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EXPLORING THE FEASIBILITY OF GREEN BURIALS IN THE CITY OF TSHWANE METROPOLITAN MUNICIPALITY

A research report submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, in partial fulfillment of the requirements for the degree of Master of Urban Studies in the field of Urban Management

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DECLARATION

I, Tlou Phillemon Mathane, declare that this research report, except where otherwise indicated in my original research, is my own, unaided work. It is being submitted to the Degree of **Master of Urban Studies in the field of Urban Management** to the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination to any other University.

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Date: 27 July 2022

ABSTRACT

The traditional burial methods currently used in South Africa do not promote environmental sustainability. Yet, globally, some cities have begun to use the green burial method to address some of the concerns regarding the environmental risks. The green burial method goes a long way in contributing towards the preservation of the natural systems for future generations. This research report sought to investigate the extent to which the green burials concept would be supported in the City of Tshwane Metropolitan Municipality (CTMM). Using a qualitative method, employing interviews for primary data collection, this research found that the green burial method receives overwhelming support from the CTMM functionaries, particularly for environmental sustainability. This research recommends that the CTMM engage communities about the green burial method, with a view to enabling the rolling out of the implementation of the green burial method in the near future.

Keywords: City of Tshwane, green burials, cemeteries, sustainability, sustainable development

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ACRONYMS

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CSIR	Council for Scientific and Industrial Research
CTMM	City of Tshwane Metropolitan Municipality
EIA	Environmental Impact Assessments
EHP	Environmental Health Practitioner
GBC	Green Burial Council
GPS	Global Positioning System
LED	Local Economic Development
MSA	Municipal Systems Act
MSA	Municipal Systems Act
NEMA	National Environmental Management Act
NGOs	Non-Governmental Organisations
NHA	National Health Act
SABS	South Africa Bureau of Standards
SALGA	South African Local Government Association
SCM	Supply Chain Management
SD	Sustainable Development
SDGs	Sustainable Development Goals
SMMEs	Small Medium and Micro Enterprises
SOPs	Standard Operating Procedures
SPLUMA	Spatial Planning and Land Use Management Act
UK	United Kingdom
UN	United Nations
UNEP	United Nations Environment Programme
USA	United States of America

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1. CHAPTER ONE: INTRODUCTION

1.1. INTRODUCTION

Recently, cities talk about green energy, sustainability, in their strategic documents and plans, etc. However, little is being said (and done) about green burials in the context of sustainable development and sustainability. This is, among others, evidenced by the issues of burials and cemeteries not featuring as high priorities for some cities. Thus, there is a need to create and heighten awareness about green burials, and the benefits they offer to the environment, society, economy, and governance sustainability. The Green Burial Council (GBC) of the United States of America (USA) (2021:1) defines green burial as a way of caring for the dead with the minimal environmental impact that aids in the conservation of natural resources, reduction of carbon emissions, protection of worker health, and the restoration and/or preservation of habitats. Green burial necessitates the use of non-toxic and biodegradable materials, such as caskets, shrouds, and urns.

To conserve the world for future generations, there is a need to find burial methods that enhance sustainability. The challenge is that the traditional burial methods currently used in South Africa do not promote environmental sustainability. The traditional burial methods are characterized by burials systems that harm the environment, do not assist in the conservation of natural resources, and the restoration and/or preservation of habitats. By and large, traditional burial methods use toxic and non-biodegradable materials. Consequently, some of the disadvantages of traditional burial methods are that they cause soil and groundwater pollution, particularly from contaminants coming from coffin materials and embalming fluids (Guttman *et al.,* 2012). However, green burials offer greater benefits for environmental sustainability. One element of the green burial method is that it does not allow chemical embalming of the body, and where coffins are used, such are made of biodegradable materials (Slocum and Carlson, 2011:139). In this way, green burials facilitate the decomposition of bodies in ways that enrich nature rather than harm it (Shove *et al*., 2012).

The United Kingdom (UK), Germany, and Britain have started exploring green burial methods (Yarwood *et al.,* 2015). In South Africa, a Cape Town-based company (Flaura) already produces "100% earth-friendly" funeral products, including coffins made from green seagrass with rope handles and laser-engraved bamboo name plaques (Davids, 2011). However, the

use of green burials is still not common in South Africa at large. Yet, green burial has the least negative environmental impact.

This research investigated the urgency for the adoption of green burials, focusing on the City of Tshwane Metropolitan Municipality (CTMM) as a case study, with the hope that the results can be replicated in other South African cities. The study sought to understand the feasibility of the green burial method from the professional perspectives of functionaries within the CTMM. In particular, the professionals working in the following areas were interviewed: environmental management, city sustainability, cemeteries administration project management, horticulture, municipal health services, environmental health, etc. These functionaries are involved in Sustainable Development strategy formulation, implementation, as well as stakeholder management. The functionaries involved in cemeteries administration are directly involved with burial operations on daily basis.

1.2. BACKGROUND

The essence of death is the cessation of human life (Johnson, 2005). After death, for most people, burial is the next inevitable logical step. For communities that use burial method as a way of interment, the traditional burial method is common, and popular too. For instance, in the African continent, by and large, when people die, their remains are disposed of through the conventional underground burial method. In this regard, it is important to mention that in many African traditional settings, death is not seen as a cessation of human life. Rather, it is seen as a transition to the realm of the spirit. In this sense, the dead are believed to continue existence in the form of an ancestor. It is believed that ancestors commune with the families and with their descendants. Historically, Africans have been guided by this belief and this informed how they approached burials. This perspective of seeing death as a transition to the realm of the spirits seems to embrace an epistemology that views burial as an opportunity to show [last] respects, reverence, and honour to departed souls.

By and large, the above perspective has contributed to particular types of burial practices and rites. Due to this, burials tend not to be done in cost-effective ways as people tend to invest more resources as a way of trying to show homage, honour, and respect through the burial process. Consequently, in South Africa, there are social pressures of providing *'dignified'* burials (Lee, 2011). Although there is no standard definition of dignified burial, the main issue

is about showing the last respect in ways that show honour and reverence. In most cases, this is often associated with spending money on expensive coffins/caskets. Green burials are believed to offer some solutions for such expensive burial bills. Shove *et al*. (2012) posit that green burials can be distinguished from conventional burial practices in at least two areas: (a) materials, and (b) meanings. Concerning materials, green burials use materials that are simple and biodegradable, unlike traditional burial methods which use non-biodegradable materials. As far as the meanings are concerned, with green burials, the focus of the meaning is the body 'restored' back to Mother Nature.

Traditional burials are ecologically damaging because they lead to the unfortunate production of greenhouse gases and harmful chemicals that enter soil and waterways. In addition, gravestones are often made of granite while coffins are made from particleboard, etc. thus polluting the land and water (Webster, 2008). With green burials, the body is not cremated, and chemicals and embalming fluids are not used (Gonzales, 2009).

1.3. PROBLEM STATEMENT

Tumagole (2005) conducted a study on the groundwater quality at Ditengteng northern cemetery in the CTMM and found that the water quality was not fit for consumption. Another study by Jonker and Olivier (2012) at the Zandfontein Cemetery (City of Tshwane) revealed (a) that traditional burials in the CTMM potentially produce up to 108, 000 kg of metals, and (b) that "mineral concentrations of soils within the Zandfontein Cemetery were considerably higher than those off-site" (Jonker and Olivier, 2012:515). This is consistent with other studies which have found that such heavy metals have a huge potential for toxicity.

One of the pillars of the Sustainable Development Strategy of the City of Tshwane is striving for efficient use of natural resources (City of Tshwane, 2013). However, the City's Sustainable Development strategies and programmes are silent about green burials. Traditional burials are more prone to contaminating groundwater and causing soil pollution from contaminants in coffin materials, and heavy metals (Shove *et al.,* 2012). The problem is that in the City of Tshwane, it is not known if the green burial method would be supported or not. So, this study sought to investigate whether the CTMM functionaries are aware of the green burial method, and the extent to which they (functionaries) would support it to further advance the Sustainable Development efforts of the city. It is of utmost importance for cities to consider

burial practices that cause less harm to the environment (Balonier, Parsons, and Patterson, 2019).

1.4. RATIONALE

The CTMM is one of the strategic cities in South Africa. As the capital city, the CTMM's long-term vision emphasizes a range of Sustainable Development goals. So, the green burial method can assist the CTMM in this regard. As a city experiencing high rates of population growth and high mortality rates, the CTMM could benefit from ecologically sound burial methods. Therefore, it makes sense from an environmental sustainability vantage point for the CTMM to move in the direction of administering burials in ways that enhance the protection of the environment. In some countries, e.g. Australia, it has been found useful to adopt green burials for similar reasons.

1.5. AIM OF THE STUDY

Going green is considered one of the twentieth-century and C22 ways of ensuring that the actions of the current generation do not negatively affect future generations. Although most modern cities broadly embrace the concepts of sustainable development and the green economy, not all cities are implementing sustainable burials. To this end, this study explores the feasibility of CTMM to adopt the implementation of green burials in support of its sustainability agenda.

1.6. RESEARCH QUESTIONS

The main research question was: to what extent would the green burials method be supported by the CTMM functionaries as part of the sustainability strategy? The secondary research questions were:

a) What are the views of CTMM functionaries regarding the readiness of the community stakeholders to accept the green burials method?
b) What are the views of CTMM functionaries regarding the urgency (timeframe) for the CTMM to move to implement the green burials strategy?
c) What would be the benefits of green burials for sustainable development in CTMM?
d) How can CTMM increase the levels of acceptability of green burials going forward?

1.7. DELIMITATION OF THE STUDY

This study focussed on the perspectives of functionaries regarding green burial implementation feasibility in the CTMM. Thus, the social, spiritual, cultural, and ethnic perspectives of the communities regarding green burials, although of significant importance, are not part of this study.

1.8. ETHICAL CONSIDERATIONS

Interviews were employed to gather the perspectives of functionaries regarding green burial implementation in the CTMM. The letter requesting the CTMM's approval to participate in the research is attached (Appendix C). Similarly, the CTMM approval letter is attached (Appendix D). The confidentiality agreement is also attached (Appendix B). The interviews were done telephonically, to comply with Covid-19 regulations. The participation information sheet is attached as Appendix E. The researcher prepared a list of interview questions (Appendix F) for participants to comply with the ethical principles of full disclosure. In addition, the consent forms are attached as Appendix G. All respondents were given assurance that they could withdraw at any point if they felt that their participation may jeopardize their safety, career, etc. In addition, confidentiality and anonymity were maintained in this study, so that the names of the respondents are not shared in this report. The ethics clearance certificate for this study is attached (Appendix A).

1.9. CHAPTERS OVERVIEW

The study comprises 6 Chapters. The first chapter introduces the study and gives the background of the study. It also discusses the problem statement, rationale, and the aim and objectives of the study. Chapter 2 reviews existing literature on the subject matter. The literature review chapter reflects on some of the recent scholarly and non-academic international trends regarding burial methods in the global north and south. This chapter also discusses some of the key characteristics/features of green burials. In addition, the benefits of green burials (environmental, economic, and social) are discussed, to reflect on their implications for sustainable development. This chapter also outlines the conceptual framework of the study. Chapter 3 provides the research methodology. This covers the research approach of the study, as well as data collection and analysis tools. Importantly, the limitations and scope of the study are clarified, along with ethical considerations.

Chapter 4 deals with the context of the study. This chapter zoomed into the case study, i.e. the CTMM, and provided the background of the CTMM, population dynamics, and trends, burial statistics, number of cemeteries, per region, per ward, and areas within the jurisdiction of the city. This chapter highlighted the socio-economic, policy, and legislative context of the CTMM. Chapter 5 discusses the findings of the study, and the analysis thereof. Finally, chapter 6 discusses the conclusions and recommendations of the study.

2. CHAPTER TWO: LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1. INTRODUCTION

This chapter presents the literature review for the study. The chapter provides some overview of international trends regarding the implementation of green burials in the global north, e.g. Europe, the United States of America (USA), Canada, Britain, Germany, etc. The chapter also provides an overview of burial practices in the global south, e.g. India, Mexico, China, Brazil, and Indonesia. The literature review also reflects on the status quo of green burials in South Africa. Moreover, this chapter provides some assessment of by-laws governing burials and cemetery administration in all the 8 metropolitan municipalities in South Africa. Particular attention is paid to methods of disposal of the body, materiality of coffins, and the materiality of the memorial work used in cemeteries. After these, the literature review chapter then turns to highlight some of the contemporary issues affecting burials and cemeteries protocols arising from the Covid-19 pandemic.

2.2. DEFINITION/KEY CHARACTERISTICS OF GREEN BURIALS

The issue of the definition of green burials is important, to clarify some of the myths, and also to enable focussed engagement with some of the controversies associated with green burials. As a starting point, it is important to highlight that there is no single universally known definition of the green burials concept. However, what seems common in most definitions is the use of some biodegradable materials (Webster, 2016). As indicated above, the Green Burial Council (GBC) of the United States of America (USA) (2021) defines green burial as a way of caring for the dead with the minimal environmental impact that aids in the conservation of natural resources, reduction of carbon emissions, protection of worker health, and the restoration and/or preservation of habitats. Green burial necessitates the use of non-toxic and biodegradable materials, such as caskets, shrouds, and urns. It is believed that this method ensures speedy decomposition of the body, thereby enriching nature rather than harming it (Shove *et al.,* 2000, Mooallem, 2009, Wilson and Chiveralls, 2013, and Schroeder, 2015). Another element of green burials is that of "laying the body in the earth without chemical embalming, metal caskets, or vaults" (Slocum and Carlson 2011: 139). Yet another element is that the green burial method does not allow the use of caskets or any other container. The body is simply wrapped in a shroud, or fabric made of fully biodegradable materials, with no metal or plastic fasteners (Marshall and Rounds, 2011; Repp, 2015).

Another important characteristic of green burials is that the body is not cremated, and chemicals and embalming fluids are not used. Where caskets or coffins are used, they are made from natural, untreated materials. The materials must also not contain artificial liners as well as metal and/or plastic handles. Examples of sustainable natural burial materials include banana sheaves, wicker, bamboo, and alien vegetation, cardboard coffins, recycled paper, etc. (Gonzales, 2009). Many of these materials can be sourced and produced locally.

So, to make the point again, there is no single definition of green burials. In this regard, my view is that the absence of a universally acceptable definition should be welcome because it gives scholars, practitioners, and city authorities intellectual and pragmatic space to conceptualize the concept of green burials contextually. Having said that, this study adopts the definition offered by the GBC offered above.

2.3. HISTORY OF GREEN BURIALS

Having discussed the key conceptual elements of green burials, this section now turns to the history of green burials. Although the concept of green burials is not commonly implemented currently in most countries (Marshall and Rounds, 2011), the idea itself is not new at all. In the global south, some African communities have been practicing the green burial method before the 20th century. However, this changed with the advent of colonialism and modernization. In the global north, the implementation of green burials gained popularity in the United States of America (USA) circa the 20th century. The Americans used the green burial method intensively before the Civil War of April 1861 (Bouverette, 2017). Apart from being used during the Civil War, the use of green burials received a major boost when the green burial movement gained traction circa 2005 when the GBC was formed. The GBC was established to set out some minimum environmental standards for green cemeteries as well as guidelines for product manufacturers and funeral professionals to support the green burial movement. The GBC is now arguably one of the standard-bearers and lead stewards of the growing green burial movement, which aspires to make end-of-life rituals simpler, yet sustainable (GBC, 2021). With this brief history, the report now turns to some global practical experiences.

2.4. IMPLEMENTATION OF GREEN BURIAL METHOD IN THE GLOBAL NORTH

This section reflects on some of the case studies regarding the implementation of the green burials strategy in the global north. Globally, the green burial method has not been popular

in the last century. It is still largely in its embryonic stage in most countries. However, it is a popular method of burial in Australia and the United States of America (Pacleb and Brown, 2016). It is also growing in Europe and Canada. By 2008, Britain had 228 burial sites used for green burials (Webster, 2008). In the UK, there are over 200 natural burial grounds (GBC, 2021). In Germany, the green burials strategy was first introduced in 2001. Since then, over 60 public cemetery sites are allowing a mix of traditional with green burials (FriedWald, 2018). The mix of traditional and green burial method is commendable because it offers communities the right to choose. New England also practices green burials. In the USA, a survey shows that between 2008 and 2010, 43% of adult Americans showed the desire to be buried through the green burial method. This increased to 64% in 2015 (GBC, 2021). In 2021, there were over 300 green burial sites in the USA. At Ramsey Creek Preserve, in the USA, bodies are wrapped in a blanket or shroud (Corley, 2007). In the Pacific Northwest, bodies are buried in trees, boxes, scaffolds, stilts, etc. In Spain, the bodies are wrapped in shrouds made of fabric. In New England, bodies were buried in wood coffins (Greene, 2008).

Figure 2.1 below shows some green burial statistics in the USA and Canada from 2015 to 2021. The cases in Canada have been increasing exponentially, implying that there is increasing consciousness for the benefits of green burials.

