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# Plastic waste: Debate about Law banning plastic bags in Angola: The advisory policy to a Member of Parliament (MP) of RMLA (Revolutionary Movement for Liberation of Angola) in Angola

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## Abstract

Plastic pollution has always been a challenge to human life and environment worldwide. It is undoub table that the plastic waste continues to increase in aquatic and terrestrial areas due to high consumption of goods packed in plastics. The Covid-19 pandemic has also contributed to its increase due to the quick development of the digital business whereby the restaurants and other catering companies are delivering their products in plastics at home. In that context, it has been recently declared by UN that more than 11 tones millions are dumped in oceans every year causing a huge burden on earth's ecosystem health.

Therefore, I established and suggested an advisory policy to the Members of Parliament (MPs) of one of Angolan political Parties based on analysis of impact of plastic waste management in Angola after evaluation of some measures that have been taken over the years. This research paper is meant to provide some of the solutions to the current human and environmental problems caused by the poor management of plastic waste in Angola. It has also been an opportunity to explore all possible solutions to the current challenges at hand. In several African countries, lawmakers have enacted the legislation to protect the environment from contamination due to increased plastic pollution. For that reason, this research aims at evaluating the strategic measures that have been implemented in some African developing countries. For the realistic analysis and solutions, I chose to explore the law about the sustainable environmental protection in Rwanda and Kenya, as two African countries that have successfully implemented a plastic bag ban and they are currently in the implementation process of a single-use plastic ban.

Finally, I found out that plastic pollution is a global problem that requires a global solution. Normally, plastic leaking into our environment in one region can end up hundreds or even thousands of kilometers away. Therefore, the regulatory and voluntary measures at a national level have proven ineffective in stopping plastic from polluting and poisoning our planet. This is why a unified global response is essential to ending the plastic crisis.

**Key words**: Plastic waste, environment protection, Plastic bag ban, plastic pollution, recycling

## Introduction

For academics and scholars in recent years, plastic waste has been a major focus. But despite their efforts, the governments in several countries have not taken the necessary measures to deal with the growing environmental pollution produced by plastics (Jambeck et al., 2018).

Literature on this subject, however, does not include much evidence of studies specifically focusing on the effect of plastic garbage in Angola, where our research study took place. This Paper research points out a gap in the existing political policy about plastic waste in Angola through analysis of the reasons for the pollution and the challenges that the population is facing.

After identifying a huge gap in environment policy related to plastic waste management in many African countries, I decide to write and publish this research paper to provide some African policymakers with a couple of measures and strategies helpful in tackling and handling the environmental challenge in the irrespective countries.

According to the UN, more than 800 marine and coastal species are affected by plastic pollution through ingestion and entanglement, while about 11 million tons of plastic waste are dumped into the ocean every year. The UN warns that this figure could triple by 2040(Eriksen et al. 2023).

Therefore, the Angolan Government, after hearing the ultimatum of the UN, has established a task force to draft an anti-plastic law that might be firstly voted by the parliament and implemented in the country.

Furthermore, as an adviser to a Member of Parliament for RMLA political party in Angola, I analyzed all impact of the plastic waste as well as potential effects of new law to Angolan society and neighboring countries. Finally, I came out with some potential solutions and recommendations that will help the RMLA political party to provide a good contribution in parliament as well as to take appropriate political decisions to fight against the negative effect of plastic waste, because there are worrying levels of pollution resulting from the use of plastic in general.

Finally, as the African Union's 2015 Agenda focuses on inclusive and sustainable development actioned through 10-yearimplementation plans, these planscalled on African cities to commit torecycling at least 50% of urban waste by 2023. The agenda also recognizes that sustainable consumption and production measures are important for the blue economy (AU, 2015).

## 1. Background of the study

Plastic waste in Angola is a pressing environmental and socio-economic issue that involves the improper disposal, accumulation, and mismanagement of plastic materials within the country. Angola, like many other African nations, faces challenges related to the proliferation of plastic waste due to its convenience, durability, and low cost. However, the lack of efficient waste management systems and inadequate awareness about the consequences of plastic pollution exacerbate the problem.

After identifying the consequences caused by the problem of plastic pollution in Angola and assessing all the reasons why the plastic waste issue prevails, I consolidated the strategies for improvement regarding plastic pollution which are hereby highlighted. In this paper, I will therefore tackle the strategic measures for solving the issue of the plastic waste issue in Angola. Based on the best practices of some African countries namely Rwanda and Kenya, it is important to propose a drafted plan combining different strategies that could help to mitigate plastic pollution in Angola in general. Those measures might lead to a ban of plastic bags in Angola as it has been done in Rwanda or Kenya so far (Sharp et al, 2010; Clapp and Swanston, 2009).

## 2. A statement of the research problem

Plastic waste has emerged as a global environmental concern due to its persistence in ecosystems, negative impacts on biodiversity, and contribution to various environmental and human health issues. In the context of Angola, a rapidly developing country with a growing industrial sector and urban population, the problem of the poor plastic waste management poses significant challenges. The research problem revolves around understanding the complex socioeconomic and environmental implications of plastic waste in Angola and identifying as well as analyzing effective strategies for mitigation and its sustainable management. Therefore, the following research questions are hereby highlighted:

- ✓ Analyze the impact of plastic waste in Angola and Africa in general as well as looking for possible solutions to the current problems caused by the poor management of plastic waste.

- ✓ Evaluate the strategic measures to be taken by the Angolan government while dealing with the growing environmental pollution produced by plastic waste.

## 3. The hypothesis to be defended

Plastic pollution has become a significant environmental concern globally, and Angola is no exception. The hypothesis to be defended is that the plastic pollution crisis in Angola is a result of a complex interplay of economic, social, and environmental factors, and the lack of infrastructure and policy implementation as well as the global influence and international partnerships which requires collaborative efforts between nations.

