



E. Ahamed Model United Nations Conference 2025 INDIA



UNITED NATIONS ENVIRONMENT PROGRAMME

Agenda:

**Waste Management : Assessing the
impact and enhancing sustainable
practices**

Background Guide

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ABOUT THE COMMITTEE



The **United Nations Environment Programme (UNEP)** is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system, and serves as an authoritative advocate for the global environment. **Headquartered in Nairobi, Kenya**, the organization operates through its divisions, as well as regional, liaison, and out posted offices, and a growing network of collaborating centers of excellence. Additionally, several environmental conventions, secretariats, and inter-agency coordinating bodies are hosted. The leadership of the organization is provided by the **Executive Director, Inger Anderson**

The UN and UNEP help in addressing major environmental issues by providing a platform for international cooperation, developing legal frameworks, raising awareness and capacity building and supporting research and monitoring on these issues. The mission of UNEP is to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.



UNEP works on delivering transformational change for people and nature by drilling down on the root causes of the three planetary crises of climate change, nature and biodiversity loss, and pollution and waste. UNEP employs seven interlinked subplans for action: Climate Action, Chemicals and Pollutions Action, Nature Action, Science Policy, Environmental governance, Finance and Economic Transformations and Digital Transformations. In all aspects of the work conducted, the overarching commitment to **sustainability** is upheld.

The Paris Agreement

The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris.

The Paris Agreement has a long-term temperature goal which is to keep the rise in global surface temperature to well below 2 °C (3.6 °F) above pre-industrial levels.



The Paris Agreement is a landmark in the multilateral climate change process. It is the first time; a binding agreement brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects.

Implementing the Paris Agreement necessitates economic and social transformation grounded in the best available science. The agreement operates on a five-year cycle, encouraging countries to undertake progressively ambitious climate actions. By 2020, countries were required to submit their climate action plans, known as nationally determined contributions (NDCs).



While significantly ramping up climate change action is essential to meet the Paris Agreement goals, its implementation has already initiated low-carbon solutions and new markets. Increasingly, countries, regions, cities, and companies are setting carbon neutrality targets. Zero-carbon solutions are becoming competitive in economic sectors that account for 25% of emissions, particularly in the power and transport sectors, creating numerous new business opportunities for early adopters. By 2030, zero-carbon solutions could be competitive in sectors responsible for over 70% of global emissions.

INTRODUCTION TO THE AGENDA

1. Waste Management

Waste management is essential to our health, to protecting our environment and for sustainable development. It involves collecting, moving, processing and disposing of different types of waste which include household, industrial, medical, hazardous and electronic wastes among others. However, the urgent problem of unprecedented levels of waste generation poses itself.

In 2020, the global direct cost of waste management was an estimated USD 252 billion. When factoring in the hidden costs of pollution, poor health and climate change from poor waste disposal practices, the cost rose to USD 361 billion. Without urgent action on waste management, by 2050 this global annual cost could almost double to a staggering USD 640.3 billion.



Inadequate waste management results in severe environmental problems and public health risks such as pollution and transmission of diseases. Through promotion of sustainable practices and global cooperation, United Nations Environment Programme (UNEP) deals with these problems. Understanding how waste management impacts on sustainability will ensure further improvements in its practice.

The globalization of trade has led to a significant increase in electronic waste (e-waste). E-waste contains hazardous materials that can pose serious environmental and health risks if not managed properly. According to the UN's 2024 Global E-waste Monitor (GEM), the world's generation of electronic waste is rising five times faster than documented e-waste recycling. The rapid obsolescence of electronic devices and inadequate e-waste management infrastructure are thus major contributors to this growing problem.



2. Benefits of Waste Management

- 1. Financial Benefits:** Money-saving opportunities arise from reducing the waste created and reusing and recycling materials. For example, organizations can shop cash with the aid of decreasing the quality of packaging they use and recycling substances like cardboard and plastic. Further, companies can save money on maintenance and operating costs by using fewer resources such as energy and water. Businesses that reduce their waste can qualify for tax and incentives from the local government. Additionally, businesses that focus on sustainable waste management can access grants to help cover the cost of sustainable practices.



2. Improves Environmental Health:

Reducing pollutants and threatening chemical substances is a vital aim of sustainable waste control. Reusing substances can reduce the need for new resources which helps protect the environment from the impacts of resource extraction.

3. Enhance Resource Efficiency:

Reusing and repurposing materials are sustainable waste management practices that can reduce the need for new resources and help conserve materials. Recycling materials like paper, plastic, and metal can also assist to save resources and reduce the need for new resources. Lastly, more efficient use of resources can lead to a more equal distribution of resources which can reduce poverty.

4. Improved Health and Safety:

Sustainable waste management can also improve health and safety. Reducing the number of toxic chemicals in the environment can help reduce the risk of health problems. Additionally, lowering the amount of waste generated can reduce the number of pests and disease-carrying organisms. Improving air and water quality can lead to improved health and safety.



3. EFFECTS OF URBANISATION

INTRODUCTION TO URBANISATION:

The world is rapidly urbanizing, with over half of the global population now living in urban areas, up from about one-third in 1950. By 2050, it is projected that around two-thirds of the world's population will reside in urban areas. Successful management of urban growth is crucial for sustainable development in both developed and developing countries. The Population Division regularly produces the dataset "World Urbanization Prospects," which provides estimates and projections of the urban population size at the global, regional, and national levels. Additionally, it tracks the current and future sizes of the world's largest cities. The Population Division produces the dataset World Urbanization Prospects regularly. It prepares estimates and projections of the size of the urban population at the global, regional and national levels. It also tracks the current and future size of the world's largest cities.



INDUSTRIAL EFFECTS- The Industrial Revolution, a 18th-century technological advancement, significantly impacted urban areas, leading to challenges like housing availability, overcrowding, and infectious diseases. Industrialization transformed agricultural economies into manufacturing, replacing manual labor with mass production and assembly lines. This process has historically led to urbanization,

creating economic growth and job opportunities. Factory establishments in regions create high demand for labor, leading to other businesses like manufacturers, retailers, and service providers following, creating more jobs and housing demands, thus establishing urban areas.

CONSTRUCTIVE EFFECTS- The construction industry's environmental impact from urbanization is significant. Construction waste and habitat destruction are major concerns. One of the primary candidates is the pollution associated with fossil fuel consumption. Construction projects notoriously guzzle fossil fuels like gas and diesel. This fuel consumption also notoriously emits large volumes of greenhouse gases like carbon dioxide, methane and other waste products. To address this, effective waste management and sustainable practices must be prioritized.



EXTRACTIVE EFFECTS- Urbanization is the conversion of land into densely populated cities, often due to population growth or migration. The extractive industry also increases the dependence on natural resources and can lead to deforestation, loss of natural habitats, and depletion of freshwater resources, reducing biodiversity and altering species interactions. Human activities, like burning fossil fuels, also contribute to environmental pollution, negatively impacting human and animal health. The extractive sector contributes to air, water and land pollution, and toxic wastes and has caused significant water pollution. Oil production has also gravely impacted the environment in many countries.



4. EFFECTS ON BIOSPHERE

a) **Water**- Ocean acidification is the gradual decrease in the ocean's pH levels, primarily due to the absorption of carbon dioxide (CO₂) from the atmosphere over an extended period.



I. Relation to Waste Disposal- One of the causes of ocean acidification is the disposal of sewage, industrial, and agricultural waste. These wastes contribute excess nutrients to the ocean, promoting algae growth. When the algae die, they decompose, releasing CO₂ into the water and increasing acidification.

II. Impact on Marine Life- Ocean acidification threatens many marine ecosystems, particularly affecting shell-forming marine organisms. The effects are notably severe on the West Coast and pose a broader threat to the marine food web.