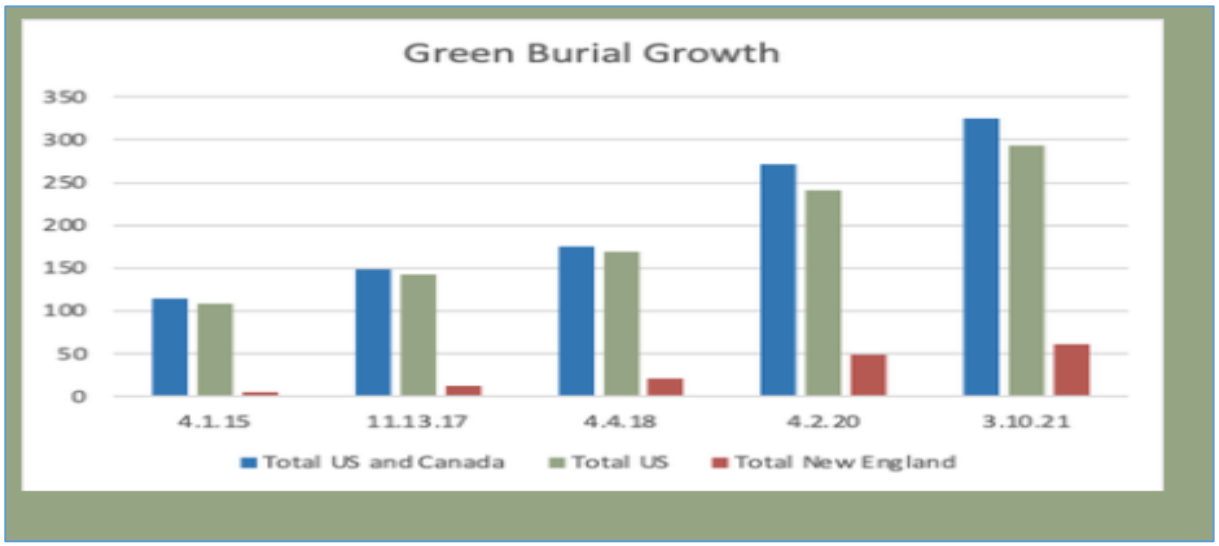

Figure 2.1: Green burial statistics in the USA and Canada: 2015 to March 2021 (GBC, 2021).

In addition, the table below shows the actual figures, and compares the USA, Canada, and New England, between 2015 and 2021.

Table 2.1: Green burial figures in the USA, Canada, and New England: March 2015 and March 2021.

Date Captured	Total US and Canada	Total US	Total New England
4.1.15	114	109	5
11.13.17	148	143	12
4.4.18	175	169	21
4.2.20	271	241	49
3.10.21	325	293	61

Source: GBC, 2021.

The table above shows that, between March 2015 and March 2021, the USA and Canada registered no more than 325 green burials. In the same period, New England registered approximately 61 green burials. In the global north, there seem to be concerted efforts to put systems, policies, and legislation to facilitate the use of green burials. This has allowed communities to make much-informed choices as far as the implementation is concerned. It would seem that the activism of the GBC and other civil society formations has greatly assisted global north countries to move progressively on green burials.

2.5. IMPLEMENTATION OF GREEN BURIAL METHOD IN THE GLOBAL SOUTH

This section discusses some of the case studies regarding alternative burial methods in the global south, including green burials. Whereas there is empirical evidence that green burials are gradually gaining popularity in the global north, the same cannot be said about the global south. It seems that, in the global south, although the practice of green burials is not new, its application has rather slowed down after colonization. So, there is some limited academic literature on green burials in the global south. What is clear is that in the global south, burial practices are still predominantly shaped and informed by culture/religion.

In Africa for instance, there are still strong cultural and spiritual practices associated with burials. For instance, the Zulu culture (South Africa) believes that a person who dies becomes an *idlozi*, an ancestor (Zwane, 2011). This is not just limited to the Zulu nation as such.

Similarly, in many parts of the African continent, in particular, death is accorded the most important among all other cultural rites. Another example is that there are still parts in Nigeria where, for instance, a woman could be buried with her necklace, clothing material, kitchen utensils, earrings, etc. This practice is also confirmed by other scholars such as Gbenda (2005). There is a general belief that the deceased need such for their comfort (Ademiluka, 2009). From an environmental sustainability perspective, the problem is that some of these materials are not biodegradable, and thus not good for environmental sustainability.

In addition to the fact that green burials are not largely used in countries in the global south compared to their counterparts in the global north, it also seems that global south countries don't seem to fully explore other alternative methods such as alkaline hydrolysis, which is commonly used in the USA, Canada and Britain (Wilson and Chiveralls, 2013). Similarly, the recycling of graves is not as much used in global south countries as compared to countries such as Australia (Basmajian and Coutts, 2011). Some African countries such as Zimbabwe still struggle to embrace alternative burial methods such as cremation, due to cultural/spiritual reasons. However, other countries in the African continent, such as Kenya, have embraced cremation, with about 100 Kenyans being cremated monthly. In the case of South Africa, several alternative burial methods have been proposed (Ngcongo, 2005). In the main, such alternatives are rejected by the general public mainly for religious and cultural beliefs (Ngecece, 2019). This view is corroborated by other scholars such as Ngubane (2004), Glass and Samuel (2011), and Leuta (2011, 2017).

Although Africans cannot be generalized as homogeneous, traditional African religion broadly holds that burial is sacrosanct. There is a general belief that after death, any burial method which does not offer a "dignified send-off" will attract evil spirits, or bad luck (Umoh, 2005). In South Africa, the Zulu people seem to be one of the people who have remained loyal to their conventional burial practices (Zwane, 2011; Mhlongo, 2017). In India, dead bodies are interred in different ways, and burial is just one of them. Within the Hindu funeral practice, there is not much reliable historical and anthropological data and research, particularly to provide a better understanding of Hindu burial practices (Ondračka, 2020). However, cremation remains one of the most followed funerary practices in India; and generally, Hindu cremation follows the ritual of fire kept in the house of the deceased person (Arnold, 2020).

In Mexico, there are also various internment practices as well (Rhodes, Mountjoy, and Cupul-Magaña, 2016). Modern Mexicans prefer burial over cremation because normal burials allow them to visit their loved ones as part of traditional practices (Kessler, 2021). This includes observing the rituals associated with the famous Day of the Dead – where the family of the deceased visit cemeteries, sometimes the whole night, listening to music, drinking, and eating, to celebrate their dead loved ones (Fersko-Weiss, 2018). In that ceremony, the dead are anointed with oil on their death bed (USC Digital Folklore Archives, 2013). So, embalming is also used. In addition, the deceased are buried with their clothes and some of their important possessions in their coffins, because it is believed that the dead will use them in the afterlife (Ward, 2016).

As far as China is concerned, the burial practices are not particularly tied to a specific religion. Most people in Chana are fluid with their burial preferences/practices. However, a majority of the Chinese are cremated. For those who are buried, the body is placed into a wooden coffin, covered with a shroud, and the coffin is placed into the grave pit, secured with cement (Pasacreta, 2005). In addition, the body is dusted with powder (talcum), and then fully dressed in the best clothes of the deceased, including footwear and cosmetics (if female). Furthermore, the comb of the deceased is broken into two halves, one in the coffin, and the other retained by the family (Adewuyi, 2020).

Coming now to Brazil, burials are more common than cremation. Even though the statistics for cremations have increased, no less than 72% of the dead still are buried (Novais, 2013). Ordinarily, burials are characterized by expensive tombstones. If the deceased were a hero or a martyr, the tombstones become more elaborate and big to allude to manhood, honour, greatness strength, glory, etc. (Motta, 2009). In the villages, burials largely involve painting the body with traditional symbols by family members themselves (Angelo, 2021).

In the case of Indonesia, over 87% of the people identify as Muslim. The rising Covid-19 related deaths created challenges of complying with their cultural rituals due to protocols put in place by the government to handle burials. Islamic burial rituals are common in Indonesia, and burials ordinarily take place within 24 hours. The bodies are interred without a casket. The goal is that the body should lie on its right side, whilst facing the holy city of Mecca. Before the burial can take place, the body is washed with soap, then wrapped in cloth that is tied at the head and feet. Both cremation and embalming are not allowed (Karmini and Milko, 2020).

Another important aspect is that Indonesians use preservation systems to keep the bodies dry for a long time, whilst in the coffins. In addition, according to the *ma'nene'* ritual, the bodies of the deceased are exhumed, retrieved, cleaned, and left to dry in the sun, and subsequently dressed in new clothes. This happens within a year after the first funerals (Sayoga, 2021).

2.6. TYPOLOGIES OF CEMETERIES FOR IMPLEMENTING GREEN BURIALS

Having discussed different burial rites in the global north and some, this report now turns to types of cemeteries allowing green burials. There are different types of cemeteries that allow green burials. According to Clayden *et al. (*2018), there are three levels. In this regard, the level 1 type accommodates both the conventional as well as green burial practices. In some instances, 'vault less' burials are allowed, and in other cases, only conventional methods are allowed. Level 2 allows sustainable practices but does not aim for long-term landscaping designs to promote natural conservation principles. Level 3, is called the conservation burial cemetery. This type encourages sustainable/natural burial practices and maximizes the burial process to move towards more ecological and landscape restoration and conservation levels (GBC, 2021). In South Africa, in the event a green burial method is adopted, it could be useful to follow a similar approach of classifications (and/or zoning) of cemeteries to facilitate a smooth administrative regime for green burials.

2.7. BENEFITS ASSOCIATED WITH GREEN BURIALS

As indicated, there are many environmental hazards associated with traditional burial methods. For instance, traditional burial methods can lead to the pollution of underground water (Van Allemann, Olivier, and Dippenaar, 2018). This can be avoided with green burials, through the use of biodegradable materials (GBC, 2021). Green burials allow the dead bodies to be integrated back into the natural ecosystem with the least possible environmental impact (Fournier, 2018). The table below shows the opinions of cemeteries managers in Britain, regarding the reasons for clients to choose green burials.

Table 2.2. Some of these reasons for supporting green burials (in Britain).

Main reasons why clients chose green burial	Exemplifiers
Sustainability	A desire for an environmentally friendly burial; no long-term maintenance of graves; minimum chance of grave re-use
Surroundings	A desire to be buried in peaceful surroundings with pleasant views (for mourners) and a rural or semi-rural setting
Locality	Sites were favoured by those with a connection to a locality, either through residence, family association or holiday visits
Personalised services	It was felt by client that green burials offered scope for self-expression that, in turn, helps deal with bereavement
'Giving back' to nature	Literal embodiment of 'earth to earth' or 'from nature we come to nature we should return' principles

Source: Yarwood, Sidaway, Kelly, and Stillwell (2015:179).

As can be seen above, some of the reasons are related to sustainability, others are for the benefits of the locality and immediate surroundings. Some people derive personal gratification from green burials. Other reasons are related to environmental sustainability, e.g. 'giving back' to nature. Interestingly, none of the reasons relate to culture, religion, or spirituality.

2.8. GREEN BURIALS: CONTROVERSIES ABOUND

Admittedly, green burials can generate some controversies and disagreements. The reality is that there are different legal, sociocultural, economic contexts for the provision of burials in any local context. There are also tensions between cultural and spiritual considerations and ecological sustainability arguments (Monaghan, 2009). In more pluralistic societies, people do not always share the same views about burials. Sometimes community expectations and perceptions regarding burials pose challenges for planners (Marshall and Rounds, 2011). These are some of the realities that need to be acknowledged.

Another area of contestation relates to the history of green burials. The predominant notion is that the green burials can be traced to the American community before the Civil War of April 1861 (Bouverette, 2017). Whilst this could be true to some extent, literature seems to be selective on accounting for the history of green burials among African countries and transitional economies. There seems to be special emphasis on the United States of America (USA) based GBC as the main vehicle which pioneered the urgency for green burials (Vallesteros, 2018). Meanwhile, the reality is that in the global south, some African

communities have been implementing green burial way before the 20th century (Bouverette, 2017).

Regarding the elements/characteristics of green burials, controversies and counter-arguments abound too. Some elements of green burials may receive support, and others may not, due to cultural, spiritual, and religious belief systems. One element of green burials which may not receive support is that of "laying the body in the earth without chemical embalming, a metal casket, or a vault" (Slocum and Carlson 2011:139). From cultural and legal perspectives, the idea of simply wrapping a body in a shroud may not be acceptable (Marshall and Rounds, 2011), even if such a shroud can be made of natural fabrics (Rose-Innes, 2012), because some good hygiene practices and protocols may not be completely complied with. Lee (2011) opines that this element may not readily find support in African countries. However, I am of the view that this aspect needs further investigation before such conclusions can be made definitively.

As posited by Gonzales (2009), green burials do not allow the application of chemicals to the body. In my view, this will be tricky to implement especially in instances where there are delayed burials due to, for example marital, estate, and other disputes. By implication, green burials suggest that burials need to happen rather quickly, and practically, this may not always be feasible. Another area of controversy relates to the notion that green burials facilitate the decomposition of bodies in ways that enrich nature (Shove *et al*., 2000). However, some commentators argue that a body decomposes best in the top two feet of soil where most of the bugs live. This is debatable too, and it would be necessary to back it up with some scientific evidence.

Another element of green burials which may be controversial is around grave markings and memorials. For families which prefer tombstones, this might be frustrating when subsequent generations wish to honour their deceased ancestor. In this respect, some communities may feel that green burials have the effect of dispossessing the already dispossessed. Such communities may be unwilling to fully embrace green burials because, in their view, the green burials remove the material symbols that help families memorialize their deceased (Balonier, Parsons, and Patterson, 2019). In my view, the major controversies around green burials in the global south would relate to culture and region since many countries in the global south are multi-cultural. In multi-cultural cities, there is no single dominant culture, cities need to

be flexible to accommodate diverse cultural practices. Having discussed the history, implementation of green burials in the global south and global north, as well as the benefits associated with green burials, the following section outlines the conceptual framework for the study.

2.9. CONCEPTUAL FRAMEWORK FOR THE STUDY

Figure 1.1 below shows the conceptual framework which displays relationships that are at play between and among the main concept and different sub-concepts in this study.

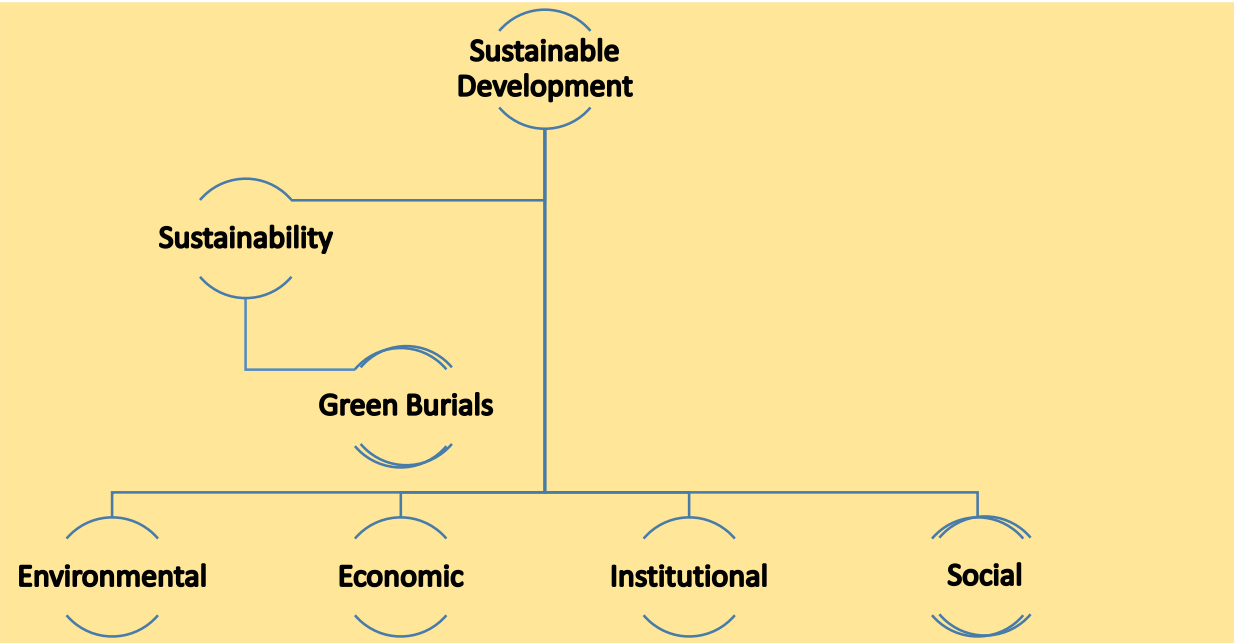

Figure 1.1: Conceptual Framework of the study: Source (Author, 2021)

As a concept, sustainable development is at the core of the conceptual framework of this study. This concept is the golden thread cutting through the study. So, green burials are studied within the context of sustainability, with a particular focus on the environmental, social, economic, and institutional implications for municipalities. So, for this study, conceptually speaking, the green burials is directly linked to the four pillars of sustainable development.

2.9.1. THE CONCEPT OF SUSTAINABLE DEVELOPMENT APPLIED TO GREEN BURIALS:

It is important to understand the environmental, economic, and social implications in pluralistic modern societies (Marshall and Rounds, 2011). Hence this study views sustainable development as a proper means towards urban development and management. The most

cited definition of sustainable development is the development that meets the needs of the current generation without compromising the capacity of future generations to meet their own (Schaefer and Crane, 2005:77). Sustainable development is a process that focuses on the use of resources to ensure that there are sufficient resources for future people/generations (Mohieldin, 2017). Sustainable development is a paradigm that emphasizes the improvement of the living conditions of people without jeopardizing the ecosystems of the earth and the environment. A key aspect of sustainable development is that it discourages anthropogenic activities which lead to outcomes such as air pollution, water pollution, and deforestation (Benaim and Raftis, 2008).

At the heart of the discourse on sustainable development lies interconnected pillars of the environment, society, institutional, and the economy. Importantly, it should be mentioned that sustainability and sustainable development are not the same. Sustainability is the ideal goal of sustainable development, whilst sustainable development is the process through which the ideal goal is achieved (Diesendorf, 2000). Sustainability refers to maintaining a process or entity at the same level/quality over a prolonged period and how a current generation can care for the needs of future generations (Mensah and Enu-Kwesi, 2018). This concept emphasizes that humans should not cause damage to the ecosystem (Ben-Eli, 2015), and deplete the natural resources (Thomas, 2015). Environmentalists criticize conventional burial methods because they are ecologically damaging. By way of example, cremations do contribute to greenhouse gas emissions, whereas embalming uses chemicals that are harmful to the soil, thus increasing chances of groundwater pollution (Aruomero and Afolabi, 2014).

