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# The Influence of environmental virtue ethics in water conservation

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# The Influence of Environmental Virtue Ethics in Water Conservation

A case study of youth in Kiambu County, Kenya

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## DECLARATION AND APPROVAL

**Declaration**

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.



Pauline Marima

Signed: …….....

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**Approval**

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## ABSTRACT

Our world, our common home, is in a tragic crisis because of increasing environmental degradation brought about by human activity. While it must be acknowledged that a lot has been done to mitigate environmental degradation at global, regional and national levels, there has been an over-reliance on solutions that revolve around policy -, economy -, science- and technology-based interventions, that have at times placed a further burden on the natural environment.

The study contends that people, not rules or consequences, are the root cause of change, and argues for a radical change in the way we look at environmental morality – beyond a notion of obligations, and towards the development of virtues and habits for human flourishing. From a conservation perspective, virtue ethics is concerned with the type of virtuous characteristics man must have in relation to how he interacts with the earth and how he preserves its well-being.

The study tries to establish the extent to which Virtue Ethics has a positive influence on decision-making concerning water conservation in particular. It also explores on the reasons for promoting virtue Ethics as a framework for conservation ethics in general, especially among the youth who have an opportunity to really change the course of the planet's future.

This research has taken a mixed approach by integrating quantitative and qualitative analyses, based on data collected from a sample of 698 secondary school students in Kiambu County. The research has identified various perceptions held by the youth regarding virtue ethics, specifically as it relates to water conservation. The research also identifies the perceptions of youth regarding some of the merits of using a virtue-oriented approach for conservation.

The research reveals that, indeed, there is proportion of youth who use virtue ethics as their main ethical framework for decision making concerning water conservation; they do this mainly with a non-utilitarian and non-obligatory intention, and they do

this as a stable habit of character under different contextual settings. The research concludes that Environmental Virtue Ethics can be effective as an ethical framework for water conservation among the youth.

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| | |
|---|---|
| AWSB | Athi Water Services Board |
| ESC | Education for Sustainable Consumption |
| OECD | Organisation for Economic Cooperation and Development |
| SDGs | Sustainable Development Goals |
| UN | United Nations |
| UNEP | United Nations Environment Programme |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |

## DEDICATION

I dedicate this research to my parents, Rose and Paul Marima, for having given me the love for education and for encouraging me to do more and be more.

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I thank God Almighty for His unending Grace and Mercy towards me during this journey, and for the lessons on virtue I learned: patience, humility, fortitude.

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# CHAPTER 1: INTRODUCTION

## 1.1 Introduction

This chapter presents the background to the problem being addressed by the research, including a rationale for why it is important to resolve it, and to who the study would be of significance. The objectives of the research, including the research questions and hypothesis are also discussed. The scope and delimitations of the study are described to define both the population and theoretical confines of the research. A brief definition of some of the main concepts used in the study is also provided.

## 1.2 Background to the Study

The broad subject matter of the study is the role of character in the conservation of water. This topic is inspired by the general degraded state of the environment globally, regionally and nationally, despite decades of human interventions directed at its protection.

The changes to the Earth System in recent years are unprecedented in the history of man. A study by the United Nations Environment Programme (UNEP) stated that, if humanity was to persists with its business-as-usual interaction with the environment, its thresholds would come close to being exceeded, resulting in dire consequences on human well-being (UNEP, 2012).

At the global level, there is an overabundance of multilateral environmental agreements, conventions, treaties and protocols, all seeking to bring countries into a united effort in safeguarding the environment. There actually exist several hundreds of international environmental agreements forged between countries, seeking to help nations implement relevant environmental policies and enforcement mechanisms. Undeniably, there has been a significant effort made to promote more

environmentally sustainable practices in the world today, but nevertheless mankind is yet to reverse the harm done on the planet so far.

The 2030 Agenda, adopted in 2015 by the United Nations Member States, comprises 17 Sustainable Development Goals (SDGs) of which 'Goal 6' is to "Ensure availability and sustainable management of water and sanitation for all" (United Nations General Assembly, 2015). At a global level, as reported by UNEP in 2016, only as little as "3 per cent of the world's water is potable - of which 2.5 per cent is frozen in the Antarctica, Arctic and glaciers" (UNEP, 2016). By these statistics, human beings are apparently relying upon only "0.5 per cent for all ecosystem's and fresh water needs" (UNEP, 2016).

The Sixth Edition of the Global Environmental Outlook (GEO-6, 2016) published by UNEP stated that "2.6 billion people have gained access to improved drinking water sources since 1990, but 663 million people are still without" (UNEP, 2016). Further, the Organisation for Economic Co-operation and Development (OECD) predicted that between 2012 through to 2050, an "additional 2.3 billion people are expected to be living in areas with severe water stress, especially in Northern and Southern Africa, and in South and Central Asia" due to "increasing strains on the availability of freshwater resources" (UN Water, 2016).

Despite these alarming figures, studies reveal that "man is polluting water faster than nature can recycle and purify it" (UNEP, 2016). What is becoming quite apparent is that, despite global efforts that have traditionally lay emphasis on regulatory, market based, scientific and technological based interventions, **ecological crises have persisted**, placing a further burden on the biosphere.

On the African scene, one UNEP study indicates that about "32 per cent of Africa's population still does not have access to potable water" (UNEP, 2016). The over-exploitation of freshwater sources, coupled with the effects of climate change and threats from environmental pollution, has reduced both its overall quantity and

quality yet the growing population is expected to continue diminishing the available water resources even further (UNEP, 2016).

The Africa Water Vision 2025 Report claims that threats to water include weak governance and poor institutional arrangements to manage water resources. This report also claims that the water threat "cannot be successfully addressed by adherence to business-as-usual approaches in water resource management" but will instead necessitate the "adoption of participatory approaches, resource management at the lowest appropriate level, the mainstreaming of gender issues and the concerns of the youth" (UN-WATER/Africa, 2012).

Kenya is categorized as a "water scarce" country experiencing increasing degradation of water resources. The Kenyan government has over the last decades put in place several policies and programmes that have impacted on water management, including the Water Act 2016 (No. 43 of 2016) that legislates on the management of national water resources (Government of Kenya, 2016). The Kenya Vision 2030 (Government of Kenya, 2007) also recognises the need to conserve water sources to support the nation's growing population. Kenya's flagship projects for national water sector reforms are however mostly technology based. Indeed, education under the water sector reforms emphasises on science- and technology-based awareness creation and capacity building initiatives (UN-WATER, 2006).

The agricultural sector in Kenya accounts for a large proportion of water use in Kenya, therefore, water management in such agricultural areas is of critical importance (Ministry of Water and Irrigation, 2006). The Kenyan Poverty Reduction Strategy Paper states that "access to water for human consumption, agriculture, and livestock use is a major problem in rural areas." (Ministry of Water and Irrigation, 2006).

In Kiambu County (the geographical location of this research), the economy is predominantly agricultural although urbanisation is also growing fast. Water

sources include surface water (rivers and dams) and ground water (boreholes). There are currently nine Water Service Providers registered under Athi Water Services Board (AWSB) and several Community Water Projects in the county, but only 35% of the population has access to potable water (County Government of Kiambu, 2015). Water demand in Kiambu County has been on the increase due to the expanding population that has an estimated annual growth rate of 2.6% or 42,206 persons per year - and cannot be adequately supported by the available water sources (Athi Water, 2015).