III. Preventive Measures- Canada is addressing ocean acidification through the United Nations Sustainable Development Goals (SDGs), aiming to reduce pollution and sewage waste impacts. Efforts on the West Coast include strengthening marine protections and advocating for stricter regulations on cruise ship pollution. Enhanced regulations on industrial and agricultural waste disposal are also necessary.

b) **Land**- Land degradation is the process in which the value of biophysical environment also known as biochemical environment is affected by a combination of human-induced processes acting upon the land. It is viewed as any change or disturbance to the land perceived to be deleterious or undesirable



I. Impact of Landfills on Natural Habitats- Creating landfills involves clearing large tracts of land, often destroying wildlife habitats. In the United States alone, landfills have consumed approximately 1,800,000 acres of land.

II. Environmental Consequences- Landfills contain toxic substances that can seep into the ground and contaminate water sources. As water filters through landfill waste, it generates toxic leachate, a liquid that may contain harmful chemicals like methane, carbon dioxide, and organic acids. Uncontrolled leachate can damage local ecosystems, wildlife, and human health.



III. Sweden's Waste Management Model- Sweden has minimised landfill waste, with less than one percent of household waste going to landfills. The country recycles extensively, with 32 waste management plants providing heat for 810,000 homes and electricity for 250,000 houses. Sweden's recycling policy ensures that energy from waste burning is utilised in the national heating network, efficiently heating homes during winter.

c) Air-

I. Link Between Waste and Air Quality

Landfills are significant sources of methane gas, produced from the decomposition of organic matter. Methane is a potent greenhouse gas, 84 times more effective at trapping heat than carbon dioxide, contributing heavily to climate change. Landfills also emit other gases like carbon dioxide, water vapour, and non-methane organic compounds, which can lead to climate change and smog.



II. Actions to Improve Air Quality- Individuals, corporations, and governments can take steps to reduce waste and improve air quality. Companies can reduce packaging, design recyclable products, and support better waste management regulations. Governments can implement strict regulations to prevent illegal dumping and burning and invest in advanced waste handling methods, promoting cleaner air and a safer environment for all.

5. EXCESSIVE CARBON EMISSIONS

I. Introduction- Carbon dioxide (CO₂) performs an important and life-sustaining function on Earth, but the increase in greenhouse gases since industrialization has emitted too much CO₂ into our atmosphere. CO₂ is the ultimate by-product of combustion of hydrocarbons such as coal, oil, and natural gas. Hydrocarbons deplete the ozone layer and contribute to climate change causing an increase in the average temperature of Earth by 2°F every decade. CO₂ accounts for 0.04% of our atmosphere which is double of the requirement for plants. Every month 3-4 tons of oil are put into the sea and among the main sources of marine pollution. UNEP has undertaken several actions to limit fossil fuel extraction in vulnerable regions by implementing a plethora of frameworks.



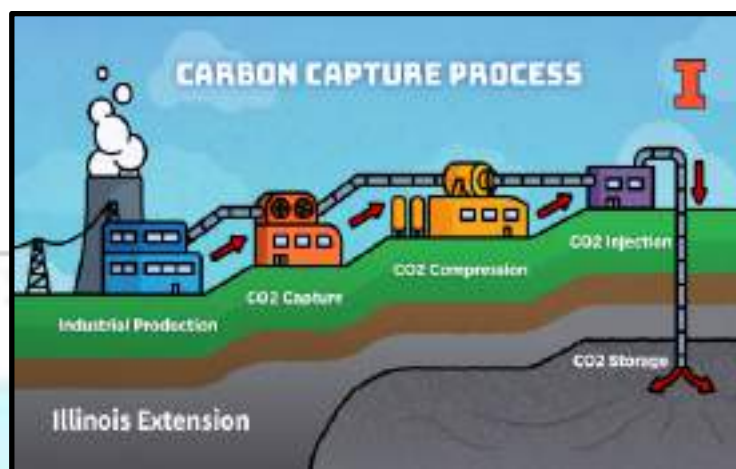
II. Enhanced Recycling Efforts- Recycling is the best way for cutting waste generated carbon emissions. Recycling materials such as plastic, metal, glass, and paper help reduce the need for raw materials hence saving energy and reducing emissions.

More capital should be put towards building better facilities, proper awareness on recycling, and markets for recycled materials. This will help reduce waste from landfills and incinerators, eventually reducing carbon emissions

III. Climate Change- Climate change refers to long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to changes in the sun's activity or large volcanic eruptions. But since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels like coal, oil and gas. The main greenhouse gases that are causing climate change include carbon dioxide and methane

Climate change is the single biggest health threat facing humanity. Climate impacts are already harming health, through air pollution, disease, extreme weather events, forced displacement, pressures on mental health, and increased hunger and poor nutrition in places where people cannot grow or find sufficient food.

IV. **Carbon Capture**- It refers to the process for trapping carbon dioxide and sequestering it deep underground. Currently, there is 47% more carbon dioxide in the atmosphere than at the beginning of the Industrial Age. This causes temperatures to rise, the ocean to acidify, and extreme weather to become commonplace and even more extreme. Carbon capture technology is essential to reversing the effects of global warming



6. Mitigation of Space Debris

I. Introduction-

Space debris are defunct human-made objects in space, principally in the Earth Orbit, which no longer serve a useful function. Several spacecraft, both crewed and un-crewed, have been damaged or destroyed by space debris. The measurement, mitigation, and potential removal of debris is conducted by some participants in the space industry. Most “space junk” is moving very fast and can reach speeds of 18,000 miles per hour, almost seven times faster than a bullet. Scientists also want to explore the outcomes of proposals for seeding millions of tons of Sulphur aerosols in the future to slow the rate of global warming by reflecting sunlight.



When space debris reenters Earth’s atmosphere, it generates intense heat due to friction. If the fragments of the space debris don’t get vaporized in the atmosphere, then the few debris left have a huge impact on Earth. If the debris lands on a dry forest, then it would cause wildfire and havoc within minutes.

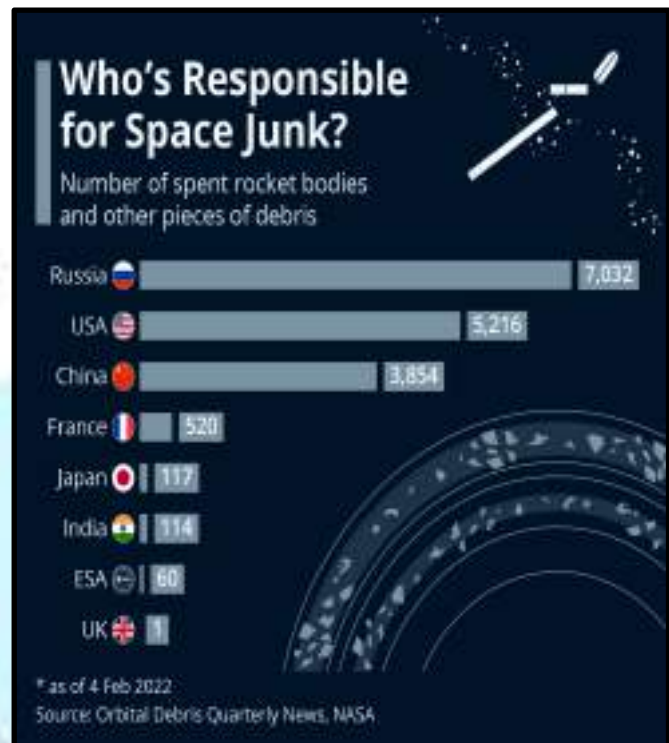


II. Spacecraft Design:

Designing spacecraft and taking precautions to minimize debris generation during deployment and operations helps prevent additional space junk.

III. Increased Debris Density and Satellite Threats-

As space debris accumulates in Earth's orbit, the risk to operational satellites grows. The higher density of debris increases the likelihood of collisions, potentially damaging or destroying active satellites. These collisions disrupt critical services such as communication, navigation (e.g., GPS), and Earth observation (e.g., weather monitoring). Costly replacements and compromised data transmission that may result from these disruptions, emphasizes the urgent need to foster effective space debris management strategies.