In fact, the plastic pollution in Angola is a crisis that necessitates comprehensive strategies that involve awareness campaigns, education, policy reform, waste management infrastructure development, and international cooperation. By understanding and addressing these complex factors, Angola can work toward a more sustainable and plastic-conscious future.

## 4. A characterization of the method

Research methods concerning plastic waste in Angola have typically involved a combination of qualitative and quantitative approaches to comprehensively understand the issue. The adopted methodology considered the combination of those academic research approaches about Kenya and Rwanda. During the gathering of information, I used the collection of secondary sources in the form of articles, journals, books, and many others cited along. The research takes an exploratory and comparative approach since it uses some established policies in some selected African countries as examples for possible solutions of plastic waste policy that could potentially be implemented in Angola.

Despite many adversities they faced, the two selected countries share similarities with Angola in terms of historical colonization, political conflicts, and economic constraints, but they managed to successfully implement some strategic measures including plastic bags bans that changed the landscape of the countries and reduced a good part of the problems caused by plastic, making them pioneers in this field. I opted for these two countries instead of developed countries due to the large disparities between developed and developing countries.

Finally, it is necessary to emphasize that it is difficult to find holistic studies and research concerning recycling and the implementation of environmental legislation in developing countries because this field is exceptionally limitedly unexplored. Low-income countries find themselves in a unique reality, as they have witnessed rapid economic growth, which ends up putting negative pressure on the environment.

In that regard, this research aims at exploring the impact of plastic in Angola, policies and legislation implemented in Rwanda and Kenya by assessing their effectiveness, and providing solutions that can be taken as a blueprint for other African countries and be implemented continent wide.

## 5. An overview of the structure of the main part

The structure of the main part for this research paper is made of different topics namely definition, different research approaches, background information about Angola and reconstruction of research categories as well as conclusion about the policy decision at hand.

## Chapter I. Main Part: Empirical Research

### 1. Definition

Plastics are known as polymers or a "long chains of monomers," which are bonded to other identical subunits to form a polymer. Polymers can be of natural origins, such as cellulose as the basic subunits that make up plant cell walls and helps cells to adapt their functions. Cellulose is known as one of the most abundant biopolymers on earth. The first synthetic polymer was discovered around 1869 by John Wesley Hyatt. It was highly expensive as compared to polymeric materials. In fact, plastics are an entirely new class of materials of synthetic polymers which are created largely from petrochemicals through addition reactions and condensation reactions that produce resins andfibers which are now the most widely used human-made substances on the planet. In addition to that, by properly treating cellulose polymer derived from cotton fiber with camphor, John Wesley invented a plastic that could be changed into various shapes and made to reproduce natural substances including linen, horn, and tortoiseshell that could be useful in plastics production (Geyer et al. (2017).

Therefore, in this research paper, as an adviser to MP of a political party in Angola, I presented a good policy including the possible strategic measures about plastic pollution management in Angola referring to the good successful examples in Africa namely Rwanda and Kenya that have managed to handle the issue of plastic use in their respective countries. Finally, I pointed out the holistic academic research about the situation of plastic waste in Angola, that will be helpful in consolidating and agreeing upon the good policy for the political party.

### 2. The interpretivism approach

Interpretivism, also known as interpretivist, involves researchers to interpret elements of the study, thus interpretivism integrates human interest into a study. Accordingly, "interpretive researchers assume that access to reality (given or socially constructed) is only through social constructions such as language, consciousness, shared meanings, and instruments" (Myers, M.D., 2008). Development of interpretivist philosophy is based on the critique of positivism in social sciences. Accordingly, this philosophy emphasizes qualitative analysis over quantitative analysis.

Interpretivism is "associated with the philosophical position of idealism, and it is used to group together diverse approaches, including social constructivism, phenomenology and hermeneutics; approaches that reject the objectivist view that meaning resides within the world independently of consciousness" Collins, H. (2010). According to interpretivist approach, it is important for the researcher as a social actor to appreciate differences between people (Saunders, M., Lewis, P. & Thornhill, A., 2012) Moreover, interpretivism studies usually focus on meaning and may employ multiple methods to reflect different aspects of the issue.

## 3. The naturalismapproach

Naturalism is a deep trend in philosophy, rather than a precise doctrine, with multiple connections in many areas of science and culture. Its starting point is the belief that nothing exists outside nature. It has been developed throughout history along two main directions. Ordinary naturalism relies on commonsense and everyday human practices to uncover reality, while scientific naturalism, dominant today, takes nature to be what physics tells us exists, and natural science to be the sole provider of genuine knowledge, (Papineau, 1993).Cognitive science and evolutionary biology attempt to account for mental and social phenomena in naturalistic terms.

## 4. More details on the policy decision to be discussed: Background of Angola

Historically, Angola, as formerly a Portuguese colony, gained independence in 1975 and it is a country rich in natural resources, the second largest producer of oil and third-largest producer of diamonds in Africa. The country has about 35 million inhabitants, 60% of whom are young. However, it continues to face the challenge of reversing this wealth to benefit the people, two-thirds of whom live on less than 2$US dollars a day. In 2017 the Human Development Index placed Angola in the group of countries with a low development index of 0.533, and the country is known for the vast social discrepancies between its haves and have nots. Following the end of the civil war in 2002, Angola became one of the fastest growing economies in the world. Its economy was stimulated by a substantial increase in oil production and the exponential increase of prices from 20 to 147 $ US dollars per barrel between 2002 and 2008, making it the third largest economy in sub-Saharan Africa (Pearce et al., 2018). Although it was formally known as a developing country, it is facing a great challenge of plastic waste management due to the fact it is located on the western Atlantic Coast of Southern Africa between Namibia and the Republic of the Congo.

Therefore, the current president of Angola has declared that there are "worrying levels of pollution resulting from the use of plastic in general". He said that in Angola, 12.4 million plastic bags are distributed for free every day in trade. Angola has a 1,600-kilometre coastline and plastic pollution is a real threat to aquatic ecosystems.

