

**RESPONSES OF PLASTIC BAG MANUFACTURERS AND KEY
SUPERMARKETS IN KENYA TO THE THREATS POSED BY PLASTIC BAGS
DISPOSAL**

BY

WANDERI JOYCE WANJIRU

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**A MANAGEMENT RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE
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DECLARATION

This research project is my original work and has not been submitted for a degree course in this or any other university.

Signed 

Date 23/9/2005

WANDERI JOYCE WANJIRU
D61/P/8086/02

This research project has been submitted for examination with my approval as a University Supervisor.

Signed 

Date 23/9/2005

DR. MARTIN OGUTU
Supervisor, Faculty of Commerce
University of Nairobi

DEDICATION

I dedicate this project to God the creator and giver of all wisdom and to my immediate family who supported me all through this worthy cause.

ACKNOWLEDGEMENTS

I would like to extend my gratitude to my supervisor Dr. Martin Ogutu for his immense patience, dedicated support and guidance through this task.

I would wish to thank all the respondents, who despite their busy schedules sacrificed their time to complete the questionnaire.

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ABSTRACT

The plastic industry is one of the fastest growing in Africa. In Kenya, the industry is growing at a rate of 8 – 10 %. Most of the plastic products produced have short service life, among them is the plastic bags which are very popular because of their versatility, durability and ease of storage. It is estimated that over 8 million plastic bags are handed out at the supermarkets every year. Most of the plastic bags produced in Kenya are less than 15 microns. This means that they cannot be recycled.

In all urban centers in Kenya, plastic bags of all sizes are found dotting the landscape. Besides this visual pollution, plastic bag waste contributes to blockage of drains, death of marine life and animals through choking. Plastic bags are non biodegradable and take 20 – 1000 years to break down. Wangari Maathai, the Assistant Minister for Environment in Kenya and 2004 Nobel Peace Prize winner, linked plastic bag litter with Malaria. The bags when discarded, can fill with rain water offering ideal and new breeding grounds for malaria carrying mosquitoes.

Top politicians, members of parliament, environment lobbyists and ordinary people have complained about the problem from time to time. Various solutions have also been voiced. A motion was passed in parliament on 8th December 2004 calling for use of sisal bags as opposed to polythene bags (Daily Nation, 9th December 2004). During the debate some members of parliament recommended a ban of plastic bags. Professor Wangari Maathai launched an antiplastic campaign on becoming a Nobel Peace Prize Laureate. No study has been conducted to establish what solutions have been implemented towards the problem hence the need to conduct this study.

The research objective was to determine the responses of plastic bag manufacturers and key supermarkets to the threat posed by plastic bag disposal. The supermarkets selected were Nakumatt and Uchumi. This is because they are the largest supermarkets in Kenya, as a result they consume most of the plastic bags. Kenya Association of Manufacturers is an organization that deals with advocacy and policy issues for its members. In this study Kenya Association of Manufacturers was picked

as the representative body of the plastic bag manufacturers. In Kenya there are approximately 100 – 150 plastic bag manufacturers, out of these 55 of them are members of the Kenya Association of Manufacturers. The role of KAM has become of increased importance in the recent past to the plastic bag manufacturers, because the plastic issue has started drawing attention from the public, the Government and the environmentalists.

The study was conducted by administering questionnaires to senior management of the three organizations. These questionnaires sought to find out the general information on each organization, how they rate the different economic factors and ecological changes and finally how they have responded to the plastic bag menace.

From the findings, it was evident that all the organizations have responded both operationally and strategically. Some of the operational strategies cited were research and development, training of staff, marketing and procurement. Strategic responses involved culture shift, policy changes, product development, social responsibility and changes in systems and processes.

Further the study shows that all the organizations have adopted different responses. It also shows that the organizations are more reactive to the problem than proactive. The launch of the biodegradable plastic bags is however a key step towards the right direction. In addition to individual responses, the organizations should look at having a united front towards this problem. This would involve formulating and implementing strategic and operational initiatives that would help curb the problem proactively as opposed to dealing with the aftermath effects of disposal.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

1.1.1 Strategic issues faced by organizations

In an organization, strategy is a very key element. In situations of life and death, it is the 'Tao' of survival or extinction. Its study cannot be neglected (Tzu, 1988).

Organizations are faced with several strategic issues but of relevance to this study is green marketing. As society becomes more concerned with the natural environment, businesses have begun to modify their behaviour in an attempt to address society's "new" concerns. As a result most organizations have embraced green marketing. Green marketing incorporates a broad range of activities such as product modification, changes to the production process, packaging changes as well as modifying advertising, designed to satisfy human needs/ wants with minimal detrimental impact on the natural resources.

Many firms across the globe have adopted green marketing for the following reasons: - they perceive green marketing as an opportunity that can be used to achieve its objectives. Organizations believe that they have a moral obligation to be more socially responsible (Keller, 1987), government firms are forcing firms to be more socially responsible (NAAG, 1990), competitors' environmental activities pressure firms to change their environmental marketing activities(NAAG, 1990) and cost factors associated with waste disposal or reduction in material usage forces firms to modify their behaviour. (Azzone and Manzini 1994)

In a 1992 study of 16 countries, more that 50% of consumers in each country other than Singapore, indicated they were concerned about the environment (Ottman, 1993). A study in 1994 in Australia found that 84.6%

of the sample believed all individuals had the responsibility to care for the environment. A further 80% of this sample indicated that they had modified their behaviour including their purchasing behaviour due to environmental reasons (EPA – NSW 1994). These figures are evidence that firms marketing goods with environmental characteristics will have a competitive advantage over firms marketing non-environmentally responsible alternatives. Some of the firms internationally who have strived to become environmentally responsible include the following: - McDonalds replaced its clam shell packaging with waxed paper because of increased consumer concern relating to polystyrene production and Ozone depletion (Gifford, 1991). Xerox introduced a 'high quality' recycled photocopier paper in an attempt to satisfy the demand of firms for less environmentally harmful products. Tuna manufacturers modified the fishing techniques because of the increased concern over driftnet fishing and the resulting death of dolphins. In 2002 UK's supermarket chain, Co-operative, launched the first 100% biodegradable plastic carrier bag. The bag starts to degrade in 18 months and degrades completely in 3 years¹.

J Ottman (1993) cited the following strategies towards successful green marketing that have been adopted by various firms.

Minimizing direct environmental impact, using sustainable sources of raw materials to prevent depletion of non renewable resources, source - reduction of pollution, conserving natural resources, habitats and endangered species, making products energy efficient, using recycled content and maximizing consumer and environmental safety among others.

1.1.2 Stakeholder organizations

The plastic bag issue affects various stakeholders in Kenya. These stakeholders can be categorised into various groups. The manufacturers, the large scale users, environmental and regulatory bodies, the general public, community based organizations and related industries.

¹ This information was obtained from various sources in the internet

1.1.2.1 *Manufacturers of plastic bags*

There are approximately 110 - 150 plastic manufacturing enterprises in the country producing an average of 4000 tonnes of plastic every month with an estimated 2000 tonnes going into the waste stream². The industry has also been registering a significant growth of 8 – 10 %. The manufacturers contribute directly to the problem through over production of thin flimsy plastic bags that cannot be recycled.

1.1.2.2 *Regulatory bodies*

Kenya Bureau of Standards is the quality regulatory body in the country. Most of the plastic bags produced are less than 15 microns meaning that they cannot be recycled. The bread packaging for example is 5 – 7 microns. KBS role in this case is to ensure standards adherence by the plastic industry.

1.1.2.3 *Environmental organizations*

The role of the environmental organizations is to ensure the conservation of environment. They work together with the industries to ensure environmental welfare. Such organizations in Kenya include; United Nations Environmental Programme, NEMA and Green Belt Movement. NEMA and UNEP have acknowledged the extent of the plastic bag problem and are spearheading a pilot project on plastic waste management in Nairobi. The project was launched on 19th July this year and officiated by the Minister for Environment.

1.1.2.4 *Large-scale consumers.*

The large-scale consumers are those who buy in bulk from the manufacturers for use in packaging. The packaging is either done at the point of sale or at the production stage in the factory. Supermarkets in Kenya are large consumers as they package all goods bought in plastic

² Speech by Jane Nyakang'o, a Director of Kenya National Cleaner Production Centre, at the launch of Pilot waste Management Project for Nairobi on 19th July 2005.

bags, which are offered for free to the consumers. Fast food outlets such as Kenchic, Nandos, Steers and Wimpy are also large-scale consumers. Most firms who manufacture fast moving consumer goods such as sugar, rice, bread and potato crisps package the end product in plastic bags.

