



The plastic bag ‘ban’ controversy in Zimbabwe: An analysis of policy issues and local responses

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Abstract

Plastic litter has become a nuisance in Zimbabwean urban areas proving to be beyond the Local authorities’ capacity to cope with. The environmental externalities have been intensified by perpetual usage of flimsy plastic bags within parts of the country. Following the footprints associated with grocery plastic bag, Statutory Instrument 98 of May 2010 facilitated regularization of plastic bag under the banner of Ministry of Environment and Natural Resources now Ministry of Environment, Water and Climate. A waiver was instigated on bread and other food packages making it partial and not a wholesome ban. Conflicts have proved intermittent particularly between law enforcement agencies and retail outlets that were given 6 months grace period regardless of bulky purchased stocks lasting them for 4-5years. The ‘ban’ was meant to encourage consumers and retail shops to practice safe habits at a cost through usage of 30 micron plastic bags regulated by the Environmental Management Agency. For the informal sector a relationship of ‘hide and seek’ with law enforcement agencies has recuperated in most instances. Despite the plastic levy on 30 microns grocery bags the move has been facing resistance and consumers have resorted back to the plastic bags making policy implementation imminent and contested.

Keywords: plastic litter; flimsy plastic; footprints; regularization

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1. Introduction

Plastic bags have been used worldwide for carrying goods. Despite their growing popularity most countries have initiated their ban or regularization in most instances. Zimbabwe is amongst African countries that have advocated for plastic bag regularization. In 2010 the Environmental Management Agency (EMA) in Zimbabwe embarked on a nationwide plastic bag 'ban' project meant to curb the problems of littering. The former Ministry of Environment and Natural Resources now Ministry of Environment, Water and Climate resorted to regularization of plastic bags that are not less than 30microns serve for bread packaging and other consumables. This ban has been partial since it did not call off plastic bags completely from the system but gave minimum restrictions.

Plastic bags were introduced in the 1970s and gained popularity among consumers and retailers since then. The vast majority of these bags are discarded as waste usually after single use, (Williamson, 2003). For Rayne (2008), plastic bags are used to ferry consumer goods due to their convenience. They have also emerged to save secondary roles for conveying drinking water and disposing domestic waste as well. The problem is particularly acute in Africa due to its unique set of socio-economic and political conditions (ibid, 2008). According to Ellis, Kanter, Saab and Watson (2005) plastic grocery bags are ubiquitous. Furthermore, they are highly convenient, cheap and easily accessible hence making them more appealing to both consumers and retailers as a reliable way to deliver goods from the store and home. This has made them very popular and widely used globally albeit with serious ecological consequences (ibid, 2005).

According to CUA- World update on plastic bags (2007), the plastic bag campaign has received extensive attention and concern across the globe. Since their introduction trillions of plastics have been used and discarded globally as waste. CUA (2007) and Stevens, (2001) echo the same sentiment that plastics take too long to decompose taking up to 1,000 years. Anthony (2003) ascertains that light weight plastic bags can be carried off by wind even from rubbish bins and landfills leading to accumulation of plastic bag wastes causing environmental pollution. One of the problems is deterioration of the natural beauty of an environment. Another problem associated with these wastes is death of domestic and wild animals (ibid, 2003). According to EMA Newsletter (2011) and CUA (2007) thin plastics can be ingested by domestic animals and wildlife becoming a choking hazard or even more a threat from mistaken ingestion right up to the food chain.

According to EMA Newsletter (2011) thin plastic bags tend to clog sewer systems leading to constant bursts exposing people to health risks. Thus, plastics exacerbate the sewer bursting problems in many urban centres in Zimbabwe and many other African countries. EMA newsletter (2011) further upholds solid waste management is one of the topical environmental problems being faced by urban areas in Zimbabwe. Plastics constitute about 70% of waste in waste dumps, and if blown away by wind they have resulted in clogging and blocking of sewers (Ibid, 2011). In the same vein Dikgang and Visser (2010) opines that plastic bag litter is both unsightly and a hazard to the environment. EMA Bulletin, (2010) acknowledges that prior to plastics being an environmental problem a looming healthy hazard has emerged especially in most parts of Harare leading to cholera outbreak in 2005, (Ibid, 2011). In some instances plastic bag litter has specific consequences of accumulating bags such as flooding and malaria (CUA, 2007).To further validate the above

notion Rayne (2008) argues that water trapped in bags also provides an ideal breeding ground for mosquitoes, raising the risk of malaria transmission.