Green burials can enhance sustainability as alternative solutions to save resources. However, some challenges need to be overcome. These include the general lack of knowledge/awareness of the concept both by the communities and planners themselves. Green burials are less resource-intensive, can thus be used by cities to advance sustainability. However, each city should develop its own contextualized definition, focussing on key aspects for implementation, rather than trying to do everything at once.

Because sustainable development is quite a loaded and multi-faceted concept with multiple nuances and layers, it is thus necessary to clarify the specific concepts that are critical for this study, under the auspices of the four pillars of sustainability. Under the environmental pillar, the study engaged with issues related to the types of materials used in the burials and

memorial work, and the impact of those materials on the ecological system (e.g. underground water pollution, air pollution, etc). As far as the economic pillar is concerned, this study focussed on the cost (affordability) implications associated with green burials. So, this study investigated whether costs and incentives can positively encourage communities to choose green burials. Under the social pillar of sustainability, the study engaged with issues related to culture, religion, and spirituality, with a particular focus on the extent to which respondents believe that such factors would play a role in supporting the green burials method in the CTMM. As far as the institutional pillar is concerned, the study looked at aspects of public consultation, policy, legislation, etc.

2.9.2. THE CONCEPT OF ENVIRONMENTAL SUSTAINABILITY AND GREEN BURIALS

As indicated above, under the environmental pillar, the study engaged with issues related to the types of materials used in burial, and the impact of those materials on the ecological system (e.g. underground water pollution, air pollution, etc). This study approached green burials and their implications on the environment from the vantage point of the typologies of materials used in green burials as opposed to materials used in traditional burial methods. Green burials conserve natural resources (Coutts *et al.,* 2018) not only by allowing the use of biodegradable materials which do not harm the environment but also by enhancing the overall biodiversity (Carter *et al*., 2007).

In addition, because they do not use herbicides or pesticides, green burials contribute to the conservation of native habitats. They allow burial sites to restore the natural landscape which has been populated by native shrubs, trees, and wildflowers, thus permitting burial sites to offer refuge and food to birds (and other wildlife). Green burials support environmental sustainability (Du and Kang, 2016) because they can serve to ensure that cemeteries serve some unique space as part of 'urban sanctuaries' in cities. As part of an urban green space portfolio, cemeteries, when used as part of large green areas, have the potential to yield some positive effects on the temperature of cities. However, there is a dearth of research in the African context regarding the desirability of cities allowing cemeteries to be used for "the extra functions" beyond burial functions (Wong and Yu, 2009).

The practice of green burials can optimize useful biodiversity functions of cemeteries (Alfa and Reza, 2012). This then may require some changes in the way nature is handled by

maintaining the integrity of the earth systems. In recent years, challenges such as depletion of natural resources, pollution, and climate change have arisen in the global context of sustainable development (Gerbens-Leenes *et al.,* 2003). The focus on environmental sustainability is therefore needed so that decision-makers do not take for granted the qualities of the physical environment (Sutton, 2004), including in burial sites.

Through green burials, the integrity of the ecosystem can be strengthened by the use of degradable materials. Activities such as deforestation contribute to negative consequences such as flooding, loss of harvests, and soil erosion (Hueting, 2009). Green burials discourage deforestation and thus can assist cities because people will forever need clean air, environment, and water (Morelli, 2011). Many traditional cemeteries require the removal of native plants/vegetation to facilitate the rows of burials and plaques. However, with green burials, the approach is to preserve and retain the native plants/vegetation. So, green burials enhance the natural vegetation. From the perspective of land use, green burials can improve and maintain the condition of the land, and also prevent the lands from being 'destroyed' (Marshall and Rounds, 2011). Green burials encourage the use of manual digging as opposed to digging through machinery, with care being taken to ensure that chances of losing native vegetation are minimized as far as possible.

Since time immemorial, death, burials, and funerary culture have been associated with materiality. So, the material reality of death, burials, and commemorative practices cannot be ignored and this is reflected in the context of discussions for green burials. Tracing the history of materiality culture and trends is difficult, especially in different cultural contexts. If one looks at Germany as an example, the materiality culture has evolved. In the 10th century, the use of stone materials for marking graves was common. Then in the 12th and 13th centuries, the use of wooden materials gained popularity; whilst wood became more convenient especially when burials had to be conducted within a short period. In the 14th century, stone materials became common followed by iron materials in the 18th century, (Kyll, 1972, cited in Klaus (2019)). The use of bluestone material became popular since 1900. In South Africa, granite stones seem popular among Black African communities. Other options of stones include marble and slate. These stones tend to be very costly, and often put families under peer pressure to buy them even when they don't afford them. All these types of

materials (stones) have some negative impacts on the environment, for example in the sense that they lead to underground water pollution (Quintus, 1993, cited in Klaus (2019)).

The main idea behind the materiality concept in green burials is the usage of materials that can be used for innovative sustainable coffins (Herder, 2016). As indicated supra, the most common feature in most definitions of green burials is the use of biodegradable materials (Webster, 2008). Green burials encourage the use of memorabilia that is sustainable in nature, like planting a tree, shrubs, flowers, etc. In recent times, it is possible to obtain coffins that are made from more sustainable natural materials, such as banana sheaves, wicker, leaves, bamboo, alien vegetation, and potato starch. These materials can be sourced and produced locally. Other materials which can be used include cardboard coffin, wicker coffin, biodegradable shroud, softwood coffin, hardwood coffin, bio-degradable body bag, etc. (Shove *et al*., 2000; Marshall and Rounds, 2011; Repp, 2015). Cannon (1989) argues that consumer choice, social emulation, and fashion have influenced the choice of materials for burials. In the past, material objects included sherds and other forms of artifacts (Johnson, 2010). So, from the vantage point of this study, the issue of the materials used in burial practices is central to environmental sustainability.

2.9.3. THE CONCEPT OF ECONOMIC SUSTAINABILITY AND GREEN BURIALS

As far as the economic pillar of sustainability is concerned, this study focussed on the cost (affordability) implications associated with green burials. According to Doane and MacGillivray (2001), sustainable environmental practices are associated with cost savings. So, from this perspective, the promotion of environmental sustainability principles associated with green burials can enhance economic sustainability. Some of the costs can be towards the community members, others for municipalities themselves. For communities, it is not clear if the costs of green burials are cheaper compared to traditional burials. The study investigated the views of officials regarding whether they think communities would accept green burials if they are proven to be cheaper. This issue is discussed in detail later in the report. For municipalities, the issue of land affordability is one of the cost drivers as cities struggle to have sufficient burial spaces for the near future (Alfa and Reza, 2012). The reality is that green burials do not take place in virtual spaces. They need land too. Municipalities

may need to be ready to bear the initial funding/investment costs associated with adopting the green burial method before they can realize or reap the economic benefits later.

In South Africa, some of the key challenges facing the 8 metropolitan municipalities as far as cemeteries include insufficient budgets (South African Local Government Association (SALGA), 2016). In addition, the availability of land remains one of the biggest challenges facing metros. There are cases where the available land is not suitable for burial sites. Another challenge relates to the planning and administrative processes and bureaucracies taking a long time to resolve. Among these are the delays in Environmental Impact Assessments (EIA), which are the prerogative of the provincial government (SALGA, 2016). This means that land set aside for cemeteries may not be readily available for use when needed.

Another cost implication related to green burials is zoning and restriction in terms of land use rights. Land that is currently zoned to allow cemetery development may have restrictions in terms of what types of burials to conduct in those cemeteries. In some cases, the zoning certificates are very specific on the types of burial methods permissible in a cemetery. This may bring further cost implications. In Australia, for instance, owners of private cemeteries need to make formal development applications if they want “accreditation” for green burials (Marshall and Rounds, 2011).

Apart from land acquisition costs for authorities, other costs are related to the operational, maintenance, and site repairs cost for the local council authorities. If the maintenance and operation costs are not well calculated and anticipated, this may have the potential of posing economic challenges for local government authorities. These costs are part of complex planning and public infrastructure nexus which needs to be handled with great circumspection because they can commit municipalities to financial obligations which may not be affordable in the long run. With green burials, since the use of permanent grave marking through tombstones, monumental structures, headstones, etc. are not allowed, this can lead to low costs of maintenance. In addition, other maintenance activities such as cleaning, or removing dead flowers, may not be necessary with green cemeteries (Herder, 2016). Unlike Herder (2016), I am of the view that green burials would not offer savings on the maintenance costs of cemeteries by municipalities. Normal and routine maintenance schedules still need to take place as part of basic services expected of municipalities in South

Africa. Municipal planners need to consider such factors, both in the short- and long-term (Marshall and Rounds, 2011).

2.9.4. THE CONCEPT OF INSTITUTIONAL SUSTAINABILITY AND GREEN BURIALS

There are governance issues that must be taken into consideration when thinking about green burials. The establishment of cemeteries has some legal requirements that planners must be aware of. As indicated supra, in Australia, for instance, cemeteries need to be granted "accreditation" to run green burials (Marshall and Rounds, 2011). So, cemeteries earmarked for green burials must be legally appropriate for the function of such burials. All the legal and technical requirements should be complied with. In South Africa, firstly, the Constitution (1996) safeguards the requirement of environmental sustainability. Secondly, the Municipal Systems Act (MSA) (sections 4(2)(d)3 and 4(2)(i), 4 73(1)) emphasizes the right to a healthy environment. In addition, although the Spatial Planning and Land Use Management Act (SPLUMA) (2013) does not specifically talk about burials or cemeteries per se, it still requires all development projects to comply with environmental sustainability requirements (Leuta, 2017).

Other technical requirements that have implications for governance emanate from the health sector. For instance, in Australia, the law requires that if a person is to be buried using a biodegradable shroud, there must be an application to competent health professional for approval (Marshal and Rounds, 2011). In South Africa, although the focus of the National Health Act (NHA) (2003) is not on providing guidance on cemetery management and/or planning (Leuta, 2017), nonetheless, this Act addresses the matters around how to handle and dispose of human remains.

There is also the National Environmental Management Act (NEMA) 1998, (Act No. 107 of 1998). Sections 24(2)(a) and (d) of NEMA deal with requirements about the development of cemeteries, such as the environmental authorization required before any new cemetery can be started, or existing ones expanded. Leuta (2017) posits that, in some cities, there seem to be no dedicated policies specifically to guide burial matters. Planners need to be aware of these legal/technical requirements in so far as they may affect the roll-out of green burials so that they can correctly advise policymakers about the implications (Marshall and Rounds, 2011).

Another governance consideration is that in many countries, e.g. Australia, public consultation is a requirement before burial practices can be implemented. The planning of such consultation processes themselves comes with cost implications (Marshall and Rounds, 2011). In South Africa, the Local Government Municipal Systems Act (MSA), Act No.32 of 2000 requires municipalities to embark on community participation in by-laws and other matters. In this regard, my view is that the consultation processes have to be so intensive because it would be the first time the green burial policy is being introduced to communities. Thus, such consultation and participation processes are most likely going to take a lot of time, and thus be costly.

It should not be taken for granted that planners and other officials have a basic understanding of what green burials constitute. In the case of Australia, it was found that planners themselves knew relatively very little about green burials (Marshall and Rounds, 2011). So, care should be taken to ensure that municipal officials, or planners, do not unwittingly prejudice the process (Lang, 1999).

2.9.5. THE CONCEPT OF SOCIAL SUSTAINABILITY AND GREEN BURIALS

The social implications of green burials are many and multi-faceted. As indicated supra, some of the elements/characteristics of green burials generate controversies and counter-arguments. It is important to note that some elements of green burials may receive support, and others may not, due to cultural, spiritual, and religious belief systems. One element of green burials which may not receive support from some communities is that of "laying the body in the earth without chemical embalming, a metal casket, or a vault", as indicated by Slocum and Carlson (2011:139). Lee (2011) argues that this element may not readily find support in African countries, where there is high credence and value about showing last respects and dignity to the departed ones.

Another important consideration is that the burial rituals vary from region to region, according to different cultures (Greene, 2008). In Africa for instance, there are strong cultural and spiritual practices associated with burials. Similarly, in many parts of Africa, death is accorded the most important among all other cultural rites. This practice is also confirmed by other scholars such as Gbenda (2005) and (Ademiluka (2009). For instance, in the Zulu culture in South Africa, it is believed that death is not the end, but a way to become an *idlozi*, an

ancestor (Zwane, 2011). Another factor is religion and spirituality. Scholars such as Ngubane (2004), Glass and Samuel (2011), Afla and Reza (2012), Leuta (2017), and Ngecece (2019) corroborate this point. This suggests that most alternative burial methods can be outrightly rejected mainly for religious and cultural beliefs.

2.9.6. SUMMARISING THE KEY ELEMENTS OF THE CONCEPTUAL FRAMEWORK

The section above provided a conceptual framing for the study. It outlined the specific concepts related to sustainable development, to the extent that these concepts are critical for this study. This chapter indicates that the four pillars of sustainable development are linked, and the linkages come through even in the context of green burials. To sum up, under the environmental pillar, what is relevant for this study is the concept of the typology of materials used for coffins and memorial work, to the degree that such materials have negative impacts on the natural ecological system. As far as the economic pillar is concerned, the conceptual framework focuses on the costs associated with green burials, particularly because green burials have different aspects. Concerning the issue of financial incentives, chapter 5 provides more nuanced perspectives from officials. Still, on the economic aspects, another conceptual issue is the one that deals with the operational, maintenance, other costs for running green burials. Under the social pillar of sustainability, the conceptual framework deals with issues of culture, religion, and spirituality, to the extent that these are seen as playing meaningful roles in how respondents relate with death and burials in particular. From the institutional pillar of sustainability, the conceptual framework deals with issues of public consultation, participation, etc in policymaking and legislation. These are viewed as key for institutional sustainability and legitimacy of alternative burial systems.

2.10. THE STATUS QUO ABOUT GREEN BURIALS IN SOUTH AFRICA

Having outlined the conceptual framework for this study above, this section now reflects on the status of green burials in South Africa. The focus is on both privately owned as well as municipality-run cemeteries.

2.10.1. THE GREEN BURIALS DEFINITION IN SOUTH AFRICA

The definition of green burials in South Africa is understood within the conceptual 'template' of the GBC. In the main, it is about the use of biodegradable materials, and the use of memorial materials which do not have negative bearing on the natural eco systems, such as

underground water sources. The problem is that there is scanty data about cemeteries that allow green burials in South Africa at the moment. Only a few are known, e.g. the Wiesenhof Legacy Park in Stellenbosch, in the Western Cape. Even though the Wiesenhof Legacy Park cemetery is reportedly offering eco-friendly caskets and other various natural products (Mama, 2011), the statistics for green burials in that cemetery and other such cemeteries are not easily found (Sitar, 2011).

2.10.2. TYPES OF MATERIALS USED FOR COFFINS IN SOUTH AFRICAN MUNICIPALITIES

A pertinent question is: *to what extent do the current coffins materiality practices promote the use of biodegradable coffin materials?* An analysis of the by-laws governing the disposal of dead bodies reveals that only the City of Cape Town and Nelson Mandela Bay Metropolitan Municipality (NMBM) metros make (some) provision for green burial as an alternative burial method. Accordingly, Section 19 of the NMBM by-law provides that a coffin interred in a grave must be constructed of bio-degradable material (NMBM, 2010). In the City of Cape Town, the Cemeteries, Crematoria, and Funeral Undertakers By-Laws define "biodegradation" as a process whereby the corpse is disposed of by bio-friendly chemical dissolution. In addition, Section 54 (3) provides that for cremation, no toxic varnish, paint, or glue shall be applied to the coffin (City of Cape Town, 2011).

2.10.3. QUALITY STANDARDS OF MEMORIAL WORK ON GRAVES

Another important aspect relates to the materials used for memorial objects. In the case of Buffalo City and the City of Johannesburg, the by-laws allow the use of materials for burial and memorials whose quality is approved by the South Africa Bureau of Standards (SABS). Such material must be durable, with at least 25 years life expectancy (Buffalo City, 2005). However, the memorial work can be made of copper or galvanized iron pins, which does not align with the requirements of green burials. In the case of NMBM, the City of EThekwini, and the City of Cape Town the by-laws are silent about the materials to be used for memorial work. In the CTMM, the by-laws do not refer to SABS quality assurance, let alone prescribe the types of materials to be used (CTMM, 2015). In the City of Ekurhuleni, the by-laws require that the memorial works must be manufactured with materials other than marble/granite (City of Ekurhuleni, 2007). On this matter, my view is that cities need to look at the issue of standards beyond the SABS. International benchmarks need to be embarked upon, and some

lessons can be drawn from the work done by the GBC, whilst contextualizing them to local conditions.

2.10.4. COVID-19 BURIAL PROTOCOLS AND IMPLICATIONS

It is a well-known reality that the Covid-19 pandemic has caused a lot of deaths. Many cities have been struggling to cope with the number of burials. As such, new burial systems and protocols were introduced both to manage the high burial rates, and also to avoid the spread of the virus through burials. From this perspective, this issue is relevant for this study, particularly to reflect on how this experience would suggest a need for cities to relook their (environmentally sensitive) alternative burial methods. Green burials allow families to actively participate in the preparation of the body, and in the burial ceremony itself. In South Africa, for people who die at home, the Covid-19 regulations do not allow families to participate in the preparation of the body. However, the Covid-19 burial protocols and rules are strict on how the body must be handled, including precautions to those in the home at the time of death. The regulations include that an Emergency Medical Services (EMS) officer must confirm the death, and after that, the undertaker must remove the body, and transport it to the mortuary (Makou, 2020). This may not be acceptable from certain cultures, where certain rituals are performed on dead bodies as part of the ancestral practices.

So, some personal choices may not be feasible to implement under the auspices of green burials (Makou, 2020), more so under the context of Covid-19 burial protocols. According to the National Department of Health, under the context of Covid-19 burial protocols, the storage of human remains must be limited to a maximum of three days (National Department of Health, 2020). This does not seem realistic, given that some families may need more time to prepare for burials. In addition, Government may intervene if human remains are not claimed within three days. All these realities may pose significant challenges for use of green burial methods.