Figure 2.1- The map of Angola from Encyclopaedia Britannica (2012).

In that context, as an adviser to the member of parliament of RMLA, this consolidated policy is meant to hasten the fight against the plastic waste with a national diagnosis to "measure the state of pollution" in the country.

**5. Legal background: Environmental Laws and Policies in Angola**

Despite the growing global concern for the environment in the 1970s, especially after the Stockholm Declaration in 1972, the Angolan constitution in 1975 did not include any norm relating to environmental protection. After Angola's independence, the constituent legislator only highlighted the economic and utilitarian value of natural goods, in which the government must manage natural resources responsibly but effectively, to generate wealth to meet the needs of the population (Amado Gomes, C., 2013). The updating of the Constitutional Law marked 1992. However, recently in 2012, according to Amado Gomes, C (2013), the Angolan government demonstrated a new position regarding the environment in article 24, which states the following:

"1. All citizens have the right to live in a healthy and unpolluted environment.
2. The State adopts the necessary measures to protect the environment and species of flora and fauna throughout the national territory and to maintain the ecological balance.
3. The Law punishes acts that directly or indirectly harm or endanger the preservation of the environment" (Constitutional Law of 1992 and Amado Gomes, C, 2013).

As long as the government realized that environmental pollution is a constant, resulting from activities designed by mankind to promote economic development (Amado Gomes, C., 2012) without taking any decisive measures for mitigating the plastic waste; the political party of RMLA has therefore recognized the need for a legal framework and policy to implement waste management by incorporating the position of the political party that will be suggested to the government in order to fulfil the duties mentioned in the legislation about the environment.

In this new policy, the aim is to present potential solutions by defining the -"use or recovery" of waste as any type of procedure that results in recycling, reuse, recovery, regeneration, or any type of action identified in orders from the service in charge of environment protection to create secondary materials. "Adequate disposal" mentions how the disposal of waste should be carried out, in sanitized containers with lids, preferably coated, and in paper or plastic bags to prevent its spread on public roads. The policy about the regulation for the Transfer of Waste for Reuse, Recycling and its Recovery relates to the procedures regarding administrative and operational control that overlooks "the transfer of waste for reuse, recycling and its recovery abroad" must be developed.

## Chapter II: Categorizing the Research: Reconstruction of Research Examples

Due to the occurrence of academic research about plastic waste in Africa; in this paper, I analyzed the so far established interpretivist research summarizing the comparison of findings for quantitative research about plastic pollution that led to the law banning the plastic bags in Rwanda and Kenya. The analysis of the exploratory quantitative and qualitative research about how plastic waste management in the above-mentioned countries might serve as a blueprint for Angola and other African countries.

**1. Plastic waste policy in Rwanda and Kenya**

For analytical purposes, Rwanda and Kenya are the countries chosen to assess socioeconomic aspects and waste management practices, namely single use plastic bans as best examples in Africa. In this part, I will illustrate the backgrounds of the countries in question and their stance on single use plastic bags, how it was achieved and considered.

## 2. Interpretivism: Summary of the findings of Quantitative research about Rwanda's plastic bag ban

Rwanda is a landlocked country located in Central Africa, bordered to the north by Uganda, to the east by Tanzania, to the south by Burundi, and the west by the Democratic Republic of Congo (Republic of Rwanda, 2021). The total area of Rwanda is 26,338 km², with an estimated population density of 445 people per km². The estimated population is 12.3 million inhabitants, of which approximately 50% of the population is under 20 years of age and the median age is 22.7 years.

After a holistic study, the government decided to raise awareness by initiating campaignsacross the country. In 2005, the government banned the use and import of plastics less than 100microns thick, and in 2008 the ban on the use of plastic bags came into effect (Behuria, 2021)

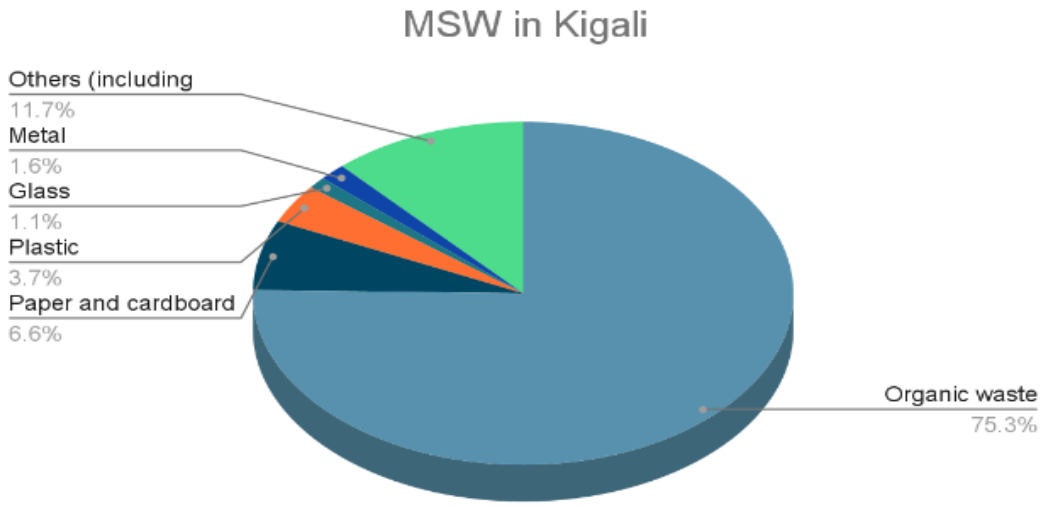



Figure 2.6- The composition of MSW in Kigali (Fidele Iraguha et al 2022).

Rwanda can be seen as an example of what could happen if proper legislation is implemented at a national level to reduce plastic consumption.