According to Rayne (2008), African countries like Eritrea, Zanzibar and Somaliland have banned plastic bags as have China, Bangladesh, Taiwan, Thailand, Papua New Guinea, Nepal, Philippines and several states in India. He further eludes that in Rwanda there has been a total ban of these plastic bags as well. Most countries such as South Africa and Botswana alike have adopted a partial ban by setting minimum restrictions on thickness. This has been instigated by putting in a place a plastic levy as a measure to sensitize consumers and instill a sense of responsibility on their part. Moreover, environmental tax externalizes costs on the part of producers.

Ireland, like Bangladesh was among the first countries to introduce a plastic levy. Like in any other country plastics used to be given free of charge. In 2002 Ireland introduced a 15 Eurocent tax on plastic bags. This was in a bid to stimulate and encourage consumers to reuse shopping bags (Convery, McDonnell and Ferreira: 2007). In Africa Rwanda was first to take action on plastic bags and later imposed an outright ban in 2008. Their laws have been considered draconian due to stringent requirements. This has been intensified with deployment of militia to monitor for compliance and in most instances stopping shoppers in possession of these plastic bags in the streets (CUA, 2007).

Dikgang, Leiman and Visser (2010) argue that during the pre-legislation period in South Africa the high income retailer already had better quality bags free of charge whilst the low income retailers extra heavy gauge bags were sold at a price. In South Africa charging of bags started in May 2003 with a fixed normal price of 46 rand cents for 24 litre bags across all retailers. The thickness of plastic bags was fixed at 30microns but a grace period of 5years was granted before recalling off 24 microns plastic bags. In the same vein (ibid, 2010) also postulate that the upper-middle income retailer experienced the highest decline whilst the low income had the least decline. This also necessitated a sharp decline in sale of plastic bags across retailers' except for the low income retailer.

In a similar study done by Mangizvo (2012) in Alice, South Africa plastic litter was still evident despite efforts put in place by government to regulate its usage. Apart from lack of awareness initiatives Mangizvo (2012) also argue that increased use of plastic bag has been necessitated by cheap costs ranging from R0.30 to R0.50. This has proved insignificant to lower consumption patterns. In the same study it emerged that some leading supermarkets were issuing plastic bags free of charge to those buying big groceries and charge those buying smaller groceries. This has not ameliorated the problem of plastic litter but instead curtailed its use leading to casual dumping in Alice. Moreover, to further worsen the situation in market places plastic bags were issued out for free to show courteous to customers (ibid, 2012).

In Botswana the ban took effect in 2006 and charging for bags began in July 2007 with retailers charging different prices, ranging from 20 thebe to 35 thebe, (Dikgang and Visser (2010). The retailers had the liberty to charge for plastic bags depending on targeted consumers denoting their classes whether low income retailer, middle income retailer or high income retailer. The introduction of plastic bag levy led to a significant decline in consumption of plastic bags in Botswana with the high income retailer experiencing the

sharpest decline. This was largely to do with different prices charged on plastic bags resulting in lower middle income classes experiencing the least decline price for bags (ibid, 2007).

In Zimbabwe Mangizvo and Steven (2012) carried out a study on post legislation regarding plastic bag regulation. Despite their growing unpopularity with environmentalists who are for the outright ban, in their study Mangizvo and Steven (2012) advocated for plastic regulation rather than a complete ban. They further castigated the responsible environmental authorities for inadequate publicity and limited media coverage well ahead of the 'ban'. In their study they have rather advocated for alternative substitutes before recalling the plastic bag completely from the system. Simultaneously (Mangizvo and Steven, 2012) proposed antilittering campaigns as another viable option in educating the public on environmental awareness. They also instigated for introduction of levies rather than an outright ban which they considered to be too drastic and the last resort after exploring the available options. They also recommended the sale of eco-bags as a viable alternative as well. However, in as much as they propose other available option it has proved beyond no reasonable doubt that regulation alone is not adequate, (ibid, 2012).

