

Chapter-II
Review of Research
Literature

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REVIEW OF RESEARCH LITERATURE

2.1 Introduction

Environment has become the very important part and parcel of life of all living things in general, and human beings in particular. Environment now days is being polluted by the number of factors and in the number of forms. Waste is of the very important aspect of environmental pollutions, consists of solid as well as liquid or waste water. Its management is very badly affecting the quality of environment through environmental pollutions. Here the study of waste and its management is very much necessary. The present study tries to examine waste management practices in rural Sangli district.

2.2 Review of Research Studies

Some of the important research studies relating to the topic of the research are as follows:-

Huang Qifei, Wang Qi, Dong Lu, Beidiu Xi, Zhou Binyan (2006)¹ in this study 'The Current Situation of Solid Waste Management in China' told about solid waste management in China. The control of solid waste pollution is an important aspect of environmental protection in China. According to Chinese law, solid waste is classified into three types. Industrial solid waste, municipal solid waste generated has increased rapidly. The study states the quantity of MSW collected and Transported in 2002 was 136.5 million tones the quantity of ISW generated in China was 945 million tones, and that of hazardous wastes were 10 million tones. There are currently 651 disposal facilities for MSW in China, including 528 landfill sites, 78 composting plants. The largest component of MSW is mining generated, which makes up 27.5% of the total. Total hazardous waste is 93%. In hazardous waste 44% was generated, was stored, 13.5% was disposed and 15.4% was discharged.

Syed. S (2006)² in his article 'Solid and Liquid Waste Management.' summarizes the current environmental monitoring program and its major findings. The fields of solid waste the interrelationships of the engineering

fundamentals and the management aspects. Various problems of wastes in past and present, environmental ecology, general aspect of recycling and materials recovered by researcher. Researcher concluded that the public health movement later on spread rapidly to Europe and the United States, where the need for improvement was not as strong as in Europe. During the last two decades we have witnessed an unprecedented rapid growth in first concern and later action, which transformed the entire field of waste management.

Goddu Vijaya Kumar, Davvuri Kavita and Bakki Vidya Kaumudini (2007)³ in their paper 'A Critical Analysis of HealthCare Waste Management in Developed and Developing Countries: Case Studies from India and England.' are concerned with comparing practices for the management of healthcare waste using two case study countries from the developed and the developing world namely India and England. With reference to primary and secondary data these people have presented in this article. They employed a range of methods including literature reviews, audits and questionnaire survey to examine health care waste management practices in the Andhra Pradesh State in India. In this study rise in the quantities of healthcare waste and its mishandling will continue unabated and may be of a big concern in future.

Abduli M. A., Samieifard, R and Jalili Ghazi Zade. M. (2008)⁴ in their study 'Rural Solid Waste Management' discuss status of solid waste management in Bushehrs village recommending appropriate system to handle the waste. require desk and field study for this study 21 scattered village all over the province were selected. There are 322 shops in chosen village and total amount of commercial waste is about 3565 kilograms per day. Waste composition in selected villages consist of materials 42.49%, construction and demolition 11.7% paper and cardboard 8.77%, plastics 8.24%, wood 6.90%, metal 6.08%. glass 5.89%, rubber and leather 5.1%, and textile 4.83% from the economic point of view, incineration with energy recovery cannot be a good alternative for rural waste disposal in Busheher province. The quantity of waste generated in each village is not sufficient to be managed separately thus a regional solid. waste management must be defined to include adjacent village.

Capatina Camelia and Simonescu Claudia Maria (2008)⁵ in their article 'Management of Waste in Rural Areas of Gorj Country Romania' study the ecological priority list place following the problems regarding the surface and underground water pollution, as well as that of the atmosphere. The study presents the advantages of waste management for the landscape, which includes waste gathering and transfer, waste collection, waste biological treatment and the storage. The study concludes that by applying good management and treatment practices of the household wastes, one may achieve long term economic objectives such as the improvement of public health, protection of natural resources, water and air contamination.

Sharholy Mufeed, Ahamad Kafeel, Mahmood Gauhar and Trivedi R. C. (2008)⁶ in a study 'Municipal Solid Waste Management in Indian Cities-A Review,' argue that municipal solid waste management is one of the major environmental problems of Indian cities, with reference to primary and secondary data these people have presented in this article. In the present study an attempt has been made to provide a comprehensive review of the characteristics, generation, collection and transportation, disposal and treatment technologies of MSW practiced in India. The researchers have concluded that a few fruitful suggestions which the study reveal that about 90% MSW is disposed of unscientifically open dumps and landfills, creating problems to public health and environment. The researchers have concluded that a few fruitful suggestions which may be beneficial to encourage the competent authorities to work towards further improvement of the present system.