1.1.2.5 Community based organizations

Solid waste management in municipalities has become a duty for every citizen as opposed to being only that of the local authorities. This has become key because the individuals of these communities contribute to the litter. Municipal management needs have for long outstripped the capacity of the local authorities to provide sufficient service because often the amounts of solid waste generated are enormous. Local communities are increasingly taking part in the provision of their crucial municipal service with the objectives of improving the environmental hygiene within their neighbour hoods.

1.1.2.6 Plastic alternatives manufacturers

As plastic bags continue to pose several challenges on the environment, alternatives to plastic bags will continue to be considered as viable alternatives. These alternatives include kiondos, baskets, cloth bags, sisal bags, cardboards, paper bags, biodegradable bags. The Jua Kali sector is involved in the weaving of baskets and kiondos. Womens' groups organizations are also involved in the activity.

1.1.2.7 The General public

Despite the production of plastic bags, the over use, misuse of plastic bags by the public has greatly contributed to the plastic bag menace. Such a problem would not be solved without addressing the public because they are a key contributor to the problem.

This study will focus on the plastic bag manufacturers and the key supermarkets. The two stakeholders are very key in finding a solution towards this problem because they are the key source of the problem and

actions adopted by the two such as source-reduction will greatly affect the input of all the other stakeholders.

1.1.3 Background on plastic bags

Plastic is one of the most versatile products that have contributed significantly to the improvement of well being through out the world through its diverse applications and utilization both as a product and in service delivery.

The plastic industry is one of the fastest growing in Africa. Most of the plastic industries are engaged in the primary production of basic products such as packaging, films, shopping bags, containers and household items using virgin materials while few are engaged in secondary production of plastic.

The large percentage of these products has short service life and is consumed in urban centres, as a result a significant volume of the plastic products end up in municipality waste causing significant load to the waste management. Plastic bags are very popular because they are durable, versatile, convenient, and easy to store and transport because of their lightness. The available alternatives such as paper bags cannot carry liquids.

Besides the littering problem which is apparent in the African urban centres, plastic waste especially plastic bag waste is causing a number of environmental and health hazards.

Bateman a supporter of the development of biodegradable plastic bags reports that, plastic bags have become a victim of their success. He cites that the industry is at a stage where its success has caused concerns and these concerns need to be addressed responsibly.³

In Kenya, the plastic industry is one of the fastest growing with an average growth rate of about 8- 10% per annum (KIPPRA 2005). This growth is driven not only by

³ This information was obtained from an identified source in the Internet.

local demand but also demand from the regional market. Demand from Uganda in particular is very strong as plastics produced there attract an excise duty. There is therefore a considerable risk of capacity over development driven by the regional market, which may not be sustained owing to increasing pressure to reduce plastic bags usage.

Most of the plastic industries have different kinds of recycling operation. While there are 11 industries that are particularly engaged in full scale recycling of plastics. The recycling industries are currently getting their supply mainly from other economic sectors such as the flower farms. A limited volume of post consumer waste is being provided by the informal collection sector operating around Nairobi. The plastic recycling industries are operating below their capacity due to shortage of supply of recyclable plastic waste.

The plastic industries believe that the collection and supply of plastic waste need to be strengthened in order to make full use of the existing capacity and improve the environment

The generation of plastic waste has become an increasing environmental and public health problem everywhere in the world and particularly the developing nations like Kenya. The rapid expansion of urban, agricultural and industrial activities spurred by rapid population growth has generated vast amounts of solid waste, plastic waste being the biggest concern because of its effects on the environment.

1.1.3.1 Ecological challenges

Major environmental issues include climate change, land and soil degradation, forest degradation and deforestation, fresh water stress and scarcity, degradation and pollution of coastal and marine areas, loss of habitats and species, growth of unplanned settlements and mounting solid waste and increasing droughts and floods. Many of the regions face similar environmental challenges though the magnitude and extent of the problems varies (UNEP'S global environment outlook, 2000).

UNEP observes that major environmental challenges are associated with three current global trends; resource depletion and environmental degradation; increasing

income disparity; and poverty and marginalization of the growing proportion of the world's population a population that is projected to increase by 65% in the next 50 years.

The growing world population to more than 6000 million people and still growing is exacerbating the demands on resources and services and increasing the generation of wastes to meet many of these demands. Overall, policy measures have not been adequate to counteract the pressures imposed by increasing poverty and uncontrollable consumption. Below is indisputable evidence of continuing and widespread environmental degradation. (UNEP's Global Environment Outlook, 2000).

Recent human impacts on the atmosphere have been enormous with anthropogenic emissions a prime cause of environmental problems. Emissions of almost all green house gases continue to rise. Ground level ozone, smog and fine particulates have emerged as significant health risks triggering or exacerbating respiratory and cardiac problems especially in vulnerable peoples such as children, the elderly and asthmatics, in developed and developing nations alike.

Over exploitation of many of the surface water resources and great aquifers upon which irrigated agriculture and domestic supplies depend has resulted and more and more countries facing water stress or scarcity. About 1200 million people still lack access to clean drinking water and some 2400 million to sanitation services. The consequences include deaths of 3 – 5 million people annually from water related diseases.

The earth's biological diversity is under increasing threat. The extinction rate of species is believed to be accelerating. Habitat destruction and or modification are the main cause of bio diversity loss but invasive species are the second most important pressure. There has been a sharp global trend towards increasingly intense exploitation and depletion of wild fish stock, numerous fisheries have collapsed and others are threatened with over exploitation.

Land degradation continues to worsen, particularly in developing countries where the poor are forced onto marginal lands with fragile ecosystems and in areas where land

is increasingly exploited to meet food and agricultural needs without adequate economic and political support to adopt appropriate agricultural practices. Many remaining forest ecosystems have been degraded and fragmented. Since 1972, extensive forest monocultures have been established in the developing world but these do not replace the ecological complexity of natural forests.

Crops and livestock production has contributed to the large increase in reactive nitrogen in the global biosphere, contributing to the acidification and eutrophication of ecosystems. With almost half of the world's population living in less developed countries, urban areas and mega cities, infrastructure and municipal services are inadequate to accommodate millions of the urban poor. Urban air pollution and deteriorating water quality are having major health, economic and social impacts. An increase in the frequency and intensity of natural disasters over the past 30 years has put more people at greater risk with the greatest burden, falling on the poorest communities.

1.1.4 Overview on responses

Organizations exist in the context of complex environment. Most writers categorize the external environment into remote, macro, industry and operating environment. Most organizations have little or no influence on or control over the economic, social, political, technological and ecological factors. The environment changes can be relatively stable or turbulent and environmental forces differ in importance from one organization to another and over time their importance may change. Strategic managers are often put to task in determining what responses to take towards different environment changes. These responses can be either operational or strategic. Organizations which have successfully managed change, have been able to link strategic change with operational change and every aspect of organization in relation to the dynamic external environment

1.2 STATEMENT OF THE PROBLEM

The use of plastic bags in Kenya has grown tremendously over the years. It is estimated that over 8 million plastic bags are handed out to consumers by the supermarkets every month⁴. In addition they are also given free of charge or at a very low price at the markets on buying grocery, at kiosks and fast food outlets. As elsewhere in the world the problem of over use, misuse and littering is serious in Kenya and especially in Nairobi.

In the rural areas especially plastic bags are used to package water and milk. The rural people do not have a collection facility and most of the litter is thrown in the manure pit, fed to the animals if edible or burnt. Since the plastic bags cannot be disposed off using any of these methods, they end up littering the environment.

About half of the plastic bags produced in Kenya currently are less than 15 microns in thickness. These thin plastic bags are highly fragile, re use is minimal and thus are prone to inadvertent littering and hence posing a very big problem of waste. The level of recycling these thin plastic bags is very low with only about four firms involved in the activity.

As the plastic bags waste increases the danger to the environment and health of the public increases. They cause visual pollution as they are found everywhere in the country tainting the landscape, which affects sectors such as tourism. Some hotels in Mombasa have reportedly cancelled planned tours because of heaps of uncollected and unsightly waste in the streets (Daily Nation, 13th December 2004).

