

**PRINT MEDIA COVERAGE OF THE BAN ON IMPORTATION OF GENETICALLY
MODIFIED FOODS IN KENYA: A CONTENT ANALYSIS OF DAILY NATION AND
THE EAST AFRICAN**

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DECLARATION

This research project is my original work and it has not been presented for a degree in any other university.

Signature Date.....

Christabel Ligami

This research project has been submitted for examination with my approval as a university supervisor.

Signature..... Date.....

Dr Samuel Siringi

DEDICATION

To God I give thanks.

And whatever you do, whether in word or deed, do it all in the name of the Lord Jesus, giving thanks to God the Father through him.

Colossians 3:17(Holy Bible)

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LIST OF ABBREVIATIONS AND ACRONYMS

GMO – Genetically Modified Organism

AATF – African Agricultural Technology Foundation

Bt – *Bacillus thuringiensis*

CIMMYT – International Maize and Wheat Improvement Center

DNA – Deoxyribonucleic Acid

GM – Genetically Modified

GoK – Government of Kenya

ISAAA – International Service for the Acquisition of Agri – biotech Applications

KARI – Kenya Agricultural Research Institute

LMO – Living Modified Organisms

SDN – Science and Development Network

WHO – World Health Organization

ASERECA – Association for Strengthening Agricultural Research in Eastern and Central Africa

ABSTRACT

This study examines the print media coverage of the 2012 ban on importation of genetically modified food in Kenya for the period between 2012 and 2013. The study employed a mixed qualitative research approach involving content analysis and interviews as data collection approaches. The study identifies and analyses articles from two print newspapers, *Daily Nation* and *The EastAfrican*, with the view to investigate the trend in reporting of perceived risks and benefits of the ban and to assess the various views on genetically modified foods published by the two newspaper in the period before and after the ban. Drawing on the agenda-setting and framing theories, a comprehensive analysis was carried out on the articles. The study employed a qualitative research approach with the use of content analysis of the articles of the ban on Genetically Modified Foods and interviews as the main tools for data collection. Interviews with 10 individuals constituting eight student biotechnology researchers, a long-term researcher and a county advisor on biotechnology products, were conducted to gain a holistic view of the perception of the nature and quality of reporting on the ban on Genetically Modified Foods by the scientist in the period leading to and immediately after the ban. Analysis was achieved through coded interviews, summary of the study was presented in form of graphs and charts, and comparison of compatible data from content analysis output and coded output from interviews. Disparities in view between the scientific and journalistic community are highlighted hence providing insight into the quality of reporting on contemporary scientific issues and shedding light on gaps for future research alongside a summary of findings drawn from the study. Findings from content analysis shed light on the contribution of the publications to public debate on important scientific occurrences as represented by the ban on genetically modified organisms in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter outlines the background information on Genetically Modified Organisms and the ban on GMOs in Kenya, problem statement for the study on the GMO ban, objectives and research questions the study will apply, rational of the study, justification, scope and limitation of the study.

1.2 Background

This study is designed to examine the coverage of the ban on importation of genetically modified food by the Kenyan government in 2012 published in two mainstream English Newspapers, *Daily Nation* and *The East African*, between 2012 and 2013. This was the period when the Kenyan government imposed a ban on imports of GM food into the country.

Population growth and adverse climate severely affect yields among communities. It is for this reason that new approaches to agriculture have been considered. Among the more controversial innovations in this effort has been the use of Genetically Modified Organisms in different capacities to achieve greater and stable yields. Karp (2008) observes that the move by the United States to make products of GMOs available to the public spearheaded the GMO revolution resulting in many countries around the world opening their board to allow for GMO products to bolster food supplies. The crux of the argument between GMO proponents and opponents is the similarity or lack thereof between GMOs and naturally propagated organisms. Proponents argue that GMOs offer added advantage to consumers of while opponents argue that modifications to

genetical make-up of organisms may result in negative effects to other organisms and to the environment in general. Albeit misgivings among sections of the scientific community, GMO production acceptance has increased tremendously on the grounds of provision of more highly nutritious foods, provision of improved and new pharmaceuticals and enhanced crops showing higher resistance to adverse environmental factors as compared to naturally propagated crops. According to Karp (2008) environmental pollution has been reduced by using GM seeds because there is minimal use of pesticides or insecticide.

Antoniou et al (2012) highlights that the threats of GMOs are more and worse than their benefits as genetically modified organisms may confer genetic complications to consumers' genes thereby resulting in unprecedented health concerns in the event that GMOs are accepted into consumer markets. Relatedly, GMOs are feared to bear toxic genes than when expressed may produce protein products that are hazardous to organisms.

China was among the early adopters of genetically modified crops accepting commercial production of GM tobacco in the late 1990s, just a decade after GM crops were first produced in 1983 (Hails & Kinderlerer, 2003). In the US, GM crops appeared mainly in the feeds industry as GM corn was cultivated in the mid-1990s with the use of insect-resistant genes in maize and similarly, in herbicide-tolerant soybean (ibid.). Skepticisms on the safety of GMOs was however apparent in Europe as the region did not accept propagation of GMO crops for food or feed, an unacceptance that was further escalated by the good shortage of the late 1990s in the region; it is however noteworthy that the shortage was not related to GMO products (GMOs) (WHO, 2011). The Cartagena Protocol on Biosafety which is one of the key international laws governing the

use of GM crops has therefore been the basis of all operations pertaining to genetically modified organisms in the European region (Panos Institute, 2005).

Kenya was the first country in the East African region to sign the Cartagena Protocol in 2000 and it ratified the document in 2003 (ISAAA, 2010). The protocol comprises 27 principles under the Rio Declaration on Environment and Development. One of these, Principle 15, underlines the role of the state in protecting the environment with relation to genetically modified organism and mandates the state in question to discontinue practices related to GMOs or GMO products in the event that they are deemed deleterious to the environment regardless of whether or not these practices are scientifically shown to confer danger to the environment. (Convention on Biological Diversity, 2011). Elements of Principle 15 are contained in Articles 10.6 and 11.8 of the Cartagena Protocol and further address the need to prevent damaged to the environment, through GMOs. (ibid).

Only three countries in Africa are commercially growing GM crops; in 2008, Burkina Faso and Egypt started producing insect-resistant GM cotton and maize, respectively where as South Africa has allowed for GM maize plantations, cotton, and soybean for over two decades. The most prevalent approach in growth of GMO crops is through field trials; six countries in Africa - South Africa, Burkina Faso, Egypt, Kenya, Tanzania and Uganda – use this approach (James, 2010). Among these, Burkina Faso, South Africa and Sudan, have authorized the sale of GMO crops. In 2014, South Africa grew 2.1 million hectares of biotech maize of which 28 per cent was maize. In Kenya, the Biosafety Authority allowed for conditional approval for environmental release of insect resistance maize (BT maize) for open field National Performance assessment (ASARECA, 2016). The maize grown confers resistance through expression of a BT protein that

repels insects thereby protecting yields from damage. This approval resulted after review of the application submitted by the Kenya Agricultural Livestock and Research Organization (KALRO) and the African Agricultural Technology Foundation (AATF) in June 2015. In the review, public stakeholders were invited to offer views.

In Kenya, research on GM crops has been limited to maize, sweet potato, cassava and cotton with the aim of developing crop varieties that are insect-resistant (maize and cotton) or virus-resistant (cassava and sweet potato). Research on GM crops in Kenya began in 1996 with trials on GM sweet potato to develop varieties resistant to the sweet potato feathery mottle virus. The multi-national biotechnology firm, Monsanto, developed a coat protein responsible for virus resistance and donated it royalty-free to the Kenya Agricultural Research Institute (KARI). However, these initial efforts were unsuccessful at modifying sweet potato genes for virus resistance (Kameri-Mbote, 2005).

The Insect Resistant Maize for Africa project by KARI and the International Maize and Wheat Improvement Center (CIMMYT) which started in 1999, was aimed at increasing maize productivity through the development of a transgenic maize variety containing genes of a bacterium that naturally occurs in the soil, *Bacillus thuringiensis* in order to confer resistance to the maize stem borer. Confined field trials of maize began in May 2005 and research is continuing at this level in several of KARI's research stations (Kameri-Mbote, 2005). Confined field trials of drought-tolerant transgenic maize began in 2010 under a five-year Water Efficient Maize for Africa project led by the African Agriculture Technology Foundation (AATF) and being undertaken in Kenya, Uganda, Tanzania, Mozambique and South Africa (AATF, 2010).

Research on GM cotton in Kenya involves development of varieties that are resistant to the boll worm. However, cotton seeds with resistance to the boll worm have been imported from South Africa for confined field trials at KARI. GM cassava varieties that are resistant to the cassava mosaic virus are being developed by KARI and the US-based Danforth Centre. The main institutions involved in transgenic crop research in Kenya are KARI and CIMMYT in partnership with Monsanto and the Donald Danforth Plant Science Centre (Kameri-Mbote, 2005). The Kenya National Biosafety Authority (NBA) recently approved the opening of field trials of BT Maize.

With regard to legislation, Kenya's Biosafety Bill was drafted in 2003 and signed into law in February 2009; with this development, Kenya became the fourth African country to pass legislation to govern the use of GMOs after Burkina Faso, Egypt and South Africa (ISAAA, 2010; Karembu et al., 2010). Among other provisions, the Biosafety Act allows for the establishment of a National Biosafety Authority to implement biosafety legislation in the country and facilitate the scaling-up of field trials to national-level performance trials of GM varieties as a pre-requisite to commercial production (GoK, 2008). The board of the National Biosafety Authority was launched in May 2010 and comprises a multi-sectoral team of scientists, permanent secretaries from key government ministries, directors of biosafety regulatory agencies and representatives from farmer groups, consumer groups and the private sector (ISAAA, 2010).

1.3 Problem Statement

The subject of GM technology has been shrouded in controversy and debate in global, regional and national arenas, and much of this debate has taken place through mass media channels. On the one hand are the proponents, who argue that GM crops hold the key to global food security,

healthier crops and improved nutrition for millions around the world. On the other hand, are those who argue against GM crops, citing uncertainty over possible deleterious effects of the products of the inserted or modified crop genes on human health, the environment and crop biodiversity.

The GMO debate in Kenya has not been any different as it has undergone significant development, especially since the publication of the Seralini study in 2012, a study that indicated that GM food causes cancer. The study helped motivate a government ban on GM crops in the country. This has also been debated through the media. Over this period, Kenyan consumers may or may not have received factual and objective information on the GMO ban. Although there is a growing body of research on media reporting of biotechnology, very little research examines media reporting in Kenya with particular focus on the GMO ban. Past research also concentrated either on an individual country or a group of countries compared against another. This study seeks to fill these gaps by examining the media reporting and source use in present-day Kenya. This study aims to explore the events that led to the GMO ban and how the ban was communicated to the public and GMO stakeholders (mainly academics, researchers and advisors) by the two Kenyan print Newspapers - *The Daily Nation* and *the EastAfrican*. The study centers on articles that appeared in the newspapers between 2012 and 2013. The study also gives a more up-to-date picture of media reporting in Kenya's newspapers particularly looking at the time immediately before and after the Seralini study was released. Furthermore, qualitative information pertaining to media perception by the scientific community was included in the study. Qualitative information was collected through the use of interviews. A robust review of publications pertinent to the ban on genetically modified organisms was suited and relevant

professionals and students were sought predominantly from academic institutions as they were deemed familiar with up-to-date developments in the area of biotechnology.

