



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 13, Issue 2, February 2024

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.423

Impact of Waste management on the Environment

Dubey Anupam¹, Shukla Shalini²

D.B.S. College, Kanpur, C.S.J.M. University, Kanpur U.P, India¹

D.G. College, Kanpur, C.S.J.M. University, Kanpur U.P, India²

ABSTRACT : The research paper is focused on problems associated with waste management and environmental pollution. Each and everything which is surrounding us has a direct or indirect connection with environment. Human beings has an effect on environmental pollution. Not only human being, other living beings also have an effect on environment pollution. There has been pollution in the environment since last many years, the level of pollution has increased and this has become a serious problem which is having a serious impact on mankind. While reviewing the existing literature, it was examined that there is an impact of waste management on environment. Every person on this earth is influenced by environmental pollution and the impact of this pollution is that people are finding it difficult to breathe, the water that we drink is contaminated and even for food items pesticides and other such harmful chemicals are being used, hence it becomes bit difficult to accept the basics that a person could consume. The individuals are facing lot many issues related to radiation and pollution. Survival has become difficult for the human beings and other living beings. Environmental problems are being faced through lack in natural resources, extinction of many animal species and plants. There is problem in bio-chemical process and global ecosystem. The study is mainly focused on the impact that waste management has on environment.

KEYWORDS: waste management, recycling, environment, ecosystem

I. INTRODUCTION

Man along with other living beings since beginning of their existence has a closed relation with the nature around which they live. The human being have an interaction with the environment and they focus on their protection. Man developed their own interest in such a way that they could harmonize the nature which surround them for insurance the necessary conditions which are required for their own survival. Human beings keep on discovering new technology and it try to make their ways better. They have their own Desire and they try to Reconcile the nature as per they needs. Contemporary economic, industrial, technological and urban development Provided Mini such benefits to the human being. There are certain conditions which are not good for human health like that is water pollution and industrial is also not pure which in healed by the human being. Deforestation has been uncontrolled and their conversion into the agriculture land is also not fixed. There has been certain other environmental issues like global warming and destruction of Ozone layer in the planet it is also followed by certain climatic changes which did not occur during the previous period. There has been accumulation of different wastes which include radioactive waste and there is also radication of certain animal and plant species. As indicated by the above points there are many other negative consequences on the human being and they have endangered their survival.

Currently it is very important that the environment remains protected and it is considered to be very important by the human being as it is very important for the living being as well. The problems which are being faced by the human being should be controlled so that there is less of health and wealth. The environment around us leads to be protected and any kind of contradictions should be eliminated or prevented. Human being have the right to protect their environment and should also focus on the impact which could be national local or even International. For formation of a normal framework to proceed with the Environment protection it is necessary that action needs to be taken at the national level, regional, local and Universal level. There is lot of waste disposal at different parts of the city and it is very important that it is restricted so that does not harmfully effect the health of human being. Many people are not aware about waste management and they tend to spread various diseases due to improper waste disposal. It is important to protect the environment and take certain precautions so that it could revealed healthy for the future to come. the population of our country is increasing in large number and the government should in to focus on the environment

which is around us so that it does not negatively impact them there are many human being who are harmfully affecting the environment and aim to protect the environment through different possible ways.

In the current scenario it is very important that waste is properly managed as there is lesser land available for the increasing population. That has been population growth since a long time and it is important that the environment around us is protected so that the human being and the other living organisms also remain protected throughout their life. Daily a large quantity of waste is generated in the industrial areas and a similar amount of waste is some time generated in agriculture areas also. It is a responsibility of each and every individual to focus on waste management. There are millions of turns of waste which is being thrown in the oceans and rivers and it is very important that they are dispose in a proper way so that we do not harm the natural environment.