Hence this study seeks to assess the aftermath of the plastic bag ban in Zimbabwe in the post legislation era. Following regularization of the plastic bag through usage of standard plastic bags that are 30 microns it was hoped that the littering situation would improve. This was marked by tremendous decline in the regulated plastic bags during the first few years. However, consumers have acclimatized to the tax levy put in place making them resort back to use of plastics. The introduction of the tax levy on plastic bags has not been deterrent on the part of the consumers. Moreover, the waiver of flimsy plastics on bread packaging and confectionery has curtailed the magnitude of plastic litter associated problems. Moreover, kaylite, plastic pet bottles and cans have been left out. In the informal sector there has been resistance since the flimsy plastic bag has been used in packaging fruits and vegetables. Regulation itself has not really addressed associated littering problems making implementation lethargic. A total ban could have been fruitful to curb litter related problems.

2. Materials and methods

The research was purely qualitative with unstructured interviews, key informant interviews, observations and secondary sources of data being used as data gathering methods to assess the aftermath of the plastic bag 'ban'. Qualitative methodology provides descriptive data on people's feelings towards the plastic bag ban. The research was conducted 3 years after the enactment of the 'ban' to assess the effectiveness of the ban. Qualitative research methodology by nature enabled the research to capture people's perceptions in regards to the plastic bag ban in Zimbabwe. This further enabled the researcher to freely interact with the respondents and probe for clarity on crucial issues emerging from the interviews. A sample size of 40 was administered through unstructured interviews with the general public and key informant interviews with Environmental Management Officials and the City Council to corroborate information relayed by the people on the issue of the plastic bag 'ban'. Secondary sources of data were also employed which involved the use of

pamphlets, news bulletins by EMA, booklets to appreciate some of the milestones that have been made regarding the ban.

3. Results and discussion of findings

Evidence gathered from the research indicated that the problem of waste can be attributed to a number of reasons of which littering proved to be one of the many other causes identified. Plastic bags have emerged to be very prominent despite introduction of the tax levy in a bid to regulate their usage. Illegal and indiscriminate dumping of plastic litter has proved evident. Apart from that, the local authorities have been in a comatose due to the economic doldrums experienced over the past decade thereby compromising on waste service delivery. It also emerged that over the years retailers have been giving out flimsy plastic bags to shoppers free of charge to carry their groceries, which have been improperly disposed into the ecosystem taking too long to decompose. This has tended to be inimical not only to the environment but even to human health. Following the enactment of legislation under Statutory Instrument 98 of 2010 retail shops have been barred from using flimsy plastic bags adapting to the recommended plastic bags which are 30 microns but at a cost of 1South African rand.

Retail shops and consumers have showed concern over the untimely imposition of the plastic bag 'ban' since they felt that there was no adequate consultation on the part of stakeholders and the general public, hence there has been resistance on the part of policy implementation. This sentiment goes hand in glove with Mangizvo and Steven's (2012) study that there has been limited coverage on awareness. It is against such a background that the researcher contend that the plastic bag 'ban' policy was implemented in a rather top – down nature with little if any grassroots consultation. Such a scenario therefore meant that the revolutionary policy was doomed for resistance and failure. This has seen retailers resorting to selling the stipulated standard of plastics for 1 rand or US\$0.10, so that they do not lose out on their profits. This has however, intensified unending disputes with the shoppers who feel that they are being shortchanged. Worse still; in the informal sector implementation has been difficult since most people derive their livelihood portfolio in informal trading. Policing in this sector is also extremely difficult if not impossible due to the deceitful nature of the business.

