

INTERNATIONAL JOURNAL OF SCIENCE ARTS AND COMMERCE

THE ENVIRONMENT VERSUS THE ECONOMY: ANALYSIS OF THE BAN ON PLASTIC CARRIER BAGS IN KENYA

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*“Kenya is taking decisive action to remove an ugly stain on its outstanding natural beauty. Plastic waste also causes immeasurable damage to fragile ecosystems – both on land and at sea – and this decision is a major breakthrough in our global effort to turn the tide on plastic.” **

Abstract

Plastic carrier bags have been in use in Kenya for many years and had become a ubiquitous symbol in virtually all aspects of life in the country to the extent that one could not imagine life without them. In supermarkets and other establishments goods were more often than not packed in plastic papers. Billions of these bags are used annually across the globe mainly for shopping because they are deemed to be the best option in terms packaging despite their ecological drawbacks.

Plastic carrier bags were preferred by both retailers and consumers due to various perceived advantages. Manufacturers and traders liked them because, among other things, they were cheap to produce, required less energy to transport and recycle and were also easy to use and store compared to re-usable bags. The bags were also used by supermarkets and other establishments to advertise themselves. Consumers preferred them because of their durability, they do not tear easily, are easy to carry and very useful when it rains or when they come into contact with liquids as they protect their contents from getting wet due to their water-proof nature. Because of their versatility, plastic bags have the additional advantage of being put to multiple uses at home, the office and elsewhere.

There was excess use of the papers such that different items could be packed in different plastic bags even when there was no need to do so. The main challenge with these plastic carrier bags was how to dispose them after use given that many Kenyans are averse to safe and responsible disposal of items that have served their purpose and again the philosophy of recycling is yet to be well established in this country. The result was that the environment was severely choked with plastic papers that were to be found virtually everywhere: on the streets, storm drains, water surfaces, trees, fences and so on.

The central proposition of this paper is that use of plastic papers had brought large scale environmental degradation that was virtually irreversible and that the ban on use of plastic carrier bags should not only be enforced but enhanced to include other plastic material that are still in use in Kenya yet they are a major contributor to ecosystem destruction. Impacts of the ban and its likely benefits to stakeholders as well as examples of the plastic experience from other countries will also form part of the discussion.

Key words: Ban on plastic carrier bags, plastic papers, plastic paper menace, environment, recycle

*Erik Solheim, Head of UN Environment.

Methodology

Data was collected from official policy documents of the Government of Kenya and other nations, Non-Governmental Organisations (NGOs), United Nations (UN) agencies, plastic paper manufacturers, journals, desk top research and observation.

Introduction

Plastic papers or carrier bags have been in use since the 1960s when they were invented by a Swedish engineer by the name Sten Gustaf Thulin and from onwards they have spread across the world and had become an omnipresent global product (UNEP, 2018). In Kenya plastic carrier bags were an integral part of the country's life. It has been estimated that at the height of using these papers, about 100 million pieces were given out by supermarkets alone every year (NEMA, 2017). Initially retailers used to pack their customers' shopping in khaki papers but from the early nineties plastic papers gained popularity and were heavily used until the 2017 ban. The bags were preferred because of their convenience: they are easy to use, fold easily and can carry just about anything. Their water-proof nature also added to their preference by many people. In short, they are the most convenient packaging option for business people and their clients.

Continual and widespread use of this product in its different variants has resulted into a global plastic pollution crisis (Scheffers and Wanger, 2011) that did not spare Kenya. Irresponsible disposal of waste, lack of the culture of recycling coupled with a weak waste management infrastructure exacerbated the negative and painful impact of plastic carrier bags on the environment in Kenya.

The plastic paper menace was, for a long time, an urban phenomenon in Kenya that was characterised by blocked storm drains which led to flooding during the rainy season and plastics

formed a fairly big percentage of the solid municipal waste (SMW) in Kenya's built-up areas (Oyake-Ombis, 2016). However with time the menace became common in the rural areas mainly because small-scale traders, including hawkers, preferred to pack their clients' shopping in plastic carrier bags. The result was choking of agricultural lands, water bodies and various other places with plastic papers (Theuri, 2013). The unsightly phenomenon of plastic papers stuck on fences, trees and other structures became the norm rather than the exception across the Kenyan landscape.

Disadvantages of Plastic Papers

Most plastic papers are made from petroleum using waste chemicals that are hazardous in nature. (Grover and Rai, 2017). Some plastics are known to release toxic monomers that are linked to cancer and human reproductive complications (Ellison, 2009; EU, 2011; DTI, 2013; Pavani and Rajeswari, 2014).

