
URBAN
HANDLING
INCINERATION
DISPOSAL
RESIDENTIAL
PROCESSING
ENVIRONMENT
ENERGY
TRANSPORT
WASTE
LANDFILL
PRODUCER
RESOURCE
RURAL
HEALTH
RECYCLING
AREA
MANAGEMENT
NON-HAZARDOUS
SUSTAINABILITY
REDUCTION
COLLECTION
MONITORING
MATERIALS
INDUSTRIAL
TECHNOLOGY
AESTHETICS
HAZARDOUS
RECOVERY
EFFECT

Slide 1: Effect of waste management

Subtitle: "Sustainable Practices for a Cleaner Future"

Name : Shubhrajyoti choudhury

Slide 2: Types of Waste

- Categorize waste into different types :

Hazardous waste
Wet waste
Healthcare and related wastes
Construction and demolition waste
Recycling
Food waste
Green waste
Liquid waste
Solid Waste
Chemical waste
Electronic waste
Gaseous waste
Packaging waste and recyclables
Commercial waste
Electronic and electrical equipment
Plastics

Slide 3: Environmental Impact

- Discuss the environmental consequences of improper waste disposal :

  An inefficient municipal solid waste management system may create serious negative environmental impacts like infectious diseases, land and water pollution, obstruction of drains and loss of biodiversity.

Slide 4: Benefits of Proper Waste Management

- Highlight the positive impact of effective waste management :
  Reducing waste will not only protect the environment but will also save on costs or reduce expenses for disposal. In the same way, recycling and/or reusing the waste that is produced benefits the environment by lessening the need to extract resources and lowers the potential for contamination.
- Environmental benefits, public health improvements, resource conservation : **It** offers fresh air and clean water.
- It maintains the outside temperature.
- It preserves nature, biodiversity, and ecosystem.
- It gives growth to more plant species for better medicine.
- It builds a healthy planet and a healthy life.