4. People's perceptions towards the plastic bag 'ban'

Peoples' perceptions pertaining to the plastic bag 'ban' were shrouded in ambivalence. Some of the people expressed disappointment with the 'ban' and asserted that they should have at least been consulted before the implementation of the policy. As such this group of people thus views this policy as more of an imposition which is far detached from the needs of the customers and business people. Some of the participants moaned that EMA should not adopt a "one – size fits all" approach in its environmental policies since this would have a backlash on the customers and business people. Evidence from data gathered in the field indicated that following the City Council's failure to meet up to its standards of refuse collection, illegal dumpsites have

proliferated in almost all urban areas leading to environmental externalities and effects on public health. Since then the Ministry of Environment and Natural Resources (now Ministry of Environment, Water and Climate) has enacted a legislation under the Environmental Management Act (Chapter 20:27) section 4, subsection 1 which clearly stipulates that every person should have a right to a clean environment. This has been further refined under Statutory Instrument 98 of 2010 which clearly spells out environmental regulations on use of plastics.

More so, evidence gathered from interviews conducted in the City centre in Harare also indicated some mixed sentiments. Most shoppers felt that the plastic bag 'ban' was ludicrous and had no proper sensitization on the part of the local community and the business community at large. It emerged that there seemed to be no public awareness over why the ban was instituted. Evidence from research revealed that the ban has affected people differently. Most shoppers highlighted that the plastic bag 'ban' had inconvenienced them in most instances especially when they want to buy bulk purchases. This is supported by Dikgang, Leiman and Visser (2010) who substantiate that shoppers tend to buy new bags with each visit to the supermarket a major reason being inconvenience of carrying plastic bags from households to shopping centers. It emerged that respondents felt that the 'ban' defies logic and only works for a person buying small groceries. Other respondents mimicked Minister's brainchild meant to reduce litter and reiterated that this was just an excuse to justify his failure to curb issues affecting the country's degrading environment. This clearly testifies that the 'ban' was untimeously enforced and caught consumers and business people unaware. Hence this validates the view that local community have 'agency' and can determine the course of action. The ban has only worked for a short time and people have since resorted back to their plastic bag since the ban was simply more on the regulatory side.

Most disgruntled shoppers interviewed felt that the Council was not doing its mandatory duties in Harare. They were saying this in light of the erratic refuse collection in both the city centre and various residential areas. This has therefore led to the sprouting of illegal dumping sites where plastics and other non – degradable waste are disposed. Such a scenario represent a health time – bomb for the residents of Harare. Other respondents testified that the City Council is not doing its duties properly and this has nothing to do with the issue of plastic bags. It was echoed that in low density areas people have resorted to carrying rubbish to the landfills in their cars. This view has been cemented by Mangizvo and Steven (2012) that it is the unavailability of municipal services such as waste disposal that have emerged to be a sine qua non of the environmental woes and in turn advocated for clean up campaigns. Contrary to this view, it emerged that the failure of the City Council has been used as a scapegoat yet despite environmental awareness campaigns on anti-littering and clean up campaigns the public has remained defiant to take part in these environmental initiatives. Moreover, littering has intensified under the pretext that the Council should be liable for garbage collection. Hence this is actually an issue of behavioral change towards littering. This point is further consolidated by Chitotombe (2014) who opines that antilittering campaigns have been introduced to instill ecological stewardship amongst citizens except that in most instances the public have failed to justify their existence. Some individuals have tended to simply become litter bugs hence litter begets litter hoping that there are people who are responsible for cleaning up.

The issue of class has tended to be another determinant over plastic bag preferences hence the 'ban' has tended to have varied effects particularly on the elderly and the middle income earning group. An interview with one elderly man revealed that 1 rand was something not worthy parting with. This is in line with Dikgang and Visser (2010) who argued that introduction of the levy instills a sense of responsibility. Data gathered from the respondents showed that the issue of class had also become dominant with some who have personal cars resorting to use of trolleys and shopping baskets. For the middle income and low income usage increased and the ban has only worked for a short term as was the case in South Africa. An interview with one respondent noted that the only viable option was to buy plastic bags especially when using public transport. Contrary to Mangizvo and Steven's (2012) study who were advocating for eco-friendly bags as an alternative, these eco-bags were readily sold in some leading retail shops at the time of the study. However, the major hurdle has been the costs of these eco-bags which have tended to be exorbitant hence forcing the consumers to buy a plastic bag which they might not have wanted in the first place.