2.11. CONCLUSION

The various components of the conceptual framework of the study were discussed in this chapter. As far as the literature review is concerned, it can be concluded that green burials are not commonly used in global south countries, but more in global north countries in Europe, the USA, Canada, etc. So far, it suffices to indicate that within the ambit of social

sustainability, as part of the conceptual framework of the study, there is a widely held view that culture, religion, and spirituality do play meaningful roles in how communities relate to death and burials in particular. Scholars such as Ngubane (2004), Glass and Samuel (2011), Alfa and Reza (2012) Leuta (2017), Ngecece (2019) corroborate this point. This suggests that most alternative burial methods may be rejected mainly for religious and cultural beliefs in the global south.

This study confirms the role of culture as one of the key factors influencing the choice of burial alternatives, both in the global south and north. In the global south, it is evident in countries such as India, Mexico, China, Brazil, South Africa, Nigeria, and Indonesia. The situation is slightly different in China, where burial practices are not particularly tied to a specific religion. This is an important finding for cities that attract people from multi-cultural and diverse backgrounds. The policies, systems, and burial methods need to consider this reality, especially considering the cultural and religious rights enshrined in the Constitution. A one size fits all approach to burials may be challenged legally by cultural groups which feel disenfranchised.

Under the environmental sustainability of the conceptual framework, this chapter shows that the typology of materials used in the burial has an impact on the ecological system. For some countries in the global south, people are buried with their belongings, etc. (Gbenda, 2005; Ademiluka, 2009; Ward, 2016). China has similar practices too (Adewuyi, 2020). The anointment of the dead bodies (USC Digital Folklore Archives, 2013), and the use of embalming are also used in countries such as Mexico. Burying the deceased with their clothes and some of their important possessions would be at odds with environmental sustainability principles. Such practices do not enhance ecological sustainability (Pasacreta, 2005).

The burial practices in Indonesia include the bodies interred without a casket, but simply wrapped in cloth that is tied at the head and feet. In addition, embalming is not allowed (Karmini and Milko, 2020). These particular aspects support the concept of green burials. However, another aspect, such as using preservation systems to keep the bodies dry for a long time, and exhuming, retrieving, and leaving the bodies to dry in the sun, and then subsequently dressed in new clothes, do not support the goals of green burials. So, this chapter concludes that some burials will have elements of activities that promote environmental sustainability, and also elements which undermine environmental

sustainability because some of the materials used are not biodegradable. This chapter also concludes that although choices on the types of materials used in burials largely emanate from the social, cultural, religious space, such options can have an impact on the environment and the natural ecosystem.

As far as economic sustainability is concerned, this chapter concludes that more elaborative studies to determine the costs associated with green burials are needed urgently. Currently, it is not easy to determine whether green burials are cheaper compared to traditional burials. In countries such as Brazil, burials are accompanied by expensive and decorative tombstones (Motta, 2009). Indonesia remains an interesting case study because it has elements of both traditional and green burials practices. As far as cost implications are concerned, there is excessive use of preservation systems in Indonesia, to keep the bodies dry for a long time, to comply with the *ma'nene'* ritual. In addition, it is also not clear if the practices involved in the traditional burying of people, e.g. with necklaces, clothes, kitchen utensils, earrings, the anointment of the dead bodies, etc. do have significant financial costs compared to green burials. Such practices are prevalent in countries such as China, Mexico, and Nigeria. The study is not able to establish the costs associated with such rituals.

Another important issue as far as economic sustainability is concerned relates to the issue in policy making and legislation of the concept of financial incentives to encourage communities to opt for green burial. From a literature review perspective, there is no evidence that many countries rely on this strategy to encourage community members to move towards green burials. However, in chapter 5, this matter was tested through the perspectives of the CTMM officials. In addition, from an institutional sustainability perspective, this chapter showed that the concept of public consultation in policy making and legislation, etc. is key for institutional sustainability and legitimacy of alternative burial systems. Australia is one such example (Marshal and Rounds, 2011). One key lesson is that in cases where the green burial option is chosen, the law may require that there must be an application to a competent health professional for approval.

In South Africa, several pieces of legislation would have a bearing on the implementation of green burials. For instance, the principle of public consultation is embedded in the Constitution and also the Municipal Systems Act – particularly the section dealing with the Integrated Development Planning (IDP) processes. Another important lesson is that some

regulations are designed to protect the environment from being degraded. For instance, SPLUMA (2013) requires all development projects to comply with environmental sustainability requirements. In addition, the National Environmental Management Act (NEMA) 1998, also has implications for green burials because it requires environmental authorization before any new cemetery can be developed or existing ones expanded. In addition, scrutiny of all the by-laws governing the disposal of dead bodies in South African cities reveals that all South African metros would need to review their Cemeteries, Crematoria, and Funeral Undertakers By-Laws if they want to consider the provisioning of green burial as an alternative burial method.

3. CHAPTER THREE: RESEARCH METHODOLOGY

3.1. INTRODUCTION

This chapter discusses the research methods employed in this study. It discusses the data collection and analysis strategies/tools. This chapter also outlines the limitations and ethical requirements that were complied with, in this study.

3.2. RESEARCH RATIONALE AND STRATEGY

The rationale for this study is based on the need for cities to embark on practices that promote and support sustainable development imperatives. In this regard, this study focused on exploring the desirability of the CTMM to implement green burial methods, as one of the ways to support the CTMM's adopted sustainability strategy. An extensive literature review was done which revealed the trends, practices, and challenges faced by global north and south countries in implementing green burials.

A case study strategy was adopted which allowed the researcher to gain an in-depth understanding of the views and perspectives regarding the willingness of the CTMM to consider green burials as a strategy to support their sustainability efforts. One of the advantages of case studies is that they assist researchers to study complex phenomena within a particular context (Baxter and Jack, 2008). The researcher was able to evaluate the possibility of green burials in the real-life context of Tshwane.

The focus of this study has been on CTMM with the hope that the results can be replicated in other South African cities. The choice of CTMM as a case study is informed by the fact that in terms of its long-term Vision (2055), the CTMM has adopted one of the pillars of the sustainable development strategy to strive for "efficient use of natural resources" (City of Tshwane, 2013). Secondly, the researcher understands the terrain of the CTMM and the key people/functionaries in the city. Therefore, the researcher was able to efficiently interact with the participants in the process of collecting data.

3.3. RESEARCH METHODS

Ordinarily, research methods specify tools that researchers use to collect and analyze the data in a more systematic and coordinated manner (Walliman, 2011). This section of research methods clarifies how the researcher went about seeking answers to the stated research

problem, research questions, and objectives articulated at the conception of the research. The research methods followed in this study clarify the process followed in understanding the perspectives and views of the CTMM functionaries as far as the willingness to implement green burial methods as one of the ways to support its adopted sustainability strategy.

3.4. RESEARCH APPROACH

The research objective of this study was to understand the perspective of functionaries in the CTMM regarding green burials as a strategy to support sustainability goals. In this regard, a qualitative research approach was deemed most appropriate because it is best placed to provide insights regarding the understanding, experiences, and views of participants concerning the research objective.

This study was designed as qualitative because the research explores different perspectives of CTMM functionaries regarding the need for CTMM to adopt green burials. In addition, this was deliberately designed as a qualitative study because the research explores green burials as a social or human phenomenon in a natural setting. The researcher appreciated the fact that a qualitative approach originates from social and behavioral sciences and has several benefits. So, the researcher analyzed in some depth and detail, the views of respondents concerning this phenomenon being studied.

3.5. RESEARCH INSTRUMENTS AND DATA COLLECTION

One of the hallmarks of credible case studies is their use of multiple data sources (Baxter and Jack, 2008). In this regard, this study used existing literature to gather the current thoughts and trends about green burials globally. In addition, the study also used the interviews to gather primary data from key respondents.

3.5.1. PRIMARY DATA COLLECTION AND TOOLS/INSTRUMENTS

Interviews remain one of the most potent strategies for data collection in qualitative studies. This being a qualitative study, primary data was collected through semi-structured interviews. An interview schedule was designed (attached as Appendix F). The interviews created an atmosphere for respondents to express their own views in greater detail. The interviews were conducted with a total of 11 CTMM officials working in the domains of environmental management, city sustainability, cemeteries administration, project management, horticulture, municipal health services, environmental health, etc.

On average, each interview lasted for 45 minutes. The interviews solicited the views of these professionals about the city's need/readiness to adopt green burials to enhance sustainable development in the CTMM. The following table provides the credentials of the 11 officials

Table 3.1. Credentials/profile of officials interviewed:

CTMM officials Interviewed	Division/ Section/Department	Roles/Responsibilities	Date of interview
Anonymous Official 1	Sustainability Unit	Specialist	25 October 2021
Anonymous Official 2	Environmental Health Management	Environmental Health Practitioner	29 October 2021
Anonymous Official 3	Environmental Health Management	Environmental Health Practitioner	28 October 2021
Anonymous Official 4	Regional Operations: (Cemeteries section)	Cemetery Administration and Management	28 October 2021
Anonymous Official 5	Regional Operations: (Cemeteries section)	Cemetery Administration and Management	28 October 2021
Anonymous Official 6	Regional Operations: (Cemeteries section)	Cemetery Administration and Management	28 October 2021
Anonymous Official 7	Regional Operations: (Cemeteries section)	Cemetery Administration and Management	28 October 2021
Anonymous Official 8	Regional Operations: (Cemeteries section)	Cemetery Administration and Management	29 October 2021
Anonymous Official 9	Regional Operations: (Cemeteries section)	Cemetery Administration and Management	29 October 2021
Anonymous Official 10	Environmental Management Division.	Project Managers/Horticulturalist	31 October 2021
Anonymous Official 11	Environmental Management Division.	Project Managers/Horticulturalist	31 October 2021

Source: Author, 2021

3.7. ANALYSIS TOOLS/STRATEGY

A combination of two analytical tools/methods was used to analyze the information arising out of the literature review and the interviews. Firstly, the Conceptual Framework (CF) laid out in chapter 2 was used as an analytical tool because it provided the mind-map and lenses through which the study was approached. As indicated, the golden thread of the Conceptual Framework (CF) is the sustainable development concept, and the various components of this concept have been outlined in chapter 2. The second analytical tool/method is Thematic Content Analysis (TCA). The TCA was used to distill various themes flowing from the interviews with the officials. So, the conceptual framework and the thematic content analysis were integrated together with the literature reviewed to provide an analysis of the findings.

3.8. RESEARCH PARTICIPANTS AND SAMPLING STRATEGY

The purposive sampling technique was used to target specific functionaries in the CTMM. The sample size of respondents was limited to the 11 functionaries indicated above. The reasons for the choice of these participants have been clarified supra.

3.9. ETHICAL CONSIDERATIONS

This study paid attention to key issues in ethical research, viz. consent, privacy, and confidentiality. In addition, according to the confidentiality agreements with officials, it was agreed that their names will not be revealed. The researcher prepared a list of interview questions (Attached as Appendix F) in advance so that the study complied with the ethical principle of full disclosure. Consent forms (Attached as Appendix G) were handed out, and these forms were explained to all the respondents. The respondents were also be informed that participation is by choice. Moreover, the respondents were also given a written assurance that their responses will be merged with others to protect their identity. The participation information sheets (Attached as Appendix E) were also shared with the officials.

3.10. STUDY LIMITATIONS AND CHALLENGES

The first limitation relates to the scope of the study. Issues about burials tend to attract strong social, cultural, religious/spiritual perspectives. However, since the focus of this study is on understanding the perspectives of CTMM functionaries, aspects relating to these issues were not covered. Even though respondents touched on these in different ways, the views of community stakeholders themselves have not been directly solicited in this study. The second

limitation relates to the fact that the findings of this study can be reasonably applied in urban as opposed to rural settings. The study appreciated the fact that rural settings have different contexts. The third limitation relates to the data collection exercise with the respondents. Ideally, the researcher would have preferred to do face-to-face interviews with the CTMM functionaries because the method tends to be more helpful in deriving interpretations, reasoning, and perspectives of respondents. However, due to the current Covid-19 restrictions, this was not possible, hence telephonic interviews were conducted.

3.11. SUMMARY AND CONCLUSIONS

This chapter outlined the research methods employed to collect the primary data for the study. The research method applied in this study was qualitative and interviews were used as the primary data collection tool. The chapter also provided the rationale for the case study research strategy. The officials were chosen based on their work, which involves burial administration, cemetery planning, and maintenance, as well as environmental management.

4. CHAPTER FOUR: CONTEXT CHAPTER

4.1. INTRODUCTION

This chapter provides the locational and situational context of the study. It summarises the CTMM context within which the potential application of green burials is explored. The chapter also outlines some of the socio-economic profile, policy, and legislative structuring elements of the CTMM, with a particular focus on burials. Finally, some critical reflections are provided.

4.2. BRIEF OVERVIEW OF LOCATION AND FUNCTIONS OF TSHWANE

The CTMM is a Category A municipality in terms of Section 4 of the Local Government Municipal Structures Act, 1998 (Act 117 of 1998). A Category A municipality executes all the functions of local government; governing large densely populated urbanized regions that encompass multiple areas with close economic linkages. The CTMM was formed in 2000 after amalgamating greater Pretoria and the surrounding areas. In 2008, the former Metsweding, Nokeng Tsa Taemane, and Kungwini were integrated into the CTMM, and this led to the new CTMM (City of Tshwane, 2020). So, as a category A municipality, the CTMM has exclusive municipal executive and legislative authority.

4.3. ADMINISTRATIVE REGIONS AND SPATIAL DEMARCATION OF THE CTMM

The incorporation of the areas outlined above increased the area coverage of the CTMM to 6 345 kilometers, making the CTMM the third-largest city by landmass in the world. The CTMM is administratively divided into seven Regions. Region 1 includes former Bophuthatswana areas as well as the townships of Soshanguve and Garankuwa. Region 2, includes areas such as Hammanskraal Township and Stinkwater (City of Tshwane, 2020). Region 3 is the city's core with Pretoria CBD and close-by suburbs of Waterkloof and Brooklyn. The former town of Verwoedburg (Centurion) is located in Region 4. Region 5 is made of areas of Cullinan and the township areas of Refilwe. Region 6 includes the middle-income areas of Moreleta Park and high-end estates in Silver Lakes and Mooikloof. Region 7 is the gateway to Mpumalanga and includes the town of Bronkhorstspruit (City of Tshwane, 2020).

4.4. POPULATION DYNAMICS IN CTMM

In 2007, the CTMM's population was 2.4 million, and it rose to 3.5 million in 2017 (City of Tshwane, 2020). Table 4.1 below shows the population size of the CTMM from 2009 until 2019.

Table 4.1: Comparison between CTMM population with Gauteng and National population size.

	City of Tshwane	Gauteng	National Total	City of Tshwane as % of province	City of Tshwane as % of national
2009	2,710,000	11,500,000	50,300,000	*23.7%*	*5.4%*
2010	2,800,000	11,800,000	51,100,000	*23.8%*	*5.5%*
2011	2,890,000	12,100,000	52,000,000	*23.8%*	*5.6%*
2012	2,980,000	12,500,000	52,900,000	*23.9%*	*5.6%*
2013	3,070,000	12,800,000	53,700,000	*24.0%*	*5.7%*
2014	3,160,000	13,100,000	54,600,000	*24.0%*	*5.8%*
2015	3,240,000	13,400,000	55,500,000	*24.1%*	*5.8%*
2016	3,320,000	13,800,000	56,400,000	*24.1%*	*5.9%*
2017	3,400,000	14,100,000	57,200,000	*24.2%*	*5.9%*
2018	3,480,000	14,400,000	58,100,000	*24.2%*	*6.0%*
2019	3,560,000	14,700,000	59,000,000	*24.2%*	*6.0%*
Average Annual growth					
2009-2019	***2.74%***	***2.51%***	***1.61%***		

Source: IHS Markit Regional eXplorer version 2070

The population in Tshwane is predominantly made of Black Africans - more than 2,8 million (78.94%), followed by Whites (17.11%) at 566 000, Coloureds (2.07%) at 68 500, and Asians (1.88%) at 62 100 (City of Tshwane, 2020:13). Tshwane is home to different languages such as Northern Sotho, Afrikaans, English, Tsonga, and Tswana. The CTMM's population is expected to reach 3, 9 million in 2024, to constitute 6.2% of the national population and 24% of Gauteng's total population (City of Tshwane, 2020).

4.5. OVERVIEW OF CEMETERIES IN THE CTMM

The first 3 cemeteries in the CTMM were established in the 1870s (Erasmus, 2011). The first one was on the western side of Church Street. Due to the sprawling growth of the city, cemeteries started to be placed on the periphery. In 2011, there were 42 cemeteries in the CTMM, and in that period, there were roughly 74 deaths per day (Erasmus, 2011). Almost half of the 42 cemeteries referred above are not operating anymore because they have reached their burial capacity. Currently (2021), there are about 21 active cemeteries in the CTMM. These cemeteries are spread across the 7 administrative regions of the CTMM.

Table 4.3: Number of cemeteries in CTMM

Regions	Number of active cemeteries	Names of CoT registered Cemeteries	Graves capacity available
1	8	Klipkruisfontein, Soshanguve P, Old Soshanguve, Heatherdale, Old Pretoria North, Old Garankuwa, New Garankuwa, Winterveldt and Mabopane	36 292
2	2	Honingnestkrans and Temba	61 224
3	2	Zandfontein and Lotus Garden	30 933
4	3	Olievenhoutbosch, Laudium and Centurion	12 046
5	2	Refilwe and Cullinan	3 306
6	2	Hatherley and Pretoria East	10 586
7	2	Bronkhortspruit and Kungwini Regional	17 486
TOTAL	21	N/A	171 873

Source: City of Tshwane (2021), Covid 19 Strategic Committee Presentation

As of August 2021, the estimated number of graves available was 171 873. In the short, medium-term period (up to 5 years) the burial sites seem adequate to cater to burial needs in the CTMM (City of Tshwane, 2021). In addition, some of the cemeteries in the CTMM have been earmarked for an extension. These include Garankuwa, Klipkruisfontein, Hatherley, and Tshwane North cemeteries (City of Tshwane, 2021). Although green burials do not necessarily solve burial land scarcity problems, the point here is that the city has the potential to use the extended cemeteries for purposes of green burials.