A large amount of waste gets s produced in the agriculture areas and villages. It is the responsibility of the human being to take care of the waste which is being disposed in the environment. Since the population is increasing there is not much available of land for each and every one and hence land should also be protected from any such kind of waste. During the pandemic they was high effect of waste disposal among the human being since the amount of waste had increased many folds during that period. There is production of oil products in our country and a lot of waste is disposed of in the oceans and rivers. Human being is responsible for any kind of waste which is being disposed of Indian environment and they should be a proper strategy which is suggested by the Indian government which should be followed so as to reduce amount of waste being disposed of in the environment. The production of various goods lead to lot of waste disposal and it is important that human being understand what needs to be produced and also should define about the quantities which need to be produced for people were currently living in our country. Transport and industrial facilities which are provided to the general public dispose of a lot of ash and aerosols in the environment. There are different landfills which have been created by the human being so that people could dispose of their waste in such a place which is designated. It is important for the government to make people aware about the place which is allocated for any kind of waste material. It is important that waste is segregated based on the effect that it could have on the human being or any other living being. At a particular landfill, waste is collected for many years. Biochemical process applied for decomposition of waste which is collected could affect the environment in a negative way. The municipal waste which is collected by the government might contaminate the plants, groundwater, air, surface water and soil. A lot of waste when not disposed of in a proper way could lead to use quantity of insects, rats or any other animals which might lead to some kind of infection. Such an infection could adversely affect the health of human being and the other living beings. Where should be properly manage so that it does not impact the future generation to come and it create a proper healthy environment for them. When waste is not properly manage it might lead to health issues among the human being and also could carry such diseases among the future generations. This would impose problems of protecting environment through management of waste in a proper way. Waste composition could be different in different places and could include solid waste, agriculture waste, electronic waste or any other kind of waste. There could be a mixed composition of waste which could include nuclear biological or chemical waste. Depends on the effect that waste could have on the human being. Waste needs to be properly manage so that they had nose of negative impact on the environment. Waste management is said to be a very big problem not only for India but other parts of the world. Waste management is not the only problem the main source of generating the way should be controlled so that there is less negative effect of waste materials on water, land and air.

II. OBJECTIVES OF THE STUDY

- To understand the various methods of waste management
- To evaluate the impact of waste management on environment

III. ENVIRONMENTAL POLLUTION

The environmental pollution is very high in many countries and all of them came to plan outer certain strategies which could reduce the amount of waste which is being disposed in the environment. Waste needs to be controlled so that there is lesser environmental pollution. There is warming of climate and even depletion of the ozone layer.

Based on the definitions mentioned by UN organization, pollution would lead to disposal of exogenous chemicals which are encountered on suitable place during an appropriate time and inadequate quantities. Based on the analysis it could be concluded that the main polluted spheres in the environment is Hydrosphere and Atmosphere. The condition of cosmic space around the planet has also created lot of concerns. There are certain laws which are mention about

taking care about the environment. It is important that different factors are considered while dealing with the environment. Waste material is being disposed of by the manufacturing units into the environment.