IV. Light Pollution-

Light pollution, also known as photo pollution, results from the excessive presence of artificial light due to urbanization and industrialization. It contributes to a dome-like shield of light pollution called **skyglow**, which includes glare, light trespass, and clutter.



- a) **Obscured Night Sky:** Urban areas obscure our view of the true night sky. In cities, only about 1% of celestial bodies, distant galaxies, and constellations remain visible due to artificial light interference
- b) **Night Vision Impairment:** Light pollution prevents the full utilization of our natural night vision. The human eye's retina can adjust to low-light conditions, but 37% of Americans lose this ability due to excessive artificial lighting.

V. Health Risks-

- a) **Circadian Rhythms Disruption:** Artificial light disturbs our biological clocks. Exposure to light at night affects melatonin production, potentially leading to sleep disorders, mood disturbances, and even cancer risk.
- b) **Insomnia and Health Problems:** Light pollution can trigger insomnia, impacting overall health. It disrupts the natural day-night cycle, affecting hormonal balance and immune function.
- c) **Safety Hazards:** Poorly designed or excessively bright lighting can create safety hazards, causing glare and impairing vision for drivers and pedestrians.



7. CIRCULAR ECONOMY MODELS

Circular economy is a framework of production and consumption, a circular economy consists in sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as many times as possible for reentering or restoring by preserving value. It helps to prolong the life of the product.

In layman's terms, it would equate to no waste at all. Where a product can no longer function, it's possible to close the loop on as many material cycles as we can with recycling. Well, these can be reused again and again, to add more value.

I. To Protect the Environment-

Slowing this down by reusing and recycling products would reduce the pace at which natural resources are used up, reduce the areas of landscape that are disturbed, or habitats destroyed and slow biodiversity loss.

Reducing the total annual greenhouse gas emission is another benefit of the circular economy. As reported by the European Environment Agency, industrial processes and product use are to blame for 9.10% of EU greenhouse gas emissions, waste management is only responsible for 3.32%.

Designing products that perform more efficiently and sustainably from the outset would reduce energy and resource use (more than 80% of a product's environmental impact is defined at the design stage). Products could be built from tougher components that can be borrowed, or even upgraded, repaired to extend their life expectancy, it will largely reduce the amount of waste which we produce. For them, packaging is a major issue and the average European produces nearly 180 kilos of packaging waste every year. It is targeted that over-packaging should be tackled and the packaging design should be improved for its reusing and recycling potential.

II. Reduce Raw Material Dependence-

As the world's population is rising, and demand for raw materials is going up. However, supply is finite for the most critical raw materials. Finite supplies mean some EU countries also depend on other countries for their raw materials.

According to Eurostat, the EU imports about half of the raw materials it consumes. The total value of trade (import plus export) of raw materials between the EU and the rest of the world has almost tripled since 2002, with exports growing much faster than imports. Still, the EU imports more than it export, leading to a trade deficit of €35.5 billion in 2021. In general, recycling of raw materials reduces risks related to supply, such as price volatility, availability, and import dependency.



III. EU's Measure To Become A Circular Economy-

Moving to a more circular economy will increase competitiveness, stimulate innovation, boost economic growth, and create jobs, 700,000 jobs in the EU alone, until 2030. [SEP]



In March 2020, the European Commission published the circular economy action plan, targeted at stimulating more sustainable product design, reducing waste, and making consumers more powerful—for instance, by creating a right to repair. Special attention is given to resource-intensive industries, such as electronics and ICT, plastics, textiles, and construction. In March 2022, the

Commission adopted its first package of measures to accelerate the transition to a circular economy and implement the Circular Economy Action Plan. The proposals include:

- Boost sustainable products.**
- Empower consumers for the green transition.**
- Reviewing Construction Product Regulation.**

8. E-Waste disposing and recycling

I. Introduction- With the increasing modernization and urbanization of the countries, it has resulted in an increased need for technological devices which has accumulated tons of electronic waste. In 2019, the world generated an estimated 53.6 million metric tons of E-waste. This electronic waste includes discarded or end-of-life electrical or electronic equipment such as daily needed phones, computers, hair dryers, washing machines etc. These electric or electronic wastes are given the abbreviation of “E-waste”. Some that are discarded may be dangerous and some may be still useful having the ability to be recycled into something valuable that can be used again.

II. Disposing of E-waste- Most countries get rid of E-waste by disposing it into landfills or incineration of them. This not only adds to air pollution with the smoke, but the landfills also take up huge spaces of land, degrading the land with the huge percentages of plastic and toxic chemicals namely mercury and lead used in those electric or electronic devices. They not only degrade, but they also lead to habitat destruction and loss of biodiversity.





If this E-waste is not properly disposed of, it not only causes neurological harm to children, but it also increases the chances of cancer and birth defects. Most of the first world countries dump their E-waste into developing countries or third world countries such as Africa, China and India. Hence, this E-waste disposing problem has become a come around problem for many third world countries such as Africa, China and India. North America exports most of its waste to China and Nigeria.

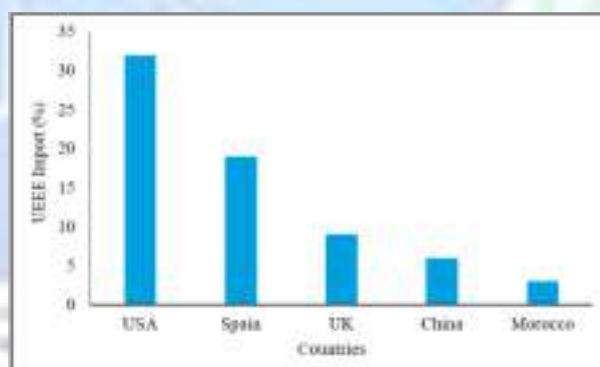
Example- China-

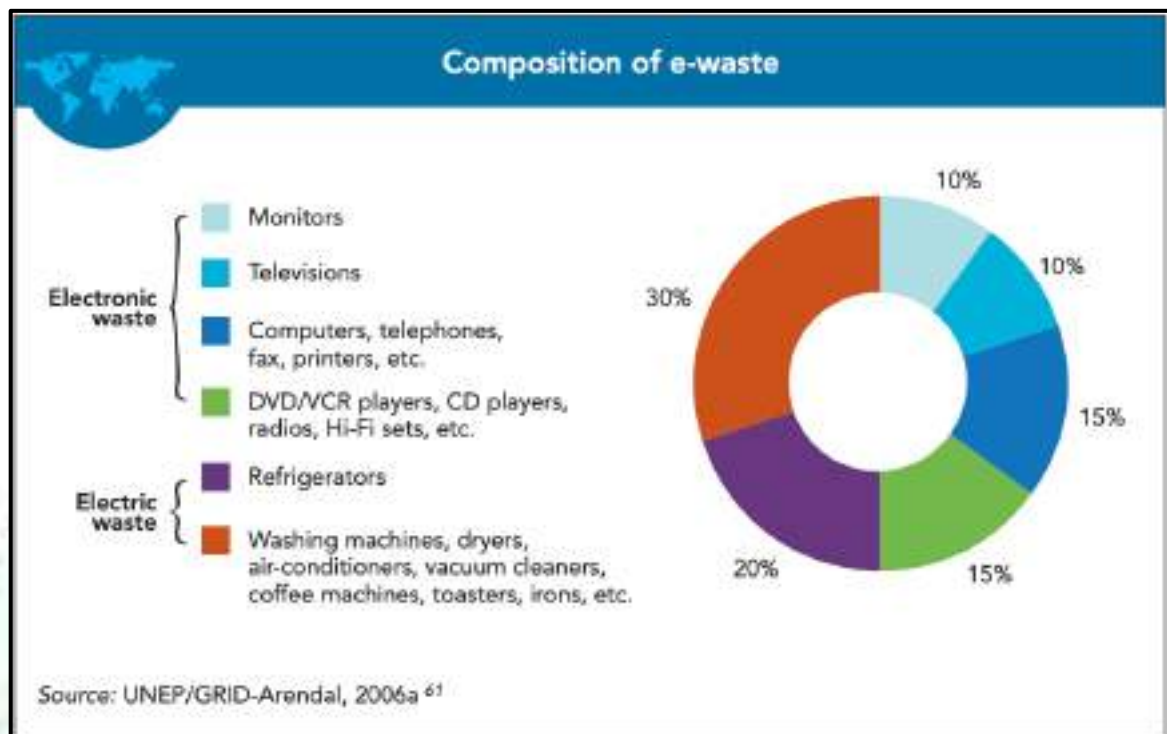
China is known as the “the largest e-waste dumping site in the world”. Among North America, the United States is alone responsible for exporting half of its E-waste to China. The United States is also known for incinerating its E-waste. The US is well resourced with the technology and machinery to recycle, but the US government still chooses to incinerate its E-waste and export most of its other E-waste to developing countries due to their cheap labor.