1.4 Objectives

The main objective was to analyze and evaluate print media coverage of the ban on importation of GM food for the period between 2012 and 2013.

The specific objectives:

1. To determine the trends in coverage of the GMO ban leading up to and after the ban.
2. To assess the angling and prominence of stories on the GMO ban in print media in Kenya.
3. To compare views expressed in the media and those of scientists regarding the GMO ban.

1.5 Research Questions

1. What are the trends in coverage of GMO products and the GMO ban leading up to and after the ban?
2. What is the angling and prominence of stories on the GMO ban in the print media in Kenya?
3. What are the views expressed in the media and views expressed by scientists regarding the GMO ban?

1.6 Rationale

The print media (Newspapers) have a key role to play in agenda setting, that is, the creation of public awareness of salient issues, particularly in the case of perceived risky or controversial issues such as GM technology (Frewer *et al.*, 2002; Marks *et al.*, 2007; Vilella-Vila and Costa-

Font, 2008). In the case of Kenya, the gaps in analytical media coverage of GMO ban may be a contributing factor towards the documented low levels of consumer awareness on the subject. If the print media coverage of the GMO Ban is not sufficiently analytical, balanced and factual then the Kenyan public will not be in a position to engage in informed debate or make informed choices regarding the adoption of GMOs.

Currently, there are few published studies on comprehensive content analysis of Kenyan newspaper coverage of GMOs in the country and other biotechnology-related topics, although several research findings on the same from other countries such as India, Ireland, Japan, UK and USA have been published. This study will, therefore, contribute to the knowledge on media coverage of GM crops by providing information on the nature of Kenyan newspaper coverage of GMO during the period of events that led to the ban and immediately after the ban. Furthermore, critical examination of the two Kenyan newspapers (*The Daily Nation* and *the EastAfrican*) coverage of GMO ban will provide information on the quality of the media messaging in terms of, for example, scientific accuracy and balance of the newspaper stories. In so doing, this study will examine the likelihood that the documented low levels of public awareness could be linked to the quality of newspaper coverage of GMOs, and thus suggest likely areas of intervention towards improvement of quality and quantity reporting by the Kenyan print media on the topic.

The results of this study are likely to be beneficial to Kenyan policymakers, science communicators and media stakeholders by providing an important platform for effective communication of the subject of GM technology and other scientific topics to the public via the print media. The study findings will also benefit the research community by adding on content

analysis of media coverage on GM technology, for which comprehensive published information is currently lacking for Kenya (Panos Institute, 2005).

1.7 Justification

Accurate, unbiased media coverage on the topic of the GMO ban is important because several studies have shown that media reporting directly influences consumers' attitudes and perceptions of risk associated with GM technology (Frewer *et al.*, 2002; Marks *et al.*, 2007; Vilella-Vila and Costa-Font, (2008). The mass media also has an important role to play in informing and educating the public, more so about the pros and cons of such innovations like GM technology. This study will highlight the important role played by two Kenyan newspapers in informing the public about GM crops - *The Daily Nation* and *the EastAfrican*.

1.8 Scope and Limitation

This study will be limited to print media, narrowing down to articles from two print newspapers - *Daily Nation* and *The East African* for the period between November 2012 and November 2013. This was the period when the Kenyan government imposed a ban on imports of GM food into the country. It is estimated that newspapers in Kenya reach about a quarter of the population weekly. Kenyans consider newspapers better news sources than television or radio for deciding how to shape their policy ideas (InterMedia, 2010).

The majority of Newspapers readers in Kenya are relatively young (between ages 18 and 34 years), affluent, males living in major urban centers such as Nairobi (Mzungu, 2013). The habit of sharing newspapers is common, with an average pass-along rate of 15 people per paper (Obonyo, 2011), as is the reading of headlines for free. Part of the reason why wealthier Kenyans

are the majority of readers could be the cost of purchasing a daily copy. *The Daily Nation*, for example, cost Ksh 60 per issue while *The East African* cost Ksh 100 (2015). This study will be conducted on two Newspapers; *The Daily Nation* and *The East African*. *The Daily Nation* because it is the country's biggest daily paper, with a combined daily and weekly readership of more than 5 million (Nyabuga and Booker, 2013); *The East African*, is a weekly paper covering Kenya, Tanzania, Uganda, and Rwanda. The two papers will give a broader scope on how the Media covered GMO Ban in Kenya and across the region.

The study employs a qualitative analysis method. Both sampling and questionnaire distribution methods are applied. Data of all the articles published on GMO ban in the mainstream newspapers, *Daily Nation*, and *The East African*, for the period between 2012 and 2013 were collected and content of the articles analyzed to assess what triggered the stories, the accuracy and the source of the information for the GMO stories.

Interviews were held with GMO stakeholders, particularly those involved in academia and research, with the view to assess their acquaintance with newspaper articles on GMOs and the ban, and the community's perception on the accuracy, authority and influence of print media in the country. The views of the scientific community stakeholders will be compared with those elicited in print publications. It may be inferred that the articles express not only the views of the writers but the editors as well as the latter are responsible for the selection, placement, and angling of the stories.

1.9 Conclusion

This chapter has highlighted the background information on Genetically Modified Organisms and the GMOs ban in Kenya and the problem statement for the study on the GMO ban. The

chapter also highlighted the objectives and research questions that the study will apply, the rational of the study, justification and, scope and limitation of the study; this informs chapter two of the study – literature review.

1.10 Definition of Terms

1. Stakeholders – Potential consumers of genetically modified foods (European Union, 2010).
2. Reporters/journalists - newspaper writers who investigate newsworthy events and interesting stories (Entman, 1993).
3. Editors - assign stories to reporters, edit story content, and decide which stories to print.
4. Media coverage- Media coverage can be defined as the way in which a particular piece of information is presented by media either as news, entertainment or as infotainment (Nyabuga and Booker 2013).

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

This chapter offers an account on what has been published on the topic of GMO, the recent debate on GMOs, the theories that relate to the study, the gaps identified by the study and a conclusion summation of the chapter.

2.2 The GMO Debate

According to Paarlberg R (2008), and Herring R (2008), one effective way of increasing agricultural productivity is the use of genetically modified crops. However, the question of whether the solution should actually be implemented remains open and very controversial. Quite a number of reputable organizations, Greenpeace, IFOAM, Oxfam being among the most notable of them, take a clear stand against GMOs as a way out of poverty and starvation, whereas other, similarly reputable organizations and scientists such as Norman Borlaug (2000) and Robert Paarlberg (2008) emphatically endorse the use of genetically modified crops as the way to bring world hunger to an end. The World Bank and the Directorate - General of Research and Innovation of the European Union maintain that as far as the scientific documentation goes, genetically modified crops are safe for human consumption. IFPRI and FAO of the United Nations, among other established international organizations, maintain that, rather than harm humanity, genetically modified foods actually have quite a number of benefits, particularly to small-scale farmers in developing countries (European Union 2010, The World Bank 2007:178). These assertions however seem to have little weight in the eyes of African leaders as evidenced

by the decision by the decision of the government of Zambia to reject food aid in the middle of a drought in 2002 (Annear 2004) because the crops were genetically modified. According to Paarlberg (2008), the decision by the Zambian government was prompted by anti - GMO lobbyists and European influences. These influences, he says, have biased opinion and negatively impac5 legislative regulation in Africa as pertains to GMOs. The ban placed by the government of Kenya on GMOs in 2012, in addition to barring small-scale farmers from planting genetically modified crops, also ground GMO research in the country to a halt (Willingham 2012).

In order to maintain their economic ties with some European markets and remain on the safe side until the debate on the safety of consumption of genetically modified crops is settled, most African countries have decided not to incorporate GMOs into their agricultural sectors, at least for the time being. Only Burkina Faso, Egypt and South Africa (ISAAA, 2010) allow commercial growing of GM crops. The Biosafety Act, signed into law in February 2009, put Kenya on the path to being the fourth African country to accept commercialization of GM crops by allowing trial farming in open fields.

The Biosafety Bill was introduced to the Parliament of Kenya in 2005 to bring regulation concerning GMOs and their adoption into the county. Five years later, in 2010, the bill was made law (Njagi, 2010). This made the provision for GM foods to be imported into Kenya for consumption, pending the approval of the state-run National Biosafety Authority and established the National Biosafety Authority (NBA) so as to provide research guidelines for GMOs in Kenya, with the main aim being ensuring that there was as little risk as possible to consumers. The NBA gave the go-ahead in 2011. In the same year, a major drought afflicted a number of

African countries, Kenya being one of them. It resulted in a shortage of maize (corn), the country's staple food. To ease the situation, the government of Kenya significantly reduced taxes on importation of maize. Also it requested GM maize from South Africa. This act had a polarizing effect in the Kenya food industry. On one hand were Kenya's Cereal Millers Association who lobbied hard for importation of GM corn, since in the market GM corn was 30% cheaper than non-GM corn. On the other, the African Biodiversity Network and the Unga Revolution fought vocally against GMO importation, even organizing protests.

The debate on GMOs went the way of the opposition when Gilles Eric Seralini (2012) published his findings on a study on GMOs. In this study, Seralini found that consumption of GM foods made rats more likely to get cancer. This prompted the Minister for Public Health in Kenya to ban the commercial sale GM foods in Kenya for human consumption until it could be ascertained that GM foods posed no threats to human health.

The ban was effected later on in the same year, and has not been lifted despite the retraction of the paper responsible for it 2013 (Willingham, 2012). The act of banning GM foods in Kenya is one of the most final decisions against GM foods ever effected outside Europe. As regards GMOs, Kenya, and evidently most African countries, have been more aligned towards the cautious Europe than the more liberal United States.

Prior to the ban, The last move in Kenya related to GMOs was in 2009, when the signing of a Biosafety Act made it the fourth African nation to accept GMOs, which made it legally acceptable to cultivate GM crops commercially, and established a regulatory body to oversee the practice. It also motivated GMO research in the country. The United States Department of Agriculture's (USDA's) Foreign Agricultural Service predicted the ban would have serious

adverse effects on Kenya's ability to address the demand for maize among its people (Snipes and Kamau, 2012).

Some also suggested that Kenya's bypassing of its GM regulatory body could set a dangerous precedent for other countries deciding their GM policies (Nordling, 2012). As of 2012, only four African countries Burkina Faso, Egypt, Sudan, and South Africa have approved commercialized GM crops (All Africa, 2013). Many other countries around the world, including Japan, China, Brazil, Korea, Australia, New Zealand, Canada and the United States, have approved GMOs, and a total of 74 countries authorize GM products for cultivation (growing), food import for people, feed import for animals and/or trials and testing (Chelsey Robinson, 2014). Recent efforts by the Deputy president William Ruto (August 2015) to lift the ban are yet to be effected by the cabinet as directed by the president

2.3 Review of other studies on GMO

Recent studies in Kenya by Kimenju et al. (2005) and Gathaara et al. (2008) to gauge consumer perceptions of biotechnology and GM crops established low levels of consumer awareness that ranged between 34 per cent and 38.6 per cent. These studies also found that most consumers who had heard or read about biotechnology and GM crops obtained the information primarily from the mass media and from newspapers in particular.

Other mass media like television and radio were less important than newspapers as sources of information on GM crops, though television was more important among higher socio-economic class respondents and radio was more important for lower socio-economic class consumers and those with low-level education (ibid.). This finding signifies the important role played by Kenyan newspapers in informing the public about GM crops. However, research by Panos

Institute (2005) found a gap in the provision of analytical reporting on GM crops in five developing countries (Kenya included), with most news articles being simply based on press releases from governmental agencies. This may suggest that the Kenyan public is inadequately and inexactly informed on GM crops through what they read in the newspapers.

