WASTE MANAGEMENT IN IIT TIRUPATI

#ABSTRACT:

PURPOSE:

The main purpose is to make people their responsibility to manage waste and to attain sustainable waste management practices which should strive to make them think twice before being the cause for waste.
It is important to emphasize the reduced use of plastic and the beneficial management of plastic waste and making our environment eco friendly zone and to promote ecological awareness among ourselves.
Mainly to identify the types of wastes in the perspective of causing the types of diseases which cause a particular kinds of diseases.
The other main purpose is to reduce the wastage of natural resources.

OBJECTIVES:

#The main objectives of managing waste includes the three steps i.e.collection,processing,disposal which are the basic fundamental elements for the protection of one's health.
The overall objectives of the waste management assessment is to assess the activities involved for managing and determine the type, nature and estimated volumes of waste to be generated.

FINDINGS:

#The findings that we made regarding the waste that are generated in the campus are residential waste,food wastage and construction wastage and the other one is about the waste water recycling.

RECOMMENDATIONS:

Create a comprehensive Zero Waste Action Plan .
Provide a comprehensive resource on the college web page for managing the waste and to generate awareness by keeping boards inside campus regarding the importance of waste management.

CONCLUSIONS:

Waste management is an important issue that needs governmental action quickly and the government should provide money to the institutions to take vigorous actions on managing waste.
For managing waste each and every individual should contribute for the improvement of pure and fresh environment in such a way that people should not tell that they are aiming for zero waste as its already the stage of zero waste.

#INTRODUCTION AND LITERATURE REVIEW:

A waste can be defined as any unwanted and useless material.

Waste management is an important part of the infrastructure ,as it ensures the protection of the environment and of human health.It is not only a technical environmental issue,but also a highly political one.Waste management is closely related to a number of issues such as urban lifestyle,resource consumption patterns,jobs and income levels,and other socio-economic and cultural factors.Lately there has been a trend to enlarge the scope of waste management and include it within the larger concept of resource management .Today ,waste management must be seen in its full context.It cannot be solved with merely technical end-of-pipe solutions.

When we employ a long-term waste management strategy to ensure sustainable development, this will not only affect a number of different dimensions; there are also different levels of decision-making and action involved. Decision-making and action take place at various levels – nationwide, regional, local and finally in households. All aspects and all actors must be considered when we develop a waste management system and implement it in daily life.

(Coming to our campus:-)

A rising quality of life, high rates of resource consumption patterns have had a unintended and negative impact on the environment-generation of wastes far beyond the handling capacities of the college maintenance. Our campus is now grappling with the problems of high volumes of waste,the costs involved, the disposal technologies and methodologies, and the impact of wastes on the local as well as global environment.

But these problems have also provided a window of opportunity for us to find solutions -involving the community and the private sector,involving innovative technologies and disposal methods;and involving the behavior changes and awareness raising.These issues have been amply demonstrated by good practices around the campus.

There is a need for a complete rethinking of “waste”-to analyse if waste is indeed waste.A rethinking that calls for

WASTE to become WEALTH

REFUSE to become RESOURCE

TRASH to become CASH

There is a clear need for the current approach of waste disposal that is focused on municipalities and uses high energy/high technology, to move more towards waste processing and waste recycling (that involves public-private partnerships, aiming for eventual waste minimization -driven at the community level, and using low energy/low technology resources).Some of the defining criteria for future waste minimization programmes will include deeper community participation, understanding economic benefits/recovery of waste, focusing on life cycles, minimizing environmental impacts ,Reconciling investment costs with long-term goals.

#LITERATURE REVIEW:

Solid waste management has become one of a major concern in environmental issues. Waste generation increase proportionally to this population number and income, creating the needs of effective management. E-waste that barely existed before was generated in large quantities this year. The management of waste become complex and the facilities provided cannot cope with the increasing demand and needs. Therefore, best approach need to be implemented immediately while considering environmental, social and economic aspects. The differences in managing solid waste not only vary between countries but also among areas in the same country. For instance, while Istanbul are having big improvement in their solid waste management with the establishment of transfer stations, sanitary landfills and methane recovery system, it does not reduce the problem in the Black Sea coast in Turkey. This is caused by the complex topography, weak administrative structures and the low local’s income. The waste management system should be dynamic and continuous based on new insights and experiences . For example, continuous assessment of current policy and regulatory framework of New Zealand indicated the lack of policies coordination, hazardous waste management, consistency, incentives and markets for recycled material, and

cleaner production effort. A lot of literature has discussed current practices, challenges and future solutions on waste management.