Due to China’s outdated and inadequate machinery to process discarded or end-of-life electrical or electronic equipment, migrant workers incinerate or often directly dump acid from heavy metal components into rivers or irrigation ditches. An overwhelming amount of E-waste gets dumped into Guiyu, China. According to data provided by the Basel Action Network (BAN), most of the E-waste also gets dumped into rivers near the residential homes in Guangdong Province.

III. Recycling of E-waste- Recycling of E-waste is done to ensure that the toxic substances emitted from it are reduced, hence, protecting biodiversity and human health of the people. There are multiple processes that go into the recycling of electronic waste. One of the processes involved in it is called de-manufacturing. This is the process which removes all the hazardous materials in the electronic devices that have a chance of destroying the machine or contaminating the environment once they are disposed into landfills.

This is done by first disassembling a product into its components so that the hazardous ones can be detached easily. This is the process which prevents toxic harmful chemicals from being released into the atmosphere. Most Electronic devices are recycled to revive precious metals which were used to make the electronic device. Most of these are then in short supply hence recycling these metals can ensure a constant in their supply and stock. These are then sold or used in making new electronic devices, hence, creating a circular economy. This reduces carbon emissions, reduces energy and water consumption and keeps useful and reusable materials out of landfills, hence, becoming a huge important process for reducing global warming, pollution, and other environmental causes.





CASE STUDIES

1. INDIA

I. *Introduction-* The Indian Peninsula, carved into the center of the Arabian Sea, Bay of Bengal, and Indian Ocean; serves as a bustling crossroads of commerce and culture. Its extensive coastline, with bustling ports and harbors, has long facilitated maritime trade routes, connecting the riches of the East to the markets of the west. From the scenic shores of Kerala to the bustling metropolis of Mumbai, the Indian Peninsula's strategic location has been a beacon for merchants and adventurers, fostering exchange and prosperity across continents for centuries.

The varied landscapes of the Indian Peninsula have prompted ingenious solutions to waste disposal and recycling. Coastal communities harness the power of the ocean to recycle waste, while urban centers leverage decentralized systems to minimize landfill reliance. The peninsula's rich tapestry of cultures and traditions have helped foster a collective ethos where ancient practices harmonize with modern technologies to create sustainable solutions for the challenges of waste management.



II. *India & Waste Management* - India faces significant waste management challenges due to its daily generation of 150,000 metric tons of municipal solid waste, most of which is improperly handled. In urban areas, demand for waste services surpasses available resources, exacerbating the issue. Inadequate waste management leads to environmental pollution, health hazards, and economic losses. Socially, communities near disposal sites suffer health risks. The informal waste sector operates in unsafe conditions, deepening social inequalities.

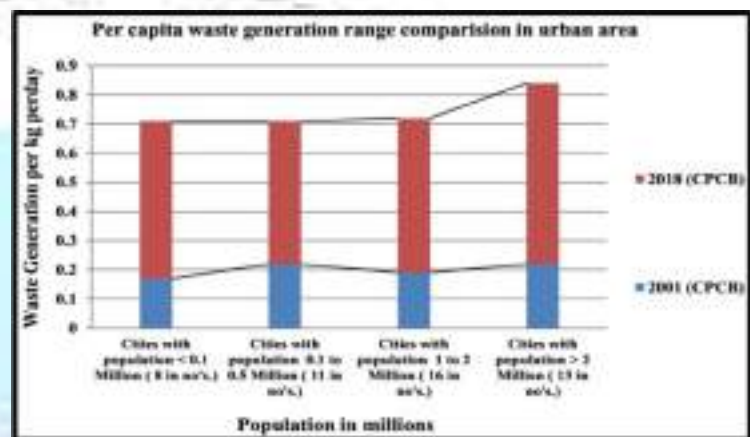
Comprehensive approaches prioritizing sustainability and public health are necessary. Initiatives like the Swachh Bharat Mission aim to improve infrastructure and sanitation nationwide. Public awareness and education on proper waste disposal are crucial. Collaborative efforts involving government, local authorities, private sector, and communities are essential for effective waste management, promoting environmental protection and sustainable development.



III. Challenges Faced By India In Waste Management: India faces significant challenges in waste management, including rapid urbanization, population growth, inadequate infrastructure, and cultural attitudes towards waste. The country generates vast amounts of municipal solid waste, much of which is not properly managed, leading to environmental pollution, health hazards, and resource depletion.

1. **Urbanization-** Urban migration in India driven by job prospects, education, and improved living standards leads to an estimated urban population of 600 million by 2030. This strains waste management infrastructure, especially in informal settlements lacking proper services and sanitation.

Indiscriminate waste disposal in these areas contribute to environmental degradation, health risks, and social disparities. Inadequate waste management results in air, soil, and water pollution from open dumping and burning, leading to respiratory illnesses, waterborne diseases, and soil contamination in rapidly urbanizing regions.



2. **Informal Sector Dominance-** India's vast informal waste management sector relies on millions of waste pickers and recyclers, essential for collecting and recycling materials like paper, plastic, glass, and metal. They significantly enhance recycling rates by salvaging valuables from waste streams. Sorting through dumps and streets, they sell recyclables to middlemen or industries, diverting waste from landfills. Recognizing their pivotal role and addressing socio-economic needs is vital for inclusive and sustainable waste management. Integrating the informal sector into formal systems can improve conditions, access to healthcare, and overall operational efficiency, benefiting both workers and waste management efforts.



3. **Population Growth:**

India's rapid population growth, second only to China, exceeds 1.3 billion people, exacerbating waste management challenges. Daily waste generation strains existing infrastructure amid urbanization and changing consumption patterns. Comprehensive strategies are vital to tackle this crisis sustainably, balancing environmental and public health concerns. Investments in infrastructure, technology, awareness campaigns, and policy reforms are essential for effective waste management, ensuring a cleaner, healthier future for all.

4. *Plastic Pollution*- India is one of the largest consumers of single-use plastics, contributing to widespread plastic pollution. Inadequate plastic waste management infrastructure and low recycling rates exacerbate environmental degradation and harm marine ecosystems.



IV. **Government Initiatives**- The Indian government has implemented several initiatives and policies to address waste management challenges and promote environmental sustainability, like: -

1. *Swachh Bharat Mission*: Launched in 2014 to achieve universal sanitation and cleanliness, particularly in rural areas, through the construction of toilets, waste collection systems, and disposal facilities.
2. *Solid Waste Management Rules*- Introduced in 2016, these rules provide guidelines for the management of solid waste, emphasizing source segregation, recycling, and proper disposal practices.
3. *Plastic Waste Management Rules*- Implemented in 2016, these rules aim to reduce plastic waste generation and promote recycling through measures such as extended producer responsibility (EPR), plastic waste management fee, and phasing out of non-recyclable multilayered plastic.
4. *Extended Producer Responsibility (EPR) framework*- This framework holds producers responsible for managing the waste generated from their products throughout their lifecycle, encouraging them to adopt eco-friendly packaging and recycling initiatives.