Youth are generally the most prone to the effects of ecological crises; this is simply because they will live with the consequences of the environmental problems that previous generations have handed down to them. Rosalind Hursthouse, in recognising that the youth need to live in ways that are different from preceding generations, stated that "our current task is, thereby, to do what we can to develop those virtues in ourselves and our children, and to adhere to the 'obvious prohibitions' in the hope that we may bequeath to them a world that is not irrevocably spoiled" (Hursthouse, 2007).

During the International Youth Day in 2016, it was however stated that "many young people continue to face barriers to making green choices", including among others "lack of information about what options are available" (United Nations, 2016).

### 1.3 Statement of the Problem

The research problem is based upon a general concern about the escalating degradation of water resources despite years of conservation efforts to safeguard it for future generations. Based on the discussions presented in section 1.2 above, the study explores the extent to which Virtue Ethics positively influences decision making regarding water conservation, using a case study based on the youth in Kiambu County.

## 1.4 Research Objectives

The **major objective** of the study is: "To explore the extent to which Virtue Ethics positively influences decisions-making concerning water conservation among the youth in Kiambu".

The **minor objectives** of the study are as follows:

i. To explore the extent to which Virtue Ethics is *used* as an ethical framework for decision-making regarding water conservation among the youth in Kiambu
ii. To identify what *reasons* the youth in Kiambu with an inclination to virtue ethics approach regarding water conservation have for their preference.
iii. To explore the extent to which Virtue Ethics is likely to have an *enduring* influence on choices regarding water conservation irrespective of place and time.

## 1.5 Research Questions and Hypotheses

The ***main research question*** aligns to the major research objective above (section 1.4). With reference to the study population, the main research question for the study is formulated as follows: "To what extent does Virtue Ethics positively influence decisions-making concerning water conservation among the youth in Kiambu?"

Likewise, and with reference to the study population, the ***research sub-questions*** are aligned to the minor objectives discussed above and have been formulated as follows:

i. To what extent is Virtue Ethics used as an ethical framework for decision-making regarding water conservation among the youth in Kiambu?
ii. What reasons do the youth in Kiambu with an inclination to virtue ethics approach regarding water conservation have for their preference?
iii. To what extent is Virtue Ethics likely to have an enduring influence on choices regarding water conservation, irrespective of place and time?

A **research hypothesis** is defined as a "statement in quantitative research in which the investigator makes a prediction or a conjecture about the outcome of a relationship among attributes or characteristics" (Creswell, 2012). The **null hypothesis** has been formulated as follows: There is no relationship between Virtue Ethics and decisions-making regarding water conservation among the youth in Kiambu. Environmental Virtue Ethics **is not** effective as an ethical framework for water conservation among the youth.

The research considered an **alternative hypothesis** as follows: There is a positive relationship between Virtue Ethics and decisions-making regarding water conservation among the youth in Kiambu. Environmental Virtue Ethics can be effective as an ethical framework for water conservation among the youth.

### 1.6 Scope and Delimitations of the Study

The geographical location of the study was Kiambu County in Kenya (Appendix D). The field of environmental conservation tends to be wide and diversified making it difficult to tackle all aspects comprehensively. For this reason, the researcher narrowed down the scope to water conservation as an aspect of the environment that is easily relatable to most people. The study was based around the issue of water conservation and its relationship with Virtue Ethics as an ethical framework for moral decisions among the youth, vis-à-vis other approaches applied in environmental conservation i.e. deontology and utilitarianism.

The focus was on youth. The African Youth Charter defines youth or young people as person between the ages of 15 and 35 years ( African Union Commission, 2006). The researcher considers that radical changes in environmental conservation (and by extension water conservation) need to be targeted at the youth because they deserve particular attention in any efforts aimed at changing wasteful consumption patterns into ones that are more sustainable to meet the needs of future generations.

The **study population** comprised youth from at least six (6) secondary schools located in five (5) out of the twelve (12) sub-counties of Kiambu and aged between 14 and 26 years (Table 4.2 Distribution of respondents' age), and undertaking the [now outgoing] 8-4-4 Education System. A list of the study population and location map is found in Appendix D.

The study had a bias towards Environmental Virtue Ethics - a virtue oriented environmental ethic which emphasises that an individual's 'character', rather than 'right action', is the key element in making moral choices regarding care for the environment.

## 1.7 Significance of the Study

Reflections on character and virtue have been prominent in the works of early and influential environmental thinkers, but the recognition of Virtue Ethics as a distinct aspect of environmental ethics is more recent (Cafaro & Sandler, Environmental Virtue Ethics, 2005). "From increasing coverage in textbooks in one or another area of applied ethics, to a growing number of articles, edited collections and monographs, applied virtue theory has become a vibrant area of philosophical research" (Axtell & Olson, 2012).

There are hardly any studies or baseline data available on the role of Virtue Ethics in environmental conservation here in Kenya, despite the growing vibrancy in Environmental Virtue Ethics in other parts of the world such as in Europe and North America. It is anticipated that the research shall add to the findings of other Researchers who have examined the value of Virtue Ethics in advancing environmental conservation in general, and water conservation in particular, especially in the Kenyan context.

Whether water conservation ultimately relies upon a society whose members strive to be good people (virtue oriented), rather than on the reliance on rules (deontology) or incentives (utilitarian) to compel good action, is an issue that this study intends to

help illuminate. By comparing the moral perceptions regarding water conservation among the sample population, the study attempts to analyse the claim (see section 2.5) that Virtue Ethics should feature a lot more prominently in the environmental conservation agenda, as a viable and effective conservation ethic.

It is hoped that the results of the research may be of some utility to policy makers in academia, based on findings by UNEP that ethics education from an early age, and integrated into the syllabus during early childhood education, is more likely to have a greater and more enduring impact than policy-based or science-based interventions in the field of environmental management (UNEP, 2014).

It is likely that this research may offer useful insights into the merits of including Virtue Ethics in environmental education for the Kenyan youth. In fact, the new education curriculum in Kenya that was rolled out in January 2018, includes 'Environmental Activities' as one of the subjects that is being taught at the Primary School level. UNEPs Education for Sustainable Consumption (ESC) Unit, and indeed the educational institutions in Kenya, may consider the research findings to be of interest in their curriculum development.

### 1.8 Limitations of the study

One apparent limitation of the study is that the environmental and socio-cultural setting for the Kiambu youth is not necessarily homogeneous with other youth in the rest of the country. Generalisations of the research findings therefore have to be made with restraint. Secondly, the study is predominantly quantitative and one of the limitations of quantitative measures is that "they do not provide direct evidence of specific behaviours" (Creswell, 2012) in practice. Open-ended questions and related qualitative data and analysis were incorporated into the survey instrument to help minimise this limitation.

## 1.9 Definition of Main Concepts

**Ethics** can be defined as that part of Philosophy that studies free human acts, from the point of view of view of their moral value in terms of goodness or badness (Strathmore University, 2016). Ethics involves systematizing, defending, and recommending concepts of right and wrong behaviour therefore '**Ethical theory**' can be construed to mean 'a system of moral principles' (Fieser, 2017).

**Environmental Ethics** can be defined as "the discipline in philosophy that studies the moral relationship of human beings to, and the value and moral status of, the environment and its non-human contents" (Stanford University, 2016). It developed as recently as the 1960s-1970s (IEP, 2017) to provide guidance on the moral obligations human beings have to their environment. Indeed, we cannot discuss environmental management without invoking ethical considerations because of the moral relationship human beings have with their environment.