#METHODOLOGY:

The mounting garbage is an eyesore. But there is an even more harmful effect of the garbage - Mother Earth is grieving. People had been taught on the proper disposal of trash yet they continue to do their own convenient way. The polluted environment has caused many diseases and some even resulted to death. Waste management is now a giant problem facing our nation. So what are we going to do? Reducing waste is one of the most important parts of waste minimization. Avoiding the unnecessary use of resources means there is less wastes to manage. The aim of waste reduction is to eliminate waste before it is produced. The next most cost effective means of minimizing waste is to reuse waste material in its same form. Reusing an item means it doesn't go in the rubbish and end up in the landfill. It also means that you don't have to buy a new product and so you are saving the energy and resources that would have been used to make the new product. Composting is a natural process in which plant and other organic wastes are broken down biologically to produce a nutrient-rich material. At home, put yard and kitchen waste such as leaves, grass clippings, and fruit and vegetable scraps in a bin. This will eventually decompose and produce a mixture that can be used for soil improvement in individual gardens. Municipalities can treat waste in the same way. Recycling is one of the best ways of waste management. It helps in reducing pollution, saving natural resources and conserving energy. Recycling newspapers, plastics, glass and aluminum also helps in saving money. Recycling other materials such as tires, batteries, asphalt, motor oil, etc. reduces pollution (otherwise these would end up in landfill). In order to reduce trash, it is necessary to encourage and implement recycling at all levels of society . In this study, we focused on segregating waste materials .Waste segregation means sorting from biodegradable to non-biodegradable. Why is it necessary? Waste segregation is necessary because if the waste is not separated properly, it will mix up in landfills, this will lead to ground water and contaminate it. It can also release methane gas which is highly flammable; this gas is also a green-house gas that ultimately leads to climate change and droughts. The impact of climate change on the world is already there for everyone to see. A lot of materials in every day waste are recyclable. When waste is not segregated, it is difficult to pick out these materials for recycling. This leads to a lot of wastage of valuable resources. Toxic waste can seep into the ground and contaminate our water supplies, and sometimes cause widespread disease. Even non-toxic waste causes pollution that contributes to global warming and a general negative impact on the public health. EPA studies suggest that global warming could make earth almost inhospitable by the end of the century. In that manner, we are in need of proper segregation of waste materials to prevent the drastic effects that can result in improper disposal of trash. Segregation of wastes is very important. This is the gauge to proper waste disposal which when done by men can make the environment free from toxins and pollution.

#DUMPING METHODS (FORMAL METHOD)

The most common waste dumping methods include landfill and incineration. A landfill is a conventional dumping method, which involves burying of wastes in a common pit. The landfill should be economical and far from the residential areas. On the other hand, incineration is a dumping method which involves combustion of the waste materials. The method is used to covert waste materials into steam, gas, ash, and heat. The advantage of using incineration method is that it can be conducted at individual scale level.

#RECYCING METHODS (FORMAL METHOD)

Perhaps, products such as LDEP, PVC, PS, and PP are recyclable. However, there are complex products that are not easy to recycle. Because of the complexity of recycling these products, there

exist processes such as biological reprocessing. This approach is useful to waste materials that are organic in nature. The waste materials are put in biological decomposition and later recycled to form composts for agricultural purposes.

#COLLECTION AND TRANSPORTATION (FORMAL METHOD)

Collection and transportation of wastes vary from one place to another. Some places prefer bin rental, which comes in different sizes. The price of renting waste disposal bins depend on their sizes. Large waste disposal waste bins cost more than the small ones. For the purpose of collection and transportation of wastes, it is imperative that every residency is endowed with three waste disposal bins. The first bin is for general wastes, the second one is for recyclable wastes, and the third bin is for garden materials.

#CREATING AWARENESS THROUGH PROGRAMMES

Management of waste is an area that requires proper awareness and education for global preservation. Creating awareness is critical for the perseverance of the security of the humankind and global health. Education on waste management involves the introduction of the reverse vending machines to supermarkets and public institutions. The advantage of employing these machines is that they are affordable and hence, cut down cost on waste management.We thought of conducting some awareness programmes.

#CREATING AWARENESS THROUGH A PLATFORM

We guys created a platform (WEBSITE) where people can share their view ,ideologies regarding waste management waste methods.

#RESULTS AND DISCUSSIONS:

Our result on decreasing water waste is , increase in water storage area .If administration can increase the water storage area then , the used water can be stored and recycled . So that the maintenance unit can use the recycled water not only for gardening but also in the flush tank . By this we can reduce the amount of water that is getting wasted . We conducted some awareness programs to improve the knowledge of people about the importance of natural resources and how they are getting extinct .