The cost of cleaning up plastic waste is very high. Cleaning of plastic waste from beaches and coastal areas of Europe alone costs 630 million Euros per year (UN Environment, 2018) and even when this is done it cannot fully restore the environment to its former self. Once the land and marine ecosystem are degraded through plastic contamination, it is virtually impossible to reinstate them. Plastic papers take too long to fully decompose, with estimates ranging from 500 to 1,000 years which is a very long time and given their massive use world-wide, this means the environment will be literally choked with plastics for eternity (Ritch *et al.*, 2009; Moore, 2014; Broom, 2015). This is further complicated by the fact that plastics tend to break down into much smaller pieces (micro-plastics) which makes it even more difficult to conduct a comprehensive clean-up exercise (EC, 2011; Moore, 2014; UN Environment, 2018).

When plastics are burnt in open and uncontrolled conditions as a method of disposal, they produce fumes containing toxic substances like dioxins and furans that are harmful to human health and the environment. These fumes can cause respiratory diseases, increase the risk of heart failure, kidney and liver ailments among other medical complications (WECEF, 2005). Burning plastics also generates green house gases (GHGs) like methane (CH₄) and carbon dioxide (CO₂) as well as particulate matter (PM) that are harmful to the environment (SME, 2012).

Careless disposal of plastic papers puts both domestic and wild animals at risk of consuming them while farmlands become less productive when choked with plastics thereby posing a challenge to food security (EAPC, 2017; Kish, 2018). Mauritania banned use of plastic carrier bags because of the large number of sheep and cattle that were dying due to plastic ingestion (*SBS News*, 04/04/2018). Plastic papers also prevent rain water from seeping into the soil thereby leading to withering of crops (*New York Times*, 28/10/2017).

Sea animals, including birds that inhabit the marine ecosystem can feed on pieces of plastic papers mistaking them for food and may die due to their inability to regurgitate ingested plastic material (Azzarello and Van, 1987). Others get entangled in plastic debris and this had led to the deaths of some sea creatures that were already endangered (Blockstein, 1988; Grover and Rai, 2017). These factors can result into economic impoverishment which would go against the Kenya Government's desire to attain food security through realisation of Sustainable Development Goal (SDG) number 2 and the country's Big Four Agenda one of whose objectives

is to attain food self-sufficiency. The Big Four Agenda (manufacturing, universal health care, affordable housing and food security) were launched by President Uhuru Kenyatta during the country's Independence Day celebrations on 12th December 2017 and focus on realizing the four goals by the year 2022. Again when plastic papers are mixed with organic waste, they contaminate it making it unsuitable for use as farm manure yet it can be very beneficial in this aspect compared to chemical fertilizers.

It has been estimated that an upwards of 20 million tons of plastic waste find their way into the world's water bodies every year, and this pollution of the marine ecosystem affects the sea wildlife, coastal communities and economies (Gold *et al.*, 2014). But what is even more critical is that plastics usually find their way into marine animals that are consumed by humans (Fela, 2015). Some plastics are made of carcinogenic chemicals and can be fatal if they find their way into the human food chain (UN Environment, 2018). Because of the light nature of plastic papers, they are easily blown by the wind, sea currents or transported by rivers for thousands of kilometres (Azzarello and Van, 1987).

By blocking the drainage system, plastic papers contribute to flooding, particularly in urban areas which leads to the spread of communicable and vector-borne diseases. Stagnant water is a favourable breeding ground for mosquitoes that cause malaria. Similarly, when water collects in discarded plastic carrier bags, they form a good breeding ground for mosquitoes leading to outbreaks of malaria (Joseph *et al.*, 2016). Floods can also interfere with the sewage and water system creating perfect conditions for water-borne diseases.

In some of Kenya's informal urban settlements such as Kibera in Nairobi (one of the largest slums in Africa), plastic carrier bags had assumed an unfortunate notoriety known as "flying toilets". Limited availability of ablution blocks had forced some residents to relieve themselves in plastic carrier bags and then hurl the contents elsewhere, which would even end up on their neighbours' houses. This unbecoming practice was particularly common at night and many residents dreaded the "messy missiles" landing right inside their humble dwellings. However with the ban, this is now almost unheard of.

