“Woman is the builder and moulder of nation’s destiny. Though delicate and soft as lily, she has a heart far stronger and bolder than man.……. She is supreme inspiration for man’s onward march.”

(Rabindranath Tagore – The Great Indian Poet)

Women have a major role in framing a generation as well as a prosperous nation. Today’s women have better opportunities and avenues in all spheres of national, social, political and economic life. In order to enjoy high standard of living and to provide better facilities, more income should be generated. So there arises the need for women’s participation in income generation. Regular salaried job requires skill and high levels of literacy. But this may not be the case of the entire womanhood. Most of the urban poor are either unemployed or employed as casual laborers. They have no job security, no assets, limited skills, fewer opportunities and no surplus to sustain themselves.

The well known Kudumbasree initiative of the Government of Kerala, a women-oriented poverty eradication program has proved more
popular and more enduring than any other poverty alleviation programs that targeted women. Kudumbasree gives a new identity of worth to its members, especially the poor. It has helped them in redefining their roles in households and in society. It also helps them to understand their realities and to grapple with them albeit with mixed success. Thus Kudumbasree act as a fulcrum for taking up many developmental and welfare activities for the poor women. Solid waste management is one among them.

Attracted by the vast employment opportunities in urban areas, people began to migrate to these areas thereby increasing population. Rapid urbanization and increase in population lead to pollution and ecological problems. Since population increased, more and more dwelling facilities had to be arranged within the limited area. Thus there arose several apartments and this “flat culture” created the need for an external agency for waste management. This is presently one of the greatest problems faced by the local government authorities.

Because of urbanization, the solid waste generated in cities has increased tremendously. New products in the market are adding to the variety in the waste. The nature and characteristics of solid waste are varying from city to city. Now-a-days, daily thousands of tones of solid waste is generated per day. The methods of disposal are conventional in developing countries. (M.R.Gidde and S.S.Sabnis,1999)

Thus solid waste management has become a serious issue for the urban and semi-urban areas of Kerala. The quantity of waste is high in Ernakulam district considering the fact that on the date of submission of this study, there are 375 apartment complexes and 12000 apartments in the corporation limits. Kudumbasree members formed several groups to
collect, segregate and transport solid waste from households, flats, commercial establishments, hotels etc. which is helpful for employment generation, poverty alleviation and thereby promoting economic growth.

1.1 Statement of the Problem

Solid waste management is an essential urban service to promote the quality of life by the way of processing and disposing the solid waste in a scientific and environmental friendly manner. Municipal solid waste (Management and Handling) Rules 2000 has clearly defined guidelines for the urban local bodies regarding good solid waste management practices. But the current scenario of urban waste management in the local bodies is quite alarming. The poor waste management practices in this segment created the need for an integrated system for urban waste management. This integrated system includes the door to door collection of solid waste by the active role of Kudumbasree women.

Solid waste management will not be a major problem in the earlier periods, since there was less population and a lot of fallow land. But in modern times, rapid urbanization, constant change in consumption pattern and social behaviour have caused massive waste generation in the city beyond the assimilative capacity of environment and the supportive capacity of existing waste management systems. The local bodies with their limited human, technical, financial and institutional capacity demonstrated their inability to cope with the multidimensional problems of solid waste management. The city is faced with lack of available space to dispose household garbage and other forms of waste. The low level of incentives and inadequate regulatory and enforcement mechanism aggravated the deteriorating health and sanitation situation. (Dr.R. Ajaya kumar Varma, 2008).
Chapter-1

One important factor creating the solid waste is the transformation of the society to a “throw away” society dominated by throw away containers. The health hazards created by solid wastes in such a society are severe. Efficient management of these is crucial. (Karpagam.M, 2007)

Lot of research work has been done about Kudumbasree and women empowerment. But little attention was given to the illiterate, urban poor women of Kudumbasree who were engaged in waste management in Ernakulam district. More remuneration, less education, a job of permanent income – all these prompted them for selecting this job. These members were engaged in several other jobs before coming into waste management. Compared to their hardships, the income was very low, so they quit that job and became a part of Kudumbasree. The element of regularity in this job and a reasonable remuneration made them economically empowered to a certain extent. So the research problem under investigation in the present study attempted is to evaluate “The Role of Kudumbasree in Waste Management- A Study of Ernakulam District”.