The law banning plastic bags is considered strict by many but effective as well. Its purpose is to ban the use, manufacture, import, and sale of polyethylene plastic bags. The law defines polyethylene bags as "a low-density synthetic industrial product composed of numerous chemical molecules of ethylene with a chemical formula; (CH2 = CH2)." (REMA, 2009). To enforce the ban, the Rwandan government used some strict policy instruments such as fines and imprisonment (up to 1 year) as a deterrent.

## 3. Interpretivism: Summary of the findings of Quantitative research about Kenya's plastic bag ban

Kenya is a country located in East Africa and it is bordered by Sudan, Ethiopia, and Somalia to the northwest, north, and east respectively. To the west is Uganda, to the south is Tanzania and to the southeast is the Indian Ocean. The total area is 582,600 km2 and the population rate is approximately 54 million inhabitants. The largest urban areas are the country's capital, Nairobi with approximately 4.7 million inhabitants, and the city of Mombasa with approximately 1.3 million inhabitants (Heritage, 2021 and IDS-Institute of Development Studies, 2014).

Since 2005, the Kenyan government has announced a ban on plastic bags on four separate occasions. In 2005 and 2007 the government announced a ban on the use of 30-micron thick plastic bags, and in 2011 it also bans 60-micron plastic bags to include all bags considered light enough to be dispersed by the wind (Obiria, M 2017). Before the ban, more than tens of millions of bags were distributed across the country through supermarkets.

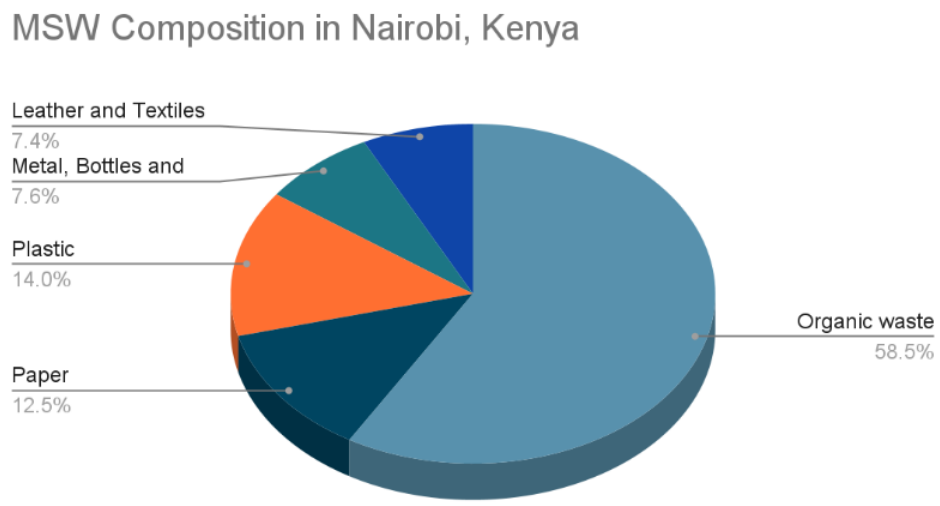



Figure 2-8- MSW composition in Nairobi, Kenya (Kabeyi, Moses & Olanrewaju, Oludolapo 2021).

## Chapter III: Argument for category

### 1. Which category and research should be used and preferred for the policy decision at hand?

After analyzing the policy of plastic waste in Rwanda and Kenya, I would like to recommend the MPs of RMLA in Angola to step in the Rwandan environment policy. If Angola is a country in southern African region touching the ocean, the coastlines, where plastic wastes are rapidly produced and exposed at a high rate due to the world's industrial development and population growth, the government should establish a clear and strict environmental policy and law to be implemented throughout the country. As known, plastics are constituted of both biodegradable and non-degradable wastes which are highly generated from man-made activities (operational sectors and climatic conditions, industrial growth, socio-economic development) and the natural processes of living creatures. Therefore, I propose and recommend the Government municipalities, social communities, and local authorities to follow the example of Rwanda by establishing and implementing thedifferent strict measures and environmental safety legislation rules that will guide the population to dispose the plastic waste after utilization.

Finally, I recommend raising the awareness level among the population. The drafted policy including potential solutions will be submitted to the MPs of RMLA with hope to help the Angolan government to effectively manage the plastic waste countrywide.

## Chapter IV: Conclusion about the policy decision at hand

It is important to emphasize that I pointed out the qualitative and quantitative research that will be presentedtoall MPs of RMLA describing why we should ban plastic bags in Angola.

In this paper, I summarized the impacts of plastic waste clarifying that plastic bags pollute land and water.

They are made from non-renewable sources, and they require a lot of energy to produce. The plastic bags are toxic, and they don't degrade. The plastic bags are dangerous to wild and marine life, and they are harmful to human health. The plastic bags are not easy to recycle, and they are produced in massive quantities. Besides, Consumers are reluctant about recycling plastic bags. The Plastic bags are disposable, and they clog storm drains. The plastic bags are a major contributor to landfills. Therefore, bans can reduce plastic bag waste. Banning use of plastic within a country as strategy can help keep the environment clean. It can save money, and it is a proven approach in some countries. A ban will raise awareness and it would be easy to apply. It would be a big relief to the governments. As Angolan government is currently trying to solve environmental challenges, banning plastic bags within the country would mean Angola has one less pollutant to deal with.

## 1. Effects of plastic waste

Many countries lack the infrastructure to prevent plastic pollution such as: sanitary landfills; incineration facilities; recycling capacity and circular economy infrastructure; proper management and disposal of waste systems. This leads to 'plastic leakage' into rivers and the ocean. The legal and illegal global trade of plastic waste may also damage ecosystems, where waste management systems are not sufficient to contain plastic waste.

### ✓ Impacts on marine ecosystems

The most visible impacts of plastic debris are the ingestion, suffocation, and entanglement of hundreds of marine species. Marine wildlife such as seabirds, whales, fish, and turtles mistake plastic waste for prey; most then die of starvation as their stomachs become filled with plastic. They also suffer from lacerations, infections, reduced ability to swim, and internal injuries. Floating plastics also help transport invasive marine species, thereby threatening marine biodiversity and the food web.