In another encounter with various shoppers some respondents indicated that the 'ban' was simply a ploy by the retailers to make customers pay through the nose their hard earned cash. It was also revealed that most customers felt their right had been infringed upon since they were now forced by retailers to buy taxi bags, while others resort to carrying their groceries in cardboard boxes. In most instances the till operators go on to the extent of asking customers whether they are buying a plastic bag or not. People have been left with no option in most instances following the shortage of coins hence leading them to buy plastic bags which in most instances they do not want. Moreover, since the dollarization of the economy coins are hard to come by making it very difficult for the 'ban' to survive under such conditions since in most instances people have resorted to buying plastic bags rather than retaining credit notes. Furthermore, 1 rand has proved not to be deterrent on the part of consumers. However, 1 rand for a plastic was only deterrent for many when it was introduced and forced customers to bring their own carrier bags. It has emerged that people are now willing to forego small change that could have otherwise been given in the form of sweets or a credit note for a plastic bag. At times people forget to carry their own carrier bags and only remember at the till point such that they are left with no option except to purchase the cheaper plastic bags. In this regard getting a credit note is not appealing considering that it might get lost or the print can easily fade. One respondent uttered, 'I would rather buy a plastic bag than get a credit note.' Some respondents felt that introduction of a fee instills responsibility on customers compelling them to value them.

From the research it was crystal clear that people have been left with no option except to buy plastic bags especially if they have a few groceries and need to board a commuter. Some have resorted to clutching the purchased commodities on their chest when necessary. One respondent argued that, 1 rand is a small price to pay compared to clutching all one's purchases to one's chest. From the observations carried by the interviewer conflicts have tended to manifest in most situations when consumers ask about where they can purchase eco-friendly bags. On another encounter conflict was evident when a shopper asked for a shopping basket to ferry his groceries to the car. One of the till operators indicated that only trolleys were allowed outside not shopping baskets. One respondent argued that plastic bags are very easy to forget and one only remembers them when doing a little shopping. Prior to this conflict has tended to surface between customers and retailers following the ferrying of shopping baskets to cars.

5. Conflicting interests on plastic bag 'ban' and livelihood implications

Most people felt that the move was anti- business and anti-people, tending to 'criminalize' companies producing plastic bags who had to scale down operations or close. This tended to impact on people's livelihoods since this lowered productivity on the part of plastic bag producing industries. Some respondents indicated that they were left jobless following massive retrenchments by the companies in the plastic production industry. Whilst this has tended to close windows of opportunities for some, informal traders who sell sacks at the doors of supermarkets valorized the ban since it has actually promoted their livelihood portfolio. The sacks are sold at the cost of \$0.50 and \$1 depending on their size.

More to that, informal traders who derive their livelihoods from selling plastic bags have been difficult to pin down and implementation has been very difficult. In the informal sector flimsy plastic bags are very common. These are found in both legal and illegal markets. Some of the interviewed informal traders noted that they wanted them to sustain fruits and vegetables of their customers. Most of them indicated that this was part of 'customer care' and would scale down their businesses if they do not issue them out. Time and again the law enforcement agencies have found it very difficult to implement since some of the street vendors have no fixed aboard. They have also been playing "hide and seek" with the authorities. One respondent argued that, informal trading was the last option that they had as a survival strategy. This has tended to create incessant conflicts with the law enforcement agencies. This is supported by a study conducted in India by Gupta (2011) who argued that despite the ban the small-stand alone stores used by single appropriators still provide plastic bags free of charge. It emerged out that use of plastic bags was pronounced within both grocery shops and vendor stalls particularly more on the latter which is unregulated. Regulations have proved difficult to enforce amongst vendors because most of them are unlicensed and operate in liaison with officials whom they bribe.