4.6. IMPACT OF COVID 19 ON BURIALS IN CTMM

Since the global outbreak of Covid 19, there have been many burial cases in the CTMM. During August 2021, 5 344 deaths were recorded in the CTMM. It remains unclear how long the declining trajectory of Covid related deaths in the CTMM will hold, and whether the vaccination programme currently being rolled out will further flatten the curve (City of Tshwane, 2021).

4.7. A CASE FOR ECO-FRIENDLY BURIAL METHODS IN THE CTMM

The Roadmap towards Tshwane 2030 emphasizes the city's commitment to ecological transformation. Part of the ecological strategy is around the environmental structuring

concept, which advocates that Tshwane's urban form and identity should be linked to its natural elements. In this regard, cemeteries are viewed as part of the environmental structuring concept in the city. This is an important point to consider, given the fact that in South Africa, generally, most burials are done with coffins built with wood, treated with preservatives, either painted or varnished (Van Allemann, Dippenaar and Olivier, 2019). Such substances have the potential to generate toxic minerals such as mercury, copper, zinc, nickel, arsenic, etc, which cause groundwater contamination (Gondal, Nasr, Ahmed, Yamania, and Alsalhid, 2011). Therefore, this study suggests that large cities like the CTMM should lead by example in terms of tackling this problem so that appropriate measures are taken to prevent groundwater pollution. Researchers such as Musingafi (2003) have already cautioned that cemeteries pose one of the highest risks for polluting Tshwane water sources. The release of harmful and toxic substances to the soil can lead to irreversible damages to the ecosystem.

4.8. CRITICAL REFLECTIONS

The following section provides some critical reflections and engagements regarding the positioning and requisite alignment of the policies and legislative requirements for CTMM to implement green burials. To some extent, the critical reflection also covers the trends in the global context.

4.8.1. Technical Competencies and Political Will

It is not clear if green burials would receive support from senior management and politicians in the CTMM. There is an overwhelming impression that cemeteries and burials are not a high-priority issue in CTMM because, in recent years, the budget for cemeteries has been declining (Anonymous Official 8, interview, 29 October 2021). There is also doubt that there is sufficient political will and technical competency of officials to drive green burials. In addition, the lack of policy framework, norms and standards, and Standard Operating Procedures (SOPs) to guide the implementation of green burials is a concern. From the perspective of law enforcement and capabilities, the CTMM does not seem readily capacitated to ensure monitoring and compliance.

4.8.2. Legislative Implications

When the CTMM finally makes the transition to green burials, care should be taken to ensure that the Constitutional imperative and the requirements of the Municipal Systems Act (MSA)

of ensuring a healthy environment are safeguarded. The CTMM might need to employ additional Environmental Health Practitioners (EHPs) to ensure better compliance with environmental legislation. In addition, it will be critical for the CTMM to ensure compliance with the Spatial Planning and Land Use Management Act (SPLUMA) requirement of ensuring that all development projects comply with environmental sustainability requirements. At a technical level, the CTMM might need to ensure that all applications for green burials are approved by a legally competent health professional. The new (revision of the current) by-law should be very clear about this. The CTMM can learn and benchmark such procedures/systems as applied in countries such as Australia.

The requirements of the National Health Act (NHA) (2003) around how to handle and dispose of human remains should also be fully complied with. In addition, according to the National Environmental Management Act (NEMA), 1998, CTMM would need to ensure that the environmental authorizations are duly given before a cemetery can be allowed to conduct green burials. In addition, CTMM would need to conduct public consultation before burial practices can be amended to accommodate green burials. In South Africa, the Local Government Municipal Systems Act (MSA) requires municipalities to embark on community participation before passing any by-laws.

4.8.3. Policy Implications

Currently, the Department of Cooperative Governance and Traditional Affairs (Cogta) is yet to develop policies that would serve to guide green burials. Neither has the South African Local Government Association (SALGA) done that. All these gaps need to be addressed. In addition, currently, planners within the CTMM may not be completely aware of all the legal, technical, and policy requirements for green burials. In countries such as Australia, the lack of planners' awareness about green burials was found to be one of the key obstacles (Marshall and Rounds, 2011). CTMM needs to carefully navigate these complex policy terrain, by among others introducing training and development interventions. If this is not done, the risk is that municipal officials, or planners, can unwittingly prejudice the process cannot be averted.

4.8.4. International benchmarks: categorization of cemeteries and quality standards

Globally, the most renowned body spearheading the cause for green burials is the GBC. Although the GBC set out some minimum environmental standards for green cemeteries as well as guidelines for product manufacturers and funeral professionals, in South Africa, (or Africa for that matter) a similar body does not exist. So, CTMM would need to commission detailed studies to further understand the concept of green burials. This would be useful so that the CTMM would be in a position to distinguish different types of cemeteries that can allow green burials. Some cemeteries should be able to accommodate both the conventional as well as green burial practices. Other categories may only allow conventional burial methods.

4.9. SUMMARY AND CONCLUSIONS

It would be prudent for the CTMM to start thinking seriously about sustainable burial methods. The CTMM should appreciate the fact that cemeteries are one of the biggest potential contributors to underground water contamination. Green burials would go a long way to assist the CTMM to mitigate exposure to such strategic risks. The CTMM needs to introspect its policies and legislative readiness for implementing green burials and ensure quick alignment. Some of the steps needed would include asserting the technical competencies of officials, and the political will of the executives. In addition, care should be taken that the highest possible quality standards are adopted across the board. In this regard, an international benchmarking exercise may be a way to go.

5. CHAPTER FIVE: FINDINGS AND ANALYSIS

5.1. INTRODUCTION

This chapter provides the findings and analysis of the primary data collection exercise carried out during fieldwork. As indicated supra in chapter 2, two analytical tools/methods were adopted for purposes of analyzing the information arising out of the literature review and the interviews. The golden thread of the conceptual framework is the sustainable development concept, and the various components of this concept have been outlined as part of the conceptual framework of this study in section 2.9. In essence, the conceptual framework was used as an analytical tool because it provided the mind-map and lenses through which the study was approached. In addition, the thematic content analysis was used to distill various themes flowing from the interviews with the officials. So, the conceptual framework and the thematic content analysis were integrated together with the literature reviewed to provide a frame of reference for discussing and analyzing the findings of this study.

5.2. DISCUSSIONS AND ANALYSIS OF FINDINGS

Six themes were identified through the literature review and the conceptual framework. The themes were (a) green burials and implications for sustainable development, (b) support for green burials by officials, (c) role/impact of legislation and incentive systems, (d) obstacles to the implementation of green burials; and (e) Solutions to overcome the obstacles facing green burials, and (f) the impact/implications of Covid-19 on burials going forward. The discussion of the analysis of the findings of the study is done according to these themes below.

5.2.1. GREEN BURIALS AND IMPLICATIONS FOR SUSTAINABLE DEVELOPMENT

During my fieldwork, I sought to understand the respondent's understanding of the concept of sustainable development and how it relates to green burials. In this regard, I found that 10 out of the 11 respondents had some basic understanding of the pillars. This is an encouraging development because it is a demonstration that by and large, the CTMM officials are in a position to motivate why green burials can enhance sustainability. The majority (7) of functionaries understood green burials only from the environmental and ecological perspective, rather than from social, institutional, and economic vantage points. This

phenomenon of seeing sustainable development from a limited environmental perspective is not new. It is well documented by authors such as Spangenberg (2002). The significance of this finding is that more work needs to be done to educate officials in the CTMM about the other aspects of sustainable development, and how green burials relate to those.

From the literature reviewed, there is a general lack of awareness about the concept of green burials (Marshall and Rounds, 2011). This notion is confirmed in the CTMM. It is affirmed by the fact that only 1 respondent (Anonymous Official 8, interview, 29 October 2021) was not familiar with green burials. Anonymous Official 1 (interview, 25 October 2021) and Anonymous Official 11 (interview, 31 October 2021) did not know the concept, but they suggested that some of the key features of the green burial method are almost similar to the method used by Muslims in terms of using cloths to cover the deceased. However, the reality is that Muslims are still forced to use coffins by law, and in most cases, the coffins are not made of non-biodegradable materials. This was also confirmed by other respondents (Anonymous Official 2 (interview, 29 October 2021); Anonymous Official 5 (interview, 28 October 2021); and Anonymous Official 7 (interview, 29 October 2021). The rest (6) of the respondents were hearing about the concept of green burials for the first time. In terms of literature reviewed, scholars such as Marshall and Rounds (2011) and Lang (1999) opine that some planners too are also not aware of what green burials are about. As indicated above, in the CTMM, a majority of the officials interviewed were not aware as well.

All the officials indicated that the current traditional burial system does not assist the CTMM in the quest for sustainable development. Some respondents indicated that the use of materials such as steel and metal takes time to decompose (Anonymous Official 1, interview, 25 October 2021). Another respondent (Anonymous Official 3, interview, 28 October 2021) argued that the wood used on caskets is not good for the natural ecosystem because they have chemicals added to them. This view affirms findings by scholars such as Carter *et al*., (2007); Coutts *et al., (*2018); and Du and Kang, (2016) that the only coffins that are good for the environment are those made of biodegradable material. In this regard, some lessons could be drawn from countries such as Indonesia, whereby bodies are interred without a casket, but simply wrapped in cloth (Karmini and Milko, 2020).

Other respondents (e.g. Anonymous Official 3, interview, 28 October 2021; Anonymous Official 3, interview, 28 October 2021) indicate that even though the traditional burial method

is not sustainable, people still follow it mainly due to cultural/religious reasons. This finding affirms the widely held view that culture, religion, and spirituality play meaningful roles in how respondents relate to both death and burial practices (Ngubane, 2004; Glass and Samuel 2011; Alfa and Reza, 2012; Leuta, 2017; and Ngecece, 2019). Scholars such as Ngcongo (2005), Umoh (2005), and Zwane (2011) show that this issue of the influence of culture on burials is more predominant in the global south in comparison to the global north.

Comparatively speaking, most countries in the global north have developed systems, policies, legislation, implementation processes, protocols, and standard operating procedures to facilitate the implementation of green burials. So, this finding suggests that authorities, especially in the global south, may need to focus more efforts on change management and civic mobilization/education before trying to (prematurely) introduce green burials. Currently, on the issue of standards in South Africa, most municipal by-laws refer to the use of burial and/or memorial materials whose quality standards are in line with those suggested by the South African Bureau of Standards (SABS), or the Council for Scientific and Industrial Research (CSIR). However, the SABS has not yet developed guidelines for green burials. The South African Local Government Association (SALGA) may need to engage the SABS to develop such guidelines for municipalities, in line with international best practices set out by organizations such as the Green Burial Council (GBC).

5.2.2. ATTITUDE OF OFFICIALS AND COMMUNITY STAKEHOLDERS TOWARDS GREEN BURIALS

Under this theme, there are two streams of perspectives. The first part deals with whether green burials can be acceptable from the side of officials, and the second part deals with whether officials believe the community stakeholders in CTMM would positively embrace the concept of green burials. Regarding the first, all the officials felt that CTMM needs to adopt the green burial method. The most cited benefits to the City are environmental such as reduction of polluting underground water. Some officials (Anonymous Official 1, interview, 25 October 2021; and Anonymous Official 8, interview, 29 October 2021), believe that the green burial method would assist the City to meet some of the United Nations (UN) Sustainable Development Goals (SDGs) especially those related to the environment. This view is consistent with the findings of scholars such as Capels and Senville (2006) and Dambudzo,

(2012) who suggest that eco-cemeteries can assist cities to deal with some of the environmental sustainability challenges.

Other officials (Anonymous Official 3, interview, 28 October 2021; Anonymous Official 4, interview, 28 October 2021, and Anonymous Official 7, interview, 29 October 2021) are of the view that the green burial method should be implemented in the CTMM because it is consistent with some of the cultural practices of burials, such as wrapping the body with cow skin, as opposed to the usage of materials such as steel and concrete, which are harmful to the environment. This view is consistent with the findings of scholars such as Webster (2016), who posit that the use of materials such as concrete, hardwood, and steel, combined with embalming fluids, for burials and memorials is not good both for soil and water quality.

From the conceptual perspective of governance sustainability, Anonymous Official 5 (interview, 28 October 2021) opines that the green burial method would only be successfully implemented in the municipality if the CTMM leadership would adequately consult with communities. This view is consistent with the argument by Marshall and Rounds (2011), who cite that in Australia, a public consultation was found helpful to improve the acceptability of green burials. In South Africa, although the requirement of consultation is entrenched in the Local Government Municipal Systems Act (MSA), I am of the view that most of the consultation processes in municipalities are more of window dressing. So, the consultation would have to be intensive and meaningful, because it would be the first time the green burial policy is being officially introduced to communities. In addition, such consultations should be adequately budgeted for, as they are most likely going to take a lot of time, and thus costly. Importantly, it would be necessary for municipalities to run workshops and training sessions for officials and councilors before the public engagements.

Moreover, still, on this matter, I am of the view that the support of community stakeholders alone would not suffice. There would be a need to review and/or align some of the legislative tools to facilitate the implementation of green burials. The current legislation in South Africa, e.g. the SPLUMA (2013) and the National Environmental Management Act (NEMA) 1998 also have implications for green burials because they require compliance with certain environmental requirements before new cemeteries can be firstly developed or new burial systems can be introduced. In addition, the Births and Deaths Registration Act, 1992 also prescribes certain legislative requirements for the administration of the burial registers.

Importantly, municipalities are required to spell out the legislation governing burials, cemeteries, crematoria, and funeral practices.

An interesting perspective is offered by Anonymous Official 11 (interview, 31 October 2021), who argues that there is a need to start with needs analysis as well as investigating the different green burial modalities feasible for the CTMM. This view is significant for this study because the fact is that there is no one definition of green burials. The GBC and other scholars such as Webster (2008, 2016) Shove *et al*. (2012), Wilson and Chiveralls (2013), and Schroeder (2015) emphasize the use of biodegradable materials for both burial and memorial purposes because, from an environmental sustainability vantage point, it is believed that this ensures speedy decomposition of the body (Mooallem, 2009). Other definitional nuances are offered by scholars such as Gonzales (2009) and Slocum and Carlson (2011), who emphasize the fact that with green burials, the use of chemicals for embalming is not allowed. So, based on this reality of different nuances and/or elements of green burials, I argue that an impression must not be created that there is a one size fits all definition for green burials in the world. Even the best attempts by the GBC are just one of many contributions. I, therefore, argue that the absence of a universally acceptable definition should be welcome because it gives cities opportunities to conceptualize the concept of green burials contextually.

In South Africa, where there are social pressures of providing 'dignified' burials (Lee, 2011), this issue of the definition requires clarification so that potential conceptual contradictions and controversies are cleared, for seamless policy development and implementation clarity. From a strategic planning perspective, definitional clarity is also important. In this regard, Anonymous Official 6 (interview, 28 October 2021) is of the view that the green burials should be supported because it is futuristic as opposed to focussing on meeting the short-term needs of the current generation. This view further affirms the findings of scholars such as Schaefer and Crane (2005) and Vallesteros (2018), who suggest that the green burial method has the potential to assist cities to avoid the actions of one generation affecting future generations negatively.

Burials are a very sensitive matter, from a cultural/spiritual point of view, etc. They involve among others, people's emotions, feelings, cultures, religions, etc. So, utmost care and sensitivity, and empathy must be exercised by officials when working on policies and laws about the introduction of green burials in their cities. For municipalities, a pragmatic change

management approach would be needed; one that will advocate for a gradualist phased implementation approach rather than a big bang approach. In this regard, different municipalities can set out their long-term green burial strategies with milestones.

From the conceptual perspective of economic sustainability, some officials support the green burial method because in their view it would be cost-effective for households (Anonymous Official 2, interview, 28 October 2021; Anonymous Official 8, interview, 29 October 2021). As argued by scholars such as Doane and MacGillivray (2001), it is agreed that sustainable environmental practices must consider cost implications. In this regard, Scholars such as Fournier (2018) argue that green burials are cheaper compared to traditional methods. My view is that this study needs further empirical studies, especially in the African context.

As indicated above, this theme has two streams/parts. The second part of this theme deals with whether the CTMM perceives that green burials would be acceptable from the side of community stakeholders. Figure 5.1. below summarises the findings in a depicted form of a pie chart.