Bel Germa and Fageda Xavier (2009)⁷ in their paper 'Empirical Analysis of Solid waste Management Costs: Some Evidence from Galicia, Spain, have analyzed the factors that determines solid waste service costs. The empirical analysis based on the information derived from a survey conducted in a sample of Galician municipalities. Present study is based on primary and secondary data. This study presents that the total waste volume to recycling does not imply greater costs. The study concludes that economies of scale are clearly available to smaller municipalities and another is private delivery does not imply cost savings but municipalities are running a solid waste service.

Ray Amit (2009)⁸ in his study titled 'Waste Management in Developing Asia Can Trade and Cooperation Help?' discusses the problems relating to mounting solid waste fast acquiring gigantic proportions in the developing countries of Asia and examines the factors behind increasing trade in recyclable waste involving Asian nations and finds that the adverse economic and environmental impact resulting from such trade far outweigh the proclaimed benefits, with reference to primary and secondary data these people have presented in this article. The study concludes by saying that a high degree of bilateral, regional or multilateral cooperation rather than trade in waste may be a better option for these appropriate capacities expertise and techniques for establishing a modern and environmentally sound waste management model.

Medina Matrin (2010)⁹ in a study 'Solid Wastes, Poverty and the Environment in Developing Country cities Challenges and Opportunities,' states that solid waste management in developing countries has received less attention from policy makers and academics, such as air pollution and waste water treatment. Insufficient collection and inadequate disposal generate significant pollution problems and risks to human health and the environment. In this study secondary data were used. Waste management usually account for 30.50% of municipal operational budgets. Waste management in the developing world is unsatisfactory. The improper management of solid waste represents a source of air, land and water pollution and poses risks to human health and the environment.

Taboada-Gonzalez Paul, Armij-de-vega Carolina, Aguilar-Virgen Quetzalli and Ojeda-Benitez Sara (2010)¹⁰ in their paper 'Household Solid Waste Characteristics and Management in Rural Communities,' present the results of a characterization study obtained by direct analysis of household solid waste generated in two rural communities in northern Mexico. To determine the need for stratified sampling, socioeconomic status were identified by taking the Basic Geostatistical Area as a reference through the data base 'composition of stratification BGA 2005' provided by the national Institute of Statistics, Geography and Data processing. The results indicate a waste generation of 0.631 kg/ cap/ day in san Quintin and 1.047 and 1.047 kg/ cap/ day in Vicente Guerrero.

Statistically, the compositions of waste between these two rural communities differ in one fraction. The implementation of waste collection centers along with waste treatments facilities such as indigestion or composting in the communities.

Gurau Marian Andrei, Melnic, Lucia Violeta and Armeanu Eduard (2011)¹¹ in a study ‘Waste Management Strategy in Construction and Demolition Industries: Constanta District.’ evaluate the waste management strategy results in construction and demolition industry in Constanta district. Its purpose is to establish a framework for creating a waste management system to ensure the objectives and targets of the district in accordance with national and European legislation of this area. Primary and secondary data are used in the study. From 2008 in ovidiu locality was authorized the operation of an inert landfill where are removed the construction of and demolition waste generated in the district. Preliminary sorting at generation places in containers or pots the use of crushing and screening equipment for the recycling of concrete and bricks. Growing complexity of the specific issues and standards on waste management facilities lead to increased demand to recycling treatments and disposal. The main purpose of this paper is to present the waste streams and identify the best solutions for managing them within the time frame set.

Hadgibiras. K, Dermatas D. and Laspidou C. S. (2011)¹² in a paper ‘Municipal Solid Waste Management and Landfill Site Selection in Greece: Irrationality Versus Efficiency’, discuss efficiency of municipal solid waste collection and disposal is a major problem of urban environment in the world today in Greece. They find several examples of inefficient MSW management and curious landfill site selection among candidate sites for land fill should not be based on dubious comparative evaluation methods. They conclude that there is a real need for rational MSW management based on high quality scientific input municipal solid waste management is a complete system of social, economic, legal political, environmental, technical and operational nature.