1.2 Objectives of the Study

The specific objectives of the study are the following:

1.2.1 To study the role of Kudumbasree in raising the economic status of women.

1.2.2 Identify the problems that are faced by Kudumbasree and their solutions.

1.2.3 To understand the various types of wastes and how it can be properly managed and recycled.

1.2.4 To compare the different waste management techniques in different areas.
1.3 Hypotheses

The study hypothesizes the following:

1.3.1 Among the various occupations undertaken by Kudumbasree, waste management is one of the most remunerative.

1.3.2 Waste removal and disposal was preferred because it required less training and lower educational qualifications.

1.3.3 The conditions of the persons who are engaged in this occupation improved after they shifted from other occupations to waste disposal.

1.3.4 This is not attractive to the younger generation and it is mostly persons who are middle aged who engage in this occupation.

1.4 Significance of the study

Nature makes no waste in a healthy ecosystems with one species of waste becomes food for the next, in an endless cycle. The modern society interrupts this cycle in three ways, by creating a wide range of substances using technological advancement, increasing the percapita use and disposal of such items and overwhelming the ecosystem qualitatively and quantitatively with discards. This leads to an increase in the generation of solid wastes. More than half of the waste generated remains on the streets without being cleared promptly. Even the collected waste is dumped in improper places under unsanitary conditions leading to pollution of water sources, proliferation of vectors of communicable diseases, foul smell and odours, release of toxic metabolites, anaesthetic ambiance and eye sore etc. The practice of open air burning is increasing in most of our residential areas and waste dumping yards leading to toxic emissions and irritation to
the community. Now dealing with waste is a challenge to all human societies.

Efficient management of solid wastes means exploring the possibilities for utilization, recovery of usable materials from them and recycling. Recycling is the most common method. Today’s garbage may become tomorrow’s raw material, through recycling. That is why it is said that “trash is cash”. Recycling therefore is the best known way to reduce waste. (Karpagam, 2007)

The controlled disposal of waste and commercial and industrial waste forms a vital part of the infrastructure of human settlements built on the principles of hygiene. It is an essential component of waste management, whose function must be to help:

- To protect human health,
- To contribute the quality of life by improving environmental conditions,
- To maintain the ecological equilibrium of the environment, particularly of the soil and ground water and where it has been disturbed- to restore it,
- To ensure safe disposal of the waste produced by the population as well as by commercial and industrial establishments, depending on the quantity and type of the waste and taking into account the need for avoidance and minimization, ensuring the long - term sustainability of resources which serve the well-being of the general public and the legitimate needs of individuals.(K.Ramaswamy (2008))
Since a healthy ecology is the basis for a healthy economy, the policy makers and the public must be aware of how our society and the economy will change in order to avoid environmental degradation and thereby promoting and ensuring sustainable development. Even though industrialization leads to economic growth and development, it should not happen at the expense of environmental pollution and degradation.

Public should be aware of the necessity of hygienic disposal of the wastes generated. Though management of waste in cities is the sole responsibility of municipal bodies, however private partnership has enhanced the efficiency and improved the sanitary conditions. By adopting an eco-friendly waste management technique, we can create “wealth from the waste”.

Since women represent almost half of the total population of our country, no scheme of economic and social development can be successful unless they play their constructive role in such programmes. Poverty can effectively be eradicated only when the poor start contributing to growth by their active involvement in the growth process. This has forced the government to take up initiatives in generating employment opportunities. All these programmes can be effectively carried out only with efficient and non-corrupt political and administrative management with high level of technical and financial skill.

Kudumbasree as the name itself indicate ‘prosperity of the family’ through women empowerment, starting from traditional activities like embroidery, bakery, cattle breeding, retail trade, its journey continues to ‘waste management’ successfully in the district.
Chapter 1

The present study highlights the need and importance of proper solid waste management and at the same time how it becomes a source of livelihood to the urban poor women.

1.5 Theories of Waste Management

Theories related to waste management which seem relevant to the present study are given below.