The Ban on Plastic Carrier Bags in Kenya

Adverse effects of plastic papers on the environment led to campaigns by environmentalists to have them banned but this was always resisted, particularly by owners of companies manufacturing plastics. The realization that continual use of plastic carrier bags and their reckless disposal was detrimental to the country's development and taking cognizance of the fact that no meaningful economic progress could take place in a degraded environment as advocated for by the environmental Kuznets curve (EKC) hypothesis was a "wake-up call" to the Kenyan government. After three attempts at banning plastic papers since 2005 (National Assembly, 2017; Nyangena *et al.*, 2017), the government, through the Cabinet Secretary for Environment and Natural Resources, finally issued a Gazette Notice dated 28th February 2017 that banned the product effective 6 months from the date of the notice. The ban outlawed the use, manufacture and importation of plastic paper bags. The penalty for violating the ban is a maximum prison term of 4 years or a fine equivalent to US \$40,000, and these are the harshest penalties in the world in this regard.

Challenges to the Ban

Soon after the ban was announced, stakeholders in the plastic sector went to court to challenge it, citing the huge losses that the country was likely to incur if the prohibition were to be enforced. However they lost the case and the ban took effect.

Human resource challenges have made it difficult to enforce the ban and the papers are still used in some quarters, though on a limited scale and mainly away from the authorities. There were also reports of the plastic carrier bags being smuggled into Kenya from Uganda where it is still legal to use them (UN Environment, 16/05/2018).

Negative Impacts of the Ban

The most immediate impact of the ban on use of plastic carrier bags was massive lay-offs of employees in concerned companies at a time when unemployment was already a national crisis. According to the Kenya Association of Manufacturers (KAM), over 60,000 people were directly employed by more than 170 plastic manufacturing industries in the country and these were the first casualties of the prohibition of plastic carrier bags (Nyangena *et al.*, 2017). However if all those who formed the entire “chain-link” of the plastic paper sub-sector were to be considered such as suppliers of raw materials, transporters and mechanics, the number of those affected by the ban is likely to be considerably higher.

The companies had also invested heavily in plastic manufacturing infrastructure that soon became redundant leading to huge losses to the owners. Even converting the machinery to have the capacity of manufacturing biodegradable carrier bags was very expensive given that investors were not prepared for the huge expenses involved.

Prior to the ban, traders used to avail plastic carrier bags to their clients for free but after the prohibition shoppers were required to have their own biodegradable carrier bags or eco-friendly alternatives whenever they went shopping or buy them from retailers. Many shoppers complained that this was an additional burden that they had not anticipated and argued that retailers should provide the environment-friendly bags for free. However since the biodegradable bags were expensive compared to plastics, retailers were not willing to give them out for free. Some shoppers (particularly men) found it demeaning to walk around with carrier bags whenever they went out shopping.

Positive Signs

August 2018 marked one year since the ban on plastic paper bags went into effect and already positive results have been reported, such as: a cleaner and greener environment, less contamination of the food chain with plastics, abattoirs are reporting less cases of plastic papers found in guts of slaughtered animals and incidents of flooding in Kenya’s urban centres had lessened because storm drains were not clogged with plastic papers. These positive outcomes have encouraged environmental campaigners to call upon the government to widen the ban to include other items like plastic bottles, particularly those used for water and soft drinks. Kenya’s efforts in combating the plastic paper bag menace received recognition during the Third Conference of the United Nations Environment Assembly (UNEA 3) held in Nairobi in December 2017 (UNEA 3 Issue 3, 2017)

Although the ban may have been a big blow to those who lost out economically, it also offers an opportunity to entrepreneurs to invest in such ventures as re-usable bags and recycling the thousands of tons of plastic papers in dumpsites across Kenya which may become a key component of the circular economy (Amlani, 2018). Apart from plastic papers that have been disposed of, other plastic material can also be recycled and this is a venture that can save the environment, create wealth and bring social transformation across the country. Recycling of waste is a potentially lucrative venture in Kenya, more so because it has relatively few players compared with the amount of plastic waste to be processed.

The sisal industry can benefit from the ban because bags made of sisal are not only durable but also biodegradable. Sisal used to be grown on a large scale in Kenya, particularly in the Rift Valley and Coastal regions. However introduction of synthetic fibres coupled with increased use of plastic material for packaging as well as importation of jute bags literally killed sisal farming in Kenya (EPZA, 2005). There is therefore hope that sisal farming can be revived through which employment will be provided and the environment saved by use of sisal material due to its biodegradability (*Business Daily*, 22/06/2018).

Other alternatives to plastic carrier bags include bamboo, banana leaves, canvas, cloth, paper, papyrus and water hyacinth from which shopping containers can be manufactured and this could be another avenue through which investors can produce environment-friendly containers (Nyangena *et al.*, 2017). Reduction or removal of taxes on ingredients that are required in the manufacture of alternatives to plastic carrier bags is another strategy that can be adopted by the government in attracting investors in biodegradable containers.