The condition of the cosmic space which is around the planet has raised there is serious concern which need to be addressed in time. The environmental around us is getting polluted since alone time and it very important that the air should be purified and the water that we drink should be purified so that there are less harmful effects on the human being and the other living beings. It is important to understand the ecological unit and it has its own loss which would be characterized by the complex factors of inanimate and animate nature. Such a unit is said to be the ecosystem. Human being needs to be very much aware about the dealing with the environment. There is not much space available in the environment. The population is increasing and there is harmful effect on land water and air it is around us. The technology is very important and since it has been implemented, the human being should take proper care about the waste which is being disposed of in the environment. there a certain this factors which are associated to health and his important that the waste is properly manage in a way that it does not harm the health of any person of any age. World Health Organization has mentioned certain conditions which should be followed by the human beings so that they do not harm the environment adversely. Economic and various other activities in the environment might harm the human beings and should be taken proper care to remain away from any kind of pollution. Environment could have harmful effect on the human being when it is polluted. The population is on rise and this as also resulted in a lot of pollution of land water and air. There is disposal of waste on land and hands it is very important that it is taken proper care of the environment. Effect of pollution could be short term or long term. it is important that the current population should take care of the environment in a proper way so that the future population does not get affected by the pollution with exist in the environment currently. It is also important to identify the working of the environment and the way it gets connected to the environmental issues. Environment needs to be protected so that there is no harmful effect on the environment and so on the health of the human beings. The working environment has an association with the process and connections which are related to operations in environment. the government has mention certain laws which are related to health and safety at workplace of the employees. It is very important for the employers to take care of the employees and also about the environment where they have been working in. The working environment is different for an organization as compare to the actual environment where they have been working in. it is very important that all the human being considered that environment could harm them if it is not taking care of. When a campaign should be run about controlling of air and water pollution. There are many people who are throwing waste material in water in the rivers and ponds etc. There are many risk which are associated with the material being disposed of on land. The material are hazardous in nature at times and they should be disposed of in the right manner so that it does not affect the health of any person who is living around in the surrounding. Waste management is very important as if not taking care of it could result in a kind of danger to the human beings who are exposed to such waste. The government is taking proper care to manage the waste as the population is increasing it is very important that everyone is taken care about of their health. The people living in an area should take proper care about the list associated with waste management. Working environment of an organization could be referred to the conditions that prevail in the environment of any organization. At times changes need to be made in the environment so I have to protect the living beings around and also those who are susceptible to such kind of issues related to the health. There are some kind of waste which are related to radiation and they have more of chemical features which exist in them. It is not necessary that all the ways which is being disposed of in the environment is hazardous in nature. The waste may not directly harm the health of people. It might just occupy the land in the surrounding and still it is not good for the organization or the human beings living around as the population is increasing and it becomes difficult to handle waste in a proper way.

Pollution might have a harmful effect on the human beings and other living beings who are staying around. Pollution could be evaluated based on it is The harmful effect of pollution, their effect is manifested in the morphological and anatomical structure, process of growth, metabolism and even the growth process at different levels in cellular organization.

IV. WASTE MANAGEMENT

There are different kind of waste which are dumped in the street. Many times people dumb there food waste on streets and insects and rodents transmit different diseases from such food waste. Waste need to be managed in a proper way so that it does not lead to any kind of transmission of diseases. During the pandemic, the waste material being disposed of was large in number and it was not very easy task to manage such waste.

The west being disposed of in the environment need to be taken proper care of as if not it could lead to any kind of pollution which could be related to water or air.

Certain laws has been defined by the government which needs to a managed so that there is lesser disposal of waste in the environment. This particular law AIDS to ensure that waste management is being done in a way that there is no harm to the environment or health.

Various laws related to waste management are based on following mention principles:

1. The principle Related to optimal choice for the options available in the environment.
2. The principle of regional and proximity approach towards waste management
3. The principle of hierarchical waste management
4. The principle related to accountability
5. 'Polluter Pays' Principle.

Government should impose certain fine on those people who are polluting the environment. The waste material which is being disposed of should be used in a better way in case it could be to reused or recycled. There are certain materials which are recycle level in nature and people should try to use such kind of material so that there is lesser waste disposal. Sometimes people are making use of waste material for creating some designer items or in some other way which is beneficial to the environment. Recyclable material could be helpful as it would generate less amount of waste and they will be less waste which is being disposed of on land. Dumps should be regulated. People should be aware where should waste be disposed so that it does not harms the environment. People should be made aware about waste management and they should know from where will the waste be collected how will it be transported, recycle, tracked, and even monitoring of waste material is important.

Waste management has always been a problem as it becomes difficult to sort out the waste which is being disposed of by households and other industrial areas. Waste needs to be segregated in a way that some part of it could be recycled and use for some other purpose in future. Sometimes people dispose of a lot of plastic waste which could be related to food or some other material like packaging material. Garbage needs to be classified in a way that it could be reused in future. it is not possible to dispose of all the ways that is collected in the same way. The plastic material could be reused and hence should we disposed of separately. The food waste should be disposed of in a way that it could be used by the animals if required. Many times people create some packaging material from the waste or some people even decorate a home with certain designer items which are created by the waste which is being disposed of in the environment. The waste material should be disposed of in away that it does not harms the help of any person who could be a human being or a living being. Japan had introduced certain legislations based on recycling in the year 1997 and in the current scenario, there are different categories of waste which might amount to 44. The waste management practices in Japan are very successful as it has been clearly mentioned about the disposal of waste of different categories. They have created certain instructions which are related to the type of face which is being disposed of India environment. in India there is no such specification for all the kinds of waste which are being disposed.