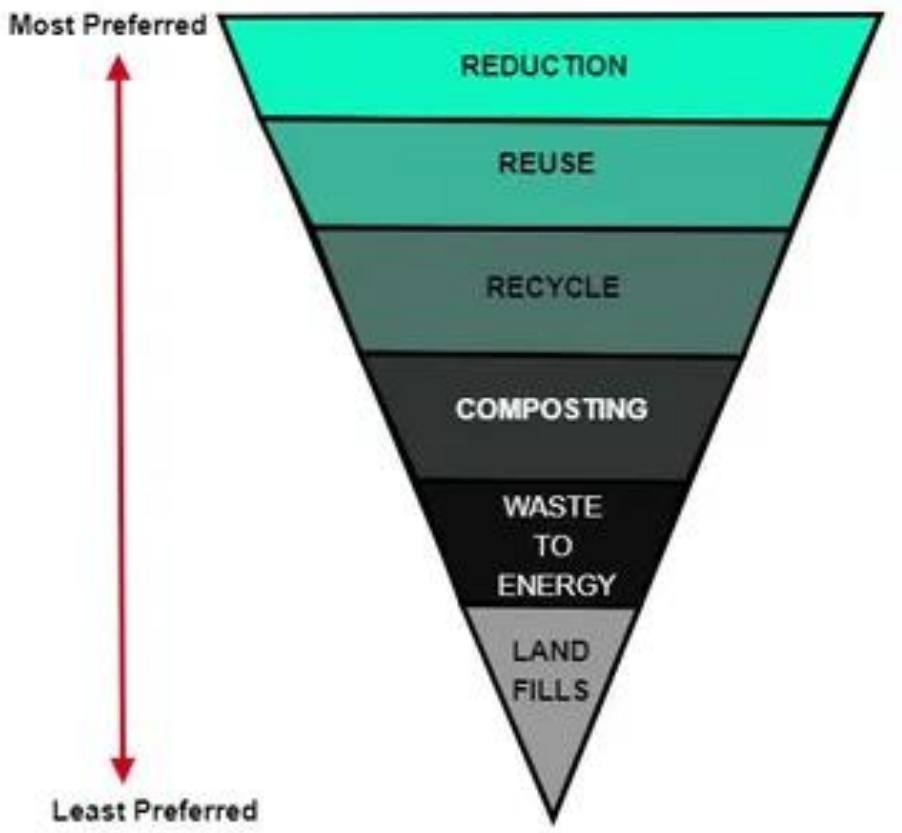
Slide 5: The 3 R's Principle

- Explain the Reduce, Reuse, Recycle concept :Reduce means to cut back on the amount of trash we generate. Reuse means to find new ways to use things that otherwise would have been thrown out. Recycle means to turn something old and useless (like plastic milk jugs) into something new and useful (like picnic benches, playground equipment and recycling bins).
- Provide examples of how individuals can apply these principles :Buy used items to reduce waste as well as the emissions created by producing new materials or disposing of them in landfills. Donate unused clothing, electronics and building materials to make sure others can reuse them too! Buy products made with recycled content.

Slide 6: Waste Management Hierarchy

- Present the waste management hierarchy
  - **Prevent** – Top priority is placed on reducing or preventing waste. Can waste be avoided by not using the material in the first place?
- **Reduce** – Can less materials be used in the design and manufacturing stage?
- **Reuse** – Can materials be re-used in other areas of your production process, or by someone else?
- **Recycle** – Can the materials be recycled, either in whole or in part to turn the waste into a new product
- **Recover** – Where further recycling is not practical or possible, energy or materials could be recovered from waste through processes such as anaerobic digestion or incineration
- **Dispose** – When all else fails, materials that cannot be reused, recycled or recovered for energy will be landfilled and incinerated (without energy recovery). This is an unsustainable method of waste management because waste that sits in landfills can continue to have a damaging environmental impact.

- Discuss the order of preference for managing waste
  - Waste prevention, as the preferred option, is followed by reuse, recycling, recovery including energy recovery and as a last option, safe disposal. Among engineers, a similar hierarchy of waste management has been known as ARRE strategy: avoid, reduce, recycle, eliminate.



Slide 7: Technologies for Waste Management

Briefly introduce modern waste management technologies

Highlight their benefits and potential drawbacks

introduction of modern waste management technologies

- **1.Smart Waste Bins**

- When left to their own devices, people don’t always bother to sort their waste into the proper waste or recycling bins. To help reduce improper recycling sorting, Polish company Bin-e designed a smart waste bin that uses artificial intelligence-based object recognition to automatically sort recyclables into separate compartments. After sorting, the machine compresses the waste and monitors how full each bin is.
  2. Waste Level Sensors

- Homes and businesses across the country rely on routine waste collection services to dispose of their trash. Weekly services have been around for decades, but they aren’t always the most efficient option.

- **3.AI Recycling Robots**

- Recycling centers play a crucial role in reducing the amount of trash that ends up in landfills and waterways each year. However, a reduced workforce during the COVID-19 pandemic has left many centers struggling to keep up with demand. Fortunately, recycling robots powered by artificial intelligence (AI) can help pick up some of the slack.
  4. Garbage Truck Weighing Mechanisms

- Like waste level sensors, weighing mechanisms installed in garbage trucks can help predict fill levels and reduce collection trips. They do this by measuring and storing the weight of waste containers, then using the data to predict fill levels over time. Cities can use this technology to more accurately predict how often they need to send their trucks out and reduce annual collection costs.
  5.E-Waste Kiosks

- Electronic waste that is improperly disposed of can be harmful to both humans and the environment. Fortunately, many companies and organizations have started e-waste recycling programs that will accept — and even reimburse you for — old electronic devices.
  : **Recycling Apps**

- Sorting through contaminated waste is one of the biggest challenges for recycling centers. In an effort to limit unrecyclable materials entering these centers, organizations have released apps like Recycle Nation and Recycle that make recycling easier for individuals. These apps provide users with information on recycling rates and center locations, and their comprehensive lists of materials help users determine which items can be recycled.

Benefits and drawbacks of modern waste management technology

- Benefits of modern waste management technologies : Reducing waste will not only protect the environment but will also save on costs or reduce expenses for disposal. In the same way, recycling and/or reusing the waste that is produced benefits the environment by lessening the need to extract resources and lowers the potential for contamination.
- Drawbacks of modern waste management technologies :
- Significant levels of pollution.
- Health and Environment Risk.
- Does Not Contribute to Waste Reduction.
- Environmental Racism.
- High Operating Costs.