### ✓ Impacts on human nutrition

Microplastics have been found in tap water, beer, salt and are present in all samples collected in the world's oceans, including the Arctic. Several chemicals used in the production of plastic materials are known to be carcinogenic and to interfere with the body's endocrine system, causing developmental, reproductive, neurological, and immune disorders in both humans and wildlife. Recently, microplastics were found in human placentas but more research is needed to determine if this is a widespread problem.

Toxic contaminants also accumulate on the surface of plastic because of prolonged exposure to seawater. When marine organisms ingest plastic debris, these contaminants enter their digestive systems, and over time accumulate in the food web. The transfer of contaminants between marine species and humans through consumption of seafood has been identified as a health hazard, and research is ongoing.

### ✓ Impacts on humans

Plastics contain many different types of chemicals, depending on the type of plastic. The addition of chemicals is the main reason why these plastics have become so multipurpose; however, this has problems associated with it. Some of the chemicals used in plastic production have the potential to be absorbed by human beings through skin absorption. A lot is unknown on how severely humans are physically affected by these chemicals. Some of the chemicals used in plastic production can cause dermatitis upon contact with human skin.

In many plastics, these toxic chemicals are only used in trace amounts, but significant testing is often required to ensure that the toxic elements are contained within the plastic by inert material or polymer. Plastic pollution can also affect humans in which it may create an eyesore that interferes with enjoyment of the natural environment.

- ✓ **Impacts on tourism**

Plastic waste damages the aesthetic value of tourist destinations, leading to decreased income from tourism. It also generates major economic costs related to the cleaning and maintenance of the sites. The build-up of plastic litter on beaches can have a negative impact on a country's economy, wildlife, and the physical and psychological wellbeing of people.

- ✓ **Impacts on climate change**

Plastic production contributes to climate change. If plastic waste is incinerated, it releases carbon dioxide and methane (from landfills) into the atmosphere, thereby increasing emissions.

**2. What should the Member of Parliament, minister or head of state now do according to the research?**

After summarizing the above blueprint in Africa, I would like to advise and recommend the MPs of RMLA to agree upon the following strategic measures that can be implemented in Angola to handle the plastic waste issue:

- ❖ **Implementation of reuse as solution to the plastic waste**

Implementation of reuse method refers to the use of materials more than once in their original form instead of throwing away after each use. This does not only ensure the maximum use of the material life span but also reduces waste.

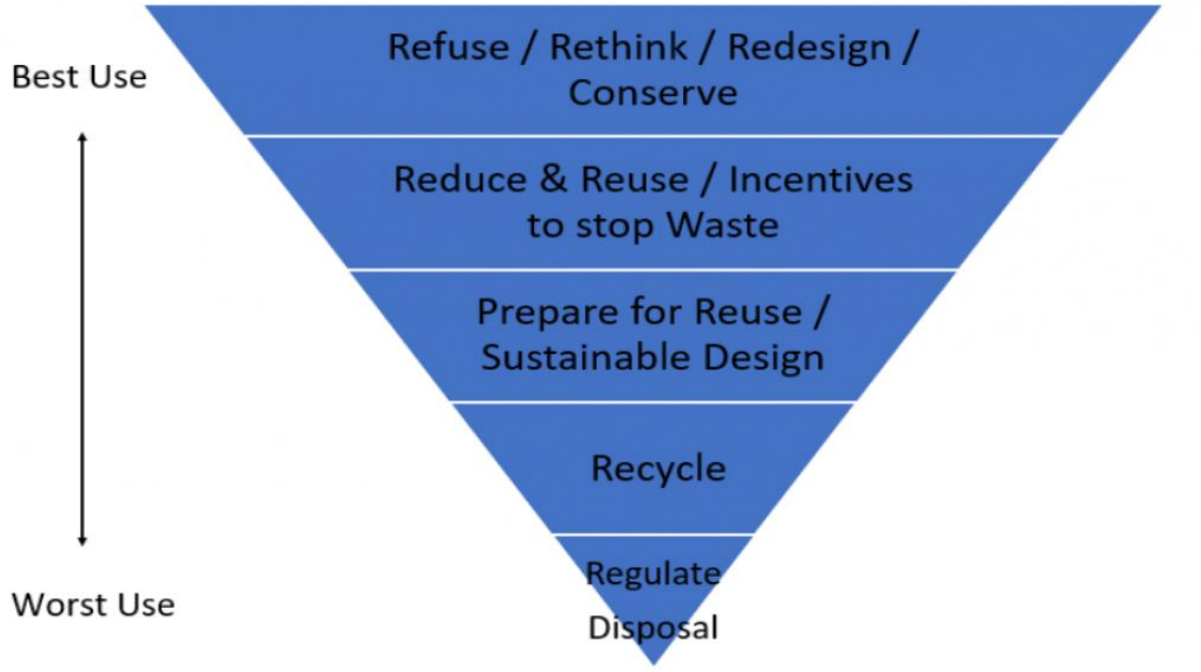
Reuse has increasingly been accepted as playing a vital part in addressing a wide range of social challenges related to poverty, health, and well-being. It should be made known to the public that reuse is not specifically a waste issue. It is an opportunity for goods to have a second life. This method requires adjustment and redesign of new strategies for conservation of plastic products. Nevertheless, to some extent, it allowed reduction in the amount of non-biodegradable plastic bags used. Plastic items can be reused or used for different purposes such as the bottled soft drinks after use, instead of throwing it away. Poor management of the plastic can cause pollution, although it has some advantages also. It is important for humans to put into consideration how plastic can be reused. People should bring their own reusable shopping and produce bags to markets and avoid using single use plastic bags. It is hereby recommended to use a shopping bag and not to use the available plastic bags. Findings showed that many companies are presently selling reusable water bottles as a substitute, thereby reducing plastic waste and exposure to leaking bottles.