Authors have also published reports of comprehensive content analysis of newspaper articles on GM technology in Germany (Kohring and Matthes, 2002), Greece. In all the above cited studies carried out in the developed world, the level of media coverage of GM technology was higher than the documented levels of coverage in countries in Africa. For instance, Banda (2002) reports a low level of print media coverage of GM in Zambia, citing just one media content analysis which revealed that only four newspaper articles on the topic of GM food were published in the year 2000 and almost all articles featured a generalized coverage of biotechnology with little local contextualization. Nucci and Kubey (2007) examined television coverage of GM food by evening news stations in the USA from 1980 to 2003 and found minimal coverage of the subject. From the reviews of literature, there is currently a paucity of published studies on television coverage of GMOs in Africa as a whole.

Researchers at the African Biotechnology Stakeholders' Forum and the Kenya Biotechnology Information Centre carried out a content analysis of the coverage of biotechnology in articles published between 1998 and 1999, and 2000 to mid-2003 in *The Daily Nation*, *The East African*, *The Standard* and *the People Daily* newspapers. Though the results of the study have not been formally published (Karembu, 2009), the researchers reported that the coverage of biotechnology in Kenyan newspapers had "increased significantly" and that stories were more balanced and had greater prominence. Between January and June 2004, Panos Institute (2005) analysed print

media reporting of the GM debate in five developing countries Brazil, India, Kenya, Thailand and Zambia – by studying newspaper and magazine coverage of GMOs in each country. The study involved counting the number of articles on a GM topic that had been published in selected newspapers and magazines and 15 analyzing their content. The study also analysed the frequency with which scientists, government officials, farmers and other stakeholders were quoted. A record was also kept of the number of editorial and opinion articles published on a GM topic, including how many were in favour of GM technology and how many were opposed (ibid.).

The Kenya case study identified 27 newspaper articles on GM from *The Daily Nation*, the *Standard*, *Taifa Leo* and *Science in Africa* that were published between January and June 2004. Of these, only one was an editorial (in *The Daily Nation*). Scientists and government officials, who tended to speak in favour of GM, were quoted more often than other stakeholders while the voice of farmers' groups was completely absent from the newspaper coverage.

The study also found limited print media coverage of GM in languages other than English (Panos Institute, 2005). During the study by Panos Institute (2005), *The Daily Nation* had a daily circulation of 100,000 copies; *The Standard*, 80,000 and *Taifa Leo*, 42,000, corresponding to daily readership of 1,500,000 copies for *The Daily Nation*; 1,200,000 for *The Standard* and 630,000 for *Taifa Leo* (an average of 15 readers per newspaper). Several studies report the media as an important source of information on GM topics. Nucci and Kubey (2007) note that the media play a critical role in creating public awareness of scientific innovations such as GM food by setting the boundaries of debate, framing scientific problems, and influencing perceptions of risk and benefit. Shineha et al. (2008) cite a consumer survey in Japan which

found that about 60 per cent of respondents obtained information on GM topics mainly from newspapers and television.

2.4 Agenda Setting and Framing Theories

This study will use the Agenda setting and Framing theories to explain how media covered the GMO Ban in Kenya.

2.4.1 Agenda Setting Theory

Also known as the Agenda Setting function of the Mass Media, agenda setting theory was first put forth by Maxwell McCombs and Donald Shaw in 1972. They originally suggested that the media sets the public agenda, in the sense that they may not exactly tell you what to think, but they may tell you what to think about. Agenda setting refers to the creation of public awareness of salient issues by the news media and describes the influence of the media in telling the public what issues are important and worth thinking about (McCombs and Shaw, 1972).

At its core, the agenda-setting theory asserts that the degree of emphasis placed on certain issues by the media adds salience to those issues, thereby influencing the importance accorded to them by the public (ibid.). Thus, by according greater prominence and coverage to a specific issue or topic, the media can influence the public to perceive that issue or topic as more salient or important than others. One of the earliest scientific investigations of the agenda-setting function of the media was carried out by McCombs and Shaw (1971) during their seminal study of the 1968 US presidential campaign. They examined the relationship between what voters in Chapel Hill, North Carolina said were key campaign issues with the actual content of the mass media

used during the campaign and found that the mass media exerted a significant influence on what the voters considered to be the salient campaign topics.

Shaw and Martin (1992) observe that the effect of media outlets with regard to agenda setting is applicable at the group level. Persons engaging in consumption of news through similar news outlets are likely to agree on the saliency of issues regardless of their social class, level of education or economic status. Furthermore, media outlets serve an agenda setting role in countering historically held notions by presenting new issues and deeming them of more importance and hence meriting public debate. Through consumption of news by groups, historically held issues are replaced with cotemporary matters by virtue of public debate across social and economic divides. It may therefore be inferred that news outlets commanding large market share have a greater ability to sway public debate.

2.4.2 Framing Theory

The Framing theory was first put forth by Goffman (1976). He put forth that people interpret what is going on around their world through their primary framework. This framework is regarded as primary as it is taken for granted by the user. Its usefulness as a framework does not depend on other frameworks. Goffman states that there are two distinctions within primary frameworks: natural and social. Both play the role of helping individuals interpret data. Framing theory is an expansion of the agenda-setting theory whereby the media not only focuses public attention on a certain issue but goes further to place the issue within a specific context or field of meaning (Marks *et al.*, 2007). Thus, the framing theory considers the context within which the issue is placed rather than the salience of issue per se, which is the focus of agenda setting. In this context, Marks *et al.* (2007) note that coverage of science and technology topics can frame

the issue so as to emphasize scientific facts, their socio-political implications, environmental risks or human health concerns. Similarly, potential environmental risks of a technology may be highlighted while ignoring the potential benefits, or vice versa, depending on the way the article has been framed. If risks are emphasized relative to the benefits of a technology (for example, through repetition of words and images), the framing theory predicts a more negative attitude on the part of the audience (ibid.).

Crawley (2007) also argues that in the case of controversial scientific topics like GMOs, the news media can choose to frame the issue either from the perspective of risk or of a scientific opportunity. Frames often emerge as the presence or absence of key words, phrases, images and sources of information, among other elements (ibid.). The framing theory predicts that if the media frames a technology in such a way that its risks are emphasized relative to its benefits, there will be more negative sentiment towards that technology by the public (Marks *et al.*, 2007). A study by Vilella-Vila and Costa-Font (2008) on how the media influences risk perceptions of and attitudes to GM food revealed that press coverage of the topic in Spain and the UK focused on the risks and potential public health hazards, framing GM food as highly controversial and rarely portraying its potential benefits. Thus, the theory predicts that the public in those regions are likely to hold negative views about GM food, based on what they read in the news media.

Cook *et al.* (2006) characterized the framing of the GM food debate in British newspapers and found that particular newspapers were consistently either anti-GM or pro-GM. The Times and the Sun newspapers were characterized as largely pro-GM and framed the issue of GM food from scientific and technological contexts, highlighting advancement in scientific knowledge and the application of GM technology for the benefit of society. Conversely, The Guardian and Daily

Mail were characterized as anti-GM, framing the GM debate within a socio-political context that stressed the interests of the various stakeholders, such as the economic interests of biotechnology companies and political interests of the foreign governments at the expense of the general public. The newspapers also used imagery and metaphors (for example, a “battle”) to describe the competing interests surrounding the subject of GM food.

Park, Holody, & Zhang (2012) is assessing media coverage on shootings in the United States observe that there exists bias in the presentation on information by media outlets in that the term “race” appears more often when shootings are propagated by a minority group in the country. There effect is that public is set to view shootings differently depending on the race of the person behind the shooting. This example highlights the importance of the angling of information presented to the public as the effect achieved on public debate may result in widening of social divides if so intended by news outlets.

2.5 The Gaps

With regard to the already published studies on GMO, there are currently few published reports on comprehensive content analysis of print media coverage of GM technology in Kenya and no study has been published on print media coverage of the GMO ban in Kenya. In a case study of the regulation of GM crops and foods in Kenya, Kameri-Mbote (2005) reports carrying out a “generalized scan” through the content of selected daily newspapers from 1997 to 2004 for their coverage of the subject of GM and found that there were “many pronouncements made by diverse actors at diverse fora.

The main shortcoming of this analysis is that it did not seek to carry out a detailed content analysis of the newspapers but merely tabulated what was said about GM crops and by various sources as reported in randomly selected newspaper articles. Researchers at the African Biotechnology Stakeholders' Forum and the Kenya Biotechnology Information Centre carried out a content analysis of the coverage of biotechnology in articles published between 1998 and 1999, and 2000 to mid-2003 in *The Daily Nation*, *The East African*, *The Standard* and *the People Daily* newspapers (AgBioworld, 2004). Though the results of the study have not been formally published (Karembu, 2009), the researchers reported that the coverage of biotechnology in Kenyan newspapers had "increased significantly" and that stories were more balanced and had greater prominence (AgBioworld, 2004).

However, the report does not provide empirical data to support the stated increase in newspaper coverage of biotechnology. Research by Panos Institute (2005) found a gap in the provision of analytical reporting on GM crops in five developing countries (Kenya included), with most news articles being simply based on press releases from governmental agencies. This may suggest that the Kenyan public is inadequately and inexactly informed on GM crops through what they read in the newspapers. Also in the case of Kenya, the gaps in analytical media coverage of GM crops, as identified by Panos Institute (2005), may be a contributing factor towards the documented low levels of consumer awareness on the subject. If the print media coverage of GM crops is not sufficiently analytical, balanced and factual then the Kenyan public will not be in a position to engage in informed debate or make informed choices regarding the adoption of GMOs.

2.6 Conclusion

This chapter has analyzed and reviewed the current knowledge on GMOs in Kenya, the GMO ban based on the recent debate on GMOs, the theories that will guide the study, and gaps identified in the study which will inform chapter three of this study.

CHAPTER THREE

METHODOLOGY

3.1 Overview

This chapter outlines the methodology of the study. It will highlight the philosophical paradigm, research approach of the study which is of a mixed qualitative nature, case research method, population and sampling, data collection, tools, data analysis and presentation, validity and reliability, research ethics and the conclusion of the chapter.

3.2 Philosophical paradigm

A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analyzed and used. According to Holden and Lynch (2012), research philosophy is closely linked to the following two terms (i) Epistemology, which is the relationship between the researcher and the reality or what is known to be true and (ii) Ontology which is the nature of reality or what is believed to be true. The two major philosophical doctrines or paradigms in the social science inquiry are positivism and interpretive.

3.2.1 Positivism

According to Holden and Lynch (2012), “positivism ontology asserts that there is a single, external and objective reality to any research question regardless of the researcher’s belief. Thus, the positivist researchers take a controlled and structural approach in conducting research by initially identifying a research topic, constructing appropriate research questions and hypotheses and by adopting a suitable methodology. Positivists also claim it is important to clearly distinguish between fact and value judgment. As positivists’ researchers, they seek objectivity

and use consistently rational and logical approaches to research. Further, statistical and mathematical techniques are central in the research methods adopted by positivist researchers and they adhere to specifically structured research techniques to uncover single and objective realities. The goal of positivist research is to make generalizations because human actions can be explained as a result of real causes that precedes their behaviour.