**Environmental conservation** is a broad term used to describe any actions that protect the natural environment, whereas **sustainable development** refers to growth that allows man to meet the basic needs and bring a better quality of life while minimizing the use of natural resources as well as reducing the emission of pollutants so as not to endanger the needs of future generations[1]. **Sustainable consumption** is all about how to use products to meet the basic needs of communities while keeping in mind the needs of future generations. The term

"**Earth system**" refers to the interaction that occurs between the earth's physical, chemical, and biological components.

**Normative ethics** deals with what humans owe to each other as moral persons (Voget-Kleschin, Baatz, & Ott, 2015); they are prescriptive by nature and help in the

[1] Adapted from the definition given by the Norwegian Ministry of the Environment (1994) Oslo Roundtable on Sustainable Production and Consumption

establishment of norms and rules that govern human conduct. Therefore, a normative ethical approach towards water conservation asks what individual human beings morally owe others in caring for water as a common resource. Normative ethics are categorised into three strands, namely: (i) Utilitarianism, (ii) Deontology and (iii) Virtue Ethics. One of the fundamental differences between these three strands of normative ethics, is not so much the moral value of the conclusions they reach, rather it is how they approach moral dilemmas.

**Deontology** centres on "which choices are morally required, forbidden, or permitted" (Stanford University, 2016). **Utilitarianism** determines the moral worth of an action solely on its contribution to overall utility in maximizing happiness or pleasure (Mastin, Philosophy Basics, 2008). **Virtue Ethics** is 'person' rather than 'action' based; it looks at the moral character of the person carrying out an action, rather than at ethical duties and rules, or the consequences of particular actions.

# CHAPTER 2: LITERATURE REVIEW

## 2.1 Introduction

The objective of this chapter is to review some of the key notions and theories underpinning the ethics of water conservation. The review locates similar views and recurring themes from selected authors, as well as some available research material and information gaps on virtue ethics as it relates to environment and conservation. The chapter concludes with an identification of the variables of the study as well as a conceptual framework for the study.

## 2.2 Theoretical Framework

Ethics of conservation are concerned with the obligations every human has to ensure the proper care for the earth's natural resources in a way that protects them from over-exploitation and degradation.

There are three main normative ethical approaches which determine how people make decisions when faced with moral dilemmas, these are: deontology (duty-based), consequentialism (outcome-based) and virtue ethics (value/character-based).

Deontology and Consequentialist theories may be regarded as ethical approaches that are concerned with conduct. They seek to provide a rationale for the sort of **actions** people should perform to do good. Deontology generally considers an action is good when it fulfils duty and obligation, regardless of whether the action is itself right. Consequentialism generally considers that an action is good if it can produce the most good. Virtue Ethics on the other hand is concerned with the **character** of the moral agent and what sort of person one ought to be.

### 2.2.1 Virtue Ethics Theory

Virtue Ethics, the prevailing ethic in Ancient and Medieval times, emphasizes the need for human beings to develop a good character, and considers that people of good character will ultimately be people who make good decisions. The way to build a good society therefore, is to help its members to become good people, rather than to use laws and punishments to deter bad actions (BBC, 2014).

Virtue Ethics is an ethic concerned with the whole of a person's life and their permanent disposition, rather than with specific episodes or actions, as is characteristic of deontological and utilitarian ethical approaches. Virtue Ethics therefore offers a different theory that asks, in addition to merely performing right acts, "how should I live my life?" and "what type of person should I be?"

Although this study has a bias towards the Virtue Ethics approach to conservation, as implied in Chapter 1, it does not however attempt to develop the interpretation of Aristotelean Virtue Ethics, rather it seeks to identify mainstream ideas regarding the relationship between character and environment and relate these to the question of water conservation.

**Aristotle** (384-322 B.C), with whom Virtue Ethics is largely identified, argued that we should focus on virtues which lead to what he called "*eudaimonia*" – which roughly translates as "happiness", "well-being" or the "good life" (Mastin, Philosophy Basics, 2008). Aristotle's definition of moral virtue is that disposition of behaving in the right manner, which is a mean between two extremes of deficiency and excess (both of which are considered as vices). Aristotle then categorized virtues as: (i) moral virtues (i.e. prudence, justice, fortitude and temperance); and (ii) intellectual virtues (which comprise of "sophia" or theoretical wisdom and "phronesis" or practical wisdom) (Mastin, 2008).

For Aristotle, we learn moral virtue primarily through habit and practice of what he referred to as "*arête*" (virtues or "excellence") in one's everyday activities (Mastin,

2008). Indeed, human beings are by nature able to acquire virtues as these are not innate dispositions; rather they are attained through habit (NE 1103a24-26) (Rackham, trans. 1934)

In Nichomachean Ethics, Aristotle suggests that genuine virtue will manifest in a person in the form of a "firm and unchangeable character", not just momentarily, and including when the virtuous action results in diminished happiness (NE 1105a.20) (Rackham, trans. 1934).

In Nicomachean Ethics Book II, Aristotle also defines moral virtue as *hexis* i.e. moral virtue is "an active condition, a state in which something must actively hold itself" (Sachs, 2017).

Virtuous acts must also be based upon practical reasoning and not our emotions (NE 1105b.20) because "because we are not pronounced good or bad according to our emotions" (Rackham, trans. 1934).

This study also considers insights from **St. Thomas Aquinas** (1225-1274) whose moral philosophy brings together two different traditions i.e. Aristotelian *eudaimonism* and Christian theology (Sachs, 2017). St. Aquinas described moral virtues as settled dispositions (good habits) that are directed by reason (ST I-II, 50, 3). His Summa Theologiae identifies four Cardinal Virtues from which all moral actions are derived (ST I-II, 61,2), namely: "Prudence in the practical intellect, Justice in the rational appetite (will), Fortitude (Courage) in the irascible appetite, and Temperance in the concupiscible appetite (Magee, 2015).

According to St Aquinas, ethics has its basis on Natural Law, which in turn receives its direction from Eternal Law – a divine Wisdom that directs all creatures to exist according to their true nature and purpose. For St Aquinas, Eternal Law is more befittingly described as Natural Law in human beings because of their quality of

being rational creatures. Ethics is associated with a rational human nature; and only secondarily is ethics based on compulsion or obligation.

For St. Aquinas the right action is that which is in alignment with the divine Will and Natural Law; this is what should provide guidance for human voluntary actions. St. Aquinas considers two main categories of virtues: (i) intellectual virtues which are manifested through good habits of the intellect/mind e.g. wisdom; and (ii) moral virtues which manifest through good habits of the will e.g. temperance, fortitude and justice.

Human beings are teleological; i.e. it is in their nature that they should desire certain goods as ends. According to St. Aquinas, an action may be considered morally good only if it is oriented towards man's true end and perfects rather than debases him as a person. The practice of virtues can therefore help to improve the person that possesses them. From this argument, it follows that the more an action produces perfection in the person, the greater its moral worth.

**Gertrude Elizabeth Margaret Anscombe** (1919 - 2001) is considered one of the driving forces behind the re-popularization of Virtue Ethics in western moral philosophy through her distinguished essay titled "Modern Moral Philosophy" (1958). In it she calls for a radical change in doing philosophy through the restoration of Aristotelian concepts such as 'flourishing', 'virtue' and 'character'.

Anscombe found fault in the way moral philosophy in modern times had become preoccupied with rules-based ethics (moral duty and obligation) and recommended instead that virtue be once again given a central place in ongoing conversations about morality (Anscombe, 1958).