There has been a lot of confusion since the enactment of the plastic bag regulation which placed minimum restrictions on carrier bags. Shoppers and retailers have been constantly clashing after the latter started charging for the government recommended plastic carrier bags. The plastic bag 'ban' has strained the trust and mutual respect that used to exist between the wholesale/retail shops and clients. One respondent indicated that, 'ever since the statute was enforced, there have been endless clashes between till operators and consumers'. Some retail shops alluded to the fact that the government should reconsider policy since it was affecting them big time. Retailers have been forced to put a small charge on government recommended plastic bags to avoid losing out. However, some retail shops such as Tsungai Supermarket continues to issue out the standard 30 micron plastic bags plastic bags free of charge to jostle for clientele. According to the Plastic Packaging and Plastic Regulations Statutory Instrument 98 of May 2010, use of the banned cheap plastic carrier bags attracts a hefty fine of US\$5 000 or a one year jail sentence. Some of the big retail shops indicated that they had been fined following their defiance to the new regulation after they continued to give out the flimsy plastic bags which were given free of charge. The issue of fines has tended to work for retail shops as well as departmental stores since they can be easily monitored for compliance and ticketed when they violate environmental regulations.

Furthermore, ever since its introduction, the 'ban' has been facing resistance since there has been very little public awareness over why the ban has been instituted. It was also evident that there had hardly been any public awareness campaign to explain the ban to the ordinary citizenry. This sentiment is corroborated by Leach and Mearns (1996) who argue that target groups are seen as passive objects of policy rather than active objects hence there is no room for maneuver by the general public. The disarming shorthand of labeling constructs a problem in such a way as to prescribe a predetermined solution legitimizing public bodies to bring about intended results. Retailers and manufacturers indicated that they were caught unaware by EMA's move, adding that consultations should have been made before effecting the ban. One retailer argued that the government should reconsider the policy because it is grossly affecting their businesses. They were forced to put a small charge on the government recommended plastic bags to avoid losing out. However, contrary to this Mangizvo and Steven (2012) found that the business community was actually the one pressing for regulation rather than outright ban which they thought was too harsh not only to them but to consumers as well.

Evidence gathered from EMA officials indicated that the banning of the use of plastic bags is a move to guard against littering the environment and to create environmental safe habits. It was also revealed that, contrary to retail and public claims, sensitization of the local community and business entities was done. EMA highlighted that outlets had been given a grace period to stop using plastics that do not comply with the environmental regulations. A respondent from EMA indicated that after gazzetting of legislation, EMA embarked on awareness campaigns targeted at the corporate organizations who are the bulk users and distributors of plastics. It was also indicated that initially EMA faced resistance from big retail outlets because some claimed to be in possession of stocks that would last for a year. In response to the defiance EMA went on to issue tickets to concerned companies. The environmentalists were for an outright ban though they had long term plans to call off the plastic bag from the system. This tended to cause disarray and had an outright ban been instituted the process could not have been futile. Thus, such resistance led EMA to back track and opt for a partial ban on the plastic bags. Contrary to Mangizvo and Steven's (2012) study that are for regulation, the researcher is of the opinion that recalling off plastic bag from the system and kay-lite takeaways could have served the environment.

The key informants also indicated that the challenge being faced by the Agency is of smuggled plastics from neighbouring countries used by the vending public especially informal traders. It was indicated that South Africa is amongst the foreign companies that took advantage of the gap in local environmental laws to engage in a lucrative business exporting flimsy plastic bags to Zimbabwe. These are the same plastic bags on the streets that informal traders have resorted to using in order to serve their customers. The key informant interviews were a true testimony that the plastic bag 'ban' was a mitigation measure meant to curb the littering scourge. The 'ban' tends to have some shortfalls since it only regulates the use of plastic bags within the country and it has been lax on importation of the flimsy plastic bags making it weak. Moreover, other shops selling cheap Chinese ware and clothes are still using flimsy plastic bags despite regularization. These have tended to extend their grip in Zimbabwe following the 'Look East Policy' by the government. This in essence has also been an impediment in successfully mooting out the flimsy plastic bag.