Policies like Swachh Bharat Mission improved sanitation and waste disposal, reducing open defecation. Solid Waste Management and Plastic Waste Management Rules standardized practices, boosting recycling and cutting pollution. Extended Producer Responsibility (EPR) encouraged eco-friendly packaging and recycling, promoting a circular economy. These initiatives enhance public health, curb environmental degradation, and pave the way for sustainability.



V. Innovative Approaches and Technologies-

In India, innovative approaches are revolutionizing waste management. Decentralized waste processing units, strategically located at the local level, utilize advanced technologies like composting and biogas generation to convert organic waste into valuable resources such as fertilizer and renewable energy.



Waste-to-energy plants are emerging as a sustainable solution for managing non-recyclable waste. These plants employ thermal or biological processes to convert waste into heat, electricity, or fuel, reducing dependency on landfills and contributing to renewable energy production.



Smart waste bins equipped with sensors and monitoring systems are deployed in urban areas to optimize waste collection routes, minimize littering, and improve operational efficiency. Meanwhile, mobile applications empower citizens to report waste-related issues, schedule pickups, and access information on recycling centers and disposal facilities, fostering greater community engagement in waste management efforts.

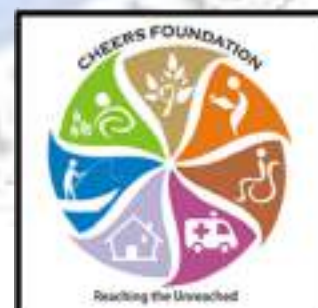
VI. ROLE OF STAKEHOLDERS

In Indian waste management, stakeholders like MoEFCC (Ministry of Environment, Forest and Climate Change), local governments, private firms, NGOs, and community groups play vital roles. Government bodies formulate policies and provide infrastructure. Private firms invest in technology and processing facilities. NGOs raise awareness and implement community projects. Community groups mobilize locals for waste segregation and clean-ups. Collaboration among these stakeholders is crucial for comprehensive waste management, addressing environmental, social, and economic concerns, and promoting sustainable development.

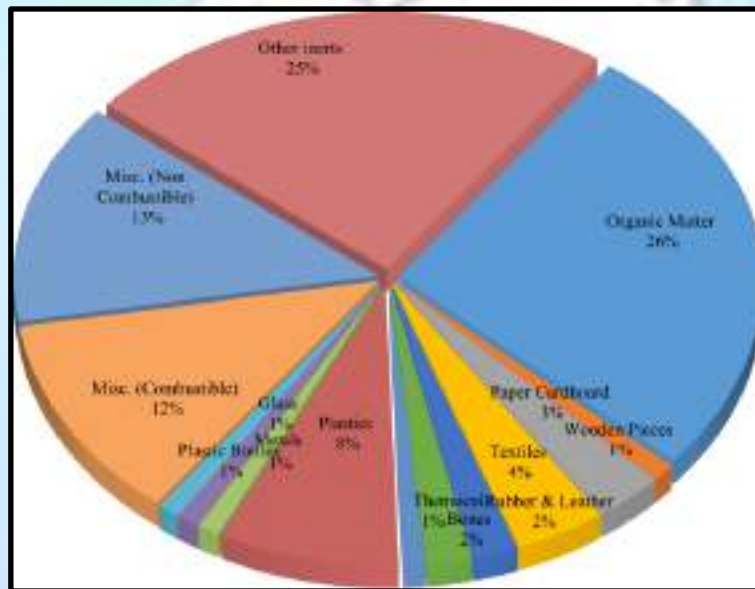


VII. Ways to Improve Waste Management in India-

1. Strengthen Policy Enforcement
2. Invest in Infrastructure Development
3. Promote Public Awareness and Education
4. Support the Informal Waste Sector
5. Foster Innovation and Research



VIII. **India and UNEP-** India maintains a robust partnership with UNEP, showcasing its dedication to global environmental stewardship and sustainable development. As a key UN member, India actively collaborates with UNEP on climate change, biodiversity conservation, and pollution control. Participation in UNEP initiatives like conferences and capacity-building programs allows India to share expertise and contribute to global environmental efforts. Through partnerships, India leverages international resources to address environmental challenges and pursue a sustainable future. This collaboration highlights India's commitment to multilateralism and its proactive role in shaping global environmental policies aligned with national development priorities.



2. JAPAN

I. Introduction-

Japan, situated in East Asia, is an archipelago consisting of nearly 4000 smaller islands and the four main islands, Hokkaido, Honshu, Shikoku and Kyushu. A very large portion (four fifths) of Japan is covered by the Japanese alps, which includes Mount Fuji, a very popular volcano in the area.

Japan has been recycling since the Edo period (1603 - 1868) creating a circler society unparalleled in the world. it has now become a world leader in plastic recycling, with a near 93% plastic collection rate and 85.5% recycling rate, a steady increase in emptying practices such as thermal recycling and incineration (without energy retrieval) accompanied by an equally steady decrease in the use of practices such as landfills and mechanical recycling.

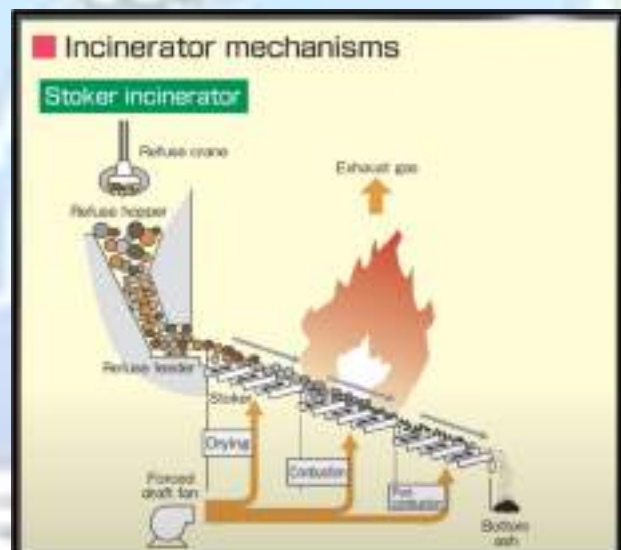


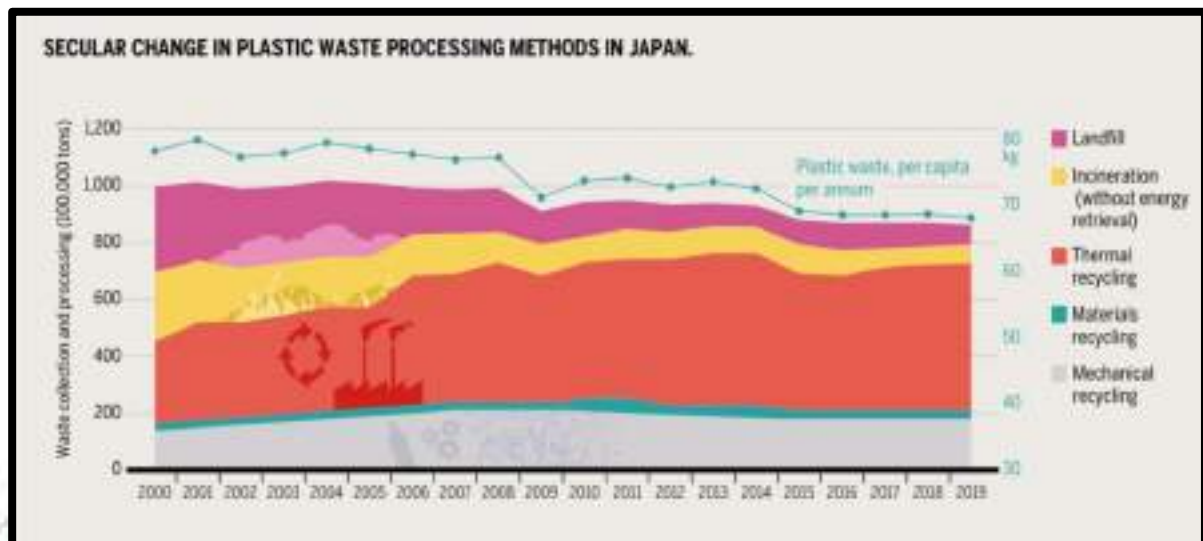
II. Thermal Recycling-

Thermal recycling mainly involves the incineration of waste and converting into energy. The resulting energy can be used in a myriad of ways such as generating electricity or heat, while any remaining residue can be further treated or disposed of safely.