Anscombe referred to utilitarianism (which she also termed as "consequentialism") as a "shallow philosophy" because it was solely committed to seeking pleasure. She also claimed that Kantian ethics (deontology) was incoherent because, as she put it,

"concepts of obligation, and duty … and of what is morally right and wrong" are merely "survivals, or derivatives from survivals, from an earlier conception of ethics which no longer generally survives, and are only harmful without it" (Anscombe, 1958). These shortcomings in utilitarianism and deontology were the basis for her championing the Virtue Ethics theory as a preferable alternative ethical approach.

**Alasdair Macintyre** (1929-present) discusses moral philosophy in one of his acclaimed books titled 'After Virtue' (1981) - considered to be one of the most important texts in modern day Virtue Ethics since the abandonment of Aristotelian ethics during the Enlightenment Period. Macintyre claims that the moral discourse must be rational. He seems to agree with St Aquinas' metaphysical grounding of human good in Natural Law, and on the capacity for perfection of the person through the practice of those virtues which lead to 'human flourishing' as the telos (end) - "human beings have an end towards which they are directed by reason of their specific nature" (MacIntryre, 1981).

### 2.2.2 Deontological Ethical Theory

Introduced by Immanuel Kant (1724–1804) in the 18th Century, deontology is based on the Categorical Imperative theory - defined as "an absolute, unconditional requirement that exerts its authority in all circumstances, both required and justified as an end in itself" (Mastin, 2008) and from which all obligations derive.

In this ethical theory, consequences and intentions do not matter. An act is morally good if it conforms to certain rules or duties as the right reason. According to the Kantian Categorical Imperative, moral law is an unconditional command and duties are obligatory irrespective of the consequences arising from the implementation of the act. Kantian ethics claim that our actions need to follow reason rather than emotion, irrespective of the context.

From a deontological view of environmental ethics, man has a moral obligation to respect environmental laws regardless of outcomes or personal inclinations. In

water conservation, deontological ethics is widely applied through the promulgation of laws, regulations, policies, standards, etc. put in place to protect water resources.

For example, hundreds of people were displaced in 2009 and rendered homeless when the Government of Kenya evicted them from the Mau Forest - Kenya's largest water catchment zone, because degradation by human activities had negatively impacted rainfall patterns in the country. The evacuation of families from the forest was undertaken so that conservation efforts could be enhanced. In part, due to these law-based enforcements over 70,000 hectares out of more than 400,000-hectare forest were rehabilitated by the year 2016 (Daily Nation, 2016).

### 2.2.3 Utilitarian Ethical Theory

Utilitarianism, a type of consequentialism, is a theory whose development is credited to Jeremy Bentham (1748-1832) and focuses on how the "greatest happiness for the greatest number of people" can be achieved. This is a type of 'Act Utilitarianism' which has its basis on what Bentham referred to as the **Principle of Utility** (Mastin, 2008) which approves or disapproves of actions on the basis of their consequences (i.e. the pain or pleasure they produce).

Utilitarian ethicists disregard the importance of duty or character of the agent in ethical thinking and focus instead on maximising welfare and happiness (IAEA, 2002). For a utilitarian, "right action is the one that does as much good as possible" (Zwolinski & Schmidtz, 2013) and moral arguments will therefore revolve around questions such as "What sort of consequences count as good consequences?", "Who is the primary beneficiary of my moral action?", "How are the consequences judged and who judges them?" (Mastin, 2008).

Using the example of Mau Forest in 2.2.2 above, the rehabilitation of this forest was intended to benefit the greater Kenyan population including neighbouring countries, even though the means used to achieve this greater good demanded the

eviction of [a relatively smaller number of] people dwelling within Mau Forest. A utilitarian would consider the eviction of the families living in the forest as the right action because it would maximise the good for the greater number of people.

### 2.3 Achieving Conservation through Sustainable Use of Natural Resources

Conservation of the environment and its natural resources has to do with a deliberate attempt by man to use environmental resources in a manner that is efficient and moderate. In the process of consuming the world's resources, man is required to maintain its well-being by mitigating against destructive over-exploitation.

In addition to resource depletion, pollution, degradation, and other environmental challenges, humanity also faces critical social challenges because resource use patterns are dramatically uneven around the world leading to an ever-expanding gap between the rich and poor.

While the planet is facing unprecedented threats to its well-being, the question arises: in what ways are human beings as consumers of its resources responsible? Doesn't humanity consist of moral agents making rational choices that either protect or annihilate the earth? From this comes the notion of sustainable use of resources.

Indeed, there has been a lot of academic and policy interest in this notion of sustainable consumption. As defined by the Oslo Symposium in 1994, sustainable consumption is about "the use of services and related products, which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of further generations" (International Institute for Sustainable Development, 1994). Sustainable consumption seeks to achieve a good life for everyone while taking into consideration the constraints of the earth's capacity.

### 2.3.1 Conventional Approaches to Achieving Sustainability

Over the years, two perspectives on how to reach sustainable consumption have been developed based on two different conceptual assumptions. One is termed as the "weak sustainable consumption approach" and is rooted in market-based approaches and technological optimism. The second one is termed as the "strong sustainable consumption approach" which gives emphasis to social innovation as a starting point and takes on a technologically pessimistic position (Lorek & Fuchs, 2011).

Much of the sustainable consumption literature is dominated by what is referred to here as the weak sustainable consumption approach i.e. an approach focusing on improving the efficiency of consumption primarily via technological improvements (Lorek & Fuchs, 2011). Such an approach, however, is limited when it comes to the human factor in the ethics of environment. This approach assumes that sustainable consumption can be achieved via improvements resulting from technological solutions, and that these technical solutions will seemingly become propagated by market demand. A strong sustainable consumption approach on the other hand, pays greater attention to the social dimension of environmental sustainability; it attempts to increase human well-being through social structures instead of material possessions (Lorek & Fuchs, 2011).

If one compares the two approaches described above, it may become apparent that they both offer necessary strategies for the pursuit of sustainable development to varying degrees, but there remains one critical obstacle - and that is the blind trust in the human factor. There appears to be a value - action gap, i.e. people are aware of the importance of their consumption choices, and perhaps even care about environmental issues, but these sentiments are not being converted into actual consumption patterns.

### 2.3.2 An Alternative Approach to Achieving Sustainability

As mentioned previously (section 2.2), the predominant normative ethical theories consist of virtue ethics, deontology and consequentialism. Virtue ethics offers an approach to sustainability that emphasizes an individual's character as the key element of ethical thinking, rather than rules about the acts themselves (as in the case of deontological ethics that judges the morality of an action based on the action's adherence to a rule or rules) or their consequences (as in consequentialist ethics which hold that the consequences of one's conduct are the ultimate basis for any judgment about the rightness or wrongness of conduct).

## 2.4 Man, as a Moral Agent in the World

As described in chapter 1 (section 1.2), the ecosystem has been subjected to centuries of destructive practices in the name of human development and advancement. In the search for human flourishing, the greatest burden has been borne by the planet; development is not neutral, the earth's resources are vulnerable to human choices. Human beings, endowed with rationality and freedom, give a moral dimension to their actions on the environment. The freedom enjoyed by human beings can either protect or destroy the very creation which has been entrusted into their care.