3.3 Research Approach

A qualitative approach was used to establish print media coverage on the GMO ban in Kenya. Qualitative research, broadly defined, means "any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification" (Strauss and Corbin, 1990) and instead, the kind of research that produces findings arrived at from real-world settings where the "phenomenon of interest unfold naturally" (Patton, 2001). Data of all the articles published on GMO ban in the mainstream newspapers *Daily Nation*, and *The East African* for the period between 2012 and 2013 were collected and content of the articles was analyzed on what triggered the writing of the stories, the accuracy and the source of the information for the GMO stories. The GMO stakeholders (academics, researchers and a program advisor) participated in interviews to established the level of interactions with the journalists to discuss the GMO Ban, how they feel about the GMO Ban coverage by the print media and, the authority and influence they attribute to the articles.

3.4 Case Research Method

The study used *The Daily Nation* and *The East African Newspapers* as the case. 63 articles in the two print media Newspapers were analyzed to determine how print media covered the GMO ban. Using articles in the two Newspapers, *Daily Nation* and *The East African*, the study analysed the

Trends in publication, angling, prominence and placement of articles, the nature and extent of coverage, and the comparison and contrasting of views between ideas expressed in articles and those held by the scientific community as presented by a sampling of ideas, predominantly from researchers.

3.5 Population and Sampling

The study population is defined as all articles on GM crops published by the Kenyan print media in *The Daily Nation* and *The East African* Newspaper during the period of the study, as the intent is to analyse coverage of GM crops by the mainstream print media for the period just before the ban on GMOs in the country and immediately after the ban in order to capture newspaper coverage that could have informed the ban was and the reaction after the ban. The sample of the study is defined as that set of articles selected from the sampling frame, within the period, for purposes of analysis. Purposive sampling was used on the approximately 71 GMO articles published in the *Daily Newspaper* and *The East African*, in line with the objective of the study and within the period of study.

3.6 Data Collection

The researcher collected data on articles that are directly related to GM food/crops in the two print Newspapers *Daily Nation* and *The East African*. The Nation Media Group library data base were used to collect the articles using at least one of the search terms on GMOs mentioned in the headline and/or lead paragraph, or where one or more search terms appear more than once in the entire article. Nation media Group library stores all its articles using an online system called DTI. This will made it easier and faster to search for the articles.

Interviews were employed in collecting data from the scientific community. The selection of participants for the study was dictated by the need for a holistic representation of the scientific community. The interviewees comprised eight academics, four, of which facilitated learning and were on track for PhD qualification within local universities, four students of biotechnology from a different local university undertaking studies at a masters or PhD level, a long-serving researcher involved in biotechnology research for a period longer than 10 years and a county program officer involved in a regional biotechnology body mandated with the responsibility of informing local government and agricultural stakeholders on matters concerning genetically modified foods and related topics. Of the four non-teaching students, one engaged as a part-time researcher in a biotechnology lab. Inclusion of students in the interviews served as a basis for assessment of the consistency of information passed down in the scientific community hence providing a holistic view of the notions held by the community as indicated in the passing down and reception of ideas in the community. The interviewees were kept anonymous for privacy concerns.

3.7 Tools

This study used interviews and documents review (Newspaper articles on GMOs) as the main tools for the qualitative research method. The interviews were held with members of the scientific community, predominantly academics as they were deemed appropriate to identify trends in the biotechnology industry. The use of secondary data in this study entailed a review of *the Daily nation* and *East African newspaper*. The documents to be reviewed were mainly the Newspaper articles on GMOs and GMO ban in Kenya during the study period.

3.8 Data Analysis and Presentation

Data for this study was presented and analyzed in form of tables, graphs. Trends and articles placement in the Newspapers on the GMOs ban were obtained for the variables of interest, which were then analysed by way of percentages. The number, length and type of articles on GMO and GMO ban in Kenya appearing in the two newspapers during the period under study were entered in form of a table.

3.9 Data Analysis Approach

Articles published before and after the ban on Genetically Modified foods were sourced from two Newspapers – *The Daily Nation* and *The East African* – and formed the basis of analysis for the study. These outlets were chosen as they present accurate, archived information presented in a digital format hence allowing for comprehensive analysis. *The Daily Nation* commands majority market share in Kenya whereas *The East African*, a weekly newspaper, is the most subscribed-to regional newspaper and is widely read by policy makers (Panos Institute, 2005). It therefore follows that articles presented in the two newspapers provide the greatest contributory ideas to public debate on the merits and demerits of genetically modified foods, and similarly on opinions on the ban of the same.

There were 63 articles deemed apposite to the study, these appeared before and after the ban with varying frequency. Articles were characterized based on six aspects – newspaper of publication, date of publication, page number, eminence of title, area of coverage on page, and nature of article. All the six aspects of the publication were input into database software (MS Access 2016) for storage and exported to spreadsheet software (MS Excel 2016) for analysis and calculation. A

word density analyzer was used to establish the overall nature of publications presented in both newspapers.

Graphical representation of the trends in publication in 2012 and 2013 was achieved through the use of a line Graph derived from the date of publication of the articles and number of publications released per month. Angling, prominence and placement of coverage was evaluated through page of publication, eminence of title, and area of coverage. To achieve distinct cataloguing, three categories were established with respect to page number – Front or back page, page one to ten, and after page ten. Likewise, three categories were created to assess the prominence of the title; these are – high focus, medium focus, and less focus. Additionally, three labels were set for area of coverage – full, half or more, and less than half/quarter the page. Graphs were presented for all three aspects of alignment, prominence, and placement of the publications.

To assess the nature and extent of coverage, three categories were established – opinion-based (opinion), informative (news), and analytical (editorial). Articles categorized as opinion-based highlighted the views of individuals or groups. Informative articles provided overviews of current state of affairs or presented information from an unbiased point of view whereas analytical articles, provided reasons for contemporary viewpoints and offered supporting evidence from peer-reviewed sources.

In further assessing the nature of publications, all utilized articles were aggregated and analyzed for word density. Words eliciting positive or negative inclinations were highlighted. The criteria for selection was set at >0.05% density and only words explicitly provoking strong sentiments were included in the study. The cutoff point of >0.05% was chosen as it indicated the lower

threshold for words evoking opinion; as is evident from appendix B, the majority of words with a density lower than 0.05% are of a generic nature. Information on the density of the words was manually assessed to determine antagonistic pairing of words with the underlying view that higher frequency of occurrence of pro-genetically-modified foods would reflect the impact that the articles, on a whole, had on the general public debate on the ban of genetically modified foods.

The inclinations conferred by the publications were captured through assessment of explicit bias of articles. Articles that endorsed pro-genetically-modified foods were viewed vis-a-vis those that conveyed an anti-GMO message and those that appeared neutral in agenda; this categorization was established to assess sentiments bestowed upon the public before the ban and the rhetoric resulting from the ban. Summative results were presented through percentages indicating the three categories – pro-GMO, anti-GMO and neutral. This information was deemed particularly important for comparison and contrast with information collected from the professional community (stakeholders in the scientific community).

Professional feedback from the scientific community was collected through the use of Interviews. The Interviews detail the frequency with which individuals interacted with print media, professional views on accuracy of publications, involvement of experts in decision making, and the influence of print media on legislation and public opinion as compared to the influence of the scientific community on the same. The parity and divergence of opinion between the journalistic community (as expressed through publications) and the scientific community was analyzed through percentages.

3.10 Coding of the articles

Newspaper articles were located through key-word searches. As such, some articles were not directly relevant to the ban or did not discuss the merits or lack thereof of genetically modified foods. An example of such publications is an article detailing the role of the National Biosafety authority. Figure 4.4.1 (Appendix B) details the coding of articles by nature in *The Daily Nation* whereas figure 4.4.2 (Appendix B) highlights the same for *The East African*. Figure 4.4.3 provides a summary of the percentage of articles by nature for the two newspapers. Of the three categories, opinion-based articles were of the highest percentage (49.21%) while news articles of an informative nature were second with a percentage of 44.44%. The least abundant category was editorials with a percentage occurrence of 6.35%.

Table of percentage of articles grouped by nature

Category	DN (No)	%	EA(No)	%	Total (No)	%
News	18.00	42.86	10.00	47.62	28.00	44.44
Opinion	21.00	50.00	10.00	47.62	31.00	49.21
Editorial	3.00	7.14	1.00	4.76	4.00	6.35

Source: Research 2016

3.11 Validity and Reliability

The study validity and reliability was based on the extent and consistency of the results over time and an accurate representation of the total population under the study. Interview transcripts and documents review were used as the main approaches to data collection in order to obtain valid, reliable and diverse results.

3.12 Research Ethics

The research ethics were guided by the value of integrity in regard to the topic of the study. Ethical issues for this study were based on individual, group and societal answers to questions about what they value as good, or what they believe to be the right thing to do. The study proposal was presented for defense first before it was finalized. Permission for data collection was sought from the Nation Media library management. An agreement for anonymity for the respondents in the study interviews was granted. The study was conducted in respect to the national regulatory system and relevant guidelines and regulations on GMO and biotechnology issues. Ethical decision on environmental issues was taken into account including different views on the relationships between human beings, animals and the environment. I was awarded a certificate of fieldwork to enable me conducted my field research (see appendix E). After which I presented my research findings to the board of examiners and I was given the certificate of corrections (see appendix F). My research work was subjected through the plagiarism test under the University's plagiarism guidelines which I passed and I was given the plagiarism certificate (see appendix G). My work was then approved and I was given then certificate of originality (see appendix H).

3.13 Conclusion

This chapter has analyzed the methodology of the study which will purely be qualitative. It has highlighted the philosophical paradigm, research approach of the study which is qualitative approach, case study and content analysis, population and sampling, data collection, tools, data analysis and presentation, validity and reliability, research ethics that will guide the research. This will now be the basis of chapter four of the study.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

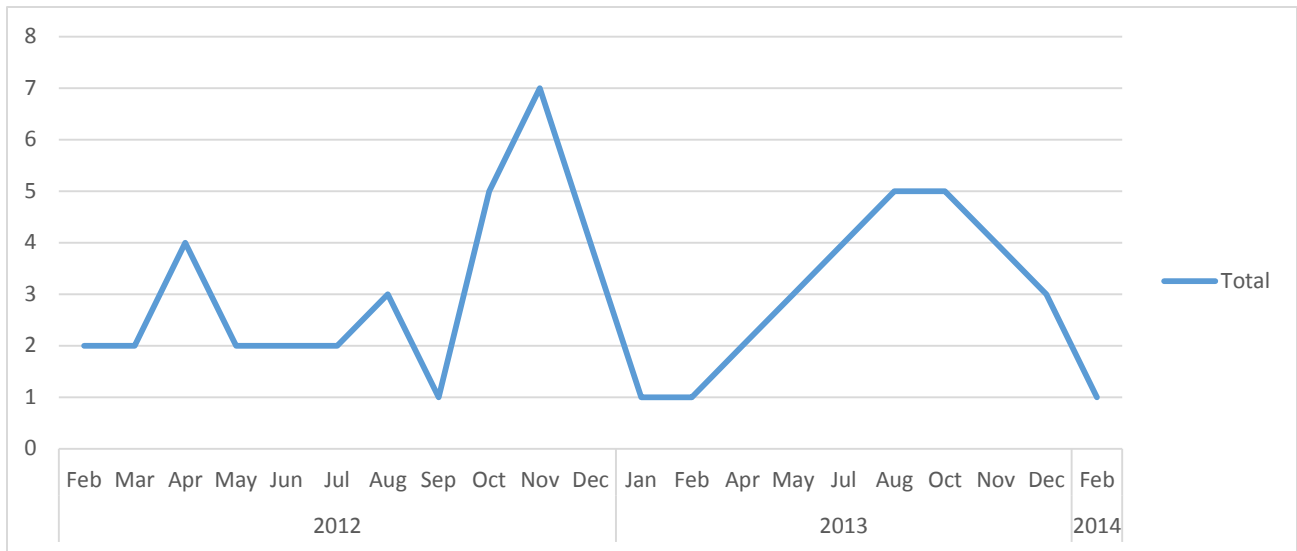
4.1 Overview

This chapter details the approach taken in analyzing and presenting the data. The results section of the paper details all observations made from the acquired data through summaries. In the Interpretation section, these results are elucidated to draw information pertaining to the objectives of the study on the trends in coverage on the GMO products and the GMO ban, the angling and prominence of stories and the comparison of the views expressed in the media and by the scientific community on the ban on GMOs in Kenya. Data used in generation of the graphs highlighted in this section are detailed in appendix C.