- ❖ **Implementation of reduce as solution to the plastic waste**

The implementation of reduce is a method which is meant to reduce the usage of plastic. This implies changing the daily attitudes and avoiding the use of plastic when there is a better alternative to it and only using plastic when it is seriously needed. Plastic packaging needs to be avoided. Since the outbreak of Covid-19, different restaurants and business shops are delivering different products in plastic bags. Therefore, reusable bags are highly recommended.

- ❖ **Implementation of recycling as solution to the plastic waste**

To find a long-term solution to the plastic waste, it is important to recommend the policymakers to adapt the best use of suggested strategies by rethinking and redesigning the current policy as well as implementing new strategies. Recycling refers to the waste management method which collects waste materials and converts them into raw materials that can be reused to form other valuable products. It is also be known as "renewing or reusing" to prevent the harmful effect on society and environmental protection. The plastics are non-biodegradable as carbon-based products and other polymers. It contains bottles and other materials that can be melted and transformed into other products like plastic tables and chairs. This process is performed in the following six steps: collecting waste plastics, sorting, or arranging plastics into categories, washing to remove impurities, shredding, and resizing, identifying, and separating plastics, and compounding. There are several benefits of plastic waste recycling that the world can gain when plastic is reused rather than disposing them in non-desirable places, one of the advantages is the protection of human life by decreasing carbon dioxide and other harmful gases in the atmosphere, which can occur during incineration or combustion of the wastes. Recycling reduces pollution across in ecosystem, requires less energy, and helps in natural conservation. It saves fast-depleting landfill space and eases the demand for fossil fuel consumption.




The **UN 2030 Agenda for Sustainable Development** calls for action to 'Conserve and sustainably use the oceans, seas and marine resources' (Goal 14) and 'By 2025, prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities, including marine debris and nutrient pollution' (Target 14.1).

Moreover, it promotes a sustainable lifestyle and contributes to the national economy. Although recycling has different benefits to the community, it also has some disadvantages that can be managed and controlled. During the recycling process, some chemicals are released into the environment. Among these chemicals, some are volatile gases that come from plastic waste compositions and organic chain of monomers that build up a plastic chain of organic fumes and ashes, which kill plant structure and affect wildlife when inhaled by different animals that live near the recycling zone.

As the process requires heat to melt plastics, it also generates sulfur, carbon, and other gases emitted to the environment. These gases can cause global warming, greenhouse effect, and acidic rain that harm the environment in different ways. This can also lead to health issues for the population who are crossing the plastics recycling zone. After the plastics downcycling process, wastes are separated for continuous recycling, which explains how it ends up with plastic is generally unfit for another round of recycling. This means that it ends up in a landfill rather than regarding them as a secondary use of unconsumed plastic waste.

## 3. Dialectical Assessment: What could an opponent say about the drafted law?

As it happened in Kenya after banning the plastic waste, the influence of the business sector can become evident in the narratives that defied prohibition in Angola. Producers and traders of plastic bags may object to the ban, arguing that it can cause job losses for factory workers and workers at supply points. Traders can protest and be threatened to pass on the extra cost of making thicker polyethylene to the consumer as it happened in Kenya in the 2007 and 2011 through the plastic ban attempt.

Moreover, one hand, an opponent can also say that plastic was invented during the industrial revolution some 100 years' ago and dubbed as a miracle alternative to expensive natural materials which were depleting. Since its inception, the fantastically flexible substance has revolutionized the way we live. It brought about convenience, and we celebrated throwaway living, as depicted in Life Magazine in 1955.

On the other hand, it is important to emphasize that the plastics help to protect the environment by reducing waste, lowering greenhouse gas emissions, and saving energy at home, at work, and on the road. Plastic packaging helps to dramatically extend the shelf life of fresh foods and beverages while allowing us to ship more product with less packaging material, reducing both food and packaging waste. Plastic insulation, sealants, and other building products are making our homes significantly more energy efficient, while reducing costs for heating and cooling. And lightweight plastics in cars can dramatically increase miles per gallon, saving drivers money at the pump. Plasticsdo not only help doctors to save lives, but they also protect our loved ones at home, on the road, on the job and at play. And these advanced materials are helping to make health care more affordable.

Finally, an opponent can also say that plastics are widely used in our economy namely in packaging, buildings, cars, electronics, agriculture, and other sectors. Several synthetic activities are being carried out with the development and population growth, increasing the need for plastic utilization in packaging and stocking artificial finished products. For instance, at the end of 2019, due to the outbreak of the COVID-19 pandemic, the world health organization took different restrictions and preventative measures, including partial/total lockdown, to prevent the spread of pandemic by contact.

But, to continue daily human life, many people were using plastic bags, taking away to deliver food from restaurants, and the product from the supermarket which were delivering online services. Up to now, the same practiceis still useful and relevant.

Through digitalization, people are becoming familiar with using online shopping which is increasing plastic packaging. The use of plastic waste will highly uprise in the coming future, but as an adviser to the MP, it is highly recommended to urgently handle this issue of the plastic waste that is polluting our environment and affecting the human life. The mismanagement and poor plastic waste disposal is the main effects of environmental pollution that causes the problems and different diseases.

According to the opposition policy, plastics should be used, and the environment should also be protected by applying some of the methods we have already discussed. The implementation of these methods will help the population to have a clean and green environment.

Finally, opposition can also say that plastics positively impact the human daily lives due to their basic applications in household activities and industrial packaging of various end-products.

**Conclusion**

Throughout the research, we found out that the plastic pollution is an already massive and quickly growing global environmental challenge which seriously harms wildlife and can be detrimental to human health by causing several other problems in Angola. Plastic waste causes damage from the local to the global level, resulting in considerable costs, especially in vulnerable sectors like fishing and tourism. It is its discharge into the oceans and subsequent distribution across the globe which makes plastic pollution a transnational issue warranting multilateral efforts to solve it. Even though, some countries have already banned certain plastic products, but we need all nations to act together in ending the plastic crisis. Global rules will create a level playing field by promoting innovation and facilitating trade. Plastic production, which depends on fossil fuels must be reduced, while at the same time, already overwhelmed waste management systems has less plastic waste to deal with. Finally, we'll see an immediate drop in some of the most common forms of plastic which end up in our environment.