Slide 8: Case Studies

- Showcase successful waste management initiatives or projects from around the world
- Highlight key takeaways and lessons learned

Successful waste management initiatives or projects from around the world :

- successful waste management initiatives or projects from around the world :

Zero-waste house, Melbourne, Australia

- The Zero-waste house in Melbourne is an inspiring example of how sustainable living can be achieved. 87 square meters house built by zero-waste evangelist Joost Bakker is located in one of Melbourne's most prominent addresses on Federation Square. The house was built using recycled materials, has a solar-powered system, and uses rainwater for irrigation. "Greenhouse" operates as a self-sustaining and productive system, with all waste generated on the site being repurposed to generate energy to power the home. In addition, the house has a composting system, an aquaponics system, a charcoal tank, a closed-loop shower, a water oxygenation system, and a vegetable garden to reduce waste and promote sustainable living. It can grow and cultivate fruits, vegetables, herbs, fish, or even mussels and snails. This zero-waste approach showcases the incredible potential that homes have not only to provide shelter but also to produce food and generate renewable energy.

- **Kamikatsu, Japan**

- Nestled in the mountains of Japan's Shikoku island is a small town of roughly 1,500 inhabitants that is taking impressive strides toward achieving a zero-waste lifestyle. Kamikatsu made history in 2003 as Japan's first municipality to commit to zero waste, and since then, the town has revolutionized its waste disposal practices from open-air burning to a circular system of consumption and disposal, all with the aim of achieving carbon neutrality. As of now, the town has already made substantial progress, estimating that it has surpassed the 80 percent mark in its journey towards reaching its zero-waste target by 2030. The town has implemented a strict waste sorting system that requires residents to separate their waste into 45 different categories, even paper is sorted in nine various ways.

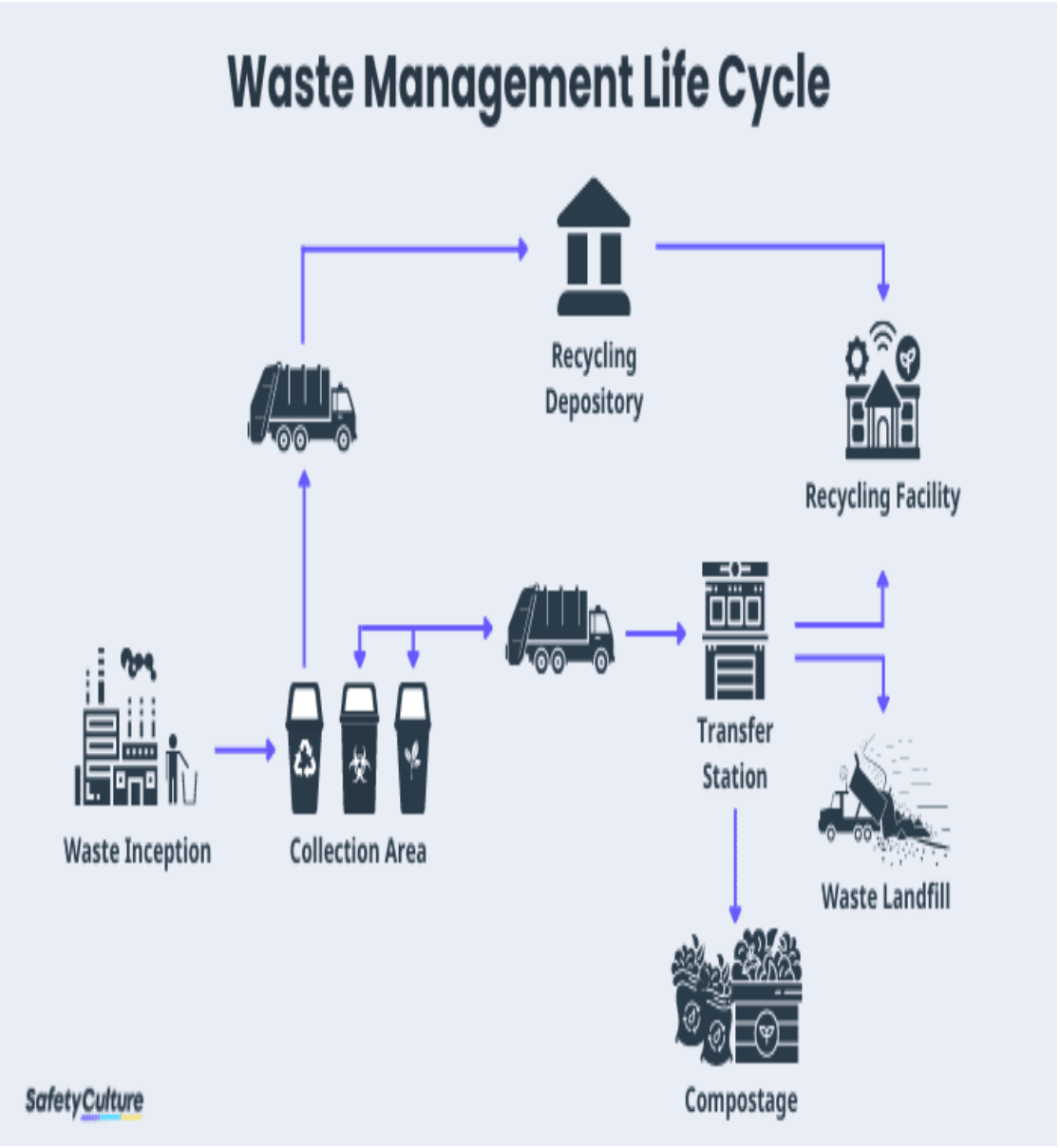
- To encourage sustainable practices among its residents, the town has implemented an incentive program that rewards people with recycling points for their efforts in recycling. These points can then be redeemed for a range of eco-friendly products. The town even has its own zero-waste brewery, a thrift shop for citizens called Kuru Kuru (Round and Round), or a ride-share system, where even the mayor is signed up as a driver.