The American philosopher Stephen Gardiner (1967- ), states in his book titled 'A Perfect Moral Storm' that: "the dominant discourses about the nature of the environmental threat are scientific and economic, but the deepest challenge is ethical… This casts doubt for our existing institutions, and our moral and political theories…Given this, we are susceptible to proposals for action that do not respond to the real problem… the global environmental tragedy is most certainly an ethical failure, and one that implicates our institutions, our moral and political theories, **and ultimately ourselves, considered as moral agents**" (Gardiner, 2011).

Man, as the only creature endowed with rationality and freedom, is uniquely predisposed to make moral decisions concerning his interaction with nature. Man's choices concerning the earth and its resources make him the moral agent in this

relationship. His character needs to be one that is compatible with the well-being of the rest of nature. His character ought to manifest his superiority of being - not by the might with which he can manipulate nature, but rather by his ability to love, to be compassionate and to care for the rest of creation. On this Pope Francis states that we "lose the possibility of understanding the place of human beings in the world and our relationship with nature, while our dominion over the universe should be understood more properly in the sense of responsible stewardship"(§116) (Francis, 2015).

Considering that the well-being of creation is a vital part to the well-being of man, humanity must seek to act in morally good ways so as to maintain a harmonious balance. When the natural environment suffers, man suffers as well; the implication is that humanity has a fundamental moral obligation to care for the environment. The current environmental crises make it imperative that man, as a moral agent by virtue of his rational nature, should find ethical ways of interacting with the earth systems. In a sense, humanity has a fundamental moral obligation towards creation.

### 2.4.1 Grounding Environmental Ethics in Natural Law

Before going deeper into the discussion on the relationship between humanity and the rest of creation, there is a need to understand the basis of human ethics. This dissertation appreciates the Christian Thomistic concept of Natural Law as the participation of a rational creature i.e. human being, in the Divine Wisdom or rather in the Eternal Law that provides man with knowledge about certain general principles (ST I. II., q. 91, a. 2 – a.3) (New Advent, 1920)

Going back to the discussion on Natural Law as defined by St. Aquinas (section 2.2.1), human beings have the capacity to direct their acts using the light of reason, and to use their freedom to act in accordance man's proper nature and true end. Natural Law defines what the proper end is for man, so that he may direct his acts in concordance with this end. The light of reason orients one to do the kind of actions that comply with what is good and avoid those actions that are evil.

According to St Aquinas, Natural Law is universal and inalterable, it is the same for every man regardless of their nationality, age, gender, status, etc., and therefore all men can come to know it through reason. Every human being is capable of knowing the first principle that "good is to be done and pursued, and evil to be avoided" (ST II. II. q. 94. a.2) (New Advent, 1920). From this basic principle come forth natural inclinations to: (i) conserve life; (ii) be fruitful; and (iii) establish relationships. Whatever pertains to these inclinations therefore belongs to the Natural Law (ST II. II. q. 94. a.2). In spite of this, a person can also use reason and freedom to disregard these inclinations through his voluntary actions.

By protecting ecosystems from destruction and protecting the right to life, man also protects environmental well-being. In endeavouring to have a harmonious co-existence within the ecosystem, man builds a good relationship with the environment and allows it flourish. And by promoting a thriving natural environment through its conservation and protection, man supports its productivity and growth. Humanity has a moral duty to be just towards the environment, and this moral obligation is grounded in Natural Law.

### 2.4.2 The Concept of Environmental Virtue

A virtue is a character trait that is deeply entrenched in the person who possess it. It is not just a trait that one portrays on one occasion and not another, rather it is a stable disposition that is perfected through what Aristotle refers to as *hexis* (also discussed in section 2.2.1), i.e. moral virtue is "an active condition, a state in which something must actively hold itself" (Sachs, 2017).

It is however imperative to establish what dispositions constitute environmental virtues. To do this, the research relies on Philip Cafaro and Ronald Sandler's description of environmental virtues. In Cafaro and Sandler's view, "human excellence" includes the possession of those dispositions that can "maintain and promote the well-being of the larger ecological community" (Cafaro & Sandler,

2005). Now, because human beings are social by nature, a human being who is disposed to undermining others' well-being is described as deviant, whereas the one who promotes wholesome relationships with others in the society is deemed as good. Likewise, Cafaro and Sandler argue that excellence as a human being includes dispositions that "maintain and promote the well-being of the larger ecological community" (Cafaro & Sandler, 2005).

From a religious perspective, human beings are considered to be the divine stewards of creation, and from this viewpoint Sandler argues that the environmental virtues are "those character traits or dispositions that make human beings reliable and effective stewards" (Cafaro & Sandler, Environmental Virtue Ethics, 2005). Likewise, an environmental vice would be associated with those character traits that undermine this relationship.

From this argument, it follows that an environmentally virtuous person is someone whose habits and disposition manifest an excellence in the performance of actions that make for an environmentally good life (Frasz G. B., 2001).

Pope Francis states that the "relationship between human life and the moral law is inscribed in our nature" (§155) and consequently the ecological crisis is "a summons to profound interior conversion" – what he also refers to as an "ecological conversion", of which it is not an option when it comes to Christians who are called to be "protectors of God's handiwork" (§217) (Francis, 2015).

### 2.5 Environmental Virtue Ethics

Louke Van Wensveen defines Environmental Virtue Ethics (EVE) as a method of applying environmental ethics through the lens of Virtue Ethics, which is both a new and yet established approach (Wensveen, 2000).

In Environmental Virtue Ethics the question may be asked: "Does a virtuous character and way of life impact on environmental well-being?" It is a vibrant area

of research, as evidenced by the availability of online material (e.g. through google scholar searches), and there appears to be continued interest in analysing its merits as a viable and possibly even preferable environmental ethic. In fact, a study by Jackson and Smith claims that Virtue Ethics is increasingly becoming an accepted alternative to the dominant utilitarian and Kantian ethical theories (Jackson & Smith, 2005).

According to internet sources, early interest in applying virtue theory to environmental problems can be found in different academic and environmental journals by influential environmental thinkers, for example: voluntary simplicity (or temperance) is central to Henry David Thoreau's (1817–1862) environmental ethics (Thoreau, 1854); Aldo Leopold (1887 – 1948) wrote numerous essays calling for moral responsibility towards nature, stating that the proper treatment of the environment is only possible when we cultivate love and respect toward it; the "Sustainable Development Handbook" (Atkinson, Dietz, Neumayer, & Agarwala, 2014) gives a critical look at ethics and virtues in an adaptive approach to environmental choices; a study by Clive Barnett, Philip Cafaro and Terry Newholm (2005) provides a critical analysis of Virtue Ethics and the behaviour of consumers (Barnett, Cafaro, & Newholm, 2005); just to name a few.

According to the study on ethical consumption by Cafarro, Barnett and Newholm (2005), empirical evidence indicates that a sense of integrity (virtue) fosters greater feelings of well-being in people, than does the concern for rules (deontology) or consequences (utilitarianism) (Barnett, Cafaro, & Newholm, 2005). Empirical evidence also suggests that Virtue Ethics has a role in the ethics of conservation because personal integrity is a fundamental feature of ethical consumption (Barnett, Cafaro, & Newholm, 2005). The same study cites results from other researches that were undertaken by Newholm (2000) and by Shaw and Shiu (2003) which indicate that although people express concern for the consequences of consumption choices, what is more important, ultimately, is making choices that resonate well with their sense of personal integrity (Newholm, 2000), (Shaw & Shiu, 2003).

Cafaro in one journal entry however states that "little has been written in environmental ethics from a Virtue Ethics perspective which focusses on human excellence and flourishing" (Cafaro, 2001). Sandler on the other hand calls for an "impetus in promoting Environmental Virtue Ethics", which he considers a "relatively underappreciated and underdeveloped aspect of environmental ethics" (Sandler R. , 2013).