They are non- biodegradable and take 20 – 1000 years to break down. As a result they deprive the soils off their nutrients. In addition, they block gutters and drains, which results to flooded roads and permanent puddles of water that are breeding grounds for mosquitoes and other disease vectors. The overall effect of this is a strain on public health facilities as the number of people suffering from such diseases

⁴ Personal communication, Director of Operations, Nakumatt Supermarket

increase. Wangari Maathai, the Assistant Minister for environment and the 2004 Nobel peace prize winner, has linked plastic bag litter to Malaria.

They are washed away into the seas and other water bodies and kill aquatic wildlife when the animals ingest the plastic bags mistaking them for food. Other land animals such as goats and cows also ingest them while grazing and risk death through choking.

Different people through various organs have been concerned about the plastic bag menace and have voiced various solutions. No study has been conducted to establish what solutions have been implemented towards the problem hence the need to conduct this study. A motion was passed in parliament on 8th December 2004 calling for the use of sisal bags as opposed to polythene bags (Daily Nation, 9th December 2004). During the debate some members of parliament recommended a ban on plastic bags. Prof. Wangari Maathai launched an anti plastic campaign on becoming the Nobel Peace Prize Laureate. Hon. Moses Wetangula the then Minister for Foreign affairs recommended a ban of plastic bags and said that the Ministry of Environment should encourage the use of pulp paper in place of plastic bags for packaging (East African Standard, 26th May 2004).

Kippra (2003) examined and discussed the use of economic instruments⁴ for environmental management in Kenya. The broad objective of the research was to equip policy makers, planners and other stakeholders with the techniques and methodologies required to develop and apply appropriate economic instruments for solid waste management.

The report also proposes an environmental policy package comprising of seven economic instruments that can be used to manage plastic bag waste. The study used an approach of integrating international and local experiences through observation, views, suggestions and advice.

Several studies for example, Bett, 1995; Kombo, 1997; Abdullahi, 2000; Thiga, 2002; Chepkwony, 2001; Goro, 2003; Mugambi, 2003; Muraah, 2003; Mutua, 2003 and

⁴ Economic instruments is a policy, tool or action which has the purpose of affecting behaviour of economic agents by changing their financial incentives in order to improve the cost effectiveness of environmental and natural resources management

Nkirote, 2004 have been done in various sectors on strategic responses to changes in the environment and they concluded that organizations needed to change several strategic variables or adopt certain strategies in order to cope with the changes and remain competitive.

Kippra (2003) does address the issue on solid waste in Kenya. The research however only proposed what economic instruments can be used in solid waste management in Kenya. It did not address the decisions and actions that plastic bag manufacturers and the key supermarkets have put in place in response to the problem of plastic bags disposal.

The aim of this research is to understand what threats the plastic bag waste poses and how the plastic bag manufacturers and the key supermarkets are responding towards the problem. The question this research will address is: - How are the plastic bag manufacturers and the key supermarkets in Kenya responding to the challenges posed by the plastic bag disposal?

1.3 RESEARCH OBJECTIVE

To determine the responses of plastic bag manufacturers and the key supermarkets in Kenya to the threat posed by plastic bags disposal.

1.4 IMPORTANCE OF THE STUDY

This study is expected to benefit the stakeholders in the plastic waste menace as it is expected to establish the responses both strategic and operational by the key supermarkets and the plastic bag manufacturers in the face of increasing threat of plastic bags disposal on the environment. It is also expected to generate interest in the academic circles leading to further researches since this area has not been studied before. The research will encourage policy makers to come up with policies that can be adopted in curbing the plastic bag menace. It will in addition contribute to the existing body of knowledge on strategic responses in the face of increasing ecological challenges.

CHAPTER TWO

LITERATURE REVIEW

2.1 CONCEPT OF ENVIRONMENT

Pearce and Robinson (1997) states that a host of factors influence a firm's choice of direction and action and ultimately its organizational structure and internal processes. These factors which constitute the external environment can be divided into remote environment, industry environment and operating environment. These factors form the basis of the opportunities and threats that a firm faces in its competitive environment.

Sauvé (2002) notes that environment is a critical factor for any organisation survival and success. It should be seen as a biosphere in which individual organisation use over the long term as a community project in which to be actively involved. It is a resource to be managed and to be shared, hence the need to effectively manage the value chain system and establish collaborations, partnerships and to get involved in social responsibility to enrich this resource and enhance the corporate image of the organisation.

Pearce and Robinson (1997) state that the remote environment comprises of factors that originate beyond and usually irrespective of any firm's operating situation. These factors include; - economic, political, technological and ecological factors. The environment presents firms with opportunities and threats but rarely does a single firm exert any meaningful reciprocal influence.

2.1.1 Economic factors

These factors concern the nature and direction of the economy in which a firm operates. A firm needs to consider the economic trends in the segments that affect its industry. These trends include the general availability of credit, the level of

disposable income and the propensity of people to spend, prime interest rates, inflation rates, and trends in the growth of the national product.

2.1.2 Social factors

The social factors that affect a firm involve the beliefs, values, attitudes, opinions and lifestyles of firm's external environment as developed from the cultural, ecological, demographic, religious, educational and ethnic conditioning. As social attitudes change the demand for products or services also changes. Like other factors in the remote environment the social forces are dynamic with constant change resulting from the efforts of individuals to satisfy their desires and needs by controlling and adapting to the environmental factors.

2.1.3 Political factors

Political factors define the legal and regulatory parameters within which firms must operate. Political constraints are placed on firms through fair trade decisions, antitrust laws, tax programs, minimum wage legislation, pollution and pricing policies, administrative jaw boning and many other actions aimed at protecting employees, consumers, the general public and the environment. Since such laws and regulations are normally restrictive they tend to reduce the potential profits of the firm. However, political factors may also benefit the firms they influence. This is through patent laws, government subsidies and product research grants.

2.1.4 Technological factors

To avoid obsolescence and promote innovation, a firm must be aware of the technological changes that might influence the industry. Creative adaptation of technological adaptations can suggest possibilities for new products, for improvements in existing products or in manufacturing and marketing techniques. All firms and particularly those in turbulent growth industries need to have an understanding of both the existing technology and advances and probable future advances that can affect their products and services.

2.1.5 Ecological factors

Ecology refers to the relationship among human beings and other living things and the air, soil, and water that support them. Threats to our life supporting ecology caused principally by human activities in an industrial society are commonly referred to as pollution. Specific concerns include global warming, loss of habitat and bio diversity as well as air, water and land pollution. This study puts special emphasis on ecological factors because plastic waste is an ecological challenge.

Pearce and Robinson (1997) cite the following ecological factors that have become of great concern over the years.

The global climate has been changing over the years and it is now evident that humanly activities are accelerating this tremendously. A change in the atmospheric radiation, due in part to ozone depletion, causes global warming. Solar radiation which is normally absorbed in to the atmosphere reaches the earth's surface, heating the soil, water and air.

Loss of habitat and bio diversity. Ecologists agree that the extinction of flora and fauna is occurring at a rapid rate and if this pace continued could constitute a global extinction on the scale of those found in fossil records. The earth life forms are dependent on a well functioning ecosystem and immeasurable advances in disease treatment can be attributed to research involving substances found in plants. As species become extinct, the life support system is irreparably harmed. The primary cause of this extinction is the disturbance of the natural habitat.

Air pollution. This is created by dust particles and gaseous discharges that contaminate the air. Acid rain or rain contaminated by sulphur dioxide, which can destroy aquatic and plant life is believed to result from coal burning factories in 70 % of all cases. A health threatening 'thermal blanket' is created when the atmosphere traps carbon dioxide emitted from smoke stacks in factories burning fossil fuels. This 'green house effect' can have disastrous consequences, making the climate unpredictable and raising temperatures.

Water pollution occurs principally when industrial toxic wastes are dumped or leak into the nation's waterways.

Land pollution is caused by the need to dispose of ever increasing amounts of waste. Routine everyday packaging is a major contributor to the problem. As a major contributor to ecological pollution, business now is being held responsible for eliminating the toxic by products of its current manufacturing process and for cleaning up the environmental damage that it did previously. Increasingly managers required by the government or expected by the public to incorporate ecological concerns into their decision making.