- **Zero-waste restaurant, Berlin, Germany**

- The Zero-waste restaurant in Berlin named FREA located is a great example of how the hospitality industry can promote sustainability. Not only is it widely regarded as one of the top vegan restaurants in the German capital, but it also sets an impressive standard for sustainability by generating absolutely zero waste. The restaurant implemented farm to fork concept while sourcing its ingredients from local producers and using organic products.

- Any surplus food that cannot be repurposed is placed into the restaurant's on-site composting machine, located in the restaurant. The resulting mixture is then transported to the very farmers who supply the restaurant with fresh products, effectively closing the loop in a truly circular economy, where waste becomes a valuable resource. This farm-to-fork-to-farm approach not only minimizes waste but also supports the local agricultural community.

- **The Ocean Cleanup, Netherlands**
- Not a typical zero-waste projects that includes whole communities like Bornholm or Kamikatsu, but on the other hand, one of the most innovatives with possibly biggest global outcome is the Ocean Cleanup. It is a groundbreaking project in the Netherlands that aims to tackle the issue of plastic waste in our oceans. The project was founded by Boyan Slat in 2013, who was just 18 years old at the time. The idea behind Ocean Cleanup is to use a passive system to collect plastic from the ocean's surface, using the natural oceanic currents to direct the plastic towards the system. Once the plastic has been collected, it is then transported back to shore where it can be recycled or disposed of in an environmentally friendly way. The system is powered by renewable energy, making it a truly sustainable solution to the problem of oceanic plastic waste.
- The success of the Ocean Cleanup project has been truly remarkable. Since the first prototype was deployed in the North Sea in 2018, the system has been continuously improved and refined, resulting in a significant increase in the amount of plastic waste collected. In just one year, the system was able to remove over 60 tons of plastic from the ocean. The project has also garnered worldwide attention and has inspired others to take action against plastic waste in our oceans.
- In conclusion, these 4 best zero-waste projects from around the world serve as inspiring examples of how individuals, organizations, and communities can promote sustainability and reduce waste. Surely not everyone can live in a zero-waste house like in Melbourne and not every community or town can be like Kamikatsu, but by implementing these initiatives at least partly and taking inspiration out of them, we can all contribute to creating a better future for our planet.