4.2 Trends in coverage of GMO products and the GMO ban

Based on aggregate data from the two newspapers it was apparent that leading up to the ban, the trends in publication on genetically modified foods was erratic (Figure 4.2.2.1). A sharp peak in article frequency was observed in November 2012 following the ban. During this period, seven articles were published at the time. A significant increase in publications was also observed in August through November with a peak of five articles published in August, 2013. This period coincided with the debate on the authority of the findings purporting that genetically modified foods had carcinogenic potential (Seralini, 2012).

Figure 4.1: Frequency of stories on GMO



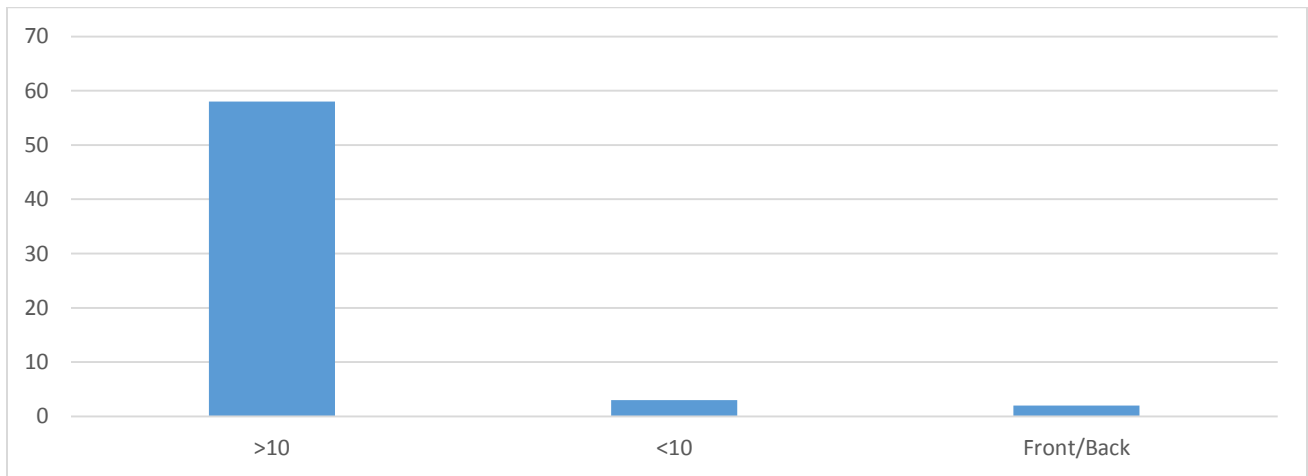
Source: Research 2016

In considering the role of the media in light of the findings on trends in publication, it is apparent that the publications released through the two newspapers served a function of determining what news were most pertinent to the general public as a result of their frequency of publication. In the period leading up to the ban on importation of genetically modified foods, an increase in publications was observed; there were four publications in *The Daily Nation* and one from *The East African*. This increase peaked in the period following the ban with seven articles, six from *The Daily Nation* and one from *The East Africa* (Figure 4.1). The trends in publications within this period (October to November, 2012) therefore presented the ban as a significant issue meriting consideration by readers (Figure 4.1).

4.3 Prominence of stories on the GMO ban

In assessing the angling, prominence and placement of the articles, it emerged that 3% of the articles were placed in the front or back page of the newspapers while 5% appeared between the first and 10th page. All other articles appeared after page ten or as feature articles. The findings appear in Figure 4.2 below.

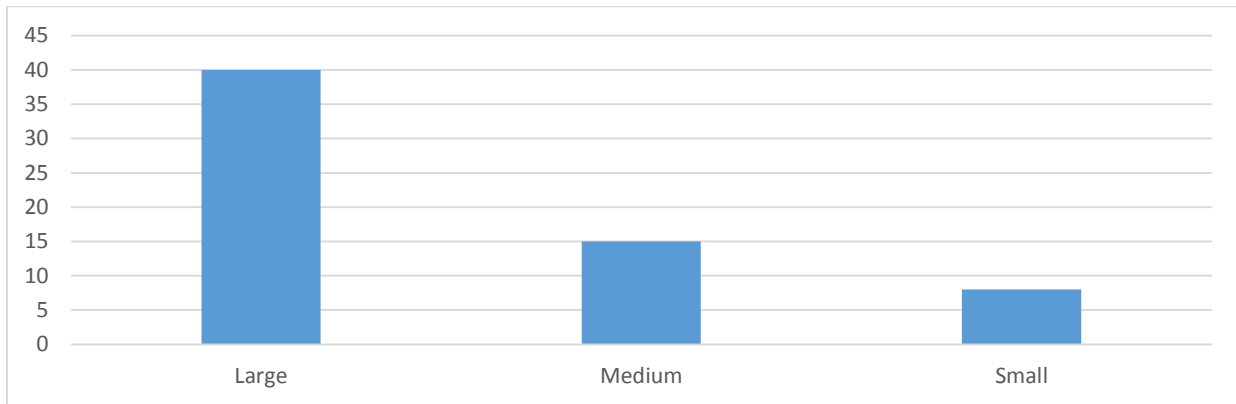
Figure 4.2: Page Occurrence against Frequency



Source: Research 2016

There were 63% high focus - sized titles highlighted compared to 24% medium focus and 13% less focus headings. This result did not appear to be in keeping with the trend observed in page numbering as although most articles were placed in middle sections of the paper, they appeared prominent and therefore were inferred to appeal to the reader's attention. Summative representations of title appearance are presented in Figure 4.2

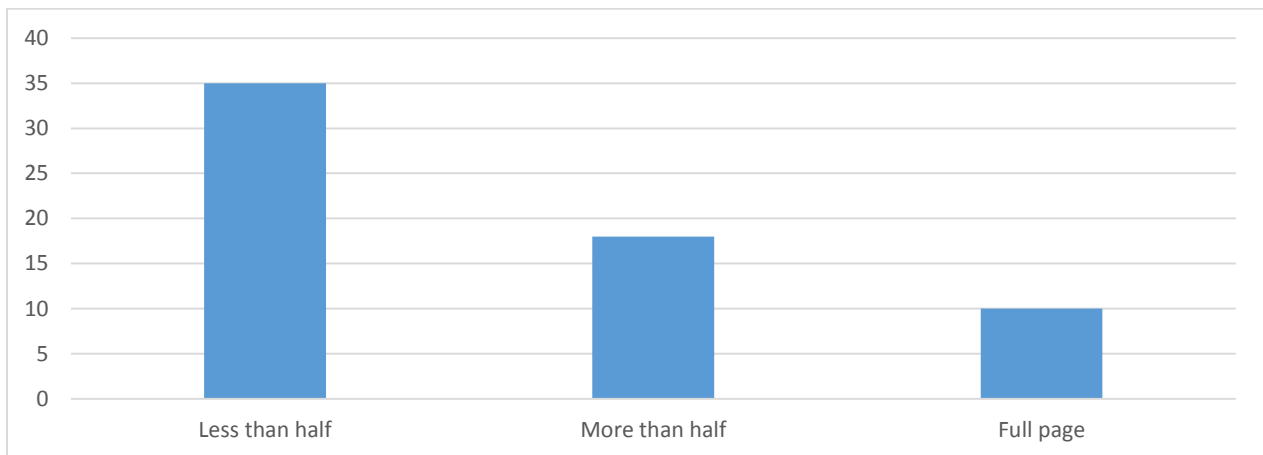
Figure 4.3: Classification based on title size



Source: Research 2016

There were 56% articles allotted less than half/quarter of the pages on which they appeared, 29% occupied half or more than half (but not a full page), while 16% were full-page articles. The percentages for this metric closely correlate with those on eminence of title as may be observed from the graphical representations of the two indicators of angling, prominence, and placement of articles (Figure 4.3). No direct correlation was however observed between the two metrics.

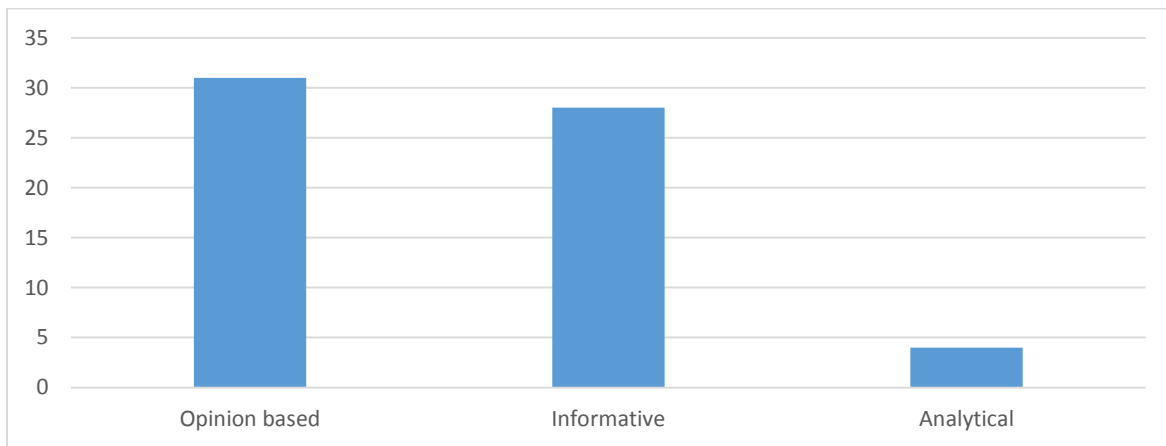
Figure 4.4: Classification according to area covered on page



Source: Research 2016

Of the three categories – opinion-based, informative, and analytical – 49% of the articles expressed one-sided observations on the nature of the ban or would have been perceived supportive of the ban (those published leading to the ban). 44% were perceived as intended to provide general information on the state of affairs and, notably, 6% appeared analytical, presenting both sides of arguments and offering substantial evidence of posited stances on the ban and on genetically modified foods in general. Figure 4.4 provides summative representation of these observations.