1.5.1 Zero Waste Theory

The first official use of the term ‘zero waste’ was in 1973 by Paul Palmer. It is a fundamental design principle that maximizes efficiency and prevents waste to address resource sustainability and other environmental detriments related to waste such as pollution and climate change. According to this theory, zero waste would maximise recycling, minimize waste, reduce consumption and ensure that products are made to be reused, repaired or recycled back into nature or the market place. This theory recognizes that there are various institutional and ideological barriers preventing the establishment of genuine zero waste practises. The elements of this theory can be followed by an analysis of San Francisco’s operationalization of zero waste through extensive recycling and compost programs and bans on plastic bags. (Ferrell, John (2002), Palmer, (2004).

1.5.2 Design Theory of Waste Management

This theory has been introduced to channel environmental sciences into engineering design. It is a unified body of knowledge about waste and waste management. It is an effort to organize the diverse variables of the waste management system as it stands today.
1.5.3 The Theory of Waste Management

The theory of waste management is a body of knowledge about waste and waste management and it is founded on the expectation that waste management is to prevent waste to cause harm to human health and the environment and promote resource optimization. This theory could be based on the following considerations:

- Waste management is to prevent waste causing harm to human health and the environment.
- The primary aim of waste is the conservation of resources.
- By applying waste management, we shall avoid loss of resources and prevent waste from being produced by creating useful products primarily.
- The role of waste management is to turn waste into non-waste.


1.6 Methodology

The study is based on both primary data and secondary data.

1.6.1 Sources of data

The primary data were collected from Kudumbasree members engaged in waste management with the help of a structured questionnaire. (Appendix). Personal interviews and discussions, provided deeper and more information regarding their working conditions, types of waste collected, monthly income, savings etc.
Secondary data were collected from various sources. Main sources of secondary data were books, journals, magazines, periodicals, newspapers and other published sources. The modern source of the internet was also used to gather secondary data.

1.6.2 Universe of the Study

The universe of the study comprises various Panchayats, Corporation, Municipalities, other governing bodies, workers involved in waste management and Non Governmental Organizations in Ernakulum District.

1.6.3 Sample Size

In order to study the role of Kudumbasree in waste management, a sample of ‘207’ Kudumbasree members were taken for the study. Despite several attempts, the researcher was unable to find out the exact size of the population. The local bodies have not maintained an accurate list of those persons who are working in this study area. Therefore in consultation with eminent scholars and others in this field, it was decided to fix the sample as ‘207’.

The method of sampling used is random sampling. But the judgement of the investigator had to be employed, since the units lay scattered in different parts of the district. So stratified random sampling was adopted. The entire study area was divided into six sections. But the number of kudumbasree units in each section could not be determined accurately since no agency maintained accurate records. Therefore in order to make the sample as representative as possible, all strata were given due consideration and an aggregate of 207 sample were selected.

The study area is the district of Ernakulum. The researcher has tried her best to make the sample as representative as possible. The researcher found
that waste collection by Kudumbasree is being undertaken only in the urban areas of the district. So the study is restricted to the urban areas of the district.

1.6.4 Treatment of the Data

After collecting data they were properly classified, processed, tabulated and analyzed. Methods like cross tabulation technique, chi-square test, sample proportion test, averages, percentages etc. and diagrams like pie diagram, bar diagram and Venn diagram were used to interpret the data effectively and vividly.

1.7 Plan of the Study

The study is arranged in seven chapters. A brief description of the content of each chapter is given below:

1.7.1 Chapter – I

The first chapter introduces the topic of research and presents the research problem. Research problem explains how population growth and rapid urbanization lead to pollution and waste generation in the city. It also explains the need and importance of efficient waste management and the role of Kudumbasree in waste management is evaluated. The study contains four important objectives and to achieve these objectives, four main hypotheses were formulated. Relevance of the study explains how waste becomes a challenge to all societies. It also explains the need of recycling and the most important functions of proper waste management. The active role of Kudumbasree in waste management is also explained. Regarding the methodology, universe and sample size is explained. Data collection includes both primary data and secondary data. Treatment of the data includes various statistical methods and diagrams to interpret
the data. Scope for further research and limitations is also added in this chapter.

1.7.2 Chapter – II

The second chapter presents a review of the existing literature provided by eminent authors in the field on Self-Help-Groups, especially ‘Kudumbasree’ the poverty eradication mission of Kerala, at International, National and Regional levels. It includes the multi-faceted ideology of Kudumbasree as a mission, a process, a project and a delivery mechanism envisions, generally the empowerment of women through community based organizations, informal banking for poor women, setting-up of micro enterprises, converging community action, a step forward in the decentralization process and the establishment of rural marketing network. The performance of Kudumbasree as the State Urban Developing Agency (SUDA) aimed at alleviating urban poverty is also very important. This is attained through the efficient co-ordination of the well-knit network of community based organizations formed as part of an empowerment mission.