Slide 9: Call to Action

- Encourage the audience to adopt responsible waste management practices
- Provide tips for individuals and communities to contribute

Tips for individuals and communities to contribute

1. **Help your local food pantry.** Today, there are an estimated 12 million children struggling with hunger in America. Contact your local food pantry or give to our partner No Kid Hungry. Your support will help them provide food items for families in need.

2. **Volunteer your time.** Volunteering is a great way to support your community. Volunteering opportunities can range anywhere from cleaning up the neighborhood to planting a community garden. Save the Children offers volunteer opportunities – learn more about volunteering with us!

3. **Never leave children unsupervised in parked cars.** As temperatures rise, children, elderly adults and pregnant woman are most at risk during a heat wave. A child left inside a car is at risk for severe heat-related illness or death, even if the windows are cracked open.

4. **Check on neighbors and family members**, especially those who live alone, are elderly, have health or mobility issues or are caring for children. Schedule time to remotely connect with these individuals regularly to let them know they are not alone.

5. **Support local businesses**, **schools and child care centers**: When possible, purchase gift cards to local shops businesses online that you can use once storefronts reopen, and uplift those who are trying to keep afloat. Due to COVID-19, many child care centers across the country have been forced to shut down. Through Save the Children's political advocacy arm – Save the Children Action Network – we are building bipartisan to support financial relief for the child care industry during the pandemic. Learn how you can join us to take action.

6. **Provide support to frontline health workers and first responders:** Many health workers are not able to stay at home and are working around the clock, so take on tasks that they don't have time to do as an expression of gratitude.

7. **Assist in local or online fundraising efforts.** Look into options that provide much-needed supplies to families, such as Amazon Wish Lists, as well as the work of your local community and volunteer organizations. You can also fundraise for children or donate your birthday to support children in need around the world.

8. **Stay informed and stay calm**: Only share information from credible sources like your state department of health or the CDC. Remember, when you stay calm, others will follow.

9. **Take care of yourself and others:** Practice patience, kindness and mindfulness. Encourage others to do the same!

Encourage the audience to adopt responsible waste management practices

Recycling bins are usually in one location. But what if they were everywhere? What if you could throw your recyclables anywhere and know that there was a recycling bin nearby? If you have public recycling bins strategically placed throughout your city or town, people will have several opportunities every day to recycle. This would be a great way to make it easier for people to recycle, as well as making them more accountable for their waste. When the recycling bins are constantly in sight, it's more difficult for people to forget about them.

- **Keep recycling bins close by**

  People are more likely to recycle when they can do it easily. We've all seen the "oops, I forgot to recycle" feeling. If recycling bins are out of sight, then people will be less likely to recycle. Keep recycling bins close by so that people know where they are and how close to them they are. Also make sure that people know what items go in which bin, and post it on a sign nearby.

- **Get recyclable items in supermarkets**

  One way to make recycling easier is by including more recyclable items in supermarkets. This means that people won't need to take the time to figure out what they can recycle and what they can't. It also makes it just as easy for people who live in apartments or don't have a car. When the throw-away items are right at the checkout, it becomes much more likely customers will remember to recycle them.

- **Reduce the price of plastic bags and create reusable ones**

  There is a company in Australia that has been able to reduce the use of plastic bags by 75% simply by banning them. Instead, they created reusable ones and now charge customers for them. A fee for single-use plastic bags can also encourage people to bring their own, which would help them recycle.

- **Make it fashionable to recycle**

  There are so many ways to recycle, but not everyone knows how or is willing to do it. One way to encourage people to recycle is by making it fashionable to do so. Talk with your local council about providing bins that can be put in high-traffic areas like cafeterias, libraries, and gyms. These locations are perfect for putting recycle bins because they are used every day and will have a chance of being seen by a lot of people.

- Another way to make recycling fashionable is by adding incentives for people who take the time to recycle. For example, you could offer discounts on utilities or free tickets to events if someone takes the time to sort their recycling correctly. This helps motivate people and ensures that they are recycling responsibly because they have an incentive for doing so.