Figure 4.5: Classification according to nature of articles



Source: Research 2016

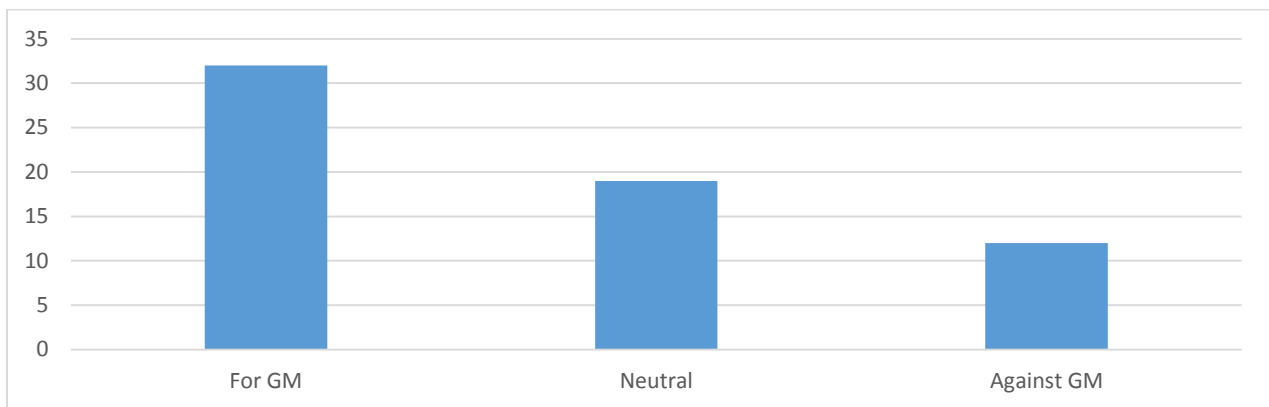
4.4 Angling of stories on the GMO ban

Results from the word-density search indicated that words provoking negative sentiments appeared more frequently than those evoking positive opinion on the ban on genetically modified foods and their implications. “Cancer”, “disease”, “risk” and “tumor” appeared with a density of 0.11%, 0.06%, 0.06% and 0.05% respectively. Safe, was the only word with a frequency of occurrence greater than 0.05%; it had a word-density score of 0.08. It is however important to

note that the word densities were not taken in context hence, though telling, they cannot be viewed as conclusive.

Views on genetically modified foods that were expressed before the ban were viewed in light of the ban and inferred to be pro-ban, against the ban or neutral. In order to collect a wider range of samples for purposes of validation of deductions, articles were assessed based on opinions held towards genetically modified foods. The metric pro-ban was therefore equated to anti-genetically modified foods (as expressed in articles) and anti-ban as pro-genetically modified foods. Figure 4.6 provided a summarized representation of the results.

Figure 4.6: Classification based on angling



Source: Research 2016

Based on the above findings, the placement of articles within a newspaper informs the significance assigned to the articles by the reader. A news article appearing on the front or back page attracts more attention and readership than that one appearing in inner sections of the paper. 92% of the articles were placed after page ten of the newspapers, 5% before page ten and 3% on the front or back page (Figure 4.1.). The two articles that were most prominently placed appeared in *The Daily Nation* on the 22nd and the 23rd of November, 2012. These were “GMOs banned as

cancer fears grow” and “GMOs ban to hit relief food efforts”. It may therefore be inferred that the editors deemed the ban on genetically modified foods and articles pertinent to the debate on the merits and demerits of genetically modified foods as less important in comparison to other news item, as these items rarely appeared on the front or back pages.

The placement and angling of articles therefore served to shape the importance attributed to the issue by the readers. The effect of increased discussion on the importance of GMO product resulting from the higher trend of publication in the periods leading up to the ban, during the ban, and after retraction of the Seralini (2012) study may have been mitigated by the placement of the articles. With regard to the agenda setting role of the media, it was apparent that front-paged articles following the ban and the Seralini report served to increase public debate.

Related to placement of the articles, is the nature of the headlines used. Like placement, article headlines inform the significance assigned to the discussed issues. A bold, high focus title is more likely to capture a reader’s attention as compared to a smaller less-highlighted one. 63% of the titles were high focus, 24% medium focus and 8% less focus (Figure 4.2); it therefore may be inferred that highlighted articles contributed significantly to the readership of articles.

The size occupied by articles serves as an indicator of the salience of the information therein. Articles occupying larger areas may be perceived as communicating an important message, one requiring lengthy discussion. 16% of articles appeared as full-page, 29% as half or greater than half and 56% as less than half/quarter (Figure 4.3). From this metric, it may be surmised that although significant attention was given to the ban and generally, to the rhetoric on genetically modified products, the placement of the majority of publications suggests a low importance ascribe to the same by the editors of the newspapers.

This finding therefore indicates that smaller-in-size publications would not result in significant public discussion on the saliency of genetically modified products and the ban on the same within the country. It is also noteworthy that there appeared to be an inverse proportion between the size of article titles and the length of articles. The reasons for this observation are however not analyzed in this study and therefore present as a research gap for future consideration.

With regard to the nature of articles, 49% were opinion-based, 44% of an informative nature and only 6% were analytical (Figure 4.4). Of the analytical pieces, three appeared in *The Daily Nation* and one in *The East African*; these were “Teach About GMO In Schools, Say Educators” “Biotechnology Is A Solution To Our Perennial Hunger But...” “GM Crops Are Unsafe, Insist Activists” from *The Daily Nation* and “Scientists Oppose Results of New Study On GM Foods” from *The East African*. Marks *et al* (2007), in expounding on Goffman’s (1976) theory of framing observe that the media not only tells readers what to think about but tells them how to go about thinking about an issue. The nature of the articles put forward by newspapers therefore not only informs what is discussed but how it is discussed by readers. With regard to the farming theory, it is apparent that a deficiency in informative publications (only 6%) resulted in a framing effect in that the audience were set to assume the writers viewpoints before coming in contact with facts that may or may not have been presented in the body of the articles.

Given that the articles pertaining to the ban on genetically modified organisms and the pros and cons to importation of GMFs were mainly opinion-based, it is apparent that readers may have been swayed towards either side of the discussion as opposed to focusing on the actual topics of concern. *The East African* presented 47% opinion-based articles whereas *The Daily Nation* had 50% (Figure 4.5). McCombs and Shaw (1972) further observes that focusing on debates in media

outlets results in a shift of attention from main topics to the outcomes of analysis by the different factions.

The high proportion of opinion-based publication therefore served an agenda-setting function as well as a framing one; agenda setting in that the public's attention was centered on the divergent camps as opposed to the actual facts, and a framing function in that the public viewed the matter as one of opinion as opposed to one of fact. The overall effect was that persons may have been lead towards a subjective analysis of the merits and demerits of genetically modified products as opposed to relying on the facts, to arrive at decisions on the benefits or lack thereof of genetically modified foods.

The online software program Key Word Density Analyzer tool was used to output word density data detailed in appendix D. In assessing the word density of terms evoking strong opinion from the reader, it was observed that "Cancer", "disease", "risk" "tumor" "debate" "shortage", "controversial", "hunger", "drought", and "debate" had a density of 0.11%, 0.06%, 0.06%, 0.06% while the rest of the aforementioned had a density of 0.05% respectively, whereas "safe", was the only positive word with a frequency of occurrence greater than 0.05% . The word "safe" had a word-density score of 0.08%. It is however important to note that the word densities were not taken in context hence, though telling, they cannot be viewed as conclusive. The cutoff point of 0.05% was chosen as it marked the lower threshold of words that evoked either a positive or negative reaction. Words with a density lower than 0.05% were mostly of a generic nature.

The high frequency of negative terminology was inferred to predisposition readers to think of the genetically modified foods in an unfavorable light therefore resulting in perception of the ban as a beneficial move by the government. Despite the context of discussion of a term like "tumor"

the reader is inclined to assume a defensive stance while absorbing the provided information. The negative terms also serve a framing theory as the reader proactively uses the terms used in the articles to form an opinion about the ban and on genetically modified foods in general.

Articles that made arguments for genetically modified foods constituted 51% of total, hence, against the ban on importation of products whereas 30% were neutral, of a reporting nature, and 19% were against genetically modified foods and therefore for the ban (Figure 4.6). The bias of the articles served an agenda setting and framing function. Readers unacquainted with the facts on genetically modified foods assume the reader's perspective and therefore use the reader's lens in analyzing subsequent publications. The 30% unbiased publications served to provide information and although implicitly framing the information by virtue of issues discussed, served to allow the reader to assume an objective approach in assessing the merits and demerits of GM crops. Informative papers however did not provide actual scientific evidence; they offered an overview of the prevailing contemporary issues.

4.5 Views expressed by the scientific community

All interviews obtained were transcribed for analysis. Each transcript was carefully studied through line-by-line reading so as to identify all information that was relevant for the study. All relevant information was then coded with the initial coding stage yielding seven general categories; these were - consumption of news, frequency of consumption, relevance of print media, authority of print media, inclusiveness of print media, frequency of publication, and, reach and significance of print media. It emerged, upon further scrutiny of the aforementioned codes that general themes could be observed; this resulted in three main overarching codes – Readership, Credibility and Stakeholder Involvement and Influence of Publications.

The code, Readership, comprised sub-codes – consumption of news, frequency of consumption and relevance of print media. Under this label, Readership, the interviewees’ main source of news consumption and their encounter with news pertaining to the ban on genetically modified foods was captured. The label, Credibility and Stakeholder Involvement, captured opinions on respondents’ views on the accuracy of opinions expressed in the print media, level of involvement of the scientific community leading up to publication, and the overall accuracy of coverage during the period leading up to and after the ban. The final label – Influence of Publications – comprised views on the effect of print media on public debate on the topic of genetically modified foods and the ban on the same and the perceived influence of opinions expressed through print media on legislation. Figure 4.7 provides a summary of responses under the three main labels.

Figure: 4.7: Summary of Responses

READERSHIP		CREDIBILITY AND STAKEHOLDER INVOLVEMENT		INFLUENCE OF PUBLICATIONS		
News via newspaper?	Viewed Bar related articles?	Factual Reporting?	Professionals consulted?	Scientists represented?	Media crafts public opinion?	Media informs legislation?
Yes	Yes	No	No	Disagree	Strongly Disagree	Disagree
No	Yes	No	No	Neither agree nor disagree	Agree	Neither agree nor disagree
Yes	Yes	No	No	Strongly Disagree	Strongly agree	Strongly agree
Yes	Yes	No	No	Disagree	Strongly Disagree	Agree
Yes	Yes	No	No	Disagree	Agree	Agree
Yes	Yes	Yes	No	Strongly Disagree	Strongly Disagree	Agree
No	Yes	No	No	Strongly Disagree	Strongly agree	Strongly agree
Yes	No	No	No	Disagree	Strongly agree	Agree
Yes	Yes	Yes	Yes	Neither agree nor disagree	Strongly agree	Agree
Yes	No	No	No	Disagree	Strongly agree	Agree
20% No	20% No	20% Yes	90% No	30% Strongly Disagree	50% Strongly agree	60% Agree
80% Yes	80% Yes	80% No	10% --	50% Disagree	20% Disagree	20% Strongly Agree
				20% Neither	30% Strongly disagree	10% Neither
						10% Disagree

There appeared to be an in-congruency between media reports and the views of the scientific community eight of the respondents in the scientific community observed that the articles were not factual and nine that experts were not consulted in the writing of the articles. Three strongly disagreed, and five disagreed, with the view that the media represented the views of experts. Six of respondents posited that the media shaped public opinion and five viewed the media as having more sway than the professional community in informing legislation (Figure 4.7). These findings parallel the government's decision-making approach as the ban was enforced swiftly following the Seralini (2012) report without consultation of the national governing body, NBA (GoK, 2008). The ban seemed to disregard all findings to the contrary, a view that, from the viewpoint of the scientific community, is consistent with inaccurate media reporting.

It is however worth noting that although not congruent in proportion, both factions – media and scientific community – reported higher support for genetically modified foods and hence viewed the ban on genetically modified foods as deleterious to the public. The disparity in view between the journalistic and scientific communities indicate a need for collaboration and communication between the two factions in order to provide factual, balanced and up-to-date views on the contemporary issues in the field of biotechnology, thereby grounding public debate on the tenets of verifiable information.