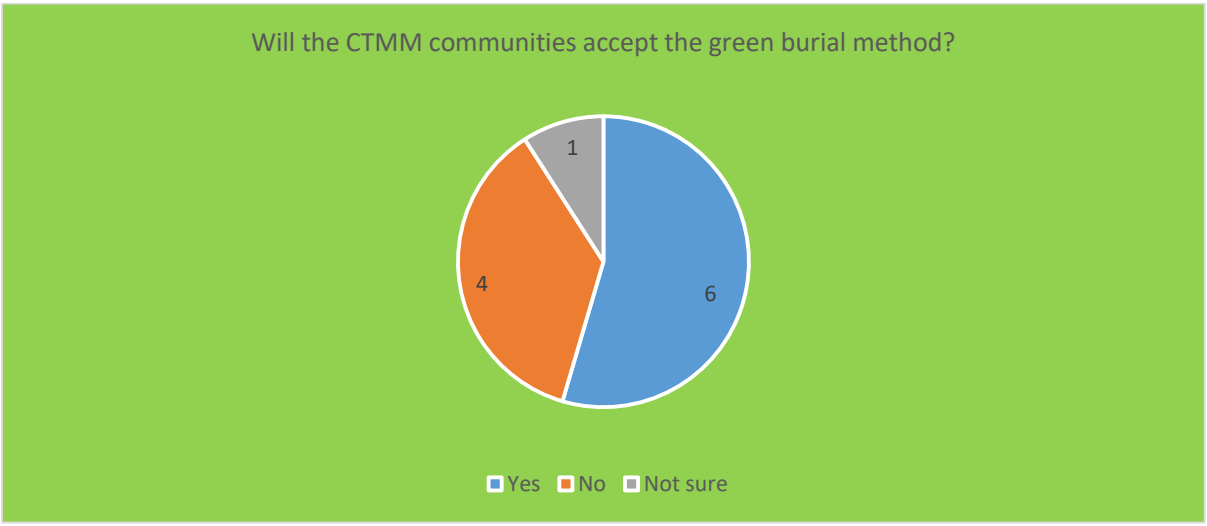

Figure 5.1: Views of CTMM officials regarding the likely support of the green burial method by communities (Author, 2021.

A majority (6 out of 11) of officials feel that the CTMM residents will accept the green burials method, provided CTMM engages communities, explaining all the benefits of green burials (Anonymous Officials 4, 5, 6, 9, 10, and 11). Others feel that if the green burial method can be proven to be more cost-effective most residents would readily embrace and accept it (Anonymous Official 6, interview, 28 October 2021). The other four respondents (Anonymous

Officials 8, 1, 2, and 7) indicated that the green burial method would be rejected for cultural/religious/spiritual reasons. In addition, some respondents posit that the environmental lobby groups and Non-Governmental Organisations (NGOs) would support the concept (Anonymous Official 1, interview, 25 October 2021); Anonymous Official 4, interview, 28 October 2021; Anonymous Official 8, interview, 29 October 2021).

Other respondents believe that younger people are more likely to reject the green burial method as it may 'deny' them an opportunity to 'show off' by spending more money on funerals, especially if it involves their parents, whom they think should be given some *'dignified send-off' (*Anonymous Official 7, interview, 29 October 2021). This speaks to the notion of social status (Klaus, 2019) and the concept of the materiality of burials (Johnson, 2010). Another school of thought is that people younger than 40 are more likely to accept the green burial method as they are not so much culturally inclined compared to older people (Anonymous Official 5, interview, 28 October 2021). Yet others believe that older (over 60s) people would support the green burial method since it would remind them of how indigenous people used to run cost-effective burials (Anonymous Official 4, interview, 28 October 2021). This view seems to be anchored on the practice of burying traditional healers and leaders (kings, chiefs, etc.) using materials such as cloths (Anonymous Official 4, interview, 28 October 2021; Anonymous Official 5, interview, 28 October 2021; Anonymous Official 7, interview, 29 October 2021). Although this may be a common practice for cultural communities, however, there is often some differentiation with most royal families concerning the positioning and items buried with the deceased.

The role of funeral undertakers cannot be ignored when talking about burials. There are strong views by CTMM functionaries arguing that funeral undertakers will not support the green burials strategy. This idea is premised on the belief that funeral undertakers stand to make less profits with biodegradable coffins and memorial materials compared to the traditional burial method. Anonymous Official 3 (interview, 28 October 2021) suggest that funeral undertakers do overprice caskets.

One of the major issues concerning the levels of acceptability of green burials by community stakeholders is the perceived or real benefits associated with green burials. In this study, the benefits cited by officials are summarized in figure 4 below:

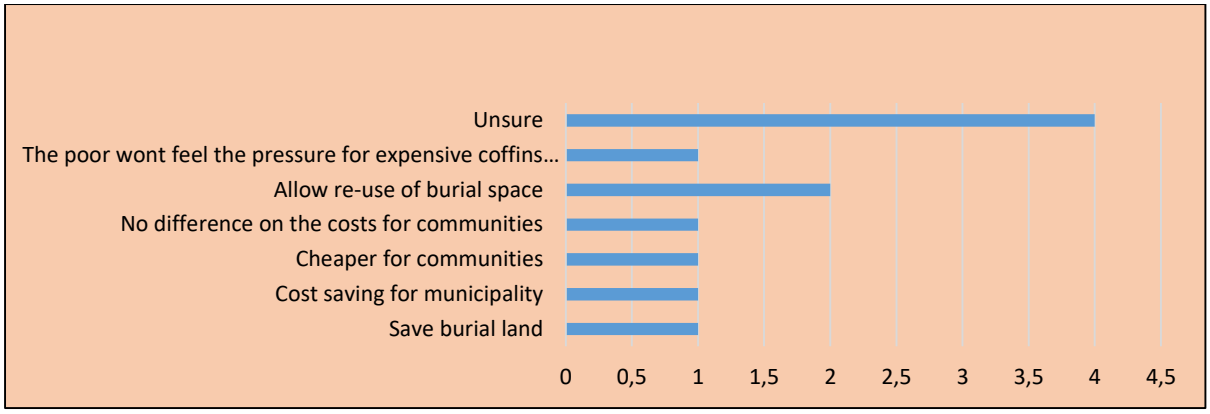

Figure 5.2. Reasons furnished by officials in support of the green burials (Author, 2021).

Scholars such as Mensah (2019) posit that green burials have proven to have a lot of ecological benefits. In this study, the reasons given by officials are varied. Anonymous Official 2 (interview, 28 October 2021) seemed to be under the impression that green burials would assist the CTMM to save land, whereas Anonymous Official 9 (interview, 31 October 2021) and Anonymous Official 1 (interview, 25 October 2021) were under the impression that green burials can result in CTMM realizing cost savings on burials budget and expenditure. Other officials do not anticipate that there would be any positive changes on tariffs/fee structure with the introduction of the green burial system (Anonymous Official 2, interview, 28 October 2021; and Anonymous Official 7, interview, 29 October 2021). Currently, there are no empirical studies to support or disprove the notion of green burials offering benefits of cost-efficiency. Such studies are needed.

Anonymous Official 1 (interview, 25 October 2021) is of the view that green burials would allow the re-use of burial space. This view is also shared by Anonymous Official 4 (interview, 28 October 2021). In my view, this argument is misplaced as there is nothing specifically required with green burials to make that assertion become a reality. Others are of the view that the green burials method may bring social benefits of serving as some kind of an "equalizer" in that there won't be any need for expensive burial caskets by the rich people in comparison to the poorest of the poor (Anonymous Official 4, interview, 28 October 2021; Anonymous Official 10, interview, 31 October 2021). In this regard, scholars such as Fournier (2018) argue that green burials are cheaper if coffins are not involved. However other scholars argue that no empirical studies are supporting that notion (Monaghan, 2009). Lee (2011) cautions against the high costs associated implications of "*dignified burials"* in recent years.

My view on the issue of cost implications for green burials is that the cost driver would depend on the definitional clarity/choice. If the green burial concept is approached from the perspective of using only biodegradable materials for burial and memorial purposes as posited by scholars such as Webster (2008, 2016), Mooallem (2009), Shove *et al*. (2012), Wilson and Chiveralls (2013), and Schroeder (2015), I believe it would be cheaper. This also needs to be qualified, by indicating that the examples of sustainable natural burial materials in this regard include: banana sheaves, wicker, bamboo, and alien vegetation, cardboard coffins, recycled paper, etc. as advocated by Gonzales (2009). These materials can be sourced and produced locally and therefore drive the costs further downwards even. However, if traditional coffins are still used in the burial process, I think the cost reductions, if any, would be insignificant.

Councilors and traditional leaders are some of the significant stakeholders in communities. Some respondents believe that councillors (Anonymous Official 4, interview, 28 October 2021, Anonymous Official 6, interview, 28 October 2021) and traditional leaders and healers would be useful to convey the message of support about the green burials method (Anonymous Official, 4 interviews, 28 October 2021). However, Anonymous Official 11, (interview, 28 October 2021) argues that the councillors who have corrupt relationships with funeral undertakers will not support the green burials method because it will shut down the system of kickbacks, which is already deeply entrenched in the Supply Chain Management (SCM) processes in municipalities My view is that if both councillors and traditional leaders are positively persuaded themselves, they will be able to influence their communities.

5.2.3. THE ROLE OF LEGISLATION AND OTHER INCENTIVES TO SUPPORT GREEN BURIALS

This theme has two aspects, i.e. legislation and financial incentives. Turning to the first aspect, there are diverse views regarding the requirement of using legislation (by-laws) to make the use of biodegradable coffins compulsory in the CTMM. Even among those who support the idea, the motivations are diverse. Figure 5.3. below shows the perspectives of CTMM officials regarding whether the use of by-laws can positively encourage the choice of biodegradable coffins.

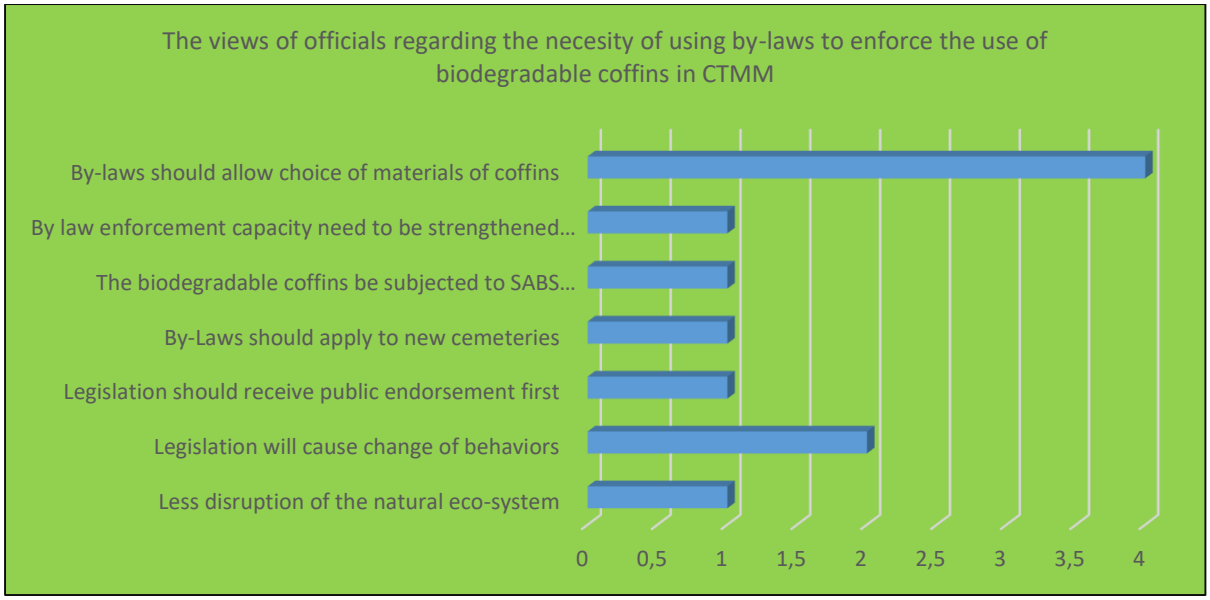

Figure 5.3. Perspectives of officials regarding the use of by-laws to enforce the use of biodegradable coffins in CTMM (Author, 2021)

For Anonymous Official 1 (interview, 25 October 2021), the use of by-laws will eventually lead to the reduction of negative impact on the ecosystem. However, others believe that the by-laws will lead to more use of biodegradable coffins, which will lead to environmental sustainability (Anonymous Official 2, interview, 25 October 2021; Anonymous Official 6, interview, 28 October 2021). Some of the officials are of the view that the by-laws should receive public support first (Anonymous Official 4, interview, 28 October 2021; Anonymous Official 5, interview, 28 October 2021). Going into the future, Anonymous Official 5 (interview, 28 October 2021) argues that the CTMM should legislate that all new cemetery sites should only allow biodegradable materials and coffins.

Interestingly, Anonymous Official 7 (interview, 29 October 2021) is of the view that the use of by-laws will reduce unnecessary competition for burials in communities because the coffins would more or less look and cost the same. If done, this might bring a needed social change or mentality about burials. In my view, this would not happen overnight. From a governance perspective, Anonymous Official 7 (interview, 29 October 2021) pointed out that the city should make it a legal requirement that coffins made of biodegradable materials are subjected to quality assurance approval systems of the SABS. In a similar vein, Anonymous Official 11 (interview, 31 October 2021) argues that CTMM first needs to build strong by-law

enforcement capacity to ensure that there is monitoring, compliance, and consequence management.

Theoretically, some scholars lament the notion of using by-laws to enforce the use of biodegradable coffins on the basis that it violates the principle of consumer choice (Cannon, 1989). Similarly, some respondents strongly believe that the legal instruments must offer choice to communities, rather than making it legally compulsory (Anonymous Official 3, interview, 28 October 2021; Anonymous Official 8, interview, 29 October 2021). In addition, Anonymous Official 10 (interview, 31 October 2021) believes that by-laws could be seen as 'autocratic', and trigger community resistance.

I support the notion of customer choice so that the process promotes social justice and inclusivity. The sad reality is that the CTMM might not have sufficient by-law enforcement capacity, to ensure that there is monitoring, compliance, and oversight, especially at the early stages of implementing the law. In addition, the development of the by-law should be accompanied by policies, standard operating procedures, and manuals to guide the implementation. This would also require requisite training of CTMM staff, as well as funerary business operators.

As indicated, the second aspect of this theme relates to financial incentives. Turning to this aspect, in the course of my fieldwork, I investigated if the respondents think the CTMM should introduce some incentives to encourage communities to embrace and adopt the green burial method. Six out of eleven officials do support the notion of incentives. Figure 5.4 below shows this.

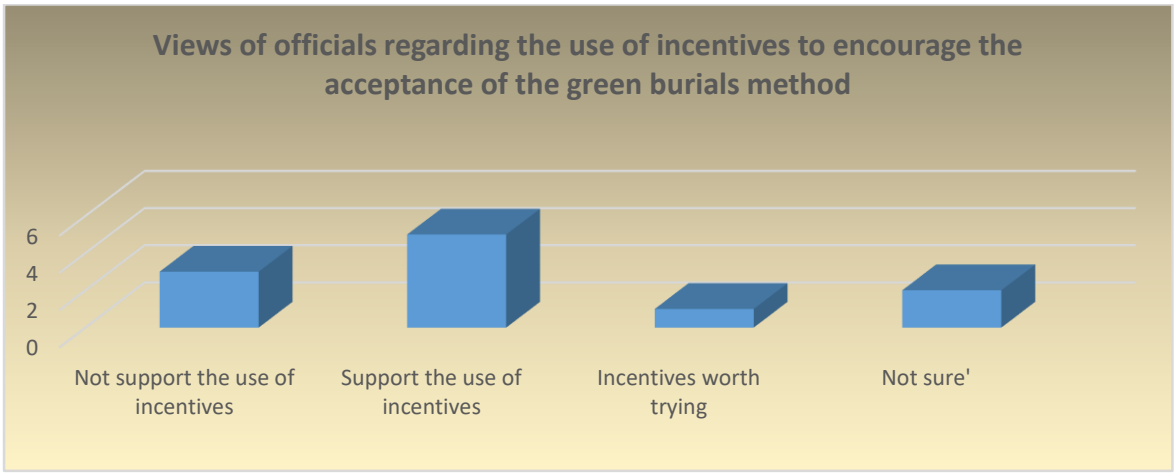

Figure 5.4. Reasons furnished by officials in support of the green burials (Author, 2021).

Some officials suggest that CTMM should start implementing the green burials method with indigent burials (Anonymous Official 1, interview, 29 October 2021). However, in the African context (especially South Africa), it is generally believed that cheaper burials are associated with poverty. This should be demystified. As far as incentives are concerned, one perspective suggests that incentivizing the green burials may be seen by communities as an effort by the CTMM to deny their loved ones *"dignified burials"* (Anonymous Official 10, interview, 31 October 2021). In the words of Anonymous Official 11 (interview, 28 October 2021), burials have become *"theatres" and "parades"* of expensive caskets (costing up to R100 000), and those who are not able to afford them panic and see themselves as social outcasts. Another view is that the incentives system is feasible, but CTMM should work closely with funeral undertakers because they are likely to sabotage it by discouraging community members to accept it (Anonymous Official 3, interview, 28 October 2021). Anonymous Official 4 (interview, 28 October 2021) argues that CTMM should deliberately reduce burial prices for green burials, to make them economically appealing, whilst addressing pertinent ecological problems.

Two respondents (Anonymous Official 7, interview, 28 October 2021) believe that although incentives may look conceptually appealing, they will only attract the poorest communities who cannot afford luxurious burials This view is also shared by Anonymous Official 7 (interview, 29 October 2021), who argues that incentivizing people for green burials should not be implemented because it might send a wrong message that the city is 'bribing' them to do what is not morally/socially the norm. Anonymous Official 4 (interview, 28 October 2021) believes that the green burials method must first be 'experimented' with rich people because it is believed that if it is a good burial alternative, the rich will also opt for it.

Another two respondents believe that green burials should not be incentivized because it is seen as unsafe (Anonymous Official 3, interview, 28 October 2021). In South Africa, both the Constitution (1996), the Municipal Systems Act (MSA) (sections 4(2)(d)3 and 4(2)(i), 4 73(1)), and National Health Act (NHA) (2003) make commitments to sound health considerations. Globally speaking, in some countries such as Australia, it is a legal requirement that a competent health professional must approve green burials (Marshal and Rounds, 2011). CTMM might need to work on this aspect as well.

5.2.4. OBSTACLES TO THE IMPLEMENTATION OF THE GREEN BURIAL METHOD

This theme tackles potential hindrances for the implementation of green burials in the CTMM. Some respondents are of the view that communities are not aware of the green burial method (Anonymous Official 1, interview, 25 October 2021; Anonymous Official 3, interview, 29 October 2021). Other officials believe that communities will see the green burials method as denying their loved ones *"dignified burials"* (Anonymous Official 10, interview, 31 October 2021). Other respondents believe that green burials may not be seen as safe, from a health perspective (Anonymous Official 3, interview, 28 October 2021).