Stilwell and Tibbs (1991), state that packaging is the ultimate symbol of the 20th century consumer culture. It protects what we buy and raises our standard of living. In developing countries, 30 % to 50% of food shipments are spoiled because of inadequate packaging and distribution systems. They state that packaging not only protects goods but also conveys information about their contents and preparation of administration. It plays a vital and growing role in the global economy. At the same time packaging is on the front line. It is the largest and fastest growing contributor to one of the most troubling environmental problem which is garbage.

2.2 RESPONSES

Organizations are environment dependent. No organization can exist without the environment. They depend on the environment for the survival and they have to scan the environment in an effort of budding trends and conditions that could eventually affect the industry and adapt to them (Thompson and Strickland, 1993). Failure to do this leads to serious strategic problem characterised by the maladjustment of organizations' output and demands of the external environment (Ansoff, 1984).

Responses of any organization can be both operational and strategic. Strategic decisions are likely to affect the operational decisions. An organization strategy cannot succeed if the operational aspects of the organization are not in line with the strategy. In addition it is at the operational level that strategic advantage can be achieved.

2.2.1 Operational responses

The nature and the tasks undertaken by the operating core of the organization has an important influence on the various aspects of the organizational design and control (Johnson and Scholes, 2001). There are links between the type of production process and the approach to management. Organizations with less standardized operational processes are likely to have devolved an informal decision making process.

Operations is the core function of the organization and continuously manage the flow of resources through it. In many organizations operations account for 80 % of the employees and hence most of their added value (Naylor, 1996). The output of operations system is the bundle of goods and services which is consumed in the society. An organization that does not continuously satisfy the needs of the customers fails.

Operational tasks are concerned with the transformation process which takes input and converts them into outputs together with the various support functions closely associates with the basic tasks (Brown et al 2000). Such transformation processes can be applied in three main categories, materials, customers and information.

2.2.1.1 Primary activities

Purchase supplies and inbound logistics

These include activities, costs and assets associated with purchasing fuel, energy, raw materials, parts, components, merchandise and consumable items from vendor; receiving storing and disseminating inputs from suppliers; inspection and inventory management (Pearce and Robinson, 1997).

Operations

These include costs and assets dealing with converting inputs into final product form. This is a pattern of decisions made over time. These decisions focus on resource

configuration and deployment. This involves how many work shifts or which type of machinery.

Sales and marketing

Also referred to as outbound logistics. These are costs and assets related to sales force efforts, advertising and promotion, market research and planning and dealer support. Once a firm chooses the basis of competition, strategies are formulated for entering the market place. Marketing and operation strategies must be well coordinated for the firm to provide its goods and services to the market place in a competitively superior manner and at a profit.

Service information

These are costs and assets associated with providing assistance to buyers such as installation, spare parts, maintenance and repair, technical assistance, inquiries and complaints. These are activities involved in the physical creation of the product and after sale support.

Brown et al (2000) observes that operational issues are those activities that enable the organization as a whole to transform a range of basic inputs which may include materials, energy, customer requirements, information, skills and finances into outputs for the end customer. An organization uses different kinds of outputs like the transformational inputs such as plant, buildings, machinery and equipment as well as the less tangible but important inputs such as learning, knowledge and experience.

Naylor (1996) observes that organizations can be seen as elements which are almost stable and referred to as structural and others which change continuously are called processes. The term structural refers to the set of relatively unchanging elements within a system. In an operational system they include buildings, facilities, vehicles or machinery, the basic organization, information systems, work rules and trade union agreements. Process refers to those features of an organization that change continuously within a structure. In operations they include flows of goods and services, energy, new recruits, cash and information. An organization is a set of

environment consisting of elements such as competitors, customers, suppliers, the government, the legal system, the labour markets, trade unions, banks and so on.

Operations management organizes, plans, controls and improves this use of process, inventory, work force and facilities and equipment in order appropriately to determine the ranking competitive priorities like price, quality, dependability, flexibility and time thereby providing short term profits, long term profits and market share.

Different functions of an organization reflect how each major activity of a firm contributes to the implementation of the business strategy. The specificity of functional tactics and involvement of operational managers in the development help ensure understanding of and commitment to the chosen strategy. A related step in implementation is the development of policies that empower operating managers and their subordinates to make decisions and to act autonomously. These operative functions include production, marketing, research and development, accounting and finance and human resource management (Johnson and Scholes, 2001)

Production

Production is the core function of any organization. It is the function that converts inputs into value enhanced out put. Production / operations management must guide several decisions regarding the basic nature of the firms system, seeking an optimum balance between investment input and production/operation output and location, facilities design and process planning in a short-term basis. Such process includes changes in the process to respond to environment. For example, production of unleaded fuel with the aim of reducing air pollution.

Marketing

The role of marketing function is to achieve the firm's objectives by bringing about the profitable sale of the business's products and services target markets. This function can be used to respond to ecological challenges. A firm for example can opt to use recycled paper for all their print advertising. Most firms in Kenya already put a

message on the product packaging regarding correct disposal of the product after use to avoid littering.

Accounting and financing

This function directs the use of financial resources in support of the business strategy, long term goals and annual objectives. If a firm has social responsibility as part of the business strategy, the accounting and financing operation support this through financing. An organization in their planning can budget for production of ecologically superior products or superior machinery that is environmental friendly.

Research and development

With the increasing rate of technological change in most industries, research and development has assumed a key strategic role in many firms. As environment continues to be depleted, firms have been challenged to develop products that have minimal impact on the environmental resources. Success entails high risks and demand considerable technological skill, forecasting expertise and ability to quickly transform innovations into commercial products.

Human resource management

Human resource management aid long term success in the development of managerial talent and competent employees; the creation of systems to manage compensation or regulatory concerns and guiding the effective utilization of human resources to achieve both firms short term objectives and employees satisfaction and development. The training component should guide the action that personnel take to meet the future human resources needs of the overall business strategy. For a firm to respond to environmental concerns employee training is crucial so that they are enlightened on the impact the organization has on the environment and how they can play a role in responding to these challenges at individual and departmental levels.

2.2.2 Strategic response

Pearce and Robinson (1991) define it as the set of decisions and actions that result in the formalization and implementation of plans designed to achieve a firm's objectives. It is thus a reaction to what is happening in the environment the organisations operate in.

Porter (1980) points out that knowledge of the underlying sources of competitive pressure provides the ground work for strategic agenda in action. Firms when faced by unfamiliar changes need to revise their strategies to match the turbulence level. (Ansoff and McDonnell 1990).

Ansoff and McDonnell (1990) noted that strategic responses involve changes in firm's strategic behaviour to assure success in the transforming future environment. The choice of the response depends on the speed with which a particular threat or opportunity develops in the environment. One of the fundamental issues in developing an operations strategy and for that matter a competitive strategy is which activities should be performed internally and which should be left to others such as suppliers, customers or partners. (Hayes et al, 1996).

Strategic response can be seen as matching the activities of an organisation to the environment in which it operates. Strategic response affects the long term direction of an organisation and requires large amounts of resources. It is aimed at achieving advantage for the organisation and as such it is concerned with the scope of entire organisations' activities (Johnson and Scholes, 1999).

Strategic response requires that strategy formulation, implementation and evaluation occur at the corporate, divisional and strategic business units or functional units of an organization. Competition occurs at various levels and organisations must reinforce and support the competitive strategies at these levels. Strategic management clearly depicts the link between the organisation and its environment as well as its internal functions and capabilities (Ansoff and McDonnell, 1990)

An organisation has two different but complementary capabilities. One is management capability whose role is to identify plan and guide strategic responses and functional capability which executes these responses (Ansoff and McDonald, 1990). According to (Grant, 2000) survival and success occurs when an organisation

creates and maintains a match between its strategy and environment and also between its internal capability and the strategy. The environment is not static but turbulent, discontinuous and uncertain.

Strategic response calls for organisations to change their strategy to match the environment and also to transform or redesign their internal capability to match this strategy. This requires that its internal resources which include both the tangible and intangible resources maintain a strategic fit in its value chain system. Failure to match an organisations strategy to environment will create a strategy gap while an organisation that fails to match the internal capability to strategy will experience capability gap (Ansoff and McDonell, 1990).

In an organisation if the environment shifts and there is no strategic response to match the organisation strategy to the environment in creates a strategic gap (Porter, 1985).

Organisations must adapt new strategies to new environments (Ansoff, 1999). Changes in the external environment will require new strategies which will in turn call for reformed organisations capabilities.