Joshi Yudhishtir and Purshottam Sunita (2011)¹³ in their study have studied ‘A Web Based Solution Framework for E-Waste Management E-waste Management Forms An Integral Part of Sustenance And Growth For Business Across The World,’ argue that E-waste management is an issue brewing at the

backyard of technological advancements. The e-waste is going to become a great challenge for environmentalists and technologists at the rate of growth is much higher than rate it is needed for improvement, operation plan, implementing a protective protocol for improvement, operation plan, implementing a protective protocol for the workers working in e- waste disposal and educating public about this emerging issue posing a threat to the environment as well as public health.

Katusiimesh Mescharch W. and Mol Arthur P. J. (2011)¹⁴ in their study 'Environmental Legacies of Major Events: Solid Waste Management and the Commonwealth Heads of Government Meeting (CHOGM) in Uganda'. They investigate whether environmental improvements and especially those related to solid waste materialized during the 2007 and whether these improvements lasted well after that event. The study based on primary and secondary data. Data collection includes Interviews and documents were used to interpret survey results. The study concludes that additional resources and institutional changes in solid waste management in the lead up to CHOGM resulted in considerable improvements. In addition, CHOGM lifted the differences in perceptions of solid waste management between the city center and peripheral divisions.

Nadi Behazad, Shamshiry Elmira and Mahmud Ahamad Rodzibin (2011)¹⁵ in their study 'Response Surfaces Model for Optimization of Solid Waste Management' study impact factor for optimization of solid waste management. The study based on initial task in analyzing the response surface is the approximation of the parameters of the model by the least squares regression and to acquire information about the fit in the form of ANOVA. In the present study researchers multiple regression analyses were carried out using response suspense analysis to fit mathematical model to the experimental data aiming at an optimal region for the response variable. Researchers have concluded that response fuel for machinery 2FI model the cost of labour and fuel for machinery will decrease to USS 56606 and also the capital value of machinery used in this section will be USS 136,615.

Nagar N. A. and Panchani M. H. (2011)¹⁶ in an article 'Development of Complete Waste Management System at Domestic Level for Rural Areas,' have presented waste management system includes collection and treatment of waste

generated from house on site at domestic level. To solve the sanitation and hygiene problems associated with the Rural Areas. Utilization of biodegradable organic waste like domestic waste and cattle dung and produce sustainable energy. Primary and secondary data are used in their study. A minimum total amount of biogas of 1m^3 can be produced per day from a family having four members and two cattle heads. Therefore, cooking of 3.4 family members for two times a day can be done. It is sustainable development and environmental friendly venture. It is self-sufficient system and it is very cost effective.

Otti V. I. (2011)¹⁷ in his study entitled 'Prospects and Processes of Human Management in the Rural Area of Nigeria' discusses of the prospect and process of human waste management using this technology or device. The author has used the analytical method for the study of prospects and rural areas of Nigeria. This study is based on secondary data. Soluble product of this process is carried into the soil by liquid portion of the excreta and gases procedure removed by the vent. They are relatively inexpensive to build and low annual cost of maintenance. The VIP latrine is strongly recommended for the management of human wastes in our rural areas. If the proposal adopted the successful construction and indiscriminate defecation which causes extensive transmission of focally related diseases.

Wang Hua, He Jie, Kim Yoonhee and Kamata Takuya (2011)¹⁸ in a study 'Municipal Solid Waste Management in Small Towns an Economic Analysis Conducted in Yunnan, China' argue that municipal solid waste management continues to be a major challenge for local government continues in both urban and rural areas across the world and one of the key issues is their financial constraints. Recently an economic analysis was conducted in Eryuan, a poor country located in Yunnan province of China. Where willingness to pay for an improved solid waste collection and treatment service was estimated and compared with the project cost. This study finds that the mean willingness to pay is one percent of household income.

Amfo-Otu Richard, Waife Edward Debrah, Kwakwa Poul Adjei and Akpath-Yeboah Samuel (2012)¹⁹ in a paper 'Willingness to Pay for Solid Waste Collection in Semi-Rural Ghana: A Logit Estimation' study willingness pay for

solid waste management services was assessed in semi-rural towns to determine the factor influencing it. Present study based on both primary data is collected by 5 traditional towns were selected purposively and 60 household heads were interviewed from randomly selected houses using semi-structured interview guide. The results showed that respondents sex, level of education, income, expenditure level, frequency of payment, frequency of collection and satisfaction with the present waste management system do not have any significant influence on the willingness to the respondents to pay for waste collection.