One official suggests that if it could be proven that green burials will cost CTMM more money to implement, senior management within the CTMM would not support it (Anonymous Official 4, interview, 28 October 2021). I support this view because, in recent years, the budget for cemeteries has been declining.

Others believe that the idea of green burials will face obstacles emerging from cultural/religious reasons (Anonymous Official 5, interview, 28 October 2021; Anonymous Official 3, interview, 29 October 2021). Some suggest that the lack of policy framework, norms and standards, and Standard Operating Procedures (SOPs) to guide implementation would be an obstacle (Anonymous Official 9, interview, 31 October 2021).

5.2.5. SOLUTIONS TO OVERCOME OBSTACLES RELATED TO THE GREEN BURIAL METHOD

Having highlighted potential obstacles to implementing green burials in the CTMM, this research focussed on what solutions are needed to resolve the obstacles. Most respondents cited the need for interventions such as education, awareness, benchmarking, research, etc. (Anonymous Official 1, interview, 25 October 2021; Anonymous Official 2 (interview, 28 October 2021; Anonymous Official 3 (interview, 28 October 2021); Anonymous Official 6 (interview, 28 October 2021); and Anonymous Official 7 (interview, 29 October 2021). Because of the urgency to entrench environmental sustainability principles in cities (Du and Kang, 2016) and protect the regenerative capacity of the earth (Wackernagel *et al.,* 2002), solutions towards the obstacles facing green burials should be found. Currently, anthropogenic actions are compromising the environment (United Nations Environment

Programmeme (UNEP), 2012). So swift actions are needed in cities to adopt green burials as part of the sustainability strategy. Figure 5.5 below shows the views of the respondents regarding the urgency of implementing green burials in the CTMM.

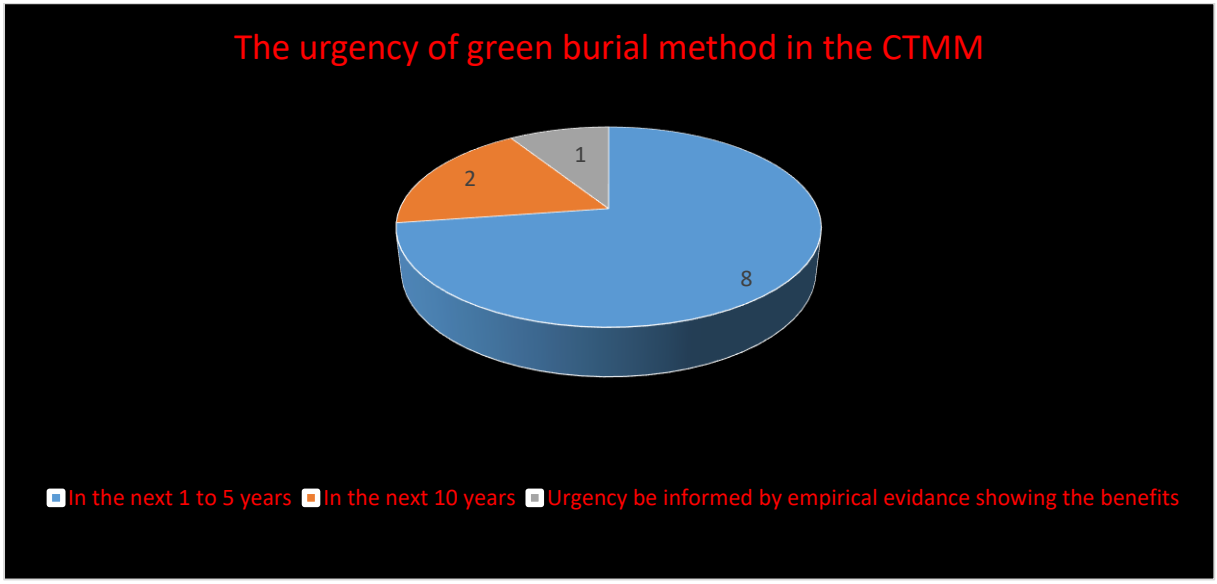

Figure 5.5: *The urgency of implementing the green burial method in CTMM (Author, 2021).*

There are three different views regarding the urgency of CTMM to implement the green burial method. The first view is that the CTMM should adopt green burials in the next 5 years. This view is supported by a majority of respondents (8/11). The second view is that the CTMM should adopt green burials in the next 5 years. This view is supported by only two respondents (Anonymous Official 8, interview, 29 October 2021; and Anonymous Official 10, interview, 29 October 2021). The third view, articulated by Anonymous Official 11 (interview, 31 October 2021) posits that the urgency should not be based on how many years, but on the availability of empirical evidence demonstrating the benefits which CTMM will reap with the implementation of green burials. Whilst I align with this view, I still emphasize that the CTMM needs time to consult communities and stakeholders, train staff, and develop systems, processes, and standard operating procedures and manuals before the adoption of green burials can be approved. Equally, the law enforcement capacity and capabilities of CTMM to ensure monitoring and compliance is an utmost necessity before implementation.

The issue of the urgency of implementation is also linked to the costs required. In the course of my fieldwork, I sought to understand if the respondents think the CTMM is forfeiting any benefits by not implementing green burials strategy to support the sustainable development

agenda for the city. In this respect, only 1 out of 11 officials was of the view that the CTMM is not losing anything (Anonymous Official 3, interview, 28 October 2021). A majority of respondents believe that CTMM is suffering some major losses by not implementing the green burials strategy. For example, Anonymous Official 1 (interview, 25 October 2021) is of the view that there is an opportunity cost for restoring the integrity of the ecosystem. Similarly, Anonymous Official 10 (interview, 31 October 2021) is of the view that CTMM forfeits opportunities to reduce environmental degradation. Yet the other officials believe that CTMM misses opportunities to reduce the rate of underground water contamination (Anonymous Official 5, interview, 28 October 2021); meaningfully contribute to SDGs (Anonymous Official 8, interview, 29 October 2021). Most of these opportunity costs are related to environmental sustainability principles.

In addition, from the perspective of environmental sustainability, the urgency for green burials in CTMM can be derived from the fact that traditional burial methods pose environmental risks through practices such as embalming, and the use of chemicals which are harmful to the natural ecosystem (Webster, 2008; Aruomero and Afolabi, 2014; Slocum and Carlson 2011). Anonymous Official 1 (interview, 25 October 2021) correctly affirms that non-biodegradable coffins release toxic chemicals into the ground, thereby contributing to pollution. This view is shared by Anonymous Official 2 (interview, 28 October 2021), Anonymous Official 5 (interview, 28 October 2021), Anonymous Official 6 (interview, 28 October 2021), Anonymous Official 7 (interview, 29 October 2021), Anonymous Official 8 (interview, 29 October 2021), and Anonymous Official 11 (interview, 31 October 2021).

The urgency for green burials in CTMM can also be derived from the fact that green burials can be used to create job opportunities through the local production of biodegradable coffins and memorial products within local markets. In this way, opportunities for the emergence of the Small-Medium, and Micro Enterprises (SMMEs) and cooperatives could arise. Some officials are of the view that the amount of steel and concrete used with traditional burial methods can be better deployed elsewhere for socio-economic development projects (Anonymous Official 4, interview, 28 October 2021). So, the argument is that the green burials method could create a new supply chain with new markets to promote Local Economic Development (LED) in townships and be part of township revitalization strategy (Anonymous Official 11, interview, 31 October 2021).

5.2.6. IMPACT OF COVID-19 EPIDEMIC ON BURIAL METHODS IN CTMM

The impact of the Covid-19 epidemic on burials cannot be ignored. Hence, during my fieldwork, I sought to understand the perspectives of respondents regarding the lessons that the CTMM could learn from how the Covid-19 epidemic burials were run, and whether there is a need for the CTMM to review its burial methods and/or systems. Recently, the CTMM went on and dug 1 million graves as a response to the epidemic and envisaged massive burial needs. In this respect, all respondents agree that the Covid-19 epidemic has challenged cities to review their burial systems and methods. One respondent even felt says that green burials should be adopted as a policy move going forward, subject to intensive community consultations and engagements (Anonymous Official 10, interview, 25 October 2021). This view corroborates the argument that green cemeteries can assist to make cemeteries become part of 'urban sanctuaries' in cities (Wong and Yu, 2009).

Another respondent shares that during the height of Covid-19, some of the funeral undertakers had run out of (traditional) coffins (Anonymous Official 10, interview, 31 October 2021). In addition, another respondent was of the view that the Covid-19 epidemic has revealed the fact that most communities are still emotionally attached to traditional burial methods (Anonymous Official 5, interview, 28 October 2021). Several respondents argue that there is a need for less resource-intensive burial methods (Anonymous Official 4, interview, 28 October 2021; Anonymous Official 9, interview, 31 October 2021). This is a significant point because green burials are less resource-intensive compared to traditional burials. So green burials would permit efficient use of resources because, firstly, fewer resources are used with green burials. Secondly, embalming chemicals would not be used. Thirdly, where coffins are used, they would have to be manufactured using biodegradable materials, with no need for paint, glues, steel handles, etc.

My view on this matter is that the adoption of green burials must not be based purely on the Covid-19 epidemic, although it is one of the triggers resuscitating the debate on sustainable burial methods. The risk of establishing a causal relationship between the need for green burials and the Covid-19 epidemic is that it may create some societal stigma that links the epidemic with the green burial method itself. The main arguments for the need for green burials should be sustainable development, predicated on the benefits for society, economy,

governance, and the environment. With or without Covid-19, green burials are the future, and cities should be encouraged to develop strategic plans with actionable programmemes, milestones, and deliverables.

5.3. CONCLUSION

This chapter discussed and provided the analysis of the empirical data. The interpretations of the findings were integrated with the literature and the study's conceptual framing. By way of conclusion, first, the empirical findings show that green burials receive overwhelming support from CTMM functionaries, particularly and more pronounced for environmental sustainability. There are fewer arguments from the respondents for institutional sustainability as a driver for the need for green burials. As far as economic sustainability is concerned, there are still doubts that green burials are cheaper, even though anecdotal evidence suggests that. However, there are two sides of the coin to this. On one side, there are strong sentiments that if it is proven cheaper, it might be seen as attractive. On the other side, there are suggestions that if it is cheaper, it might not attract the attention of richer people. This is a perception; it may not necessarily be factual.

There is uncertainty as to whether the communities will accept the green burials method. The influence of cultures, religions, spirituality, etc. seems to be one of the key determinant factors. This view is consistent with the current body of knowledge engaged through literature review. It remains true for both the global north and south, but mainly in the global south. In my view, the CTMM needs to do sufficient groundwork before green burials are adopted as policy. Part of this groundwork should include the review of by-laws and policies, developing standard operating procedures and manuals to guide the implementation, as well as training of CTMM staff, as well as other stakeholders such as funerary business operators and religious leaders.

6. CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1. INTRODUCTION

Chapter 5 presented critical discussions and analyses of the empirical data. The interpretations of the findings were integrated with the literature and the study's conceptual framing the analysis of the findings of the study, based on the conceptual framework and literature reviewed. This chapter presents four things. Firstly, the key conclusions of this study. Secondly, it presents the urban management implications of adopting green burials. Thirdly, it spells out the contributions made by this research to practice and theory. Finally, it tables recommendations for future studies/research.

In Chapter 1, specific intentions were outlined in terms of the main research question as well as secondary research questions. In addition, the aim and objectives of the study were presented. These are now revisited to facilitate a crystallized closure for the study.

6.2. REVISITING THE AIM OF THE STUDY AND THE CONCEPTUAL FRAMEWORK

The conceptual framework outlined in chapter 2 provided lenses through which the study was approached. It also clarified that the main thread of the study is the concept of sustainable development, with a specific focus on the pillars, viz. environmental, social, economic, and institutional. Under each of these pillars, specific (sub)concepts for the study were identified. The conclusions are now discussed in line with the structure of the conceptual framework of the study.

6.2.1. ENVIRONMENTAL IMPLICATIONS FOR GREEN BURIALS

As far as the environmental pillar is concerned, this study concludes that whereas some professionals in the CTMM (and possibly RSA) are aware of some of the practices related to the green burials method, they generally are unaware of the concept of green burials itself. There is an overwhelming belief among CTMM functionaries that the implementation of green burials will enhance the ability of CTMM to meet the Sustainable Development Goals, especially as far as the environmental sustainability goals of CTMM are concerned. Significantly, this study affirms that the current traditional burial methods do not assist CTMM in terms of sustainability, particularly from an ecological vantage point. With the traditional

burial methods, the risks of contaminating underground water and the negative impact on soil quality remain high.

This conclusion supports the findings of scholars such as Capels and Senville (2006) and Dambudzo, (2012) who suggest that green burials can assist cities to deal with some of the environmental sustainability challenges. In addition, it supports the assertions made by scholars such as Webster (2016), who argues that non-degradable materials for burials and memorials are not good for soil and water quality. In terms of implications for practice, the study suggests that every municipality needs to develop a contextualized understanding of green burials so that a gradual approach rather than a big-bang approach is adopted.

6.2.2. ECONOMIC IMPLICATIONS OF GREEN BURIALS

Coming to the economic sustainability aspects, the study concludes that empirical studies are needed to reach a conclusive determination as to whether green burials would offer benefits of cost efficiency in South Africa. However, the study notes that sustainable environmental practices are ordinarily associated with cost savings (Doane and MacGillivray, 2001). Safe to say that this notion is not proven in this study. So, the study concludes that municipalities should consider exploring less-resources intensive burial methods, and going green is highly recommended. In terms of implications for theory and practice, the study does not suggest, nor support a notion that green burials will assist municipalities to solve this problem of burial land scarcity because the factual reality is that green burials require land too. Cities still need to find the most land-efficient burial practices and also adopt policies that encourage less resource-intensive burial methods/systems.

6.2.3. SOCIAL IMPLICATIONS FOR GREEN BURIALS

As far as social aspects are concerned, this study concludes with two major points. Firstly, in South Africa, there are social pressures of providing 'dignified' burials. This view is consistent with findings from scholars such as Lee (2011). Secondly, there is a notion that the green burial method may 'deny' people an opportunity to 'show off' by spending more money on funerals, especially if it involves their parents, whom they think should be given some *'dignified send-off'.* So, the issue of costs speaks to the notions of social status (Klaus, 2019)

and the materiality of burials (Johnson, 2010). Social status, social emulation, and fashion are some of the most influential, interdependent, interrelated factors regarding the choice of burial methods in South Africa. This point corroborates the views asserted by scholars such as Leuta (2011), who indicate that some people still see alternative burial options as disrespectful or even offensive.

Importantly, the study concludes that the influence of culture/tradition regarding the choice of coffins made of biodegradable materials is key. As Greene (2008) would caution, burial rituals vary from region to region. The study concedes that even within South Africa, there are different sub-cultures, which influence burial choices, especially where rituals are involved Several scholars such as Gbenda (2005) and (Ademiluka (2009), Ngubane (2004), Glass and Samuel (2011), Zwane (2011), Afla and Reza (2012), Leuta (2017), and Ngecece (2019) corroborate this point about the role and influence of cultural rites when it comes to burials. From a practical point of view, this study concludes that within cities, some cultures may support the green burials method, others may not. Cities should see opportunities in their contexts, leverage and exploit them.

6.2.4. GOVERNANCE/INSTITUTIONAL IMPLICATIONS FOR GREEN BURIALS

The study concludes that the transition towards green burials needs to be implemented gradually, as the big-bang approach may yield unintended consequences. Cities should start preparatory work well in advance, to deal with potential obstacles such as the lack of community awareness, as well as the perception that green burials will not allow *"dignified burials".* The transition from traditional burial methods to green burials will not be an easy one. In addition, this study concludes that since cemeteries don't seem to be on the high priority list for senior management and executive, cemeteries are not likely to receive the desired attention.

Importantly, from a practical implementation point of view, cities need to develop policy frameworks, norms and standards, and Standard Operating Procedures (SOPs) to guide the implementation of green burials. As all these are developed, they need to comply with legislative principles contained in legal instruments such as the South African Constitution (1996), the Municipal Systems Act, the Spatial Planning and Land Use Management Act

(2013), the National Health Act, (2003), the National Environmental Management Act (NEMA) 1998, etc. In addition, from the perspective of law enforcement and capabilities, the CTMM does not seem ready to ensure monitoring and compliance. This area needs attention too.

6.3. RECOMMENDATIONS

The study submits the following recommendations:

6.3.1. PUBLIC ENGAGEMENTS

This study emboldens the importance and needs for eco-burial practices. Thus, it is recommended that cities start processes of engaging communities about the concept of green burials. This process should be inclusive, transparent and embrace all community stakeholders, private sector, non-governmental organizations, faith, and culture-based organizations, etc. Municipalities should facilitate the process, rather than direct it.

6.3.2. INCENTIVES AND BY-LAWS ENFORCEMENT

Cities need to combine the use of incentives with the development of appropriate enabling by-laws. It is recommended that municipalities apply locally appealing incentives, such as reduction of burial fees, and such incentives must be supported with policies, norms, and standards. Cities need to improve their capacity to monitor the implementation of the by-laws and to ensure compliance.

6.3.2. CHOICE

Green burials, however appealing they are, should not be made compulsory by law, at least not for now. Residents must still be allowed to make their own choices. When people are given choices, they are more likely to be receptive to the idea than when it is imposed on them.

6.3.3. SMME DEVELOPMENT AND LED

Many cities in South Africa are emphasizing the notion of township economic revitalization. Green burials present massive opportunities to create job opportunities through the local

production of biodegradable coffins within local markets, as part of the township revitalization strategy. In the African context, it wouldn't be difficult to source non-toxic and biodegradable materials, such as shrouds, urns, grass, leaves, banana sheaves, wicker, bamboo, alien vegetation, cardboard, recycled paper, etc. In this regard, it is highly recommended that the green burial method be integrated as part of cities' SMMEs and LED development programmes, going forward.