We hope many students have got our message and they would stop wasting the natural resources and start using some abundant energy sources like solar energy , energy generated from windmills . By looking at the difference in the costs for both electricity from fossil fuels and solar energy we concluded that solar energy is cheap and it is not causing any damage to the environment .So administration should use more number of solar panels , hopefully total solar panels in the campus . Because of that we can reduce both cost and the usage of natural resources .

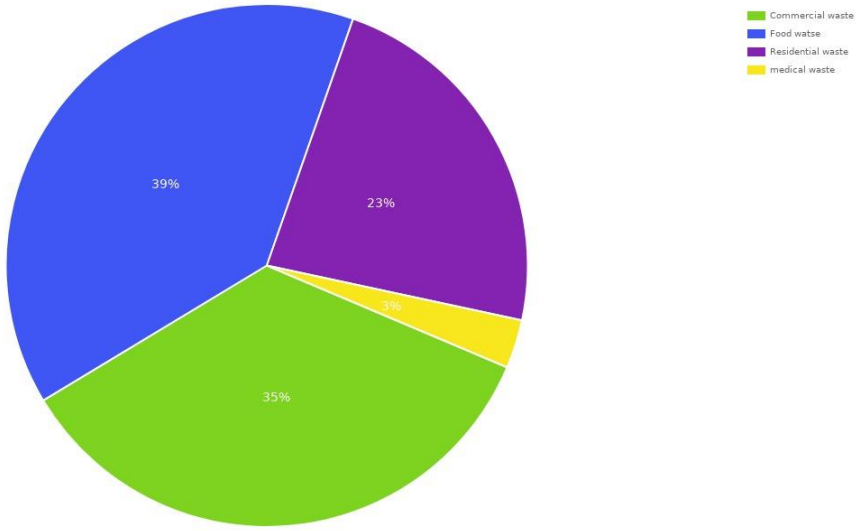
But at the present situation we think we cannot implement this in our college , because the solar panels which are used in our campus are not of our own , they are rented . Because of less space and the urgency in the need of electricity which is used for construction and water recycling it is challenging to rent more solar panels. But we can implement this method in our college after this constructions are completed . There is a lot of iron and steel waste in our college because of construction . Construction unit is not separating the iron and steel waste from the total waste because of more construction work . But if we separate the iron and steel , and send them to recycling unit then we can use it in some other ways . If administration can give more funds to the construction unit so that they can hire some workers for waste separating .

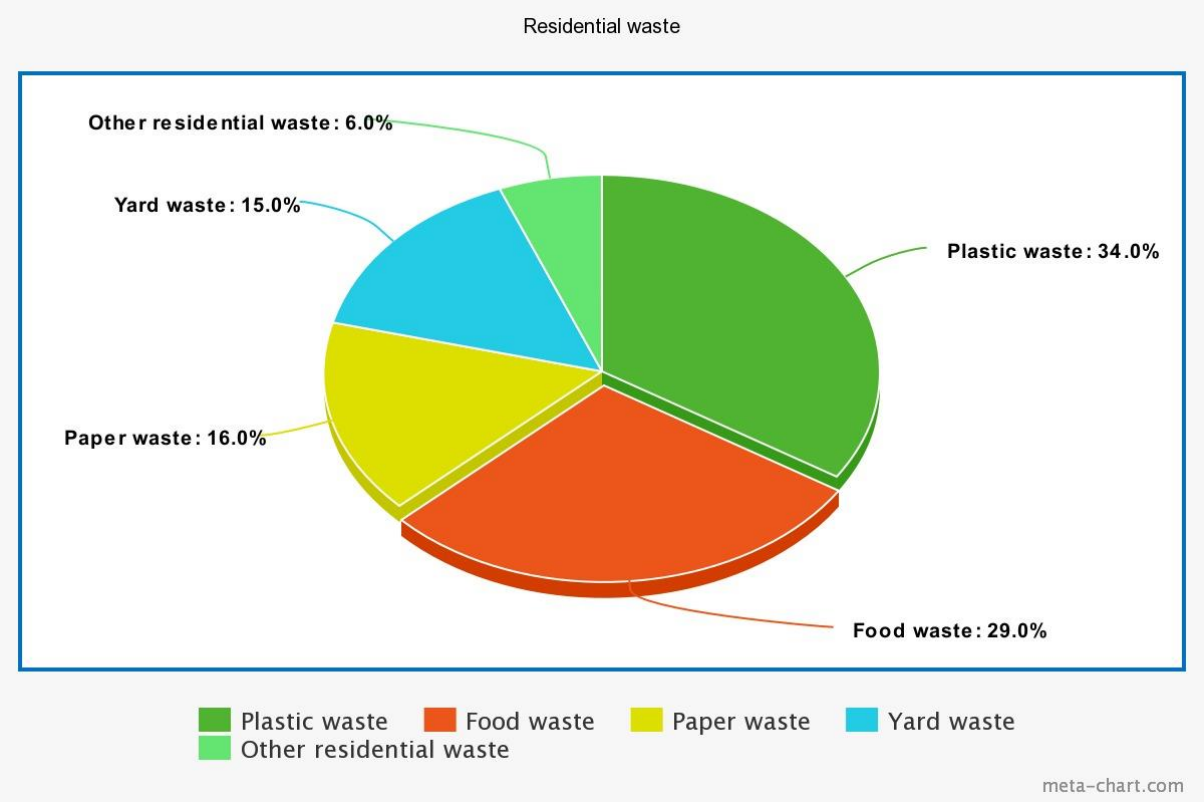
After separating the waste we can send the remaining waste to the waste management unit so that they can dispose that waste safely . In our college one of major issues is food wastage .Because of which vegetables are getting wasted and also the natural gas is getting wasted . Which can be