There is a clear mention about the type of waste in the booklet, so that some of the items which are being disposed off could be reused or recycled in future. A lots of waste is being disposed of indifferent countries and Japan is taking proper care about disposal so that it could be further used or at least they will be lesser damaged to the land available for the country. The living standard and increase in population also has resulted in increase in the amount of waste. Annually, there is a lot of waste generated in the environment.

Radiochemical industry and military waste that makes use of products and materials which have hazardous properties mainly in the current scenario. Hazardous waste could be produced through combat, destruction of such chemical plant in various NHB accidents like natural disasters, accidents, storage and transport and other such incidents. The dangerous and harmful contaminants that are currently working in the environment would include certain physical waste like noise, solid waste, vibrations and dust. There are certain chemical waste like gases, dust, fumes, aerosols, vapours etc. and for radiation such UV, oils, x-ray, ionizing, laser, infrared, radar, ultrasound etc. and there are certain biological waste which could lead to bacteria, fungi, rodents, parasites, viruses, etc.

4.1. Disposal of solid waste in landfills

Landfills are referred to as sides where solid waste is disposed of in a systematic manner. There are many landfills which have been separately assigned for disposal of waste and certain protection measures are used so as to prevent any kind of pollution of groundwater or air pollution. Hydrosphere and atmosphere becomes contaminated due to garbage disposal in the open areas. In case protective measures are not in place they might be harmful effects on the areas surrounding the landfills. The area which is designated for any kind of waste disposal should be taken care of so that there is no such harmful effect on the environment. For prevention of any kind of pollution which might result due to disposal of sanitary, certain measures are necessary so that any kind of harmful effect could be avoided. The air in the

surrounding areas should be so clean that it does not create any kind of harmful effect on the health of the people who are living nearby. When waste is disposed of in a non-systematic manner there could be many problems which might arise due to this disposal. It is not necessary that every material which is being disposed is hazardous in nature but there is a chance that it could harm the human beings or other living organisms. Waste could be disposed in bowels if Earth and this represents an alternative to the landfill sites. In such a way, air pollution could be avoided and there could be undesirable propagation from the animals. This type of method when used for disposal of waste could have the following disadvantages:

1. In case, wrong selection of the underground landfill is made, it might result in contamination of groundwater.
2. When the waste is located and buried in the center of the country, there is no such oxygen and its decomposition. Further Biogas is formed, that consists of different types of hydrocarbons, mainly methane.
3. When this waste gets decomposed, the volume of the waste gets decreased and this would cause sagging area, hence no such building or any other facility could be constructed in such an area.

4.2 Strategies for building and controlling landfill

During construction of landfills, the following strategies could be used:

1. Waste needs to be stored on land and such a land needs to have certain properties and also ability of self-purification so that spread of any kind of harmful substance be avoided.
2. Strategy of limiting maximum infiltration of the pollutants from landfill to the land, so that the material could cover the land area which impervious to water so as to minimize penetration of surface water and atmospheric water and soil pollution in a way.
3. A modern conception would consider landfill as a chemical reactor, but should work in a controlled manner.

4.3. Industrial waste management

A lot of waste is created by technical and Technology activities and there are several types of waste was which are used like glass, paper, plastic and metal. there are a number of issues which are caused by environmental pollution and hill station reusing the materials which has been disposed of in the environment so as to reduce the requirement of primary raw material and also reduce the pollution of water and air. Industrial waste is divided into:

- waste wood,
- Scrap,
- industrial waste,
- waste plastics and other materials.

Comprehensive technologies which are ecological beneficial are still in the process of being produced.

Non-waste technology should provide:

- Production and development of new products could take into account, possibility of re-using them
- processing of production and waste could be used to make new products;
- The usage of closed systems of industrial water supply.