Pearce and Robinson (1997) cite that a firm can incorporate ecological concerns in to their decision making. They give an example of how a certain firm cut its pollution by half by reformulating products, modifying processes, redesigning production equipment and recycling by products. The following are examples of strategic responses that a firm that can adopt to respond to environmental challenges: -

Policy changes

Pearce and Robinson (1997) define policies as directives designed to guide the thinking decisions and actions of managers and their subordinates and implementing a firm's strategy. Policies communicate guidelines to decisions. They are designed to control decisions while defining allowable discretion within which operational personnel can execute business activities.

The increasing attention by companies to protect the environment is evidenced by firms establishing pro ecology policies.

They further mention that the job of protecting the environment will continue to be a top strategic priority usually because corporate stakeholders and executives choose it increasingly because the government and public require it.

Pearce and Robinson (1997) cite that many of the world's largest corporations are realizing that business activities must no longer ignore environmental concerns therefore environmental policy must be implemented to ensure comprehensive organizational strategy. Because of increases in government regulations and consumer environmental concerns the implementation of environmental policy has become a point of competitive advantage. Therefore the rational goal of business should be to limit its impact on the environment thus ensuring long run benefits to both the firm and society.

Structural changes

Pearce and Robinson (1997) observe that successful strategy implementation depends in large part on the firms' primary organization structure. Structure helps to identify the firm's key activities and the manner in which they will be coordinated to achieve the firms' strategic purpose. Some organizations have incorporated in their structure a department that specifically deals with external affairs. These are all the business issues that relate to the external publics and not the core function of the business, such as the customers, the suppliers, the community at large and the government. EABL for example has an External Affairs department that deals specifically with the external issues that face the brewery.

Organization culture

Pearce and Robinson (1997) define organization culture as the set of important assumptions that members of an organization share in common. Every organization has its own culture. An organizations culture is similar to individual's personality- an intangible yet ever present theme that provide meaning, direction and meaning and the basis for action. The members of an organization become fundamentally committed to the beliefs and values when they internalize them. Leaders typically attempt to manage and create distinct cultures through a variety of ways.

Brown (1998) defines organization culture as the pattern of beliefs, values and learned ways of coping with experience that have developed during the course of an organization's history and which tend to be manifested in its material arrangements and in the behaviour of its members. Thus an appropriate and cohesive culture can be a source of competitive advantage. This is because it promotes consistency, co-ordination and control and reduces uncertainty while enhancing motivation and organizational effectiveness all of which facilitates the chances of being successful in the market place.

According to Thompson (1997), the potential for changing the culture of an organization is affected by the strength and the history of the existing culture, how well the culture is understood, the personality and beliefs of the strategic leader and the extent of the strategic need.

If an organization desires to respond to environmental challenges, it can instill a culture in the organization to respond to this, through institutionalizing practices that systematically reinforce desired beliefs and values. For example, a culture of recycling printing paper in offices to reserve forests as a natural resource.

Product development

Product development involves product evaluation, development planning, product design, prototyping and marketing.

Many companies at the preliminary evaluation and development stage have found it necessary to direct their research and development resources in to the search of ecologically superior products, with the sole aim of reducing the effects on the environment. Pearce and Robinson (1991) gave an example of how Pepsi Cola introduced a biodegradable plastic soft drink bottle. In July this year, Nakumatt supermarkets communicated plans to introduce a biodegradable plastic bag.

Pearce and Robinson (1997) cites that social changes can result to increased demand for a wide range of products e.g. the most profound social change has been the entry of large number of women into the labour market. As a result new products

have been developed to respond to this need of convenience e.g. microwave oven and day care centers for children.

Social responsibility

An organization through its code of ethics describes voluntary constraints, which the firm undertakes to respect both its intra firm and environmental behaviour. But a social responsibility strategy includes not only constraints but also proactive behaviour, which the firm undertakes beyond its concern with goods and profits optimization e.g. charitable contribution of money to social issues. Pursuit of social responsibility may have an indirect impact on the firm's profit seeking behaviour. This impact is usually in the long-term and is caused by the influence, which the firm's behaviour as a good and caring citizen has on the customer's preferences for the firm's product.

Many firms in Kenya today, have taken up social responsibility on environmental issues. Barclays Kenya for example is involved in clean up activities in the city and KREP bank supplied tapped water to the Kawangware community

Systems and processes

Organizations can be seen as elements which are referred as structural and others which change continuously called processes. Structural refers to the set of relatively unchanging elements within a system. They include buildings, vehicles, machinery, facilities, information system, work rules and trade union agreements (Naylor, 1996). Processes refer to those features in an organization that change continuously. In operations they include flow of goods and services, new recruits, energy, cash and information.

Changes in the firms systems and processes need to be made which provide the competence and capability for dealing with societal challenges (Ansoff and McDonald, 1990). An ecological challenge to an organization calls for these changes. Such changes are often effected in the operational functions of the organization.

CHAPTER THREE

RESEARCH METHODOLOGY

Since the aim of the study was to identify the responses by plastic bag manufacturers and the key supermarkets to the threat posed by plastic bags disposal, a case study approach was chosen because the number of organizations interviewed were three in total.

3.1 Design of the study

This study was a case study which focused on three institutions; Nakumatt supermarkets, Uchumi Supermarkets and the Kenya Association of Manufacturers. These organizations represent the large scale consumers of the plastic bags and the source.

3.2 Population of the study

In Kenya there are approximately 110-150 plastic bag manufacturers and a universe of approximately 1000 Supermarkets⁵. Most of the supermarkets in Kenya range from small to medium in size with a small network of branches with the exception of a few that are large. These are Nakumatt, Uchumi, Tusker Mattresses and Ukwala.

3.3 Sampling

Judgement sampling was adopted by identifying organizations to represent each of the categories mentioned above. This is because the population is large and such a representation will give a more than a representative view of the entire population. The supermarkets will be represented by the two key supermarket chains; Nakumatt and Uchumi. The selection of the supermarket is based on the size and the network of branches. The two chains have a countrywide network and are the largest supermarkets in the country. As a result they consume most of the plastic bags. The plastic bag manufacturers are represented by the Kenya Association of Manufacturers (KAM). KAM acts as the voice of the manufacturers in environmental /

government issues and tabling their grievances. This organization will therefore be a good representation of all the manufacturers.

3.4 Data collection

Primary data was be collected by use of questionnaires. The questionnaires were administered personally to probe for further information. The respondents were key decision makers in the top management level and included the Head of Operations, the Head of Marketing and Public Relations Managers.

The questionnaires was both open and close ended and was structured into three areas, general information on the organization, environmental questions and questions related to the research objective.

3.5 Data Analysis

The data is qualitative data hence has been analyzed through content analysis. This entails analyzing the content of the information in the questionnaires to determine the major responses by the various organizations. Content or information is what is key and not the number of people interviewed or the proportion associated with the factors which the data is collected.

⁵ The number of supermarkets is an estimate given by a various firms who sell fast moving consumer goods through personal communication.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 INTRODUCTION

This chapter presents analysis and findings of the study. The general information is presented first then the environmental challenges and lastly the operational and strategic responses.

4.2 GENERAL INFORMATION

The first part of the questionnaire sought to find out the general information on each of the organizations. Such information was on the nature of operations, size, shareholding and the type of clientele the organization deals with.

Three organizations were interviewed, Uchumi supermarket, Nakumatt supermarket and Kenya Association of Manufacturers. A total of 8 people were interviewed from the three organizations and they were all in senior management. They ranged from Head of Operations, Head of Marketing, Head of Retail and Public Relations Manager.

Data collected from Uchumi indicated that Uchumi is a retail supermarket chain that has been operating in the country for the last 29 years. The company employs about 1200 employees with a countrywide network. Uchumi was the first large supermarket chain in Kenya and had been a market leader for several years. The shareholders include the, public, ICDC, KWAL and ICDCI. Uchumi is one of the large scale consumers of plastic bags and uses own branded plastic bags for packaging.

Responses from Nakumatt supermarket cited that it is a family owned retail business that has been operating for the last 13 years. It is currently the leading supermarket chain. The organization employs approximately 2500 employees. The supermarket chain has recently been expanding and embarking on making Nakumatt shopping

more of a lifestyle rather than just a supermarket. Its presence is in most key urban centers. Like Uchumi, they use their own branded plastic bags for packaging.