Mane T. T. and Hingane Hemlata N. (2012)²⁰ have studied the waste management especially in topic 'Existing Situation of Solid Waste Management in Pune City, India' argue the most serious problem of pollution is the direct result of human activity as soon as large settlement and town become common. The problem of disposal of solid waste arose. India is also experiencing tremendous growth in urban areas. Information related to existing situation of solid waste management in Pune city was collected from Pune municipal office. This study of solid waste management in Pune city generates about 1200-1300 metric tones of solid waste per day. This study and analysis concludes that the solid waste disposal methods at Urali Devachi Depot generate many environmental as well as health hazards within the surrounding area due to that air get polluted and this pollution leads of global warming.

Sanoji Ajeet (2012)²¹ in a study 'E-Waste Management: An Emerging Environmental and Health Issue in India' studies electronic waste or e-waste is one of the rapidly growing problems of the world and Environment and human health is affected by e-waste. E-waste from developed countries in the name of free trade further complicating the problems associated with waste management. The study is associated with issue and impact of this emerging problem in the light of initiatives in India. The study based on secondary data researchers concluded that urgent need for improvement in e-waste management covering technological improvement operation plans implementing a protective protocol for the workers working in e-waste disposal and educating public about this emerging issue posing a threat to the environment as well as public health.

Shah Rashmi, Sharma U.S. and Tiwari Abhay (2012)²² in their study 'Sustainable Solid Waste Management in Rural Areas,' study Solid Waste Management in Cluster of Villages near Tekanpur Area on NH-75.' The study is based on cluster of six villages. The study discusses on the biggest problems and its management is one of the major issues now days for our environment with reference of primary and secondary data. In this present study the qualities of both solid and liquid wastes are disposed of in an uncontrolled manner these adverse impact on public health and environment. In this study main aim of the study is to generate source of income for women of rural areas using vermin composting for solid waste management.

Shivsharanappa and Shrioao Milind M (2012)²³ in a paper titled 'Solid Waste Management: A Case Study of Amravati City, Maharashtra', has an objective of the study existing system of collection, transportation and disposal of solid waste in Amaravati Municipal Corporation area. The solid waste form seven locations of the study area were analyzed for physical chemical and other parameters. In this study researcher observed physical and chemical characteristics of refuse from various area of AMC as per standard method. AMC used only one disposal site but its capacity is inadequate from last five years and hence there should be five disposal sites form convenient disposal of MSW form seven transfer stations. Researchers conclude that AMC may impose rules and regulation for contractors to increase more number of sweepers to collect the refuse for working at different shifts so as to run proper functioning of system.

Sharma Deepika and Rampal Raj Kumar (2013)²⁴ in a study 'Daily fluctuation in Solid Waste Generation in Rural Areas of Jammu,' have carried out a study in rural area at Parwsh village of Block Marc Jammu to determine solid waste generation and per year of study area was calculated. With reference to primary and secondary data these people have presented in this article. Cmpilation of the data of all the households of the study area reveal that the average solid waste generation in average households of the study area was observed to be 6561.543 + 1837 359/house/day. The study concludes that earthier households generally generate more waste.

Wani Ahmad Muzafar and Ahmad Shamim (2013)²⁵ in a paper ‘Challenges Issues of Solid Waste Management in Himalyas: A Case Study of Srinagar City’ argue that overburdened and ineffective solid waste management systems in congruence with rapidly changing consumption patterns plague cities within the developing world. The present study is based on both primary and secondary data. Data collection includes document semi structured interview, published data regarding solid waste from Srinagar. The present study is relating to Srinagar city, is facing the worst solid waste management issues due to rapid urbanization, tourism industry, insufficient funds and poor management practices. Researchers concluded that reveal there are more than 518 solid waste collection points and single site which is proving to be unsustainable for managing huge solid waste generated form Srinagar city.

2.3 Importance of Review of Literature

Waste has been a very important environmental problem, now a day. Here its proper management is of vital importance. The problem of waste is of both the solid waste as well as waste water. It is also a problem in rural as well as urban areas. The forgoing review of research studies reveals that, there are number of studies about waste in urban areas and more importantly of the solid waste. There are a very few studies of waste in rural areas. It is therefore, the study of waste in rural areas is very much important. Hence the present study concentrates on waste management both the solid and liquid as well, with reference to rural areas of Sangli district in Maharashtra state.

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