### 2.5.1 Some Proponents of Environmental Virtue Ethics

**Rachel Carson** (1907-1964) in her book "Silent Spring" (Carson R. , 1962) warned about human destruction on the environment in the name of man's mastery over nature. She also believed that cultivating virtue is central to appreciating the value and beauty of the natural world. She has been quoted as saying: "wonder and humility are wholesome emotions, and they do not exist side by side with a lust for destruction" (Carson R. , 2011)

**St. Pope John Paul II** (1920-2005) discussed in one encyclical, the connection between human action and environmental issues, claiming that "the ecological crisis is a moral problem" (John Paul II, 1990) and called on men all over the world to have a responsibility to oneself, to others and for the earth in both thought and behaviour. He called on families, which he referred to as the first educators in society, to educate the children to respect their neighbours and to love nature (John Paul II, 1990).

**Philippa Foot** (1920-2010) in her book "Natural Goodness" (Foot, 2001) claimed that goodness should be seen as the natural flourishing of humans as living beings, and ethics should be about making the world a better place. For Foot, virtues are beneficial to the individual and the community as they contribute to the good life (Foot, 2001).

**Thomas E. Hill Jr.** (1937 - present) is known for taking a virtue ethics stance when it comes to environmental issues. In his paper "Ideals of Human Excellence and Preserving the Natural Environment" (1983), Hill approaches the issue of environmental degradation from the perspective of the moral agent, and asks "What sort of person would destroy the natural environment?" (Hill, 1983). According to Hill, taking this approach to environmental problems can help us to realise that "even if there is no convincing way to show that certain destructive acts are wrong, we may find that the willingness to indulge in them reflects the absence of human traits that we admire and regard as morally important" (Hill, 1983).

In Hill's perspective, human acts that destroy the environment reflect on the person's inability to "appreciate things as important apart from themselves and the limited groups they associate with" (Hill, 1983). A person who destroys the environment either willingly or for profit, in Hills view, reveals in his character an absence of "traits which are a natural basis for a proper humility, self-acceptance, gratitude, and appreciation of the good in others" (Hill, 1983).

Human action in preserving the natural environment has a moral significance that is not entirely based on rights or utility according to Hill. The question is not necessarily on the wrong-ness or right-ness of the act itself, rather the main question is on the type of person who would carry it out.

**Rosalind Hursthouse** (1943-present) in her work "On Virtue Ethics" (Hursthouse, 2000) called for a radical change in the way we engage with nature and championed for the place of virtue in achieving human flourishing. Much like Anscombe and Alisdair, Hursthouse also argues that modern moral philosophy needs to become more Aristotelian. She has explored on the human nature and character traits that can be considered as virtues, and how a virtue-based ethic could be used to provide guidance on resolving moral dilemmas.

**Ronald Sandler** (1952-present) is the author of "Character and Environment: A Virtue-Oriented Approach to Environmental Ethics" (Sandler R. L., 2007) which is said to be the first "book-length defence of a virtue-oriented approach to environmental ethics" (Columbia University Press, 2017). Sandler is also the co-editor with **Philip Cafaro** of the book "Environmental Virtue Ethics" (Cafaro & Sandler, 2005).

Sandler holds that environmental virtues consist of "the proper dispositions or character traits for human beings to have regarding their interactions and relationships with the environment" (Sandler R. L., 2007). For an environmental ethic to be adequate, it should not only provide guidance on our actions towards the environment, but must also be an ethic of character that "provides guidance on what **attitudes** and **dispositions** we ought and ought not to have regarding the environment" (Cafaro & Sandler, 2005).

From a religious perspective, human beings are considered to be the divine stewards of creation, and from this viewpoint Sandler and Cafaro argue that environmental virtues are "those character traits or dispositions that make human beings reliable and effective stewards" (Cafaro & Sandler, 2005).

**Pope Francis** (1936-present) in his encyclical letter titled 'Laudato Si': On Care for Our Common Home" (Francis, 2015) calls for a virtue-oriented environmental ethic and makes a connection between present-day ecological crises and the need for a radical interior conversion of man. This piece of literature features quite prominently in the discussion of the research findings and conclusions.

Pope Francis argues that although we need institutions that can regulate human action on the environment, we also need to foster "the personal qualities of self-control, and to translate our awareness of the ecological crisis into new habits" because "authentic human development has a moral character" (Francis, 2015).

As previously discussed in section 2.3.1, market based approaches, technological optimism, and use of regulatory frameworks are overlooking a most critical element in their approach towards achieving conservation - the character of the acting agent. In *Laudato Si'* Pope Francis states that "he environment is one of those goods that "cannot be adequately safeguarded or promoted by market forces" (§190) and so he asks for a closer focus on the "place of human beings and of human action in the world" (§101) to support the prevailing technocratic and market-based paradigms currently in the fore front (Francis, 2015).

### 2.5.2 Applications in Value-based Conservation Ethics

Virtues have always been an important aspect in environmental management, and this is evident in accounts from different cultures around the world where the care for nature is acknowledged - even sacred in some, to uphold the complementariness of humanity with nature. The linkage between character and environment is therefore not by any means a new concept or an innovative idea, rather just an overlooked one in the Researcher's view.

#### *2.5.2.1 Africa*

Traditional environmental management approaches in Africa were informal in the sense that they fostered an "awareness and sensitivity to issues of nature preservation, and the dissemination of knowledge in environment conservation, through stories, riddles, songs, proverbs and taboos, as well as through participation in sustainable resource use and other eco-friendly activities" (Ssozi, 2012). Such systems have aspects of virtue-oriented environmental ethics.

In ancient Baganda for example, the traditional system supported those values that were consistent with conserving the environment and discouraged those values that were incompatible with sustainable living (Ssozi, 2012). These traditional systems would be transmitted orally from one generation to another, for instance through songs, stories, riddles, poetry, proverbs, wise sayings, etc. The purpose of such

traditions was to impart values concerning conservation of the environment (Ssozi, 2012).

In most African religions, there existed a supreme being from whom all living and non-living beings originated. According to an article by Obiora and Emeka (2015), for the most part, African metaphysics conceived the creator as "the Universal Vital Force that animated and energized all things" and "whose real essence consisted not in matter but in the energy and power infused into them by the Creator" (Obiora & Emeka, 2015). Oral tradition concerning the environment would also often contain elements of religion; for instance, some traditional taboos would associate certain elements of the natural environment (e.g. forests, seas, mountains, etc.) with the spirit realm. Consequently, a certain respect was due to all of creation, and this had the effect of perpetuating a respectful co-existence between man and nature.

In a similar argument by John Mbiti, Africans traditionally associate all creation with God and subsequently their cosmological view is deeply religious (Mbiti, 1970). Subsequently, the moral order that exists in their societies does not separate the relationship between man, nature, and God; this interrelationship has the implication that to act contrary to the moral order is an abomination against nature and humanity (Mbiti, 1970).

Although traditional approaches to water conservation were likely to have been adopted to respond to the prevailing local circumstances, such knowledge could still provide a valuable source of environmental conservation information in modern times. A study by Ogendi and Ong'oa (2009) found that children from a traditional rural setting are taught from an early age to respect natural resources and utilise them with care in accordance with cultural beliefs and practices. Therefore, the role of indigenous environmental knowledge and practices on water resource management, especially in developing countries, should not be dismissed but rather promoted (Ogendi & Ong'oa, 2009).