In Japan, the recycling processes can vary between different states in Japan. While there are national guidelines and regulations for recycling, implementation methods can differ based on local infrastructure, resources and policies.

This means that things such as the number of categories into which waste is sorted, the methods employed for recycling, and many other aspects can vary from state to state, but the principle stays the same, and that is to achieve zero waste.



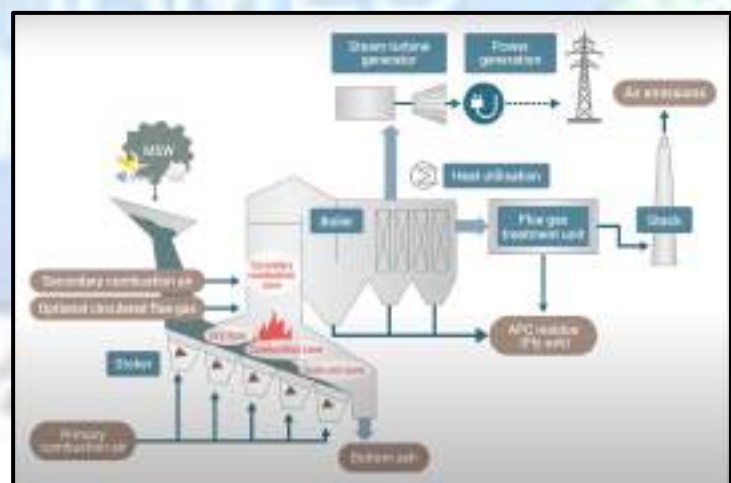


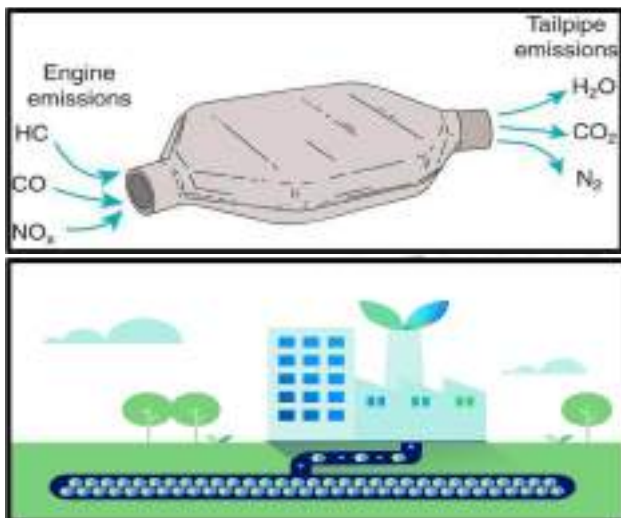
III. *The process-*

The Saga prefecture, situated on Kyushu Island in southwestern Japan, has recently begun the practice of Thermal recycling, and has already worked wonders. This elaborate process first begins with the citizens of the prefecture, who segregate their waste into several categories such as Burnable and Non-Burnable Waste, Recyclable Materials, Organic Waste, and Special Waste.

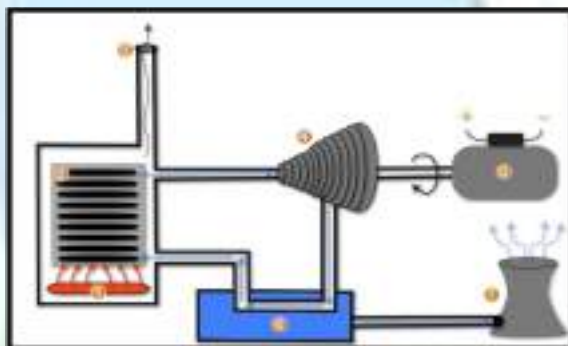
The main problem with incineration is that it requires a steady inflow of fuel. This is solved by a constant waste collection system involving regular collection schedules and other establishments. Once collected, it is transported to incineration sites, which are equipped with systems to control the combustion process, ensuring that the fire is efficient in its work.

1. **ASH:** This mainly involves the formation of bottom ash, which refers to incombustible substances such as glass, ceramics, and metals as well as fly ash, which is the fine ash carried up by exhaust gasses during combustion. The ash is trapped by air filters present throughout the entire prefecture, and is used as a cover for landfills, for road construction, cement production which is currently being used to make an artificial island and has many more applications.





3. **PARTICULATE MATTER:** The production of particulate matter during the process of thermal recycling is swiftly dealt with using electrostatic precipitators, fabric filters, cyclone separators, and wet scrubbers.



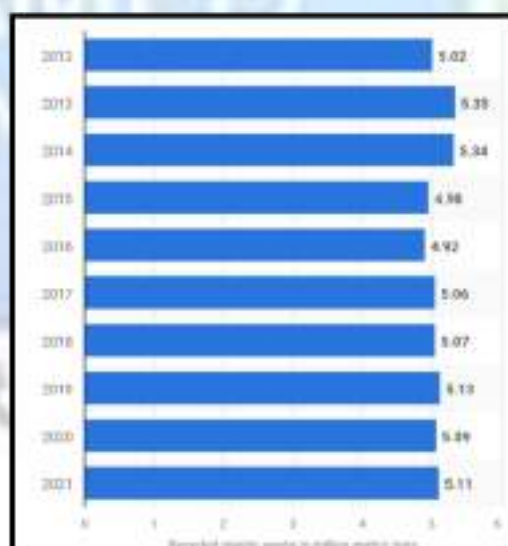
IV. **Environmental and Economic Benefits-**

Thermal recycling has not only the advantage of turning its by products into raw materials for other industries, but rather also helps to decrease the use of landfills as waste that can be incinerated is incinerated and waste that cannot be treated in such a way can be recycled, thus putting landfills out of business. Secondly, the ingenuity with which the Saga prefecture has employed this method helps to control emissions and further supports Japan in its mission of zero waste. Thirdly, it's almost a blessing a disguise as the by products can be used as inputs for several other industries, aiding economic gains.

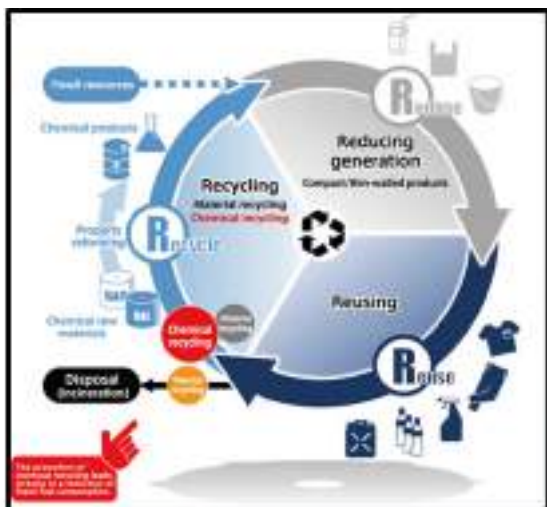
2. **GASES:** Carbon Dioxide is first captured from emissions and is stored underground. The gas is also sold to nearby businesses for farming and algae photosynthesis, helping to boost the economy. Secondly, Nitrogen Oxide, which can cause respiratory issues and can have cardiovascular effects, is converted into nitrogen gas and water vapor before the exhaust gasses are released into the atmosphere. And lastly, Sulfur Dioxide is released, which is treated through flue gas desulfurization, dry scrubbing, semi dry scrubbing, and activated carbon injection.