1.7.3 Chapter – III

The third chapter contains the concept development of “Waste Management”. This chapter contains the followings:

a) Background of Waste Management

The problem of waste is man-made and it starts from the Palaeolithic hunters. At that time, waste disposal in London and other cities was very ineffective. The year 1856 became known as ‘the year of the great stink’.
After World War II tremendous improvements were made in the safe disposal of wastes.

b) Definitions of Waste Management

It contains major definitions given by eminent authors and institutions in this field. All these definitions throw light on the need and importance of waste management and different waste management techniques.

Sustainable Development

This concept gives more importance to natural resource protection without causing any damage to our environment. Our resource consumption will be in such a way that is available and affordable to our future generations.

c) The Dangers of Waste Management

The dangers of solid waste management are classified under the following heads:

- Effects on humans
- Effects on animals
- Effects on plants
- Effect on materials and
- Global effects

d) Waste management and Pollution

There are different kinds of pollution which includes Air pollution, Water pollution, Soil and Land pollution, Thermal pollution, Radioactive pollution and pollution due to Biomedical waste, Infectious waste, Chemical waste and E-waste.

All these terms and concepts are included in this chapter.
1.7.4 Chapter – IV

This chapter presents a district wise analysis of the social functions of Kudumbasree. In all the 14 districts, the functions are not uniformly distributed. Resource availability and the differing talent skills are primarily responsible for this divergence. The various social functions of Kudumbasree in all the 14 districts are summarized in this chapter. A bird’s eye view is given below.

**Idukki District**

Majority of the Kudumbasree workers are engaged in farming on leased lands. Tapioca, vegetables and ginger are cultivated on these lands. Besides this, a computer centre started by 10 Kudumbasree members with post graduate diploma in computer applications, has been successfully functioning. They have also taken up dairy farming and chicken units.

**Kannur District**

15 members have formed a ‘pancharimelam’ band. This is the second of this type in the district. They are also doing paddy, banana and vegetable cultivation. Mushroom production by many units has turned out to be a major hit. They have started a textile shop and another major project is ‘Aadu gramam’ (goat rearing).

**Malappuram District**

There has been an increase in lease-land farming in this district. The nutrient food units that provide the baby food required for all anganwadis are a creditable achievement of Kudumbasree. In addition to this, coconut oil units, tailoring units and hotels are functioning profitably in the district. Availability of common facilities for purchase, stocking, packaging and marketing has added glitter to the project in the district.
Introduction

**Kottayam District**

Kudumbasree members are selling vegetables to the star hotels in the tourism destination. They have already entered into the business of ornamental fish culture. ‘Amrutham’ food mix is produced and is being sold to the anganwadis. ‘Swanthanam’a health project is creating health awareness among the people in the district.

**Pathanamthitta District**

In view of the scope for apiculture, an innovative project ‘Madhuram’ is a big hit and the basic infrastructure has been provided by the Horticorp. They are running coconut oil extraction unit, offset printing press, fancy centre, mushroom cultivation and book binding units.

**Alapuzha District**

Kudumbasree in Alapuzha, from where the very concept originated is gearing up to go places. The various projects under Kudumbasree mission include the production of Kuttanadan Kuthari, pickles, honey, wine, soap making, rice powder, medicinal Njavara rice, tamarind, mushroom cultivation, and purified coconut oil and so on.

**Kollam District**

From garbage collection to super market management a good team of Kudumbasree women are engaged in a big endeavour - i.e., erasing the BPL label from the society. Quality fish pickle is their prime product. Nutrient mix production is another thriving occupation in the district. Some of the members are the owners of super market while some others earned a reputation through running a quality catering unit.
**Wayanad District**

The organically cultivated rice became popular in the district. They have other activities such as dairy farming, organic vegetable cultivation, preparation of pickles etc. Bamboo shoots and bamboo rice products are popular among the eco-tourism restaurants in the district.