#### *2.5.2.2 Other Parts of the World*

The Organisation for Economic Cooperation and Development (OECD) is a forum comprising of 30 countries (mostly from Europe, Asia, North and South America) that work together to address various environmental and developmental challenges. The governments represented in OECD have various initiatives that try to promote sustainable development. In many of these countries, the governments have developed education curricula in their national schools to address sustainable consumption and promote environmental conservation and protection.

Several examples are given in one publication of the OECD titled "Promoting Sustainable Consumption: Good Practices in OECD Countries": The Austrian Federal Ministry of Education, Irish Sustainable Development Commission, and the Korean National Strategy for Sustainable Development for example have introduced relevant topics on sustainable consumption including consumer education into school curricula (OECD, 2008). Other initiatives which have included components of sustainable development into educational programmes include the Czech Republic Action Plan for Education for Sustainable Consumption, Finland's sustainable consumption plan, the UK Action Plan for Sustainable Development in Education and Skills, and the Swedish sustainable consumption programme (OECD, 2008).

The report also informs that countries such as Italy and United Kingdom have gone a step further to develop what are known as 'sustainable schools' which teach children to live sustainably in their day-to-day activities (OECD, 2008). In addition, the concept of 'Eco Schools' has been introduced in some of these countries whereby environmental principles are integrated into the education curricula in order to "involve young people in addressing sustainable development challenges at local level" (OECD, 2008).

Several other examples exist in Norway, Germany, Japan, etc. whereby children are being taught to be aware of the effects of their consumer behaviour towards the environment.

## 2.6 Ethics of Water Conservation in Kenya

The Kenya Vision 2030 (Government of Kenya, 2016) shows that environmental management is primarily being reinforced through regulatory tools, market-based controls and technological advancements, implying that most national efforts in conservation are centred on deontological and utilitarian approaches.

Although there is abundant literature and empirical studies on water conservation, it has been a difficult task to come by any substantive material relating to the application of Virtue Ethics in conservation in general, particularly in the African and Kenyan contexts. The closest match is perhaps found in literature on African traditional systems that are/were customarily used to protect and conserve the natural environment (examples are discussed in section 2.5.2.1).

There does exist a wealth of traditional values that could be of great value to water conservation efforts today. However, there is a need for more research into the merits of value-based ethics in advancing environmental conservation in Kenya.

With regard to water conservation, and specifically in Kiambu County, the researcher was unsuccessful in turning over any published material on environmental ethics, except for a number of websites that have posted government/private sector development initiatives dealing with water supply management in general.

The official website for Kiambu County for example, has no specific information about ethics of water conservation, and the mention of youth engagement relates to their economic empowerment through government-funded loans (e.g. Uwezo Loan). The Athi Water Board (one of eight national Water Boards that fall under the

under the Ministry of Environment, Water and Natural Resources) also did not have information on any water conservation ethics or initiatives in its official website (Athi Water, 2017), except for various ongoing and planned water infrastructure projects in Kiambu County.

### 2.6.1 Kenyan Youth and Water Conservation

One study done in Kenya, reveals that there is a substantial need for an education in environmental ethics that could produce citizens capable of making value-based judgements concerning environmental issues (Otieno, 2002). The study established through a survey of 720 randomly selected respondents from primary and secondary schools in three Kenyan districts, that their perception of "sympathy for nature and protection of the environment were not reflected in their essays" and this was attributed to "non-incorporation of ethics in the school subjects" (Otieno, 2002). The study also states that despite this realization, "both primary and secondary textbooks are permeated with utilitarian ethics", which Otieno claims is responsible for the destruction of the environment (Otieno, 2002).

In Kenya, the National Water Resources Management Strategy (NWRMS) states in its 2006 issue that the goal of public awareness programmes on water management ought to be "the development of conservation ethics among water users". In order to eliminate wasteful water use habits, long-term results can only be achieved through "educating young people", and "teaching children to respect the value of water, and help them grow into responsible adults with a conservation ethic" (Ministry of Water and Irrigation, 2006). This National Water Resources Management Strategy of 2006 suggests that the best place to begin education on conservation ethics is in schools.

Unfortunately, a more recent issue of the National Water Resources Management Strategy published in 2015 totally abandons this previous directive on value-based ethics education for youth! It instead focuses on legislation enforcement, fiscal incentives and embracing of modern technologies as means of promoting

conservation. The only reference to engaging the youth in water conservation seems to be through their economic empowerment by offering internships / apprenticeships and opportunities to participate in tenders (National Water Conservation & Pipeline Corporation, 2015).

With regard to youth and water conservation in Kenya, Osano *et al.* provide useful information about youth participation in environmental conservation and sustainable consumption, to include water use and conservation (Osano, Corcoran, Weakland, & Hollingshead, 2009). They evaluate a study by Ogendi and Ongoa (Ogendi & Ong'oa, 2009) which focuses on youth aged between 12 and 18 resident in Njoro Division of Nakuru District in Kenya; the study discusses among other things, the effects of environmental education and awareness on water conservation among youth in Nakuru. This study by Ogendi and Ongoa concludes that investing in environmental education activities can "greatly strengthen the connection between the environment and the youth, who will become active and informed environmental stewards" (Ogendi & Ong'oa, 2009). Their findings imply that a value-based ethic in water conservation offers a "valuable tool for policy makers and development practitioners to enhance sustainable development" (Ogendi & Ong'oa, 2009). The study also suggests that institutions, including churches and other faith-based organisations should also provide "platforms from which core principles of water conservation can be communicated to the youth to empower them to act for sustainability" (Ogendi & Ong'oa, 2009)

Indeed, there has been a lot of work worldwide to protect the environment, but the focus of these efforts has mainly been on: policy reforms; legally binding conventions, protocols and multilateral agreements; science-based solutions; technological advancements; awareness creation and capacity building. These predominantly deontological and utilitarian approaches have for decades been the mainstay of environmental conservation efforts, yet the world is still faced with global ecological crises to date.

Perhaps then, ongoing science- and regulatory-based efforts should be coupled with ethical education to bring up a new breed of humans with the right mind set for environmental conservation (UNEP, 2016).

From this viewpoint, Virtue Ethics might be particularly advantageous, because its focus is on nurturing the formation of character i.e. lasting and stable habits of character, necessary to reinforce and sustain all these other ongoing efforts.

The Researcher also makes the assumption that youth are critical to any debate on environmental conservation if the implementation of any model is to be effective. Through their youth exchange programmes, UNEP and United Nations Educational, Scientific and Cultural Organization (UNESCO) have been working to show young people that it is possible to translate their aspirations for a better world into everyday actions. (UNESCO/UNEP, 2002).

## 2.7 Conceptual Framework

The three main ethical approaches to making moral decisions, i.e. Deontology, Utilitarianism and Virtue Ethics theories (discussed in section 2.2), shall stand for the **Independent Variables** of the research. These ethical bases are regarded by the Researcher as having a direct influence on how different people will perceive the issue of water conservation - the **Dependent Variable** of the study.

The survey instrument (Appendix C) will attempt to elicit appropriate responses on these study Variables. Questions formulated around deontological ethics will adopt the 'Kantian Categorical Imperative' (section 2.2.2) and those for utilitarian ethics will adopt Bentham's 'Act Utilitarianism' (section 2.2.3). Questions based on Virtue Ethics theory will follow the general Aristotelian notion of virtue (section 2.2.1).