Data collected indicated that Kenya Association of Manufacturers is an organization that represents the interests of manufacturers in the country. It deals mainly with policy and advocacy issues. Its membership is 525 organizations of which 55 of them are plastic bag manufacturers. The organization has been in operation since 1959 and its membership has been growing ever since. The stakeholders of the organization are members, the government, development partners and other business associations. The role of KAM as a representative body for the plastic bag manufacturers has become of utmost importance in the recent past since the government and the environmental bodies identified that plastic waste was becoming a crisis and the government prioritised solid waste management highly over other environmental issues. For example in 1998/1999 financial year, out of nine departments at the Nairobi City council, the Department of Environment consumed about 19.2% of the council's total expenditure.

All the organizations interviewed have a strategic plan. For the supermarkets, the plan covers 2 –5 years and is reviewed annually, KAM on the other hand has a strategic plan that covers over 5 years and is only reviewed after 5 years.

4.3 ENVIRONMENTAL FACTORS

The second part of the questionnaire sought to determine the importance of the environmental factors to each of the organizations and more importantly what their views are on the plastic bag menace.

From the data, all environmental factors macro, industrial and operating factors emerged to be very key to these institutions, economic factors especially were viewed to be very important to all the organization because they related directly to growth. Ecological factors were also cited to be key because the organizations understood that to some extent they each contribute to environmental pollution. According to Nakumatt and Uchumi most of the macro environment factors are

extremely important except for technological factors. They cite technology to be moderately important because their business is retail and not very mechanised.

Increased rivalry and threat of new entrants were identified to be key factors because of the competition in the industries except for Nakumatt who responded differently. This is because Nakumatt is at a growth stage and currently the leading supermarket chain in the country.

The powerful buyers and the suppliers were cited to be key factors in the supermarket chains because of the choice available and the competitive nature of the business. KAM however, did not find this as important because the plastic industry is more industrial than retail and most companies do not competitively position themselves.

Each of the organization showed the understanding that it is key to position themselves in the market so as to remain competitive. Government regulation, human resource and customers were generally identified as very key in the operation of the organizations.

4.3.1 Environmental challenges

The organizations were expected to rate the different ecological challenges that have been occurring in the country in the recent past and also describe the extent of threat of plastic bags waste on several factors.

Generally most of the ecological challenges that have been occurring in the country were identified to be extreme, these include the plastic bag waste, pollution of water masses, air pollution and air pollution. The plastic bag waste was unanimously identified as a big issue and was described as problematic, extreme, a disaster, a menace and critical. However, the issue was identified to be manageable if proper measures are put in place.

The extent of plastic bag waste on different aspects was rated differently by the three organizations. These aspects were health of the people, blocked drainage, deprivation of soil nutrients, flooded roads, breeding ground for disease vectors,

death of marine life and choking of animals. From the data Uchumi cited blocked drainage, flooded roads and breeding of disease factors as major resultant effects of the menace. On the other hand, Nakumatt identified health of the people, blocked drainage and deprivation of soil nutrients as the key effects. Both organizations did not cite death of marine life and choking of animals to be key issues. From KAM's point of view however all the factors listed emerged to be extreme effects of the plastic bag waste. According to Nakumatt, garbage accumulation was a key factor, which is mostly contributed to by improper disposal of plastic bags. The responses given varied based on the point of view of the institution, the responses were expected to be subjective.

4.4 RESPONSES

This third part of the questionnaire sought to find out how the organizations are responding to the menace both operationally and strategically.

All the organizations have made an effort to contribute towards this problem, from the responses given the following operational areas were cited.

4. 4.1 Operational responses

Research and development

From the responses, Nakumatt is the first company in Kenya to introduce a biodegradable plastic bag in the supermarket. Together with a plastic bag manufacturer they embarked on a research, which resulted in an idea of having a biodegradable bag. In July this year they launched a biodegradable bag. The Operations manager mentioned that the new bags cost the organization more money to buy, but no cost is transferred to the customers. The non-biodegradable plastic bags are still in use but will eventually be replaced by the biodegradable ones.

Human resource management

The data shows that both Nakumatt and Uchumi have been embarking on training program for their members of staff on proper packing. The training is aimed at

reducing overuse and misuse of plastic bags by packing right and not issuing unnecessary plastic bags to the customers, which end up in the litter.

Through KAM enforcement the plastic bag manufacturers must ensure the safety of their workers by providing a safe and conducive work environment. Every employer has to subject workers to medical tests.

Accounting and finance function

Response from Nakumatt supermarket shows that the organization is spending 20% extra budget over last year in the implementation of mechanisms aimed at reducing the plastic bags waste. One of these projects is the biodegradable plastic bags and the organization is looking at doing more in future as a contribution to this problem. ‘*This is a start we want to sustain environmental consciousness*’

Response from KAM shows that the plastic bag manufacturers through the Kenya Association of manufacturers have contributed financially towards the pilot project on plastic waste in Nairobi, which was launched on 19th July this year. So far they have pledged \$15,000 towards the project and they will be providing more support as the project progresses.

Procurement

The data collected shows that most of the plastic bags used in Uchumi and Nakumatt are recyclable. The plastic bags are of standard allowed thickness, which can be recycled. On all these plastic bags a sign is put on the pack which indicates that they are recyclable. At the same time, Uchumi has introduced collection bins at each of their outlets for their customers to drop off all the Uchumi plastic bags after use, which are then taken for recycling.

Production

From the responses, KAM cites that with the introduction of a minimum thickness of plastic bags, the plastic bag manufacturers have had to embark on production of heavier bags to match these standards. The pilot project on plastic waste management is also looking at enforcing other policies and economic instruments, which will require the plastic manufacturers to produce even thicker bags.

Marketing

Response from Nakumatt supermarket shows that they have been creating awareness of their biodegradable plastic bags through the media and through their outlets with the aim of making the consumers aware that the chain is looking out for the public good.

4. 4.2 Strategic responses

The data regarding strategic response showed that all the organizations identified the following factors to be very key in addressing the plastic bag menace, policy changes organization structure, organization culture, systems and processes, product development and social responsibility. Each of the organizations cited having adopted some of the responses. The responses are briefly discussed below.

The data collected shows that Uchumi has had to change their policies in line with the new government policies regarding plastic bag thickness. The organization has also had to change their culture, this was done through making the staff understand that over use of plastic bags is detrimental to the environment and making them understand that the responsibility starts with them at the point of sale. The number of plastic bags discharged to the environment is a part of their contribution. The supermarket chain has also embarked on social responsibility project by introducing a recycling chain where all the customers get to return the plastic bags after use for recycling, this is supposed to minimise the number of plastic bags that end up on the garbage pile.

Nakumatt on the other hand has been involved in product development and this is the biodegradable bag, which is the first of a kind in Kenya. From the response, it is evident that the organisation has instilled in its staff a culture of environmental consciousness and sustenance, they take the pride of being instrumental and being a forerunner in a making a significant step towards the plastic bag menace.

The data shows that KAM has been involved in policy making for the plastic bag manufacturers. KAM designed the initial measures to check plastic waste, which was later adopted and implemented by the pilot project on plastic waste management in Nairobi. Important to note is the standard thickness of 30 microns which is to be implemented by the pilot project. The responses show that due to the introduction of this standard thickness, the manufacturers have had to change their production processes to be able to produce the new bags, this also meant that they had to embark on product development aimed at producing better quality bags and researching on other options to be implemented in future once the pilot project is completed. This is because new regulations are bound to be introduced with the completion of the pilot project.

The data also indicates that the plastic bag manufacturers have also jointly embarked on social responsibility by supporting the pilot project on plastic waste management. They are contributing financially and are also represented in the different components of the committees with the aim of contributing positively to the solutions. These components are awareness and education component which is to conduct the awareness and education programmes for the general public on a rational utilization and disposal of plastic bags, recycling component which has the responsibility of ensuring that more plastic waste is recycled through the provision of support to community based plastic recycling groups, policy measure component which will provide input for the design and implementation of economic instruments and accompanying policy measures through multi stakeholder consultation and Comprehensive strategy component that will facilitate the development of a comprehensive waste management strategy frame work for Nairobi city.

All the organizations acknowledge that most of these responses are more than adequate to curb the menace if they are applied by most of the organizations appropriately. One of the respondents said that *'it is more than an organization culture it has to be a national culture'*

CHAPTER FIVE

CONCLUSION

5.1 Introduction

This is the final chapter of the study. It represents summary, discussions and conclusions of the study. It also covers limitations of the study, recommendation for policy and practice and recommendation for further research.