However, it will be prudent to argue that the ban has proved to be only a short term policy and is gradually dying out since people have continued to buy plastic bags. It has also emerged that it only works for people buying a single item. The plastic bag 'ban' has not resolved the littering scourge since it left out the pet bottles and cans. It is not clear what will happen to the environment if these are not recalled from the system. More to that the kaylite has been left out and is still under scrutiny yet it has also emerged to be an environmental eyesore since it is the most common method of takeaway foods. A total ban on plastic bags could have sufficed and ameliorated the environmental problems bedeviling Zimbabwe.

6. Eco-friendly shopping bags

From the research it was also reflected that a total ban on plastic bags was the only viable option and selling of recyclable eco-bags would ensure that customers remember to carry their own shopping bags to the store. This would likewise reduce the polluting effects of these disposable plastic bags. This is in line with Mangizvo and Steven's (2012) sentiments that regulations, taxes or reusing plastic bags for shopping would not ameliorate the problem of plastic bag consumption considering their convenience. Ignorance and apathy surfaced from the interviews since some shoppers were not concerned about the harmful imprints of plastic bags on the environment and human health, only insisting that they want their plastic bag back and this is becoming evident. It would be an oversight to argue that EMA has failed to deal with the imminent problem of plastic litter; hence it will be fruitful to note that it really has made 'baby steps'. Lack of implementation has tended to be a hurdle in policy following the failure to articulate the voices of the local communities who have tended to challenge the technocratic 'think tanks' to whose knowledge they are deemed to subject to. To this policy on plastic bag 'ban' has been a process of muddling through. Evidence from EMA officials revealed that eco-friendly shopping bags will go a long way in the amelioration of the urban ecological woes. The only challenge is that in points of purchases where they are available their cost is too exorbitant for the ordinary citizen. Partial plastic bag 'ban' has not been a candid solution and only works for a person buying one item.

7. Ecological footprint of plastic grocery bag

From an ecological point of view the plastic bag ban was quite plausible. Most respondents seemed not to be aware of the ecological effects of the ban. Plastic bags have tended to have environmental externalities during their manufacturing. Ellis, Kanter, Saab and Watson (2005) postulate that air pollution caused by emission of toxic chemicals and carbon dioxide during the manufacturing of plastic bags is a significant part of the environmental impact of this product. In the study plastic bags have emerged to be a common method used for carrying groceries and vegetables and fruits, and for fruits and vegetables they have tended to be flimsy plastic bags. Narayan (2001) argues that use of plastic bags for carrying food items can cause serious health problems since some carcinogenic agents could be generated during chemical reactions that take place in plastic materials (for example, colouring agents and the food items due to temperature variations. In Zimbabwe waste has been disposed through various means which range from open dumping, burning and in

some instances burying as a means of disposing plastic bags. This is similar to the situation portrayed in Ethiopia in a study conducted by Adane and Muleta (2011). It was evident that in Ethiopia the throwing of waste on surrounding areas (open dumping, burning and burying emerged to be common practices to dispose plastic bag wastes).

Burning waste emerged to be a source of dealing with dump heaps in high density areas such as Glenview, Budiro and Mbare particularly in the early morning hours when residents sweep their compounds. However, the Environmental Management Agency does not allow burning of waste since it also has adverse environmental implications. For Boadi and Kuitunen, (2005) and Rayne,(2005) this is because of several reasons such as green house gas emissions that cause climate change and release of toxic organic compounds into the environment that cause different health risks such as respiratory health problems.