**Kasargod District**

Major activities in the district are lease-land farmings. There are also groups engaged in goat/cow rearing, plantain cultivation, poultry, paddy cultivation, vegetable growing nursery, nutrimix production, garment making etc. Balasabha units, which includes the activities of the children are very strong and have helped to strengthen the Kudumbasree.

**Kozhikode District**

The Kudumbasree units formed an event management group called SMART to undertake and organize trade fairs across the district. Another distinctive initiative is the ‘Nirmalyam’ gold plated jewellery which is running very well.

**Palakkad District**

Being an agricultural district, the majority of Kudumbasree projects taken up are agriculture and dairy-based. Some of these projects such as paddy and vegetable cultivation, curry powder, paper carry bags; nutrimix baby food, nature fresh milk, poultry etc. are found very popular.

**Thiruvananthapuram District**

The mission had a series of path breaking ventures- from micro credit to food processing or lease-land farming to notable IT ventures.
Other than conventional crops, floriculture, scented rice, medicinal and aromatic plants, mushroom cultivation and sericulture are the major initiatives taken up by the group. The mission has extended training to health volunteers at Thiruvananthapuram Medical College, as part of its Santvanam project.

**Thrissur District**

Women of potter community, one of the most backward communities, by using Kudumbasree funds, replaced their traditional potter’s wheels with mechanized ones. Handicrafts, flower pots and other objects have customers across the State. Health care enterprises of Kudumbasree give employment to many trained persons from BPL families. Kudumbasree implements projects in many sectors from food processing to hollow bricks production and lease land farming to IT.

**Ernakulam District**

Kudumbasree members have started a book making and book binding unit and a hotel, both the ventures are successful. They also decided to pay proper attention to the differently abled children facing emotional and physical challenges. The Kudumbasree members started a tender coconut vending outlet. The curry powder and readymade garment units were started. There is a shingarimelam troupe, which gets invitations from both within and outside the State. They are also doing waste management programme in the city, as initiative of the Kudumbasree in this district.

**1.7.5 Chapter – V**

This chapter deals with a detailed statistical analysis of the problem. Based on the questionnaire ‘27’ tables were prepared and analyzed with the help of statistical techniques like averages, percentages, ratio etc. Different
diagrams like Pie diagram, Bar diagram, Venn diagram etc. were used to interpret the data effectively and vividly.

1.7.6 Chapter – VI

This chapter gives an empirical verification of the study. This empirical verification helped the researcher to reach very broad conclusions. The Pearsonian Chi-square test has been used to determine the level of significance. A cross tabulation of the important variables has been made. It was possible to bring about a positive correlation in the case of 8 variables, the relationships in the case of the remaining 3 are found to be negative. The negative cases have been taken only in an effort to strengthen the hypothesis.

1.7.7 Chapter – VII

The seventh chapter summarizes the study with important findings and conclusions. The researcher has put forward some recommendations to improve the waste management programme of Kudumbasree in Ernakulum district.

1.8 Scope for Further Research

- Now-a-days residents associations are taking an active role in waste management. The waste management programme can be made successful only with the joint effort of all these service organizations. So the role of residents associations in waste management has greater scope for further research.

- The importance of SHGs is increasing not only in Kerala, but also in other States. There are various poverty eradication programmes under these SHGs. The various development
projects of SHGs in Kerala and other states can be compared and studied.

- Waste management techniques in developing countries are conventional in nature, but those in developed countries (like United States of America, Western Europe, Japan) are carried very efficiently. There is a great scope for studying the comparison of waste management techniques in developed and developing countries.

- In Kerala, migrant workers are also playing an important role in waste management. So there is a scope for studying their role in the waste management programmes of our State.

- By adopting eco-friendly waste management techniques, we can create wealth from waste. So by giving more importance to recycling and reuse, there is a scope for the study ‘wealth and waste’.

- Efficient waste management is necessary for sustainable development. Effective protection and planned improvement of the natural environment are assuming crucial importance for all mankind today. So there is scope for the study, efficient waste management in ensuring sustainable development.

1.9 Limitations of the study

1) The study is restricted only to Ernakulam District. It can be extended to other major districts.
2) Though Kudumbasree is a poverty eradication programme for women, some male members are also there.

3) The information collected for the secondary data based study carries all the limitations inherent with the secondary data.
References


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