The government can also provide financial and other forms of support to entrepreneurs and former employees of plastic manufacturing companies to cope with the transition to other enterprises. After the plastic ban in Bangladesh, the government provided loans and financial support on liberal terms to factory owners and their employees to enable them cope with the changed environment (*IPS*, 21/01/2002).

Examples from Elsewhere

In an effort to confront the plastic menace, several countries have adopted different measures such as imposing taxes on use of plastic carrier bags or banning them altogether. The first European country to levy charges on use of plastic bags was Denmark in 1993. The charge was imposed on outlets that were giving out plastic carrier bags and this measure saw the use of plastic bags in the country reduce by half to approximately 400 million pieces per year (Grover and Rai, 2017; MEFD, 2017).

In 2002, the Republic of Ireland became the first country to impose the plastic bag levy on consumers at sale points that saw a 90% reduction in use of plastic carrier bags while the government earned \$9.6 million from taxes which was used to fund several environmental projects (*Irish Environment*, 01/10/2015). When use of the bags started going up in 2007, the “bag tax” was raised to discourage their increased utilization. After positively influencing consumer behaviour, the Irish environmental levy is regarded as the best practice and had continued to be copied by other countries (IEEP, 2016).

Bangladesh was the first country to ban the use of plastic carrier bags in 2002 and this was informed by the fact that the country suffered two major floods in 1988 and 1998, both of which were blamed on plastic papers that had blocked the drainage system and waterways (UNEP, 2018). The 1998 floods were reported to be the most severe in living memory. More than 1,000 people lost their lives, there was widespread destruction and two thirds of the country remained under water for eleven weeks (Shah, 1999; Ecospear, 2018). Apart from the two catastrophic floods, Bangladesh is prone to annual flooding particularly during the monsoon season (June to September) when the country is inundated with large volumes of water (van Leeuwen, 2013). Effects of the flooding were exacerbated by plastic papers that would usually clog the drainage system. With the floods come water-borne diseases like diarrheal, dengue fever and malaria. On several occasions also plastic papers have been known to block the sewage system in Bangladesh leading to spewing of the sludge (*The Third Pole*, 09/04/2018).

Unfortunately the ban on plastics in Bangladesh has been largely ignored due to poor enforcement mechanisms as well as lack of cost-effective alternatives and as a result the country has continued to suffer consequences of careless disposal of the product (*IRIN*, 02/03/2011; van Leeuwen, 2013).

Plastic bags were banned in Rwanda in 2008 and those found in possession of them risk fines, jail terms and must make a public apology. The law is strictly enforced and those entering the country have to surrender any plastic bags in their possession before they are allowed in (*Sunday Nation*, 20/08/2017). Apart from law enforcement officers and other state agencies, there is a network of vigilantes and informers spread across the country to back-up the ban. On the last Saturday of every month able-bodied citizens, including the President, are required to participate in cleaning up their neighbourhoods – an exercise known as *Umuganda* – and coupled with the ban on plastics, this has contributed to making Rwanda one of the cleanest countries in the world (Froidbise, 2015; UN Environment, 2018). Rwanda has virtually conquered the plastic paper menace and perhaps offers the best example in benchmarking for countries that wish to rid themselves of one of the greatest environmental challenges facing the world today (TEA, 2011; Danielsson, 2017; *New York Times*, 28/10/2017).

In 2014 the European Union passed a directive that required member states to reduce plastic bag usage by 80% by the year 2019 (Karlaite, 2016). As the danger of plastic carrier bags to man and the environment becomes more evident, over 60 countries have imposed various forms of sanctions against them and the number is likely to increase with time (UN Environment, 2018).

The Way Forward

A number of measures can be adopted to minimise use of plastic carrier bags in Kenya. Taxes can be imposed on plastic carrier bags to reduce their usage and many people are likely to be discouraged from paying taxes that they can avoid by using containers made of biodegradable material. Similarly since the carrier bags will come at a price, shoppers are likely to be more responsible in handling them compared to throwing them away after single use. This is a two-pronged approach that would save the environment from degradation while at the same time earning the government revenue.

To tame irresponsible disposal of plastic material that is legal in Kenya such as water and soft drink bottles, consumers could be encouraged to embrace take-back schemes that involve returning such items to manufacturers for recycling for which they could be eligible for incentives like discounts on selected products (NEMA, 2017).

