



Food Waste Management System

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Abstract: Food waste has been increasing at an unprecedented rate in recent years, posing a threat to economic growth factors. This has a significant impact on the agricultural processing industries. Because food recycling is a difficult task, we are focusing on food waste in the workplace, weddings, and other events in this project. This web application is used to manage food waste in an efficient manner. People throw away a lot of food every day. As a result, we must address the issue of food waste online. In general, we are automating the food waste process. Food waste is a growing global problem that has negative consequences for the environment, economy, and society. To address this issue, a comprehensive food waste management system is required. This system involves reducing food waste at the source, recovering and redistributing edible food, and diverting non-edible food waste from landfills through composting and anaerobic digestion. The implementation of such a system necessitates collaboration among stakeholders such as governments, businesses, and individuals, as well as the adoption of innovative technologies and policies. We can help alleviate food insecurity and promote social equity by reducing food waste.

Keywords: Leftover Food, Food donation, Unused Food Supply

I. INTRODUCTION

Waste management encompasses the processes of waste collection, transportation, processing, recycling, and disposal. Advanced management strategies are used in sustainable waste management systems to reduce environmental challenges and protect resources. Regardless of who humans are or what their mindset is, one thing is certain: no one can escape the clutches of hunger. While approximately 1.3 billion tonnes of food are wasted each year, approximately 10 million people die from hunger, what an irony. So, as Indian citizens, we must first try to solve this problem in our own country. This is the primary focus of our project.

Although food waste occurs primarily at the consumer level in developed countries, it occurs throughout the supply chain in developing countries, where a lack of infrastructure is the primary cause of significant post-harvest loss. According to studies, the post-harvest to distribution loss in Central and Southern Asia is about 21% higher. Furthermore, India is the origin of 85% to 90% of the observation locations in central and southern Asia, indicating that food loss in supply chains is a significant issue in the country. According to various statistics, approximately 40% of food produced in India is wasted. According to the WHO, 20% of the world's population faces severe food scarcity. As a result, a solution to reduce food waste and feed the hungry must be found. This food waste management system can assist in the collection of leftovers from hotels and restaurants for distribution to those in need. NGOs that support underprivileged communities in their fight against malnutrition and starvation can use this programme to request food supplies from restaurants. Once the request is approved, the NGOs can pick up the food from the restaurants and distribute it. A food waste management system will help restaurants reduce food waste while also assisting in the feeding of the underprivileged and those in need.

II. LITERATURE REVIEW

ResQ[1] is actively entering the Malaysian market and is accessible in 22 European locations. For instance, more than 55 restaurants, cafés, bakeries, and bars take part in the fight against food waste in Amsterdam. They provide meals that would otherwise be wasted at a reduced cost. The ResQ app lets you view the deals. Its goal is to link restaurateurs and prospective clients. Magic Fridge[2] has quick and easy recipe ideas for preparing an economical meal in your kitchen. The application offers recipes for everyday with products already available in your kitchen. Karma[3] is the multi-award winning take away food app for buying delicious surplus food from restaurants, cafes and grocery stores at a lower price. Order and pay in the app. Find great food deals where you pay half the price and pick up your food as take-away. And help create a more sustainable society by reducing food waste. Restaurant food waste is eliminated by Food for All[4]. Customers can access eateries for meal savings of up to 80% an hour before they close. Customers can enter their location to view offers in the area, and they pick up their orders at the restaurant's designated hour. Through the app, users can also give food to those in need. Simply select the dish you want, pay through the app, arrive at the restaurant



within the pickup window, and savor your takeout. a tasty and enjoyable approach to protect the environment by reducing food waste.

III. METHODOLOGY

By donating leftovers to NGOs, this strategy lowers food waste in restaurants. In the event that eateries have any leftover food, NGOs will make a request. The restaurant management of that specific establishment receives this request. The request is then given approval by the NGO Manager and given to one of the NGO staff members for takeout and replies to the restaurant. Until he picks up the meal, the restaurant manager can follow the individual dispatched through an NGO using the information provided by the NGO. At the end of the day, the restaurant's leftover food can be donated to NGOs. The study will concentrate on an overview of food waste in India, then go on to main sources of food waste and significant causes of food waste in our nation. Research understands the statistical information illustrating the percentage of wasted food nationwide. Studies clarify the food waste pyramid. In That there are Two categories :-

- a. Waste management
- b. Waste avoidance

In contrast to waste management, which has two sub-levels of composting and using only renewable energy for disposal, waste avoidance has three sub-levels: reducing, feeding the hungry, and feeding livestock.

IV. RESULT AND DISCUSSION

Food waste is becoming more of a global issue, not just in India. The demand for food waste management has grown in India and many other countries throughout the world as people's awareness of climate change, famine, and resource conservation has grown. According to studies, roughly 40% of the food produced is wasted, along with all the other resources like water, fuel, and energy that are consumed. Food waste is a bigger issue than this. Food waste management practices that are not suitable can have negative financial, environmental, and legal effects. Food is wasted at every point along the food supply chain, including the farm, post-harvest, processing, transit, wholesale, retail, and consumer levels.

Restaurant plate waste, processed plant and animal material, kitchen scraps, garden trimmings, and food that is thrown out after becoming contaminated with a disease are all unfit for human consumption. These can be recycled with ease. While we may not be able to totally prevent food waste, it would be savvier if we did our share to lessen its effects by following excellent disposal procedures. We will create an application that will act as a middleman and collect the food which would go to the trash by the end of the day and donate it to the poor and needy thus hitting two birds with one stone (stopping wastage of food as well as eradication of hunger).

V. CONCLUSION

Food waste management is an important aspect of environmental conservation and sustainability. Composting and anaerobic digestion are two methods for diverting non-edible food waste from landfills. Adoption of innovative technologies and policies, as well as collaboration among stakeholders such as governments, businesses, and individuals, are required for the implementation of such a system. We can not only save natural resources and reduce greenhouse gas emissions by reducing food waste, but we can also help alleviate food insecurity and promote social equity. It is critical that we take action to create a more sustainable and resilient food system.

To produce food and feed the world's population, it is critical to keep the soil nutrient-rich. Fertilizer is produced as a result of the recycling of food waste in domestic food recyclers. It can be used on agricultural land to improve soil health. Effective food waste management necessitates collaboration among various stakeholders, such as governments, businesses, non-profits, and individuals. Governments can develop policies and regulations to encourage waste reduction and diversion, while businesses can implement waste reduction and food donation strategies. Non-profits and food banks can assist in the recovery and redistribution of surplus food, while individuals can practise sustainable food practises at home, such as composting and reducing food waste. Overall, a well-managed food waste system can promote sustainability, social equity, and economic growth. It is crucial for all stakeholders to work together and adopt innovative solutions to address the issue of food waste and build a more resilient food system.



REFERENCES

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