4. **HEAT:** The heat produced in the process is used to convert water into steam, which then moves turbines to produce electricity. The electricity is then supplied by a local grid and is used by the entire community



Volume of plastic waste recycled using thermal recycling method in Japan from 2012-2021 (in million metric tons)



V. Citizen Awareness- Although thermal recycling does have all these benefits, such a positive outcome would not have been possible without the input of the citizens of Saga prefecture, which has focused on first and foremost educating citizens through campaigns, advertisements and educational programs so that citizens too can help in the process to salvage the world from the state that it currently suffers through.

3. BALKANS REGION

I. Introduction- The Balkan Peninsula is the eastmost of the three southern peninsulas of Europe. It usually consists of the following countries: Albania, Bosnia, Bulgaria, Croatia, Herzegovina, Kosovo, Montenegro, North Macedonia, Romania, Serbia, and Slovenia as well as portions of Greece and Turkey. The Balkans are bordered by Hungary on the north, Moldova and Ukraine on the north and northeast, Greece and Turkey on the south, and by Italy on the northwest. The countries in the west of the Balkan Peninsula except for Montenegro are still excessively dependent on landfills and waste is mainly dumped in non-sanitary landfills and is usually not pre-treated. Some of these landfills are under municipal control and others are illegal. These landfills are usually poorly engineered and managed. Open burning of waste is still practiced in Albania, Kosovo and North Macedonia. Recycling and sustainable waste management practices are mostly insignificant.



II. Steps that are absolutely crucial for the development of waste management in the Balkan region-

i) Improvement of waste generation data system to improve quality and accuracy -

Good quality data is necessary for expediting planning and investments. The current data available are estimates. When surveys are conducted, response rates are very low. Landfills do not have adequate weighing equipment to measure the amount of waste sent to them.

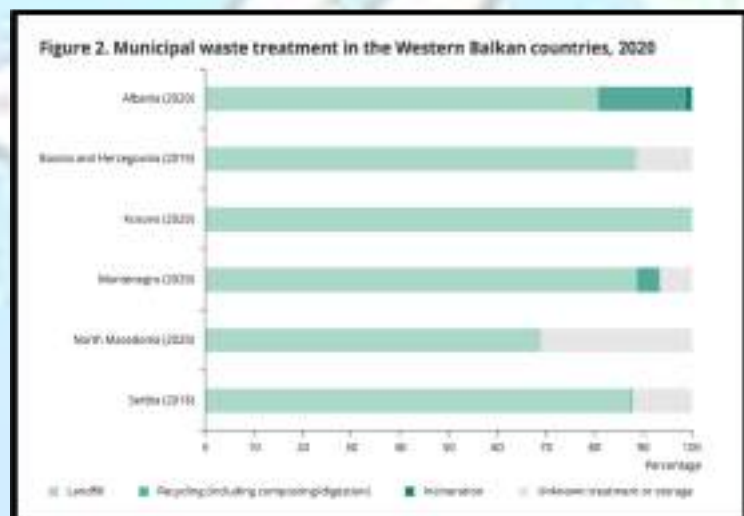
ii) Mobilizing separate waste collection systems and recycling and disposal infrastructure-

Segregating the waste allows more items to be recycled therefore reducing the impact on landfills and the environment

iii) Enforcement of waste legislation-

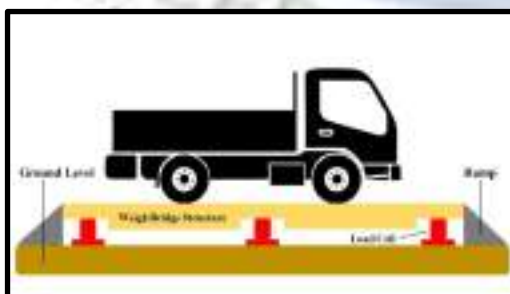
The European Union's legal framework for waste management is the Waste Framework Directive. It introduced a set of basic principles which emphasized the need for waste to be managed without endangering the

ecosystem or causing a nuisance. Countries in the region have set their waste targets similar to the ones set by the EU which in some cases seem ambitious and overestimated when compared to the current rate of progress. The steps taken to meet these targets are not implemented strictly which has to these targets not being met. The lack of data also limits the ability to track the progress in waste management.



However, there has been a gradual improvement in the above-mentioned necessity of the data collection system through the implementation of the following -

- Installation of weighing bridges in Albania
- Advancement and implementation of a waste management information system in Bosnia and Herzegovina
- Improvement of the response rate for surveys by conducting interviews in Montenegro
- Introduction of electronic systems to collect data in Bosnia and Herzegovina and North Macedonia

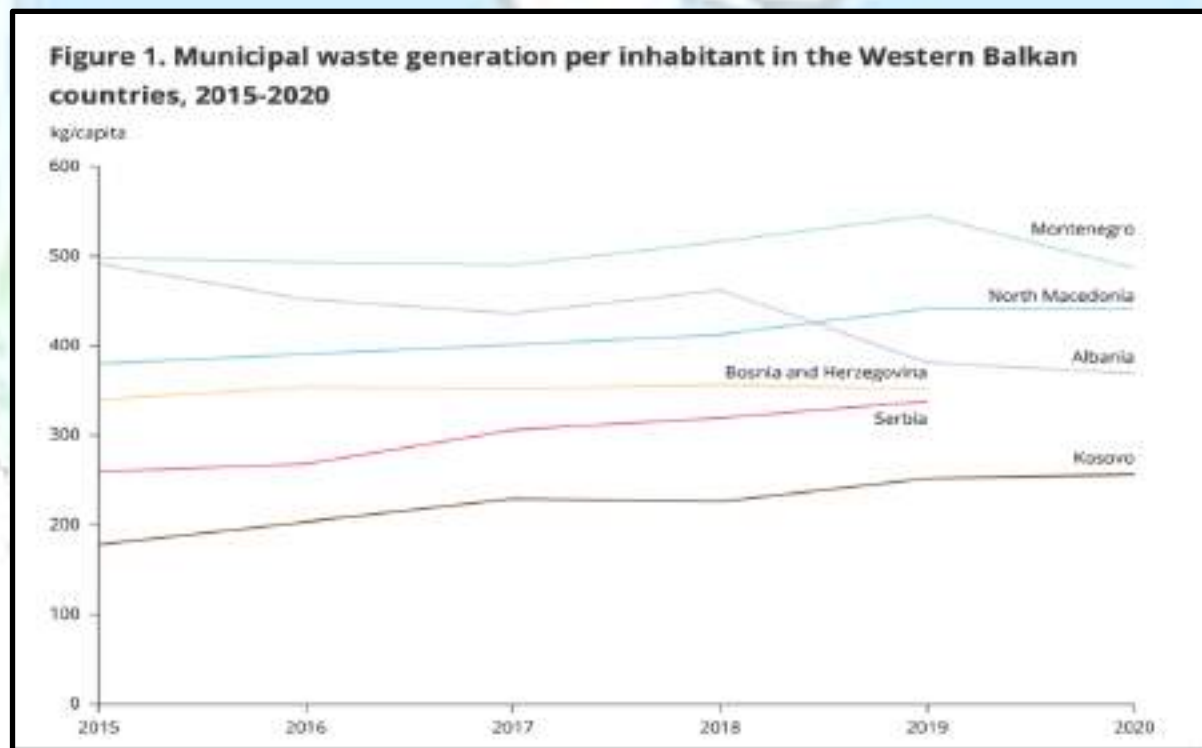


III. Solutions that have been implemented -

1) *The EPR system* (A system where the producers are accountable for their packaging and products) of packaging is a great option to minimize waste generation. For the best results the system must be monitored and managing in terms of keeping track on how the fees are collected and used. All the western Balkan region have or have plans to implement the EPR system of packaging. An EPR system has been formulized for electrical waste in Bosnia, Herzegovina and North Macedonia



- 2) Investing in standardized, central and sanitary landfills and waste disposal sites.
- Two waste plants in Albania
 - A sorting and composting plant in Kosovo
 - A total of seven sorting plants in Montenegro
 - A mechanical-biological treatment plant in North Macedonia
- 3) The regional industries can create a sector mainly for recycling by forming a cooperation. This forms a regional circular economy.