Article 42 of the Constitution of Kenya 2010 affirms that “Every person has the right to a clean and healthy environment...” while Part II (1) of the Environmental Management and Coordination Act (EMCA) of 1999 declares that “Every person in Kenya is entitled to a clean and healthy environment and has the duty to safeguard and enhance the environment.” The government has a duty to ensure that the environment in Kenya remains clean while at the same time the people must play their patriotic duty of being environmental stewards. More sensitisation of the public regarding dangers of plastic carrier bags should be conducted as one way of minimising effects of plastic contamination. There should be enhanced involvement of the public in waste management as is the case with Rwanda; regular clean-up exercises in community neighbourhoods can help in inculcating a culture of responsible waste management. Promotion of re-usable bags and availing incentives that can promote a circular economy is another avenue of tackling the plastic paper menace in Kenya (Nzioka, 2017).

There should be strict enforcement of existing rules; having good legal instruments is one thing but enforcing them is quite another. In Kenya enforcement of laws has always been a challenge due to a number of reasons such as lack of capacity (financial, human and material resources), corruption and a “don’t care attitude” among some citizens. There is also need for impartial enforcement of the ban to remove any feelings of bias. As another approach to effectively address the plastic bag menace, a regional approach to the challenge might be more sustainable. The rest of the East African Community (EAC) countries (Burundi, South Sudan, Tanzania and Uganda) should follow Kenya and Rwanda in imposing bans on single-use plastic carrier bags. To have a ban in only two member- countries has made it easier for smugglers to sneak the papers into Kenya and Rwanda thereby posing a challenge to effective implementation of the ban.

It is an undeniable fact that plastics play a significant role in today’s world and in future plastic material could provide solutions to some of the contemporary global challenges such as climate change and food shortages (EC, 2011). However, every effort should be put in place to ensure that they are only used where and when it is absolutely necessary (Scheffers and Wanger, 2011) and then recycled accordingly because they are known to cause harm to human health and irreversible ecosystem degradation. This is made possible by the fact that there are other environment-friendly materials that can be used instead of plastic carrier bags. Although Kenya banned the use of plastic carrier bags, there are many other plastic products that are legal such as plastic bottles, single-use plastic cups, straws and food packaging material all of which have contributed to environmental degradation yet they can be replaced by suitable alternatives.

Conclusion

The importance of plastic papers in improving the life of man cannot be disputed and indeed plastics have brought positive changes to humanity. However their importance is diluted by the harm they bring to man and the environment. It can also be argued that plastic papers are not a problem *per se*, but it is how they are managed that really matters. Failure to utilize and dispose

plastic carrier bags responsibly coupled with their non-biodegradable nature creates a complicated paradox that calls for stringent enforcement measures to maintain the ban as well as policy interventions that will create a seamless transition from using plastic carrier bags to environment-friendly containers. The ban on use of plastic carrier bags in Kenya was a game changer that had brought positive environmental and social impacts to Kenya in a much shorter time than previous campaigns to save Planet Earth have been and it should be encouraged. Economic or political variables should not be allowed to cloud the long term benefits that the country is likely to enjoy from non-use of plastic papers. Although modern technology has brought about biodegradable plastic papers that decomposes within three years compared to conventional plastic that takes up to 1,000 years, the best sustainable solution to environmental destruction in this regard is to use non plastic carrier bags

Political expediency, corruption and selfish interests are among negative forces that for a long time have curtailed implementation of several strategic policies and projects in Kenya that would have brought positive development to the nation. For example implementation of the integrated public transport system in Nairobi has been delayed for decades because of vested interests by a few people and the result is the incessant traffic gridlock that has become synonymous with Kenya's capital city.

Banning the use of plastic carrier bags in Kenya was met with mixed reactions but it could go down in history as one of the major policy decisions by the government of President Kenyatta as far as promotion of environmental sustainability is concerned. As suggested, there is need for sustainable and strategic interventions that would cushion stakeholders from any adverse effects of the ban on the use of plastic carrier bags in Kenya. This is likely to bring more support for the ban and hence ensure the three dimensions of sustainable development – environmental protection, social improvement and economic growth – are adequately catered for.

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ABBREVIATIONS AND ACRONYMS

DTI	Danish Technical Institute
EAC	East African Community
EAPC	Eastern Africa Policy Centre
EC	European Commission
EKC	Environmental Kuznets Curve
EMCA	Environmental Management and Coordination Act
IEEP	Institute for European Environmental Policy
IPS	Inter Press Service
KAM	Kenya Association of Manufacturers
MEFD	Ministry of Environment and Food of Denmark
EPZA	Export Processing Zones Authority
NEMA	National Environment Management Authority
NGOs	Non Governmental Organisations
PM	Particulate Matter
SDG	Sustainable Development Goal
SME	Saskatchewan Ministry of Environment
SMW	Solid Municipal Waste
TEA	Toronto Environmental Alliance
UN	United Nations
UNEA	United Nations Environment Assembly
UNEP	United Nations Environment Programme
WECF	Women in Europe for a Common Future