reduced if we can follow some measures . Food is getting wasted because most of the students are not eating in mess and also they are wasting some food .

If students are served with consumable amount of food then we can reduce the wastage of food from students side . And the remaining waste can be reduced by following token system . If we follow token system the catering unit can estimate the number of students who eat in mess and they can prepare food only for those students . By this we can reduce the wastage food . By our discussions we have concluded that using the yard waste as fertiliser for other plants is the best solution to reduce the yard waste . If we can implement this method we can save the soil and plants from getting wasted . In our college diesel and petrol are getting wasted in a large scale because of excess use of busses . In the evening we are using shuttle busses . We found that those busses are used by only some students , on an average only 10 students are using one bus . Because of this there is a lot of waste in diesel and petrol . If we can remove the shuttle busses and arrange shuttle van then we can reduce the diesel and petrol waste . We think this is the best solution for this issue. In our college we have a lot of paper waste . If the maintenance unit can collect all the paper waste and send it to a recycle unit it would reduce the paper waste .

We have to motivate the students to use recycled books and recycled papers for rough books and other needs, so that all the recycled papers can be brought to our college and they can be sold in the college . By this we can both save money and also save natural resources . The cotton which is used for medical purposes is getting wasted . Instead of that they can send the used cotton to recycle unit and they can use the recycled cotton to make beds or foe any other uses . By this we can reduce the cotton waste . In our college all the waste which is collected is not separated . If we can separate the waste into categories like organic waste and non organic waste then we can use the organic waste as fertiliser for plants . If the administration can arrange some place o compost pit then we can prepare the fertiliser here it self in our college using that compost pit . And the non organic waste can be sent out and can be buried in a safe way . By this there will be no health issues . The street waste which is collected should also be separated into the above mentioned categories .





#CONCLUSIONS:

Nothing is waste until you cannot use it anymore in anyway! At one time, wastes piled up and people did not think deep enough on how to use them. Today, it is gratifying to see the innovations in waste management - recycling wastes into usable products, generating methane or fuels, manufacturing new products for home/commercial usage such as fence posts, furniture… the list goes on.

Even though just about everything eventually will decompose, this process has a lot of unwanted by-products. If we use a human time scale, most of the things we discard don't decompose. We are basically storing them underground, while telling ourselves otherwise.

I have very little faith in solutions that try to wake us up into "doing our part", not littering the streets, avoiding plastic cups. (This can also be extended to the "save the planet by taking shorter baths".)

Even though we guys have tried implementing some solutions for the cause say conducting awareness programmes, providing a platform where people can share their ideologies ,views so that they will try to find out the best solution for the cause.

Platform in the above passage refers to the website which our team had done.Our website also potrays the problem regarding waste management through articles ,so that you guys can determine the situation, say how waste is managed in our campus and responsibilities taken by us and the administration and find the measures to decrease it to an extent.

But still,I believe that the biggest conclusion is that humanity, as a species, currently has a very wrong view of what our position is in the universe. We forgot that deep down we are made of the exact same material of both stars and landfills.

The conclusion is very simple and complicated though:" What is the use of all this 21st century bla bla bla .. technology if we are still destroying nature eventually leading to complete destruction".

#REFERENCES:- Municipal solid waste characterization and quantification as a measure towards effective waste management in Ghana - Kodwo Miezah | Kwasi Obiri-Danso | Zsófia Kádár | Bernard Fei-Baffoe | Moses Y. Mensah.
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