4.4. Hazardous waste management

As mentioned by the United States Agency about Environmental Protection hazardous waste, it is said to be a waste which is toxic, reactive, corrosive and flammable. Hazardous waste could be at each turn. The previous studies have indicated that main source of the type of wastes are mentioned below:

- Chemical industry, which releases 60% of total industrial hazardous waste;
- metal industry, around 20%;
- clinical centers;
- household
- small businesses.
- military industry;
- pharmaceutical industry;

V. HAZARDOUS MEDICAL AND VETERINARY WASTE

Waste which is disposed by veterinary and health institutions, regardless of their origin and composition is referred to as medical-veterinary waste. Such a heterogeneous mixture which includes municipal garbage, laboratory waste, infectious waste, medicines, packaging and other kind of chemical and pharmaceutical waste accounted for around 14%

of various type of wastes including infectious waste, sharp objects, black and gray parts of human body, pharmaceutical industrial waste chemicals and drugs, chemical waste, radioactive waste and other such heavy metals which are discarded as waste.

There are various institutions which dispose off veterinary medicine waste like veterinary clinics, research laboratories and other numerous farms for breeding flocks and herds.

VI. BIODEGRADATION

Biodegradation is referred to as processing of various organic components of the municipal waste which has composing and biodegradation. Bacteria in a large quantity and having diversity could exceed the other group of microorganisms. Bacteria performs process of nitrogen fixation, which is said to be a biological activity and even it would depend upon soil fertility. In the rural areas and other cities that are medium-sized, biodegradation could be mainly on greenhouses and smaller farms.

The main product of degradation of organic fertilizer, water and biogas (energy) could be used further in the household advantage and corporate advantage of biodegradation as the ecological purity. It is a widely used method of biodegradation and it is in practice in many countries.

6.1 Technology biodegradation of organic waste

The micro-organisms who are said to be inseparable component of the ecological system of biosphere and enormous activity could release larger amount of oxygen that provides life on the earth. Since last many centuries, biodegradation of the organic waste happens due to the action of the microbes. Currently, human being have managed to process and even synthesize certain groups of microorganisms. For performing microbiological degradation of animal waste and vegetable waste, it is very important to understand chemical structure of their parts. Such a structure would depend upon composition of the food products from which waste gets produced. Majorly the suppliers of the organic food waste are the agricultural producers, processing industry, and certain other industries. The remains of industrial and food waste of animal or plant origin could be exploited in the manner mentioned below:

- solid waste from the industrial waste and other such municipal waste should be disposed on landfill
- usage of organic waste in the form of fertilizer on the agricultural land;
- bury carcasses of various domestic animals;
- discharge of various forms of industrial waste into sewer system in the city;
- disposal of wastage in the illegal dumps.

VII. RECYCLING

Re-usage of materials and their separation from different forms of waste is said to be recycling. It would involve separation, processing, collection and manufacturing of newer products from used materials or items. Everything which could be reused and is not thrown anywhere is recycling. There are different recycling centers which are engaged in recycling of different products and they try to manufacture products such items which could be prepared from recycling of the old material. Such a practice is not only in India but also other parts of the entire world. In centers like paper service where the old paper is taken back in exchange for certain amount. Recycling of glass is also possible and there are a few centers which are engaged in recycling of glass. Through the process of recycling, the following strategic objectives are being achieved:

- Saving raw resources
- Energy saving
- Environmental protection
- Creation of new jobs

7.1 Recycling of plastic waste

Plastic waste is carried out naturally and it is not an easy task to decompose plastic waste. When plastic waste is re-used, it could be made use for packaging and this would reduce the amount of environmental pollution and also reduce the waste which could be generated due to plastic waste. There is a big problem which could be caused by making unlimited usage of plastic products and also dumping of such remains. There are different ways which are used for recycling of plastic. The technological process is composed of seven stages:

- (a) Waste collection,
- (b) Identification and selection,

- (c) Milling,
- (d) Rinse,
- (e) Spinning,
- (f) Material drying and
- (g) Storage

7.2 Car-battery Recycling

Car battery could also be recycled and such category of un-selected waste is deposited at various landfills. The old batteries are generally disposed during a particular year in the landfills without making any such preparation area. It would lead to contamination of soil and this would further lead to acid, lead and other such inorganic substance formation from different batteries. For recycling old batteries, it is important that a particular area is allocated previously for recycling of batteries. Such a technology remarks old batteries and this process is not much commonly used. Based on difficulty in collection of older batteries from the wild landfills, it becomes important to settle waste material of different kinds.