6.3.4. INTEGRATED FRAMEWORK FOR GREEN BURIALS IN SOUTH AFRICA

In South Africa, there are social pressures of providing 'dignified' burials. So, the issue of a contextualised definition of green burials must receive attention so that conceptual contradictions are cleared for policy development and implementation clarity. SALGA, along with academia, experts, and other think tanks, should lead the process to develop an integrated framework for green burials, not with a view of being setting normative prescripts, but to allow cities to engage with the multiple nuances of green burials and integrate these as part of the main discussion points for consultative engagements with the community stakeholders.

6.4. RECOMMENDATIONS FOR FURTHER STUDIES

This study recommends three areas for further study. Firstly, issues about burials attract strong social, cultural, religious/spiritual perspectives. However, this study focused on understanding the perspectives of CTMM functionaries. Therefore, studies that will directly source the views, perspectives, and opinions of community stakeholders are highly recommended. The second area relates to the fact that the findings of this study can be reasonably applied in urban as opposed to rural settings. So, some studies focusing on rural settings are necessary and needed. Thirdly, currently, there are few empirical studies to support or disprove the notion of green burials offers benefits of cost-efficiency. Such studies are needed in South Africa.

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APPENDIX A: ETHICS CLEARANCE LETTER

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

SCHOOL of ARCHITECTURE PLANNING

18 February 2022

Faculty of Engineering and the Built Environment:

Ethics clearance letter:

Dear Phillemon Mathane

Student number (2330748), this letter confirms that your ethics application has been cleared. Your clearance/protocol number SOAP123/06/2021

Yours sincerely

Lerato Nkosi

School of Architecture and Planning, Faculty of Engineering and the Built Environment, John Moffat Building, Wits, 2050, South Africa
Tel: +27 11 717- 7692| Email: lerato.nkosi@wits.ac.za | **www.wits.ac.za**

APPENDIX B: CONFIDENTIALITY AGREEMENT

City Strategy and Organisational Performance

Room D2EO01 | 2nd Floor, Block D | Tshwane House | 320 Madiba Street | Pretoria | 0002
PO Box 440 | Pretoria | 0001
Tel: 012 358 4749/0478 | Fax: 086 651 9999
Email: nosiphoh@tshwane.gov.za | www.tshwane.gov.za | www.facebook.com/CityOfTshwane

CITY OF TSHWANE
IGNITING EXCELLENCE

My ref: Confidentiality Agreement
Contact person: Pearl Maponya
Section/Unit: Knowledge Management

Tel: 012 358 4559
Email: PearlMap3@tshwane.gov.za

CONFIDENTIALITY AGREEMENT BETWEEN THE RESEARCHER AND THE CITY OF TSHWANE MUNICIPALITY

(To be completed by researchers who require access to conduct research within the City of Tshwane Municipality)

Name of Researcher	Tlou Phillemon Mathane
Name of Institution	University of Witwatersrand, Johannesburg
ID Number	7612275808082
Research Topic/Title	**EXPLORING THE FEASIBILITY OF GREEN BURIALS IN THE CITY OF TSHWANE METROPOLITAN MUNICIPALITY**

I, the undersigned, acknowledge, understand and agree to adhere to the following conditions of access.

(Insert details of dataset fields and other information to be accessed in course of research)

- I will maintain the privacy and confidentiality of all accessible research data and understand that unauthorized disclosure of personal/confidential data is an invasion of privacy and may result in disciplinary, civil, and/or criminal actions against me.

- I will not disclose data or information to anyone other than those to whom I am authorized to do so.

- I will access data only for the purposes for which I am authorized explicitly. On no occasion will I use research data, including personal or confidential information, for my personal interest or advantage, or for any other business purposes.

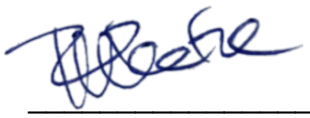
- I will comply at all times with the City of Tshwane's data/information security policies and confidentiality code of conduct.

CONFIDENTIALITY AGREEMENT BETWEEN THE RESEARCHER AND THE CITY OF TSHWANE MUNICIPALITY

- I am informed that the references to personal, confidential and sensitive information in these documents are for my information and research purposes, and are not intended to replace my obligations under the Data Protection and Privacy policies and regulations of South Africa.

- I understand that where I have been given access to confidential information I am under a duty of confidence and would be liable under common law for any inappropriate breach of confidence in terms of disclosure to third parties and also for invasion of privacy if I were to access more information than that for which I have been given approval or for which consent is in place.

- Should my work in relation to the research discontinue for any reason, I understand that I will continue to be bound by this signed Confidentiality Agreement.



13 May 2021

Signature **Date**

APPENDIX C: LETTER TO THE CITY OF TSHWANE REQUESTING PERMISSION TO CONDUCT RESEARCH

12 May 2021

The Research Unit,
City of Tshwane Metropolitan Municipality
Pretoria
0001.

Dear Sir/Madam

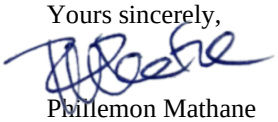
PERMISSION TO CONDUCT RESEARCH IN THE CITY OF TSHWANE

My name is Phillemon Mathane. I am a Master of Urban Studies (Urban Management) student at the School of Architecture and Planning, at the University of the Witwatersrand, Johannesburg, South Africa. As part of my studies, I am undertaking a research project titled **EXPLORING THE FEASIBILITY OF GREEN BURIALS IN THE CITY OF TSHWANE METROPOLITAN MUNICIPALITY,** under the supervision of Dr. Tsepang Leuta. This research aims to understand the feasibility of implementing green burials in the City of Tshwane Metropolitan Municipality.

As part of this project, I would like to secure permission to conduct interviews with officials in the City of Tshwane Metropolitan Municipality (CTMM).

If you have any questions during or afterward about this research, feel free to contact me on the details listed below. This study will be written up as a Masters Research thesis, which will be available online through the university library website. If you wish to receive a summary of this thesis, I will be happy to send it to you. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0)117171408, email hrec- medical.researchoffice@wits.ac.za

Yours sincerely,



Phillemon Mathane

Researcher: Phillemon Mathane, phillemonmathane@gmail.com Tel: 0763769032
Supervisor: Dr. Tsepang Leuta, Tsepang.leuta1@wits.ac.za 011 717 7718

APPENDIX D: THE CITY OF TSHWANE PERMISSION LETTER TO UNDERTAKE THE STUDY

CITY OF TSHWANE
IGNITING EXCELLENCE

City Strategy and Organisational Performance

Room D2EO01 | 2nd Floor, Block D | Tshwane House | 320 Madiba Street | Pretoria | 0002
PO Box 440 | Pretoria | 0001
Tel: 012 358 4749/0478 | Fax: 086 651 9999
Email: nosiphoh@tshwane.gov.za | www.tshwane.gov.za | www.facebook.com/CityOfTshwane

My Ref:	**Research Permission Letter\P.Mathane**	Tel:	(012) 358 4559
Contact Person:	**Pearl Maponya**	Email:	PearMap3@tshwane.gov.za
Section/Unit:	**Knowledge Management**	Date:	12 May 2021

Mr Tlou Phillemon Mathane
House No. 1316
Magalies Estate 1
Amandasis
Pretoria North

Dear Mr Mathane,

RE: EXPLORING THE FEASIBILITY OF GREEN BURIALS IN THE CITY OF TSHWANE METROPOLITAN MUNICIPALITY

Permission is hereby granted to Mr Tlou Phillemon Mathane, a Master of Urban Studies Degree candidate at the University of the Witwatersrand, to conduct research in the City of Tshwane Metropolitan Municipality.

It is noted that the study aims to understand the feasibility of the City of Tshwane Metropolitan Municipality regarding the implementation of the concept of green burials. The City of Tshwane further notes that all ethical aspects of the research will be covered within the provisions of the University of the Witwatersrand Research Ethics Policy. You will be required to sign a confidentiality agreement form with the City of Tshwane prior to conducting research.

Relevant information required for the purpose of the research project will be made available as per applicable laws and regulations. The City of Tshwane is not liable to cover the costs of the research. Upon completion of the research study, it would be appreciated that the findings in the form of a report and or presentation be shared with the City of Tshwane.

Yours faithfully,

Pearl Maponya (Ms.)
DIRECTOR: KNOWLEDGE MANAGEMENT

APPENDIX E: PARTICIPANT INFORMATION SHEET

12 May 2021

City of Tshwane Metropolitan
Municipality
Pretoria
0001.

Dear Sir/Madam

PARTICIPANT INFORMATION SHEET

My name is Phillemon Mathane and I am a Masters student in Urban Management at the University of the Witwatersrand, Johannesburg. As part of my studies, I have to undertake a research project, and I am investigating the **EXPLORING THE FEASIBILITY OF GREEN BURIALS IN THE CITY OF TSHWANE METROPOLITAN MUNICIPALITY,** under the supervision of Dr. Tsepang Leuta. This research aims to understand the feasibility of implementing green burials in the City of Tshwane Metropolitan Municipality.

As part of this project, I would like to invite you to take part in an interview / answering a questionnaire. This activity will take around 20-30 minutes. With your permission, I would also like to audio record the interview using a digital device. This recording will be stored in password protected computer and only the researcher will have access to this recording. Further, all identifying features removed; and the data will be deleted after 5 years.

There will be no personal costs to you if you participate in this project, You will not receive any direct benefits from participation but there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. You may withdraw at any time or not answer any question if you do not want to. The interview will be completely confidential and anonymous as I will not be asking for your name or any identifying information, and the information you give to me will be held securely and not disclosed to anyone else. I will be using a pseudonym (false name) to represent your participation in my final research report. If you experience any distress or discomfort at any point in this process, we will stop the interview or resume another time.

If you have any questions during or afterwards about this research, feel free to contact me on the details listed below. This study will be written up as a research report which will be available online through the university library website. If you wish to receive a summary of this report, I will be happy to send it to you (optional). With your permission the data collected from this research project may be used by other researchers.

If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

Yours Sincerely

Phillemon Mathane

Researcher: Phillemon Mathane, phillemonmathane@gmail.com Tel: 0763769032
Supervisor: Dr. Tsepang Leuta, Tsepang.leuta1@wits.ac.za 011 717 7718

APPENDIX F: INTERVIEW SCHEDULE

QUESTIONS FOR THE CITY OF TSHWANE METROPOLITAN MUNICIPALITY OFFICIALS

Exploring the feasibility of green burials in the City of Tshwane Metropolitan Municipality

By Tlou Phillemon Mathane

(Student nr 2330748)

Interviews for City of Tshwane Officials

A. Profile of the Official

Name (Not Compulsory)	
Department/Division	
Positional Rank/Level of operation	Specialist/Manager/Supervisor/Executive/etc
Roles/Responsibilities attached to the position	
Highest level of qualification	
Duration (work experience) with the CTMM	
Total work experience in the sector	

Kindly take a few minutes to answer the following questions with deep consideration and honest information:

B. Understanding sustainability policy framework/position of the City

1. What is your understanding of the **concepts of sustainable development and sustainability**?

_____
_____
_____
_____

2. In your understanding, what is the current sustainability policy position of the city regarding sustainability, sustainable development?

_____
_____
_____
_____

3. What are the key pillars for sustainability in the City of Tshwane Metropolitan Municipality?

_____
_____
_____
_____

4. To what extent do you think the **current traditional burial system in the city supports the goals of environmental sustainability**?

_____
_____
_____
_____

5. One of the pillars of the Sustainable Development Strategy of the City of Tshwane is striving for **"efficient use of natural resources"**. What are some of the key elements of this pillar?

_____
_____
_____
_____

C. Knowledge about green burials

6. Have you ever heard about green burials and their impact on sustainability in the 21st century?

_____
_____
_____
_____

7. To what extent do you think the green burial method would assist the City of Tshwane Metropolitan Municipality in **achieving the sustainability goals and objectives of the City**?

_____
_____
_____
_____

8. Do you know of any city in South Africa, or in the world, which is implementing green burials?

_____
_____
_____
_____

9. In your view as a Professional, do you think the City of Tshwane Metropolitan Municipality should implement green burials strategy as part of sustainability efforts?

_____
_____
_____
_____

D. Benefits of green burials

10. In your view, what **social benefits** will the City of Tshwane Metropolitan Municipality gain if it were to implement a green burials strategy as part of sustainability efforts?

_____
_____
_____
_____

11. Do you think **Tshwane residents** would support green burials? Why? Why not?

_____
_____
_____
_____

E. Economic and Financial Investments to support green burials

12. In your view, what **economic/financial benefits** will the City of Tshwane Metropolitan Municipality gain if it were to implement a green burials strategy as part of sustainability efforts?

_____
_____
_____
_____

13. Do you think that the City of Tshwane should find it worthwhile to **invest funding and other resources** to introduce and implement a green burials strategy?

_____
_____
_____
_____

14. Would you support a policy proposition for the City of Tshwane to give some form of **rebates and/or incentives** to citizens to encourage them to use the green burial method to bury their loved ones?

_____
_____
_____
_____

F. Environmental benefits of green burials

15. In your view, what **environmental/ecological benefits** will the City of Tshwane Metropolitan Municipality gain if it were to implement a green burials strategy as part of sustainability efforts?

_____
_____
_____
_____

16. Would you agree that some aspects of the current traditional burial method pose risks to **underground water contamination** in the City of Tshwane? Please elaborate on your response.

_____
_____
_____
_____

17. Would you support a **policy change by the City to pass by-laws that would make it compulsory for everyone to use coffins that are made of biodegradable materials** in the City of Tshwane? Why? Why not?

_____
_____
_____
_____

G. Other benefits of green burials

18. In your view, what **institutional/governance benefits** will the City of Tshwane Metropolitan Municipality gain if it were to implement a green burials strategy as part of sustainability efforts?

_____
_____
_____
_____

19. In your view, are there **any other benefits** that the City of Tshwane Metropolitan Municipality would gain if it were to implement a green burials strategy as part of sustainability efforts?

_____
_____
_____
_____

H. Potential obstacles/challenges for implementing green burials in CTMM

20. In your view, why is the City of Tshwane Metropolitan Municipality not currently implementing green burials strategy to enhance sustainability efforts?

_____
_____
_____
_____

I. Opportunities associated with implementing green burials

21. In your view, are there any opportunities or benefits the City of Tshwane Metropolitan Municipality is forfeiting by not implementing a green burials strategy?

_____
_____
_____
_____

J. Views on how community stakeholders would react to the concept of green burials in CTMM

22. Do you think the community stakeholders in the City of Tshwane Metropolitan Municipality would welcome the implementation of the green burials strategy? Please elaborate on your answer.

_____
_____
_____
_____

23. Are there any top 3 stakeholders in the City of Tshwane Metropolitan Municipality which you think would **support or reject the implementation of the green burials strategy**? Please elaborate on your answer.

_____
_____
_____
_____

K. Solutions to obstacles to the introduction of green burials in CTMM

24. How can the City of Tshwane Metropolitan Municipality address the top three to five potential obstacles in implementing the green burials strategy identified above? Please elaborate on your answer.

_____
_____
_____
_____

L. Preparatory work to be done by the city before moving towards the introduction of green burials

25. Should the City of Tshwane Metropolitan Municipality start preparing to move towards implementing green burials strategy? Please elaborate on your answer._____
_____
_____
_____
_____

M. Feasibility/desirability of the city to move towards the introduction of green burials

26. Do you think it is feasible/desirable for the City of Tshwane Metropolitan Municipality to move towards implementing a green burials strategy?

_____
_____
_____
_____

27. How soon or later do you think the City of Tshwane Metropolitan Municipality should start implementing the green burials strategy? Please elaborate on your answer.

_____
_____
_____
_____

N. Impact of the Covid 19 epidemic

28. Considering the recent high rates of deaths and burials caused by the Covid 19 epidemic, do you think the City should review its systems of burials? If yes, how?

_____
_____
_____
_____

CLOSING REMARKS (any comment on the study is welcome)

_____
_____
_____
_____
_____

THANK YOU FOR YOUR PARTICIPATION IN THE STUDY

APPENDIX G: CONSENT FORMS FOR THE STUDY

12 May 2021

Dear Sir/Madam

CONSENT FORM

TITLE OF PROJECT: EXPLORING THE FEASIBILITY OF GREEN BURIALS IN THE CITY OF TSHWANE METROPOLITAN MUNICIPALITY

NAME OF RESEARCHER: PHILLEMON MATHANE

I, ……., agree to participate in this research project. The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	YES	NO

…… (name of participant) …… (signature)

…… (date)

If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

Yours Sincerely

Researcher: Phillemon Mathane, phillemonmathane@gmail.com Tel: 0763769032
Supervisor: Dr. Tsepang Leuta, Tsepang.leuta1@wits.ac.za 011 717 7718

APPENDIX H: PLAGIARISM DECLARATION FORM

Faculty of Engineering and the Built Environment

Private Bag 3, Wits 2050, South Africa * Telephone (011) 717 – 7007 * Fax: (011) 717 7009 * Email: febe.pg@wits.ac.za

PLAGIARISM DECLARATION TO BE SIGNED BY ALL HIGHER DEGREE STUDENTS

SENATE PLAGIARISM POLICY: APPENDIX ONE

I Tlou Phillemon Mathane (Student number: 2330748) am a student registered for the degree of MUS(Urban management) in the academic year 2021.

I hereby declare the following:

- I am aware that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong.
- I confirm that the work submitted for assessment for the above degree is my own unaided work except where I have explicitly indicated otherwise.
- I have followed the required conventions in referencing the thoughts and ideas of others.
- I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this in not my own unaided work or that I have failed to acknowledge the source of the ideas or words in my writing.

Signature: _____ Date: 01 July 2021