5.2 Summary, Discussions and Conclusions

The summary and conclusions in this section are guided by the objective of the study which was to determine the responses of plastic bag manufacturers and the key supermarkets to the threat posed by plastic bags disposal. From the findings the organizations have responded both strategically and operationally. Strategic responses being long term embrace the organization as a whole while operational responses are departmental activities. They two are interrelated and there has to be harmony between the two.

The Operational responses and strategic responses are summarized below.

5.2.1 Operational responses

One of the operational responses cited was through research and development. In the light of changing technology organizations are edging more and more towards investing in research for new products to remain competitive. One of the avenues to do this is ensuring that they are sensitive towards the environment. From the study this is evidenced by the launch of biodegradable bags by Nakumatt.

Secondly, the human resource management function was also cited as response. It has become a key asset for success of any organization. By having competent and motivated employees the organization productivity is increased. From the findings it is evident that all organizations embark on a human resource training program to

improve the service delivery. More specifically is the training on how to package hence less misuse of the plastic bags.

Thirdly, accounting and financing was a response echoed by the three organizations. This function provides the monetary support to the various company projects. From the study it is evident that social responsibility projects are embarked on as a support to the environment.

Another operational response was through production function. This is through ensuring production and use of environmentally superior products such as the plastic bags over 30 microns in thickness which are recyclable.

Lastly, one other operations cited was marketing. This was through creating awareness of products either through the media or word of mouth. This is evidenced by the promotion of the biodegradable plastic bags by Nakumatt.

5.2.2 Strategic responses

The first strategic response identified from the study is policy changes. The organizations have had to change their policies to follow the government policies. The second response was change of organization culture. This was through identifying the plastic menace as part of their responsibility and working towards finding a solution.

Another strategic response cited is product development. This is through development of products that are less detrimental to the environment. These include the biodegradable bags introduced by Nakumatt June this year.

Social responsibility was also cited as a strategic response adopted by all the organizations. This is in light of being a corporate citizen who is concerned about the welfare of the environs and the society as a whole to which the organization exists. One of the key social responsibility projects is the support of the pilot project on plastic waste in Nairobi by the plastic bag manufacturers.

The last strategic response identified was change of systems and processes. This especially is as a result of new plastic manufacturing policies which meant that the manufacturers have had to change their production processes to produce the superior plastic bags.

Previous studies have been done on operational and strategic responses and brought out similar and differing responses depending on the nature of the study. Below is a summary of some of the responses and how they compare to this study

Bett (1995) studied the dairy industry in Kenya and found that due to on going economic reforms in the country, the firms in the industry made certain adjustments in the marketing mix components of product, price, promotion and place in order to adapt to changes and remain competitive in the liberalised industry. He also noted that in addition, the firms adopted market driven strategies by engaging in market segmentation and market planning to cope with competitive environmental challenges. They were flexible and adaptive. This shows that the responses were executed through the marketing function. Similarly from the findings of the research at hand we find that Nakumatt for example made adjustments in the product variable through the product development that resulted into the biodegradable bag to adapt to the changes in the environment.

Similarly, Kombo (1997) found that as result of the ongoing economic reforms, firms in the motor industry adjusted their variables substantially so as to survive in a competitive environment. The firms in the industry introduced new technologies of product development, differentiated their products, segmented and targeted their customers more and improved customer service. They also made significant changes in their marketing mix variables.

Chepkwony (2000) found that firms operating in the oil industry laid more emphasis on strategic planning. Many of these firms also redesigned their organization structure in a bid to making the organizations more efficient. Most of the firms also adjusted their product strategies so as to improve the quality of their products to meet the ever changing needs of the consumer. One of the responses identified by Chepkwony similar to the study at hand is the emphasis on research and

development by firms. This is aimed at and establishing the needs of their customers and finding solutions to these needs. One of the responses that he cited which was not identified in the research at hand is restructuring. This is a response that can be applied in light of ecological challenges.

On the other hand, Njau (2000) found that in response to threats posed by increased competition due to liberalisation, a firm can adjust strategic variables of products, promotion, cost structures, market research, research and development and market predisposition. Njau noted that there was a concerted effort to differentiate the company's products. The company also adopted cost structure strategies involving changes in the management structure and staff retrenchment. Important to note is that these responses touch on organization structure, research and development, change of strategic variables such as product. All these were responses cited in the study at hand.

Muturi (2003), in the study of responses of Christian churches in Kenya to changes in the external environment, found that most churches had put a strategic plan in place. This plan covered less than 5 years which showed that they were able to respond quickly to external environment. The study also concluded that the churches did respond to the society by building schools, hospital and other institutions that enabled them to have a positive influence in the community. This is a response of social responsibility which is also cited in the study at hand. Most churches sought the views of the congregation and regularly evaluated and adjusted the various ministries so as to determine the performance. This is an indication that they responded to the needs of their members. Another response cited was adopting training and development of the staff. This is a similar response to one cited in this study at hand.

Nkirete (2004) on study on environmental challenges and responses in the mortgage industry in Kenya found that most firms have adopted a marketing concept. They are using all available channels including market intelligence and research to establish market needs and wants in order to tailor products to suit the customers. This means that the firms focus has changed from operations to customer focus.

Similarly he also found that human resource capabilities are a key factor on coping with change and driving the business firm to successful results. The study showed that firms are continuously involved in upgrading their staff by way of training.

Abdullahi (2000) found that insurance firms have made adjustments of the strategic variables mostly marketing and process of delivery strategies. Musa (2004) identified several responses in his study of responses by commercial banks to changes in the environment. These included restructuring, marketing, training of staff and culture change. From his study restructuring was adopted mainly through cost cutting, and control through automation, modernization, reorganization and staff retrenchment. Recruitment was also conducted of well trained staff to improve on speed and efficiency.

Marketing was a response adopted through redefining the market segments and marketing function being reorganized into retail and corporate divisions. Aggressive marketing was also adopted through competitive pricing, product innovation, advertising products as well as building brand image and also through rationalizing branch network to better reach its customers.

The study also found out that a culture inherent in government or parastatal changed to embrace a serious business culture experienced in the private sector. One way was through encouraging upward communication and interaction between senior management with other employees in social forums such as end of year party. The culture shift also made the organization to be customer focused and transform into a profit making business.

Mulema (2003), studied the responses to changes in the external environment in service industry. His study was focused on the Teacher's Service Commission. He found that the organization had adopted several operational responses which included managing capacity. On introduction of free primary education, a survey was carried out to assess the need of teachers in public schools across the country and as a result hired new teachers and constructed extra facilities. Managing capacity is an operational response that can be adopted by the stakeholders in the plastic bag menace. This especially would be applicable by assessing the supply strength of the collection and the recycling facilities vis a vis demand of such facilities.

Omondi (2004) identified marketing, Information Technology and Culture change as the responses in his study of responses of mortgage companies in Kenya to threat of new entrants. These responses are both operational and strategic in that different departments are involved in the implementation. That is, marketing, administration and information technology.

In conclusion, it is evident that organizations adopt different responses depending on the nature of the problem. Important to note however is that most of these responses are applicable for different environmental challenges. That is, whether the challenge is economical, technological, legal, political or ecological in nature an organization may adopt similar responses. Most strategic responses especially are applicable across the board. A good example is organization culture change.

From the study it is evident that the three organizations interviewed have responded to the plastic bag menace in various ways discussed in this chapter. Since organizations operate in a dynamic environment, strategic as well as operational responses which are well developed and appropriately adopted are powerful tools to promote organization growth as an environmental conscious organization.

The organizations however should become more proactive to the problem and be the fore runners of the solutions without necessarily being reactive in nature. The introduction of the biodegradable bags is definitely a step in the right direction. This would involve formulating and implementing strategic and operational initiatives that would help curb the problem at the source as opposed to dealing with the aftermath effects of disposal. If the approach was through concerted effort of all the stakeholders instead of individual responses, it would be more effective.

5.3 Limitations of the study

The main limitation of the study was lack of access to the different operational and departmental heads. The people interviewed were the senior management who felt that they are the voice of the organization hence represented the organization's view.

This being a case study, the research findings cannot be used to make generalizations on the entire industries. The findings are indicative in nature.