UN AND UNEP INVOLVEMENT

The United Nations (UN) and its agency, the *United Nations Environment Programme (UNEP)*, have undertaken several actions to improve waste management practices worldwide. Here's a breakdown of their key initiatives:

Concrete Targets - About 28 targets have been designed to improve the management of waste and chemicals. The newly endorsed framework focuses on the prevention of illegal trade and trafficking of chemicals and waste, implementation of national legal frameworks and the suspension of highly hazardous pesticides utilized in the agricultural sector by the year 2035. The framework also includes the transition to a safer and more sustainable chemical alternatives.



The above image shows trash flowing due to heavy rainfalls in Germany affecting livelihood and endangering marine lives.

Bonn Declaration

A new and global framework was adopted by UN, held in Bonn, Germany to reduce environmental risks from chemical and toxic wastes. At the fifth International Conference on Chemical Management, concrete targets and guidelines were set for a safe, healthy and sustainable future.

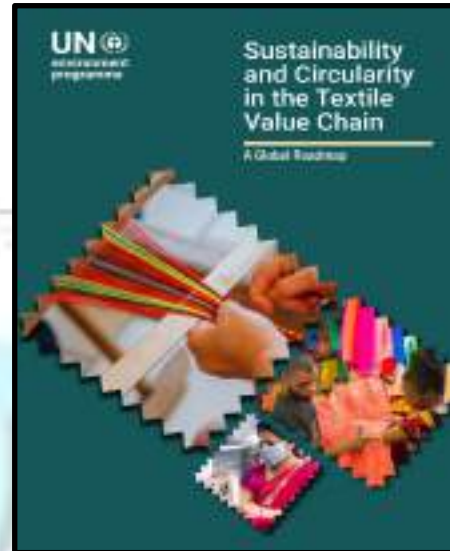
The declaration aims to prevent exposure to harmful chemicals, suspend the most harmful ones and enhance the management of safe chemicals wherever needed. It also encourages nations to support the fostering of safe and sustainable alternatives of hazardous chemicals.



Eliminating Hazardous Chemicals from Fashion and Construction Value Chains- UNEP has jointly organized a webinar on the 30th of May 2024, which focuses on the policy issues within construction and fashion value chains while introducing the Global Coordination Project of the Global Environment Facility's Integrated Program on eliminating hazardous chemicals from the supply chains.

A high-level panel discussion explores the opportunities and challenges for the development of safer alternatives of chemicals.

Global Consultation on Chemicals and Waste Issues of Concern UNEP had hosted the global consultation which concentrated on issues of concern, these concerns were discussed in the Assessment Report on Issues of Concern. Out of the 19 issues discussed, eight of these were identified under Strategic Approach to International Chemicals Management (SAICM)- chemical in products, endocrine disrupting chemicals, environmentally persistent pharmaceutical pollutants, hazardous substances in the life cycle of electrical and electronic products, highly hazardous pesticides, lead in paints, nanotechnology and manufactured nanomaterials.



Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal:

This international treaty, adopted in 1989, aims to reduce the movement of hazardous waste between nations, especially from developed to less developed countries. It promotes the environmentally sound management of hazardous and other wastes, emphasizing waste minimization and recycling.



UN Sustainable Development Goals:

The 2030 Agenda for Sustainable Development was adopted by all United Nations Member States in 2015. These include 17 goals amongst which the most important goal to help with waste management is-

Goal 12- Responsible Consumption and Production- Ensure sustainable consumption and production patterns

This focuses on-

1. Preventing hazardous waste generation.
2. Minimizing transboundary movements.
3. Ratifying the Basel and Bamako Conventions.
4. Eliminating hazardous waste exports to prohibiting countries.



Other goals assisting in waste management include-

Goal 11- Sustainable Cities and Communities- Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 13 – Climate Action- Take urgent action to combat climate change and its impacts

Goal 14- Life Below Water- Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15- Life on Land - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Goal 17- Partnerships for the Goals- Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

PUBLIC AWARENESS AND ENGAGEMENT:

UNEP "Clean Seas" Campaign:

The UN's Clean Seas campaign, while primarily focused on plastic pollution impacting marine ecosystems, also raises awareness about the detrimental effects of fossil fuel extraction on ocean health. By highlighting the link between oil spills, gas flaring, and the degradation of marine habitats, the campaign aims to encourage responsible resource management and promote a shift towards cleaner energy alternatives. This holistic approach recognizes the interconnectedness of environmental issues and emphasizes the need for comprehensive solutions to safeguard the delicate balance of our planet's oceans.



UNEP "Beat Plastic Pollution" Campaign:



The “Beat Plastic Pollution” Campaign helps to raise awareness about the harm of plastic waste on the environment. It aims to inspire the public, communities, and governments to take necessary actions to reduce plastic pollution.

Around the world, every minute, over a million plastic bottles are purchased, also about five trillion plastic bags are used worldwide every annum. Overall, half of all plastic produced is designed for single-use purposes – used just once and then thrown away.

Plastics especially microplastics are now very common in our natural environment. They are becoming part of the Earth's fossil record and a marker of our geological era. They have even given their name to a new marine microbial habitat called the "plastisphere".

Today, we produce about 400 million tons of plastic waste every year.

Global Partnership on Plastic Pollution and Marine Litter:

GPML focuses on reducing marine litter through global partnerships. It engages governments, NGOs, and the private sector in collaborative efforts to tackle the issue of plastic waste in oceans, promoting clean-up activities and preventative measures. By highlighting the need for proper waste management, these campaigns foster a global shift towards sustainable and environmentally sound practices. This comprehensive approach is essential for the health of our planet and the well-being of future generations.



UNEP “Waste Wise Cities” Campaign:



UN-Habitat launched “Waste Wise Cities”, to address the increasing global waste management crisis. Waste from homes, markets, businesses and institutions is thrown on the streets, in drains, dumped next to communities or openly burnt. Not only does this make our cities unsightly and unattractive to tourists and investors, it leads to flooding, air and water pollution, diseases as well as respiratory and other health problems. The urban poor are the most affected. Waste management operations account for a significant proportion of city budgets, but financing for waste management remains inadequate.

CONCLUSION

Fostering waste management across all sectors – from households to industries – is imperative for a sustainable future. As cities grow, so does the strain on waste collection, recycling and disposal systems. Therefore, effective urban waste management requires innovative solutions and robust infrastructure to cope.

With comprehensive management strategies, we can not only mitigate environmental pollution, reduce greenhouse gas emissions and conserve resources but we can also minimize the impact of waste on the biosphere and human health.

Together, we can ensure a cleaner, healthier planet for current and future generations, highlighting our commitment to environmental sustainability and ecological balance.

QUESTIONS A RESOLUTION MUST ANSWER

1. What measures can be implemented to reduce the generation of waste at its source?
2. How can we improve waste collection and disposal infrastructure in both urban and rural areas?
3. What policies can be enacted to encourage businesses to adopt sustainable waste management practices?
4. What financial resources are needed to implement effective waste management initiatives, and how can they be mobilized?
5. What role can technology and innovation play in improving waste management processes?
6. How will the implementation be phased, and what are the key milestones?

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POSITION PAPER GUIDELINES

Format:

Font: Times New Roman

Font Size: 12

Position Paper Page Limit: One page (excluding bibliography)

Page One

Delegate Name: _____

Country: _____

Institution: _____

Topic: _____

‘A quote is preferred, not compulsory’

Paragraph one:

Introduction to the topic and steps taken by the UN on the topic at hand.

Paragraph two:

Elaboration on the country’s laws and policies regarding the topic, how it is affected by the topic at hand, and measures incorporated by the country to combat the problem. Statistical Data is preferred.

Paragraph three:

Unique solutions suggested by the delegate to combat the problem.

Page Two

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