7.3 Recycling of vehicles at the end of life

The vehicles could also be recycled when they are not at all in use. Such cars are recycled and the main items which are reused are steel and cast iron. Approximately around 80% of weight of car could be recycled in current recycling plant. Such a process of car recycling is quite complex as there are many things which form parts of the car. It includes glass which forms 3% of car weight, and it is not processed in the factories to manufacture glass, since it is a complex composition. Fluids in cars like fuel, coolant and oil constitute around 2% of a car's weight. Such fluids while recycling a car is itself a significant process. And it could lead to chemical composition and their toxicity.

VIII. WASTE MANAGEMENT STRATEGY

The storage, collection, treatment and transport of waste could involve a variety of risks towards health and safety of the employees of the waste industry. The system activities would include prevention of waste through reduction of waste reduction, reducing packaging materials and also developing a particular habit among all the people to sort out waste in the right manner.

Waste Management Strategy would provide the following activities:

- Introducing formal legal mechanisms, like acquisition of knowledge in waste management.
- Acquisition and also improvement of training and education to the people who are engaged training of persons who manage waste
- Establishment of a body at the national level who would remain active in developing educational training and education in waste management

IX. CONCLUSION

Contemporary economic, industrial, technological and urban development Provided Mini such benefits to the human being. There are certain conditions which are not good for human health like that is water pollution and industrial is also not pure which in healed by the human being. Deforestation has been uncontrolled and their conversion into the agriculture land is also not fixed. There has been certain other environmental issues like global warming and destruction of Ozone layer in the planet it is also followed by certain climatic changes which did not occur during the previous period. There has been accumulation of different wastes which include radioactive waste and there is also eradication of certain animal and plant species. As indicated by the above points there are many other negative consequences on the human being and they have endangered their survival. Currently, human being have managed to process and even synthesize certain groups of microorganisms. For performing microbiological degradation of animal waste and vegetable waste, it is very important to understand chemical structure of their parts. Such a structure would depend upon composition of the food products from which waste gets produced. Majorly the suppliers of the organic food waste are the agricultural producers, processing industry, and certain other industries. The system activities would include prevention of waste through reduction of waste reduction, reducing packaging materials and also developing a particular habit among all the people to sort out waste in the right manner.



REFERENCES

1. Bjelajac Z. Ecological policy of EU and its criminal legal draft, MP4, 2011.
2. Heleta M. System management projecting of environmental, University Singidunum, Beograd 2010.
3. Jovanovic L. Ecomanagement in function of environment protection in towns. Ecological movement of Novi Sad, Novi Sad 1999.
4. Jovanovic L. Recycling as an important part of sustainable development ISO14000, Aranđelovac 2000.
5. Kolomeiceva-Jovanovic L. Chemistry and environmental protection, Belgrade 2010,
6. Rajovic G. "Environmental awareness as a basis for sustainable development of rural areas of Montenegro", Ecologica, scientific and professional society for Environmental Protection of Serbia, No. 49, Belgrade, 2007.
7. Todić D. Environmental management conditions of globalization, Megatrend University, Belgrade, 2008.
8. <http://www.forum.ftn.uns.ac.rs/index.php?act=attach&type=post&id=5558>
9. http://hr.wikipedia.org/wiki/odlagaliste_otpada
10. <http://staklenozvono.rs/?p=1254>
11. www.dominomagazin.com
12. <http://krize.medijkestudije.org>
13. www.ecologija.org.rs/casopis.htm
14. <http://www.reciklaza.in.rs>



INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 9940 572 462  6381 907 438  ijirset@gmail.com



www.ijirset.com

Scan to save the contact details