Albeit decreasing readership, newspapers remain fundamentally important in the distribution of news. Peiser (2000) posits that a “cohort replacement” phenomenon is in effect whereby there is a marked increase in the number of young people that read less frequently and an increasing percentage of older people who read less often. Newspapers however, command significant subscribership among the younger working class. Mzungu (2013) posits that young affluent

males constitute the bulk of those that consume news through newspapers. The Panos Institute (2005) further postulates that *Daily Nation* commands a readership of 100,000 copies per day therefore amounting to a 1,500,000-reader-base, daily, after factoring in the pass-on rate.

In light of the subscribership to *Daily Nation* and *The East African*, it may be inferred that these news outlets contribute significantly towards public discussion and in the shaping of contemporary issues. McCombs and Shaw (1972) observe that the media holds an Agenda Setting function in that in as much as they may not tell the general public what to think, they contribute significantly in determining what is thought about.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Overview

This chapter provides a summation of the findings, and conclusions drawn from the findings, and provides recommendations. Gaps are presented for future research are also highlighted in this section.

5.2 Summary of findings

From the findings, it was apparent that the frequency of publications on genetically modified organisms increased before the ban and that publications were most frequent immediately following the ban and following the discussion on the legitimacy of the Seralini (2012) report. This indicated a growing trend of highlighting of the ban during the period. This increase in frequency of publication served to spearhead debate among the public and inform the public on the possible merits and demerits of genetically modified foods.

The angling, placement and prominence of the publications however served to deem the topic on genetically modified foods as less important; the articles were published in inner sections of the paper, mainly covering an area less than half/quarter of a page. Nevertheless, most articles appeared to have large, high focus headings. In summation, with reference to the agenda setting and framing models (McCombs, 1972) (Marks et al, 2007), reporting on the ban on genetically modified organisms and issues pertinent to genetically modified foods was not prioritized by the media except for periods following the ban and retracting of the Seralini (2012) report.

With regard to the scientific community, an in-congruency was noted in that articles did not reflect the views of the community as it was posited that professionals were not consulted in the process leading up to writing of the articles. These findings indicate that collaboration between the media and the scientific community should be effected in order to enhance reporting through newspapers by predominantly providing science-based articles that inform the public through an unbiased approach. It may be inferred that there is a lack of communication of scientific findings in a manner appropriate to reporters and that no channels of direct communication exist to establish factual rhetoric between reporters and the scientific community.

5.3 Conclusion

The trends in reporting on scientific phenomena indicate a reactive approach in that matters are presented in newspapers following major incidences as was the case in reporting on GM foods and the ban on GM products; there were increased publications following the ban and following the retraction of the Seralinin (2012) reports with minimal publications in between the two occurrences.

With regard to angling and prominence of articles, it was apparent that the media did not assign appropriate significance to the topic of genetically modified foods in the country as most publication were placed in interior sections of newspapers and were placed inconspicuously hence did not attract the readers' attention as may have been if more prominently placed. Most articles were of an opinion-based nature hence readers may have been framed to assume particular positions as opposed to having an objective view of the matter. With regard to the scientific community, publications by the media were viewed to be inconsistent with scientific views as professionals were considered not to be consulted.

5.4 Recommendations

Trends in publications, angling and prominence of articles are informed by the importance assigned to news items by the journalistic community. In the scientific community, the ban on genetically modified products was viewed as a weighty matter regarding discussion by the public and among legislators; this was not apparent through publications in print within the period of study. It is therefore evident that there is a need for institution of communication channels between the journalistic community and the scientific community to collaborate in order to ensure that matters of concern within the scientific community merit appropriate attention in the media.

5.5 Areas for further study

There are two gaps that present as areas for further study. The first is a need for analysis of the impact of the publications among the public and the second is the need for research on the influence of media publications on legislation. A notable emergent observation from analysis of article angling, placement and prominence, was that the area covered by articles was inversely proportional to that of the size of the title used. It was unclear why this phenomenon was observed.

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APPENDICES

APPENDIX A: INTERVIEW GUIDE

Stakeholder Views on print media coverage on genetically-modified-foods ban in Kenya

General information (Section A)

Position Occupied

Academic Consultant Other (Please Specify) _____

Length of Service in the organization

Less than 1 year 1-3 Years 4-9 Years 10 Years and above

General Questions (Section B)

How do you usually consume your news?

Do you seek out information on genetically modified foods?

Did you read articles pertaining to the ban on genetically modified organisms before and after the ban?

If so, did you find the news to be accurate?

If not, what information was not factual?

If accurate, what was highlighted by the articles?

As a professional or student in the field, would you infer proper involvement of the scientific community in writing the articles you encountered?

How do you think the articles you came across affected public debate?

Do you think that the influence on the public was positive or negative?

What would the influence on of the articles be on legislation if any?

APPENDIX B: CODING OF THE ARTICLES

Figure 4.4.1 Table of Publication by Nature, Date – *Daily Nation*.

Newspaper	Nature	Dates	Day	Month	Year
Daily Nation	Editorial	3/26/2012	26	3	2012
Daily Nation	Editorial	3/2/2012	2	3	2012
Daily Nation	Editorial	2/5/2012	5	2	2012
Daily Nation	News	12/28/2012	28	12	2012
Daily Nation	News	10/8/2012	8	10	2012
Daily Nation	News	2/24/2014	24	2	2014
Daily Nation	News	4/7/2013	7	4	2013
Daily Nation	News	8/31/2012	31	8	2012
Daily Nation	News	1/29/2013	29	1	2013
Daily Nation	News	11/23/2012	23	11	2012
Daily Nation	News	11/22/2012	22	11	2012
Daily Nation	News	12/31/2012	31	12	2012

Daily Nation	News	5/21/2013	21	5	2013
Daily Nation	News	12/8/2013	8	12	2013
Daily Nation	News	11/26/2012	26	11	2012
Daily Nation	News	12/1/2013	1	12	2013
Daily Nation	News	11/30/2013	30	11	2013
Daily Nation	News	5/11/2012	11	5	2012
Daily Nation	News	10/12/2013	12	10	2013
Daily Nation	News	10/5/2012	5	10	2012
Daily Nation	News	11/10/2012	10	11	2012
Daily Nation	Opinion	8/24/2013	24	8	2013
Daily Nation	Opinion	11/14/2012	14	11	2012
Daily Nation	Opinion	8/12/2013	12	8	2013
Daily Nation	Opinion	4/2/2012	2	4	2012
Daily Nation	Opinion	4/16/2012	16	4	2012
Daily Nation	Opinion	4/12/2012	12	4	2012
Daily Nation	Opinion	4/3/2012	3	4	2012

Daily Nation	Opinion	9/12/2012	12	9	2012
Daily Nation	Opinion	5/2/2013	2	5	2013
Daily Nation	Opinion	7/16/2013	16	7	2013
Daily Nation	Opinion	8/9/2013	9	8	2013
Daily Nation	Opinion	6/18/2012	18	6	2012
Daily Nation	Opinion	7/21/2013	21	7	2013
Daily Nation	Opinion	7/26/2013	26	7	2013
Daily Nation	Opinion	11/7/2012	7	11	2012
Daily Nation	Opinion	10/23/2013	23	10	2013
Daily Nation	Opinion	10/10/2012	10	10	2012
Daily Nation	Opinion	10/22/2012	22	10	2012
Daily Nation	Opinion	6/18/2012	18	6	2012
Daily Nation	Opinion	5/2/2013	2	5	2013
Daily Nation	Opinion	12/10/2012	10	12	2012

Figure 4.4.2: Table of Publications by Nature, Date - *East African*.

Newspaper	Nature	Dates	Day	Month	Year
The East African	Editorial	11/2/2012	2	11	2012
The East African	News	11/2/2013	2	11	2013
The East African	News	8/11/2012	11	8	2012
The East African	News	10/15/2012	15	10	2012
The East African	News	10/12/2013	12	10	2013
The East African	News	12/21/2013	21	12	2013
The East African	News	12/1/2012	1	12	2012
The East African	News	2/13/2012	13	2	2012
The East African	News	4/27/2013	27	4	2013
The East African	News	8/18/2012	18	8	2012
The East African	News	11/16/2013	16	11	2013
The East African	Opinion	7/13/2013	13	7	2013
The East African	Opinion	7/16/2012	16	7	2012
The East African	Opinion	7/16/2012	16	7	2012
The East African	Opinion	11/23/2013	23	11	2013

The East African	Opinion	8/17/2013	17	8	2013
The East African	Opinion	5/14/2012	14	5	2012
The East African	Opinion	8/10/2013	10	8	2013
The East African	Opinion	2/9/2013	9	2	2013
The East African	Opinion	10/12/2013	12	10	2013
The East African	Opinion	10/26/2013	26	10	2013

APPENDIX C: ARTICLE DETAILS

ID	Title	Dates	Newspaper	Title size	For/Against GMO	Nature	Area	Page Number
1	Ugandan scientists differ on proposed GMO law	7/13/2013	East African	High focus	For GM	Opinion based	Less than half/quarter	>10
2	Let African farmers be, scientists say on GMO	8/24/2013	Daily Nation	High focus	For GM	Opinion based	Less than half/quarter	>10
3	Cabinet would do well to avoid scare-mongering over GMOs	11/14/2012	Daily Nation	Medium focus	For GM	Opinion based	Less than half/quarter	>10
4	Debate rages on safety of	12/28/20	Daily	High	For GM	Informative	Less than	>10

	GM food products	12	Nation	focus		ive	half/quar ter	
5	Do not be deceived; there's clear and present health danger in GM foods	8/12/201 3	Daily Nation	High focus	Against GM	Opinion based	More than half	>10
6	Don't dismiss new findings on GMOs	10/8/201 2	Daily Nation	Mediu m focus	Against GM	Informat ive	Less than half/quar ter	>10
7	Let's be extra cautious as we embrace GMOs	4/2/2012	Daily Nation	Mediu m focus	Neutral	Opinion based	Less than half/quar ter	>10
8	Replenish the African breadbasket	4/16/201 2	Daily Nation	High focus	For GM	Opinion based	More than half	>10

	through fertilizer and biotechnology							
9	Experts call for policies on GMOs	4/12/2012	Daily Nation	Medium focus	Against GM	Opinion based	Less than half/quarter	>10
10	Experts drum up support for GMOs	4/3/2012	Daily Nation	Medium focus	For GM	Opinion based	Less than half/quarter	>10
11	Farmers to plant genetic maize seeds from local shops by 2014	2/24/2014	Daily Nation	High focus	For GM	Informative	More than half	>10
12	Genetically modified food imports	4/7/2013	Daily Nation	Medium focus	For GM	Informative	Less than half/quarter	>10

	to be screened with new kit						ter	
1 3	Genetically modified food may go on sale in two years	8/31/2012	Daily Nation	High focus	For GM	Informat ive	Less than half/quarter	>10
1 4	GM foods taskforce criticised for silence	1/29/2013	Daily Nation	Medium focus	Neutral	Informat ive	Less than half/quarter	>10
1 5	GMOs ban to hit relief food efforts	9/12/2012	Daily Nation	High focus	Neutral	Opinion based	Less than half/quarter	>10
1 6	Ban on GM foods was political, says kiome	5/2/2013	Daily Nation	High focus	Against GM	Opinion based	Less than half/quarter	>10

