of urban slums in Madurai and also through the analyses, researcher identified prevailing of water scarcely has created a good base to water business in Madurai.

Madurai a place that bought culture, language, and tradition to Tamilians is under huge assault due to unplanned urbanizations. Numerous tanks have disappeared by buildings, and alarming Vaigai is getting more and more polluted. If IT comes into Madurai, it will bring over crowd Madurai to manage his overcrowd sustainably has to maintain. Its natural pillars, including the crucial Vaigai rivers in a healthy condition. Any development that can be sustained depends hugely on water needs and that water needs can be easily satisfied if the local water bodies like Vaigai are nourished properly.

Suggestion and Recommendations

- Hills and heritage resources like Jain vestiges and Biodiversity should be protected and maintained by the district forest administration and archaeological department, which would enable to develop.
- Development of infrastructure proper roads well-connected railway network, international airports at Madurai, cleanliness of the District as well as city with more clean public toilets, dustbins and eco-friendly taxi drivers will help to promote Madurai to next level.
- Reducing pollution and planting more trees will make the district. Planting would dilute the effect of pollutants from automobiles and factories. Clean pollution- free city and a high civic sense among people should be achieved first.
- Organised lanes, encroachment should be displaced in channels, river side's etc. Many programs representing our rich culture and heritage can be organised for the public. Many parks should be planned in every area.

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