At shopping centres piles of waste are evident and in most instances the City Council workers have resorted to burning after sweeping. There is a hive of activity including formal traders making the sight unattractive. This situation is also pronounced in the City Centre particularly where people board commuters. Data gathered from secondary sources of data revealed that people had been warned from burning waste since it results in greenhouse gas emissions. However, due to the erratic collection of refuse by the city councils, residents are left with no choice but to resort to these cheaper and environmentally damaging alternatives. According to EMA Bulletin (2011) pollutants such as carbon monoxide, carbon dioxide and nitrogen oxides are emitted from burning waste. Burning of waste also tends to pose serious health hazards. Smoke from burning household waste is unhealthy to breathe hence causing some respiratory diseases. Chemicals commonly detected in smoke include benzene, styrene, polychlorinated dibenzodioxins also known as dioxins and polychlorinated biphenyls and polychlorinated dibenzofurans also known as furans. Evidence from EMA Bulletin (2011) revealed that smoke from waste dumps can contain traces of hydrochloric acid as well as formaldehyde and other aldehydes. These chemicals are especially irritating to the eyes and lungs. Bleached paper products and certain plastics contain chlorine which creates dioxins when burnt with other trash leading to cancer, birth defects and altered immune function. Burning of polystyrene polymers- such as meat trays, yoghurt and deli containers releases styrene which in turn affect the central nervous system, causing headaches, fatigue, weakness and depression.

Health problems also emanate from unscrupulous waste disposal. In Harare high density suburbs following the City Council's incapacity to collect refuse people have often resorted to 'use and throw away'. It emerged that most people have resorted to dispose waste in open dumpsites as a way of disgruntlement over failure to collect refuse by the city fathers. 'Flying paper bags' were evident on the dumpsites since people nicodemously dispose the waste at night when they cannot be noticed by the relevant authorities. This finding is further corroborated by Adane and Muleta's (2011) study in Ethiopia that indiscriminate throwing of wastes to their surrounding open areas was used by majority of residents. 'Use and throw away' emerged to be a custom among residents of Jimma City in Ethiopia.

In high density suburbs such as Glenview and Budiro burst sewers are quite evident. This has been exacerbated by plastic litter that is disposed in open dump sites and carried away by wind in turn clogging sewer pipes. The burst sewers have found their way into water sources hence causing eutrophication. The

same water is consumed by the public making it a health time bomb. In some instances they leach into the soil contaminating underground water which has proved to be a viable source for drinking water amongst Harare residents. This has culminated in the widespread outbreak of cholera and typhoid leading to increased mortality rates. Data gathered from EMA officials and secondary sources of data revealed that about 5 000 animals are dying each year through ingestion of plastic bags. For Ellis , Kanter, Saab and Watson (2005) plastic bag footprints lead to animal mortality which when it decomposes the plastic is released back into the environment and ingested by another animal

In most parts of Harare Clean up campaigns have been facilitated to address the imminent problem of plastic litter. However, though popular with the public these clean ups have not been very effective. This has been mainly because of citizen's attitude towards the clean-ups. Even though various organizations have taken the initiative on board people still continue to litter. Moreover, these clean ups are usually done as a once off event making it very difficult to deal with plastic litter.

8. Conclusion

The ban has been contested and due to divergent interests. Based on the narratives given by key informant interviews it emerged that the ban was there to promote safe habits. From an ecological point of view the ban is valid since it addresses some of the ecological footprints which include health issues, land and air pollution as well as wildlife. In terms of implementation the 'ban' has been successful amongst leading formal shops that are easily monitored through issuance of tickets if they do not comply. The leading shops have since resorted to selling the standard plastics at a cost. However, policy implementation has been very difficult due to resistance in particular from the informal sector making the whole plastic bag 'ban' controversial. These have in most instances smuggled flimsy plastic bags from Mozambique in order to serve their clients as a courteous gesture. To add on to the plastic bag issue there has been emergence of new players under the auspice of 'Look East Policy' who have not yet complied to usage of standard 30 microns plastic bags. The 'ban' has only worked for a short term and people are gradually resorting back to their plastic bag. The tax levies have proved not to be deterrent in the long run since 1 rand is too low and only a higher levy would have instilled the sense of responsibility. However, it is paradoxical that the ban has been waived on bread packaging plastics leaving out pet bottles and kay-lites which have not been recalled from the system yet they contribute to the environmental externalities. Given that scenario an outright 'ban' could have been prudent encompassed by conscientization and awareness on the part of society and the business entity.

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