17	Ban on genetic foods is illegal, claim MPs	7/16/2013	Daily Nation	High focus	Against GM	Opinion based	Less than half/quarter	>10
18	GMOs ban to hit relief food efforts	11/23/2012	Daily Nation	High focus	Neutral	Informative	More than half	Front/Back
19	GMOs banned as cancer fears grow	11/22/2012	Daily Nation	High focus	Against GM	Informative	More than half	Front/Back
20	Its time to ignore anti GMO activists	8/9/2013	Daily Nation	High focus	For GM	Opinion based	More than half	>10
21	'Lack of political will, strengthening opposition'	11/2/2013	East African	High focus	For GM	Informative	More than half	>10

	hinder GMO uptake in EA							
2	Kenya GMO regulations 'too prohibitive'	7/16/2012	East African	Less focus	For GM	Opinion based	Less than half/quarter	>10
2	Kenya GMO regulations 'too prohibitive'	7/16/2012	East African	Less focus	For GM	Opinion based	Less than half/quarter	>10
2	Kenya to gazette rules on GMO	8/11/2012	East African	Less focus	Neutral	Informat ive	Less than half/quarter	<10
2	Kenyans have a right to know what they eat	10/15/2012	East African	High focus	Against GM	Informat ive	More than half	>10
2	Using biotechnolog	6/18/2012	Daily	High	For GM	Opinion	More	>10

6	y to spur food security and production in Kenya	2	Nation	focus		based	than half	
2 7	African farmers need to adopt new technologies to feed the continent	11/23/20 13	East African	High focus	For GM	Opinion based	Full page	>10
2 8	East African scientists defend work on GMOs	8/17/201 3	East African	High focus	For GM	Opinion based	More than half	>10
2 9	East Africa should copy Brazil to become food secure	5/14/201 2	East African	High focus	For GM	Opinion based	Full page	>10
3	Farmers	8/10/201	East	High	For GM	Opinion	Full	>10

0	want the choice to decide whether or not to grow GM crops	3	African	focus		based	page	
31	Banning genetically modified foods won't reduce cancer; what of tobacco?	12/31/2012	Daily Nation	Medium focus	Neutral	Informative	More than half	>10
32	GM crops are unsafe, insist activists	3/26/2012	Daily Nation	High focus	For GM	Analytical	Full page	>10
33	Biotechnology is a solution to our	3/2/2012	Daily Nation	High focus	For GM	Analytical	Full page	>10

	perennial hunger but...							
3 4	Legal status of GMO probe team queried	5/21/201 3	Daily Nation	High focus	Neutral	Informat ive	Less than half/quar ter	>10
3 5	Like Paul, I've seen light in GMOs	7/21/201 3	Daily Nation	High focus	For GM	Opinion based	Less than half/quar ter	>10
3 6	Lift ban on GM foods, says group	7/26/201 3	Daily Nation	High focus	For GM	Opinion based	Full page	>10
3 7	Low yields could force region to adopt GM crops	10/12/20 13	East African	Mediu m focus	Neutral	Informat ive	Less than half/quar ter	>10
3	Maize shortage	12/8/201	Daily	High	Neutral	Informat	Less than	>10

8	rekindles talk on genetic foods	3	Nation	focus		ive	half/quarter	
39	Official denies GM food sold in Kenya	11/26/2012	Daily Nation	High focus	Neutral	Informative	Less than half/quarter	>10
40	Researchers push for the passing of GMO bill	12/21/2013	East African	Less focus	Neutral	Informative	Less than half/quarter	>10
41	Sale of GMO products not yet approved	12/1/2012	East African	Less focus	Neutral	Informative	Less than half/quarter	>10
42	Scientists demand apology for GMO ban	12/1/2013	Daily Nation	High focus	Neutral	Informative	More than half	>10
4	Scientists oppose	11/2/2011	East	High	Neutral	Analytic	More	>10

3	results of new study on GM foods	2	African	focus		al	than half	
4	Shorten	11/7/201	Daily	Mediu	For GM	Opinion	Less	>10
4	GMO approval period, pleads group	2	Nation	m focus		based	than half/quar ter	
4	Study on	11/30/20	Daily	High	For GM	Informat	Full	>10
5	GMOs withdrawn	13	Nation	focus		ive	page	
4	Tanzania	2/13/201	East	Less	For GM	Informat	More	>10
6	backs plan for use of GMOs	2	African	focus		ive	than half	
4	Teach about	2/5/2012	Daily	High	Neutral	Analytic	More	>10
7	GMO in schools, say educators		Nation	focus		al	than half	

48	To fight poverty, take up GMOs, Microsoft boss tells african government	2/9/2013	East African	Large	For GM	Opinion based	Full page	>10
49	Uganda law sees halt to Monsanto BT cotton funds	4/27/2013	East African	Medium focus	Neutral	Informative	Less than half/quarter	>10
50	Verdict of GMO taskforce should be informed by the global trends	10/23/2013	Daily Nation	Large	Against GM	Opinion based	Less than half/quarter	>10
51	Why study linking GM	10/10/2012	Daily Nation	Large	For GM	Opinion based	Less than	>10

	maize to cancer is 'scientifically deficient'						half/quarter	
52	Keny trains staff in readiness for GMO trade	8/18/2012	East African	Less focus	Neutral	Informative	Less than half/quarter	>10
53	This anti-GMO army is going against the grain	10/22/2012	Daily Nation	Large	For GM	Opinion based	Full page	<10
54	Use of Genetic Engineering ("Modern Biotechnology") is no solution to food	6/18/2012	Daily Nation	Large	Against GM	Opinion based	Full page	>10

	insecurity in Africa							
55	A forward-looking Kenya can lead the movement for global food sufficiency	5/2/2013	Daily Nation	Large	For GM	Opinion based	More than half	>10
56	Dar could lift ban on GMO cotton, sisal, tobacco, cloves	11/16/2013	East African	Medium focus	Neutral	Informative	Less than half/quarter	>10
57	As global GMO debates, the poor suffer	10/12/2013	East African	Large	For GM	Opinion based	More than half	>10
5	Kebs seeks	5/11/201	Daily	Medium	Neutral	Informative	More	>10

8	to enforce labelling of GM foods	2	Nation	m focus		ive	than half	
5 9	Experts accuse GMO probe team of bias	10/12/20 13	Daily Nation	Mediu m focus	Against GM	Informat ive	Less than half/quar ter	>10
6 0	New study links GM food to cancer	10/5/201 2	Daily Nation	Large	Against GM	Informat ive	Less than half/quar ter	<10
6 1	Banning GMOs was done without any supporting research	12/10/20 12	Daily Nation	Less focus	For GM	Opinion based	Less than half/quar ter	>10
6 2	Approved Comesa GMO policy a worry	10/26/20 13	East African	Mediu m focus	Against GM	Opinion based	Less than half/quar ter	>10

6	Scientists	11/10/20	Daily	Large	For GM	Informat	Less	>10
3	oppose Cabinet decision on genetic foods	12	Nation			ive	than half/quar ter	

APPENDIX D: WORD DENSITY

food1960.75%said1570.60%kenya1470.57%cropl330.51%maize1160.45%biotechn
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APPENDIX E: CERTIFICATE OF FIELDWORK



**UNIVERSITY OF NAIROBI
COLLEGE OF HUMANITIES & SOCIAL SCIENCES
SCHOOL OF JOURNALISM & MASS COMMUNICATION**

Telegram: Journalism Varsity Nairobi
Telephone: 254-02-3318262, Ext. 28080, 28061
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Email: director-soj@uonbi.ac.ke

P.O. Box 30197-00100
Nairobi, GPO
Kenya

REF: CERTIFICATE OF FIELD WORK

This is to certify that all corrections proposed at the Board of Examiners' meeting held on 17/06/2016 in respect of M.A/Ph.D final Project/Thesis defence have been effected to my/our satisfaction and the student can be allowed to proceed for field work.

Reg. No: K50/74558/2014

Name: CHRISTABEL - MUTEITSI LISAMI

Title: PRINT MEDIA COVERAGE OF THE BAN ON IMPORTATION OF GENETICALLY MODIFIED FOODS IN KENYA: A CASE OF THE DAILY NATION & EAST AFRICAN

Dr Samuel Sirugi
SUPERVISOR

[Signature]
SIGNATURE

19/08/2016
DATE

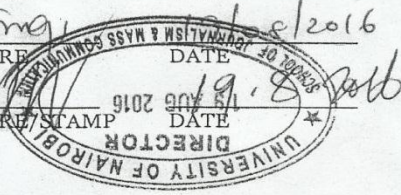
Dr Samuel Sirugi
ASSOCIATE DIRECTOR

[Signature]
SIGNATURE

19/08/2016
DATE

Dr. Nlet Nlet
DIRECTOR

[Signature]
SIGNATURE



APPENDIX F: CERTIFICATE OF CORRECTION



**UNIVERSITY OF NAIROBI
COLLEGE OF HUMANITIES & SOCIAL SCIENCES
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P.O. Box 30197-00100
Nairobi, GPO
Kenya

REF: CERTIFICATE OF CORRECTIONS

This is to certify that all corrections proposed at the Board of Examiners meeting held on 11/11/2016 in respect of M.A/PhD. Project/Thesis Proposal defence have been effected to my/our satisfaction and the project can now be prepared for binding.

Reg. No: K50/74558/2014

Name: CHOLISTABEL -M. LIGAMI

Title: Print Media Coverage of the ban on importation of genetically modified foods in Kenya: A content analysis of the daily Nation and the East African.

Dr Samuel Siringi
SUPERVISOR

[Signature]
SIGNATURE

11/11/2016
DATE

Dr Samuel Siringi
ASSOCIATE DIRECTOR

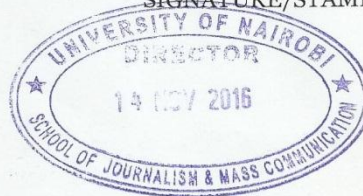
[Signature]
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DATE



APPENDIX G: CERTIFICATE OF PLAGIRISM

11/11/2016 Turnitin Originality Report

Turnitin Originality Report

PRINT MEDIA COVERAGE OF THE BAN ON IMPORTATION OF GENETICALLY MODIFIED FOODS IN KENYA: A CONTENT ANALYSIS OF THE DAILY NATION AND EAST AFRICAN by Ligami
Christabel Muteitsi Registration Number: K5

From Project Final & Corrections (MA Communication theory)

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APPENDIX H: CERTIFICATE OF ORIGINALITY

UNIVERSITY OF NAIROBI

Declaration of Originality Form

This form must be completed and signed for all works submitted to the University for examination.

Name of Student CHRISTABEL MUTEESI LIGAMI

Registration Number K50/74558/2014

College CHSS

Faculty/School/Institute SOJ M.C

Department SOJ M.C

Course Name MA - COMMUNICATION STUDIES

Title of the work Print media coverage of the ban on importation of Genetically modified food in Kenya: A content analysis of Daily Nation and the East African

DECLARATION

1. I understand what Plagiarism is and I am aware of the University's policy in this regard
2. I declare that this project (Thesis, project, essay, assignment, paper, report, etc) is my original work and has not been submitted elsewhere for examination, award of a degree or publication. Where other people's work, or my own work has been used, this has properly been acknowledged and referenced in accordance with the University of Nairobi's requirements.
3. I have not sought or used the services of any professional agencies to produce this work
4. I have not allowed, and shall not allow anyone to copy my work with the intention of passing it off as his/her own work
5. I understand that any false claim in respect of this work shall result in disciplinary action, in accordance with University Plagiarism Policy.

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Date 11/11/2016