5.4 Recommendations for further research

An interesting area of further research would be to look at a different view of the same problem by looking at responses by the environmental organizations or manufacturers of consumables packed in plastic bags such as the bread companies. Since it is approximated that the informal sector gives out twice as many plastic bags as the supermarkets per annum (approximately 16 million), the informal sector would be a key area to study in reference to the plastic waste.

5.5 Recommendations for policy and practice

In light of the extent of the plastic waste menace, the plastic industry should adopt some policies that will facilitate solutions towards this menace. Such policies would include self regulation of the industry on the quality of the plastic bags produced to ensure that they can all be recycled.

A concerted effort by all the stakeholders would be a key step towards the problem. Such an effort should bring out practices and policies that are documented and are applicable to all the stakeholders with possible penalties upon default.

In conclusion, this problem has not been studied before particularly in regard to responses. As a result the findings are more indicative than conclusive and further research is recommended.

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APPENDIX 1: LETTER OF REFERENCE

Date: 22/08/05

TO WHOM IT MAY CONCERN

The bearer of this letter, Joyce Wanderi, Registration Number D61/P/8086/02 is a Master of Business Administration (MBA) student of the University of Nairobi.

She is required to submit as part of her course work assessment a research project report on some management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would therefore, appreciate if you assist her to collect data in your organization for the research.

The results of this report will be solely for academic purposes and a copy of the same will be availed to the interviewed organization on request.

Thank You.

JACKSON MAALU
CO-ORDINATOR, MBA PROGRAM

APPENDIX 2: QUESTIONNAIRE

SECTION A – General Information

1. Nature of operations

2. How long has the organization been in existence?

3. What is the size of your organization? (Small, Medium, Large) Please elaborate

4. What type of clientele do you deal with?

5. Who are the stakeholders of your organization?

6. Does your organization have a strategic plan? Yes / No

Yes

No

7. If yes what period does the plan cover? (Tick the one that apply)

Less than two year

Two to 5 years

Over 5 years

8. How often is the strategic plan reviewed?

Every year

Every other year

Every two to three years

SECTION B – Information on environmental challenges / threats of plastic bags

1. How important is each of the following macro environment factors to your organization? Use a 5 point scale where 1= Not at all; 2= A little important; 3= Moderately important; 4= Very important and 5= extremely important. *(tick in the box that applies)*

- | | | | | | |
|--------------------------------|-------|-------|-------|-------|-------|
| a) Economic factors | [1] | [2] | [3] | [4] | [5] |
| b) Technological factors | [1] | [2] | [3] | [4] | [5] |
| c) Social factors | [1] | [2] | [3] | [4] | [5] |
| d) Political and legal factors | [1] | [2] | [3] | [4] | [5] |
| e) Ecological factors | [1] | [2] | [3] | [4] | [5] |

2. How important is each of the following industrial environmental factors to your organization? Use a 5 point scale where 1= Not at all; 2= A little important; 3= Moderately important; 4= Very important and 5= extremely important. *(tick in the box that applies)*

- | | | | | | |
|---|-------|-------|-------|-------|-------|
| a) Increased rivalry from other organizations | [1] | [2] | [3] | [4] | [5] |
| b) Threat of new entrants | [1] | [2] | [3] | [4] | [5] |
| c) Threat of substitute products | [1] | [2] | [3] | [4] | [5] |
| d) Powerful buyers | [1] | [2] | [3] | [4] | [5] |
| e) Powerful suppliers | [1] | [2] | [3] | [4] | [5] |

3. How important is each of the following key operating environment factors to your organization? Use a 5 point scale where 1= Not at all; 2= A little important; 3= Moderately important; 4= Very important and 5= extremely important. *(tick in the box that applies)*

- | | | | | | |
|---|-------|-------|-------|-------|-------|
| a) Competitive position of the organization | [1] | [2] | [3] | [4] | [5] |
| b) Creditors | [1] | [2] | [3] | [4] | [5] |
| c) Government regulations | [1] | [2] | [3] | [4] | [5] |
| d) Customers | [1] | [2] | [3] | [4] | [5] |
| e) Suppliers | [1] | [2] | [3] | [4] | [5] |

- | | | | | | |
|--------------------|-----|-----|-----|-----|-----|
| f) Human resources | [1] | [2] | [3] | [4] | [5] |
| g) General public | [1] | [2] | [3] | [4] | [5] |

4. How would you rate the extent of the following ecological challenges that have been occurring in the country in the recent past? Use a 5 point scale where 1= small; 2= moderate; 3= large ; 4= Very large and 5= Extreme . *(tick in the box that applies)*

- | | | | | | |
|------------------------------|-----|-----|-----|-----|-----|
| a) Floods | [1] | [2] | [3] | [4] | [5] |
| b) Plastic bag waste | [1] | [2] | [3] | [4] | [5] |
| c) Pollution of water masses | [1] | [2] | [3] | [4] | [5] |
| d) Air pollution | [1] | [2] | [3] | [4] | [5] |
| e) Land pollution | [1] | [2] | [3] | [4] | [5] |

5. How would you describe the extent of plastic bags waste in the country? Please explain

6. What do you consider is the extent of threat of plastic bags waste on each of the following? Use a 5 point scale where 1= small; 2= moderate; 3= large ; 4= Very large and 5= Extreme (in the space below, list others and rate).

(tick in the box that applies)

- | | | | | | |
|---|-----|-----|-----|-----|-----|
| h) Health of the people | [1] | [2] | [3] | [4] | [5] |
| i) Blocked drainage | [1] | [2] | [3] | [4] | [5] |
| j) Deprive of soils nutrients | [1] | [2] | [3] | [4] | [5] |
| k) Flooded roads | [1] | [2] | [3] | [4] | [5] |
| l) Breeding grounds for disease vectors | [1] | [2] | [3] | [4] | [5] |
| m) Death of marine life | [1] | [2] | [3] | [4] | [5] |
| n) Choking of animals | [1] | [2] | [3] | [4] | [5] |
| o) Others | | | | | |

_____	[1]	[2]	[3]	[4]	[5]
_____	[1]	[2]	[3]	[4]	[5]
_____	[1]	[2]	[3]	[4]	[5]
_____	[1]	[2]	[3]	[4]	[5]

SECTION C - Responses

1. Has your organization made any effort towards this problem?

Yes

No

2. Describe briefly what you have done in the following operational areas to be able to address the issue of plastic bags?

e.g. Allocation of budgets by the accounting and finance function

a) Accounting and finance

b) Research and development

c) Production

d) Human resource management

e) Marketing

3. To what extent are the following strategic responses important in addressing the plastic bag menace? Use a 5 point scale where 1= Not at all; 2= A little important; 3= Moderately important; 4= Very important and 5= extremely important. (*tick in the box that applies*)

a) Policy changes

[1] [2] [3] [4] [5]

b) Structure	[1]	[2]	[3]	[4]	[5]
c) Organization culture	[1]	[2]	[3]	[4]	[5]
d) Product development	[1]	[2]	[3]	[4]	[5]
e) Social responsibility	[1]	[2]	[3]	[4]	[5]
f) Systems and processes	[1]	[2]	[3]	[4]	[5]
f) Other (state)					
_____	[1]	[2]	[3]	[4]	[5]
_____	[1]	[2]	[3]	[4]	[5]
_____	[1]	[2]	[3]	[4]	[5]
_____	[1]	[2]	[3]	[4]	[5]

4. Which of the above responses has your organization adapted in an effort to curb the problem? Please explain.

5. To what extent to do you consider each of these adequate for addressing the plastic bag menace? Use a 5 point scale where 1= Not at all; 2= A little adequate; 3= Moderately adequate; 4= Very adequate and 5= extremely adequate. (tick in the box that applies)

a) Policy changes	[1]	[2]	[3]	[4]	[5]
b) Structure	[1]	[2]	[3]	[4]	[5]
c) organization culture	[1]	[2]	[3]	[4]	[5]
d) product development	[1]	[2]	[3]	[4]	[5]
e) social responsibility	[1]	[2]	[3]	[4]	[5]
f) Systems and processes	[1]	[2]	[3]	[4]	[5]
g) Others (state)					
_____	[1]	[2]	[3]	[4]	[5]
_____	[1]	[2]	[3]	[4]	[5]

[1] [2] [3] [4] [5]

[1] [2] [3] [4] [5]