- ✓ **Once more a statement of the defended position / the hypothesis / the results**

Although plastics have several important roles in our lives due to their physicochemical composition, they can cause different problems to human life and the ecosystem if the post-use disposal is not well-managed. Therefore, I recommend to the MPs of the political party RMLA to carefully read this research paper about plastic waste. I also advise them to implement the different strategic methods as illustrated above, countywide to treat plastic wastes so that the plastic life can be cyclic. The implementation of these strategic methods will save the lives of people, animals, and the environment by saving a lot of money by recycling raw-materials and reusing plastics. In addition, it is crucial to keep the environment safe because it will help everyone living in this ecosystem to live well and to spend safe and healthy life. Finally, the recycling of plastic waste will help us to improve the economy by decreasing the production cost. Not only economically viable, but it will also help to eradicate infectious diseases that are transmitted through polluted air and water.

In summary, plastic waste in Angola is a multifaceted challenge that demands collaborative efforts from various stakeholders to address its environmental, economic, and social impacts. By implementing effective waste management strategies, raising awareness, and promoting sustainable practices, Angola can work towards a cleaner and healthier environment for its citizens and ecosystems.

- ✓ **Recommendations and open questions for improvement of plastic waste in Angola**

Defining a plastic waste policy for Angola requires a comprehensive and holistic approach due to the diverse challenges and contexts across the continent. Indeed, developing a comprehensive and holistic plastic waste policy for Angola is crucial, given the diverse challenges and contexts across the continent. Such a policy should consider a wide range of factors, including environmental, social, economic, and cultural dimensions.

Improving plastic waste management in Angola, as in many parts of the world and in Africa specifically, requires a comprehensive and multi-faceted approach involving government policies, community engagement, education, and infrastructure development. Here are some suggestions for improving plastic waste management in Angola:

- ➢ **Policy and regulation:**

- Implement and enforce regulations: Introduce or strengthen regulations that govern the production, use, and disposal of plastic products. This includes policies on single-use plastics, plastic packaging, and plastic waste management.
- Extended producer responsibility (EPR): Implement EPR programs that make manufacturers responsible for the entire lifecycle of their products, including their collection, recycling, or safe disposal.
- Plastic bans: consider banning or limiting the production and distribution of single-use plastics and non-recyclable plastics.

➢ **Waste collection and infrastructure:**

- Improving collection systems: Establish efficient and regular waste collection systems, especially in urban areas, to prevent plastic waste from being dumped in streets, rivers, and open spaces.
- Recycling Infrastructure: Invest in recycling facilities and promote the development of a local recycling industry to process and recycle plastic waste.
- Waste-to-energy: explore waste-to-energy technologies as a means of converting non-recyclable plastic waste into energy.

➢ **Awareness and Education:**

- Public awareness campaigns: Launch campaigns to educate the public about the negative impacts of plastic waste on the environment and human health.
- School Programs: Introduce educational programs in schools to teach students about the importance of reducing, reusing, and recycling plastic waste.

➢ **Community engagement:**

- Community clean-up initiatives: Organize regular clean-up events involving local communities to raise awareness and actively clean up plastic waste from public spaces.
- Support for Informal Waste Collectors: Recognize and support the role of informal waste collectors in collecting and recycling plastic waste.

➢ **Innovation and research:**

- Innovative Solutions: Encourage research and innovation for alternative packaging materials, biodegradable plastics, and sustainable substitutes for single-use plastics.
- Plastic Collection Apps: Develop mobile apps that allow citizens to report plastic waste hotspots and request waste collection services.

➢ **Partnerships and collaboration:**

- Public-private partnerships: Collaborate with private companies to develop sustainable solutions for plastic waste management.
- International Cooperation: Seek partnerships with international organizations and neighboring countries to share best practices and technology.

➢ **Incentives and rewards:**

- Deposit-return schemes: Introduce deposit-return systems for plastic bottles and containers to incentivize proper disposal and recycling.
- Plastic Recycling Incentives: Provide incentives for businesses that use recycled plastics in their products.

➢ **Research and data collection:**

- Waste Audits: Conduct regular waste audits to understand the types and quantities of plastic waste being generated and discarded.

- Data-Driven Decision Making: use collected data to make informed decisions and track the progress of plastic waste management initiatives.

➢ **Infrastructure for waste Separation:**

- Segregated collection bins: install separate bins for different types of waste to facilitate the sorting of plastic waste at the source.

➢ **Sustainable alternatives:**

- Promote reusable items: Encourage the use of reusable bags, containers, and utensils to reduce the consumption of single-use plastics. It is important to emphasize that successful plastic waste management requires a combination of short-term interventions and long-term strategies, along with active involvement from the government, private sector, civil society, and the public.

## 4. Suggestions for future research

The current research study has provided a balanced understanding of the various approaches used to handle the plastic waste in Angola. Furthermore, the implementation policy's recycling knowledge and awareness level about other strategic measures to be implemented were researched. The level of access to the environmental policies of the Angolan government must be enhanced to boost environmental protection attitudes and promote recycling habits. This research also envisaged different strategies and recommendations for the good handling of plastic waste in Angola. Besides, the same is true in the proposal stage within MPs of the political party of RMLA. The scope of the present study is narrow and focused on "plastic waste management.

Since the novel concept of building environmental concerns and attitudes toward safe environmental practices needs further studies in Africa and in Angola specifically, future research should be conducted to determine how the recycling of plastic waste will affect the economy.

It is possible to investigate how plastic waste recycling affects environmental sustainability. This will also leadto the study of plastic waste recycling in developing and less developed countries to determine how different countries are attempting to be more environmentally friendly. The realization of the water bottle recycling drive requires further exploration in each area of plastic waste recycling. Further research will givean opportunity to eradicate the products that inflict the most harm on the people, wildlife, and habitats we care so much about. It's also a powerful tool to move us away from the single-use mindset that is fueling the dual nature and climate crises and set us on the path to a sustainable future.

## References

Adam, I., Walker, T.R., Bezerra, J.C., Clayton, A. (2020) : Policies to reduce single-use plastic marinepollution in West Africa .Marine Policy, 116, art. no. 103928. doi:10.1016/j.marpol.2020.103928

Behuria, P. (2021). Ban the (plastic) bag? Explaining variation in the implementation of plastic bagbans in Rwanda, Kenya and Uganda. Environment and Planning C: Politics and Space, 39(8),1791–1808. https://doi.org/10.1177/2399654421994836

Government of Rwanda (2021) Geography. Republic of Rwanda. Last Accessed : 30.10.2022 inhttps://www.gov.rw/about#section_Geography

Multi-dimensional sustainability assessment of product-packaging combinations:MuDiSa: a calculation tool to assess the sustainability of product-packaging combinations in multiple dimensions of sustainability

Brouwer, Marieke, Thoden van Velzen, Ulphard (2023) Wageningen: Wageningen Food & Biobased Research (Report / Wageningen Food & Biobased Research 2442)

From source to sea: Floating macroplastic transport along the Rhine riverKuizenga, Boaz , Tasseron, Paolo F. , Wendt-Potthoff, Katrin , van Emmerik, Tim H.M. (2023) Frontiers in Environmental Science (2023), Volume: 11 - ISSN 2296-665X

Mountains of plastic: Mismanaged plastic waste along the Carpathian watercourses

Liro, Maciej , Zielonka, Anna , van Emmerik, Tim H.M. , Grodzińska-Jurczak, Małgorzata , Liro, Justyna , Kiss, Tímea , Mihai, Florin Constantin (2023) Science of the Total Environment (2023), Volume: 888 - ISSN 0048-9697

van Emmerik, Tim H.M. , González-Fernández, Daniel , Laufkötter, Charlotte , Blettler, Martin , Lusher, Amy , Hurley, Rachel , Ryan, Peter G. (2023) Environmental Research Letters (2023), Volume: 18, Issue: 4 - ISSN 1748-9318

Mellink, Yvette ,Schreyers, Louise , Hauk, Rahel , Pinto, Rose , Thi, Khoa , Waldschläger, Kryss , van Emmerik, Tim (2023) In: Plastic Pollution in the Global Ocean - World Scientific Publishing - ISBN: 9789811259104 - p. 47-75.

Shafea, Leila , Yap, Julia , Beriot, Nicolas , Felde, Vincent J.M.N.L. , Okoffo, Elvis D. , Enyoh, Christian Ebere , Peth, Stephan (2023) Journal of Plant Nutrition and Soil Science (2023), Volume: 186, Issue: 1 - ISSN 1436-8730 - p. 5-22.

Tassinari, Gianmaria , Bassani, Andrea , Spigno, Giorgia , Soregaroli, Claudio , Drabik, Dušan (2023) Science of the Total Environment (2023), Volume: 856 - ISSN 0048-9697

Schwarz, Anna , van Emmerik, Tim (2022) In: Plastics and the Ocean - Wiley - ISBN: 9781119768401 - p. 77-98.

Helmes, Roel J.K.,Goglio, Pietro,Salomoni, Silvia, van Es, Daan S., Vural Gursel, Iris,Aramyan,Lusine (2022) Sustainability (Switzerland) (2022), Volume: 14, Issue: 18 - ISSN 2071-1050

Mellink, Y., van Emmerik, T., Kooi, M., Laufkötter, C., Niemann, H. (2022) Frontiers in Environmental Science (2022), Volume: 10 - ISSN 2296-665X

Roebroek, Caspar T.J., Harrigan, Shaun, Van Emmerik, Tim H.M., Baugh, Calum, Eilander, Dirk, Prudhomme, Christel, Pappenberger, Florian(2021)

S.A. Qamar, M. Ashiq, M. Jahangeer, A. Riasat, M. Bilal, Chitosan-based hybrid materials as adsorbents for textile dyes–A review, Case Studies in Chemical and Environmental Engineering, 2 (2020), p. 100021

G. White, G. Reid (2018), Recycled waste plastic for extending and modifying asphalt binders8th Symposium on Pavement Surface Characteristics, SURF 2018), Brisbane, Queensland, Australia (2018), pp. 2-4

R. Bassiouny, M.R. Ali, M.K. Hassan, an idea to enhance the thermal performance of HDPE pipes used for ground-source applicationsAppl. Therm. Eng., 109 (2016), pp. 15-21

J. Thornton, Environmental Impacts of Polyvinyl Chloride (PVC) Building Materials, Healthy Building Network, Washington, DC (2002)

M. Asgher, M. Muzammil, S.A. Qamar, N. Khalid, M. Bilal, environmentally friendly colour stripping of solar golden yellow R dyed cotton fabric by ligninolytic consortia from Ganoderma lucidum IBL-05, Case Studies in Chemical and Environmental Engineering, 2 (2020), p.100031

S.S. Ali, T. Elsamahy, E. Koutra, M. Kornaros, M. El-Sheekh, E. Abdelkarim, J. SunDegradation of conventional plastic wastes in the environment. A review on current status of knowledge and future perspectives of disposalSci. Total Environ. (2021), p. 144719

F. Ahmed, S. Hossain, S. Hossain, A.N.M. Fakhruddin, A.T.M. Abdullah, M.A.Z. Chowdhury, S.H. Gan, Impact of household air pollution on human health: source identification and systematic management approach, SN Applied Sciences, 1 (5) (2019), p. 418