The data analysis and discussion in Chapter 4 will notably exhibit greater focus on the Virtue Ethics variable, primarily because the study is grounded on the Environmental Virtue Ethics theory (as discussed in section 2.5). The discussion of

findings will mainly refer to literature on Environmental Virtue Ethics as expressed in the second encyclical of Pope Francis "Laudato Si': On Care for Our Common Home" (2015). The discussion shall also consider St Aquinas concept of 'right action' as that which conforms to Natural Law as its foundational basis. In addition, three Aristotelian dimensions of virtue will be taken into consideration in the enquiry as follows:

If conserving water is virtuous (excellent), virtuously caring for water requires the agent acts:

a) With **knowledge** (Nicomachean Ethics 1105a.20): conservation of water is done knowingly as an act that has a certain value and based upon practical reasoning and not on emotions or duty.
b) For **its own sake** (Nicomachean Ethics 1105a.20): careful usage of water is the result of a decision to deliberately conserve water, for its own sake, i.e. not merely insofar as it tends to produce 'right action' (Sandler R. L., 2013)
c) From a **firm disposition of character** (Nicomachean Ethics 1105a.20): conservation of water is done from a stable trait in one's character (the "constancy and centrality of a person's character in orienting their life, in addition to episodic actions, is crucial to an effective environmental ethic" (C.f. R. Sandler (Columbia University Press, 2017)).

Figure 2.1 below shows an illustration of the conceptual framework for the study.

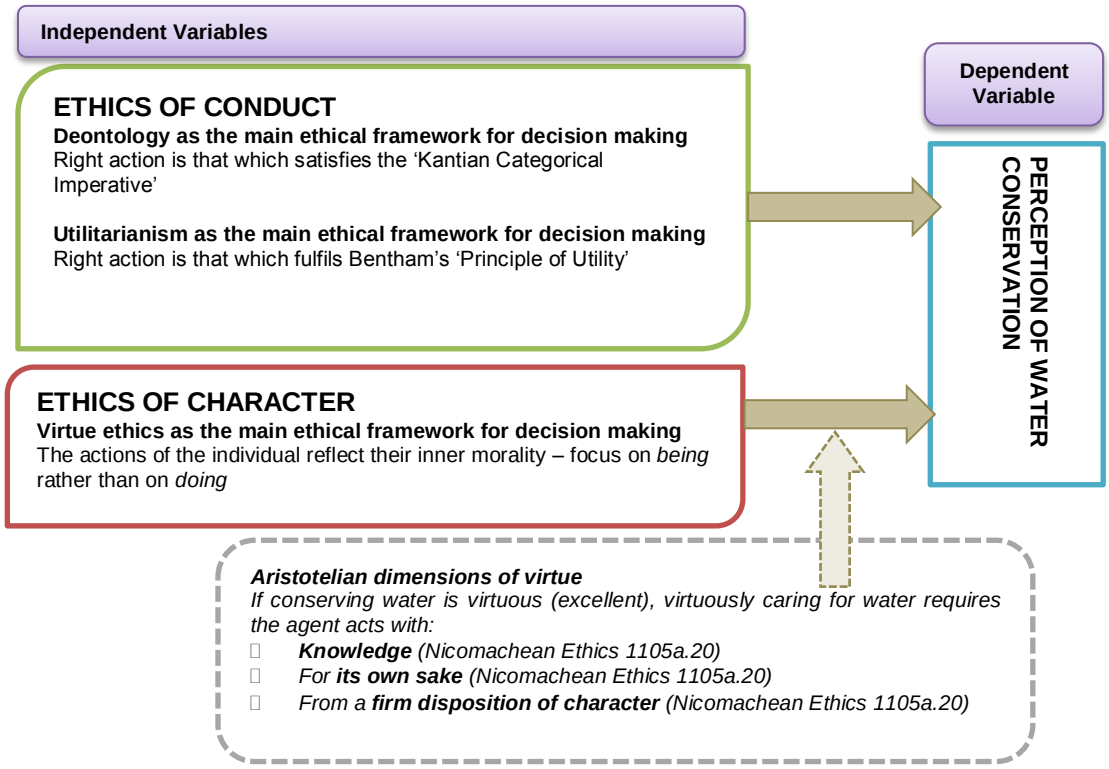


**Figure 2.1 Researcher's Conceptual Framework**

# CHAPTER 3: RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter aims to describe the research design. In this chapter is found a description of: the nature of the study; the study population, sample and sampling procedure; data collection procedures; and the data analysis methods used. The chapter concludes with a description of how data quality and ethical issues were considered during the study. By and large, the chapter presents the framework within which the research activities were undertaken.

## 3.2 Nature of the study

The nature of the research has been largely determined by the research questions themselves (section 1.5); they include enquiries into the extent of phenomena - for which a quantitative analysis is suitable. They also enquire about perceptions - which are value-based and therefor more fittingly dealt with by using a qualitative approach. The research consequently applied mixed methods i.e. both quantitative and qualitative methods to analyse data, and the Researcher's role was mostly passive.

The nature of the study was predominantly positivistic, collecting quantitative data by means of a survey tool (section 3.5). Qualitative data was also obtained using the same tool, by means of open-ended questions that were aimed at encouraging respondents to share their personal perspectives on the topics in subject. In addition, the Researcher undertook a qualitative inquiry using library sources related to the research topic, to draw out useful insights by other authors that could supplement the data analysis.

The study is for the most part descriptive in its attempt to establish the extent to which the research variables (section 2.7) are associated. Descriptive studies are

either cross-sectional or longitudinal (Creswell, 2012), and the Researcher adopted a cross-sectional survey method i.e. surveying the target population at a single point of time, in order to establish current attitudes and practices.

### 3.3 Study Population

The geographical location of the study was Kiambu County in Kenya, a predominantly agricultural area. As discussed in Chapter 1, the protection of water resources is critical in agricultural areas, and its conservation is of great consequence to the survival of agricultural economies. Kiambu County was therefore one such location where the research was deemed to be relevant.

A study population is described by Creswell as a group of individuals who share a common characteristic that the researcher can study (Creswell, 2012). The target population for this study was comprised of Kenyan youth in secondary schools, who are typically between the ages of 14-18 years (section 1.6). The reason for selecting youth as the target population was supported by the Researcher's conviction that a culture of conservation needs to be instilled at an early age, and an interest to know which perceptions youth have regarding water conservation.

### 3.4 Description of Study Sample and Sampling Procedures

From the target population, the researcher selected a study sample which represented a sub-group that could represent the population under study. A convenience (non-probability) sampling approach was used, defined by Creswell as sampling in which the Researcher "selects individuals because they are willing, available, convenient, and represent some characteristic the investigator seeks to study" (Creswell, 2012).

The type of sampling employed was homogeneous sampling, used when the goal of the research is to understand and describe a particular group in depth (Cohen & Crabtree, 2006). The research population comprised of secondary school students

based in Kiambu County, forming a group of individuals with common characteristics (i.e. age group, geographical setting, and educational system).

The selection of the schools was non-scientific and based on four general criteria. The first criterion was that it had to be a secondary school to target the correct age group intended for the study. The second criterion was that the location of the schools had to be within the geographical scope of the study i.e. in Kiambu County. The third was a consideration of the limited available resources in terms of cost and time, prompting the Researcher to rely on personal networks in identifying the most accessible schools. And the final criterion was a consideration for the willingness and availability of students to participate in the study.

The study sample was eventually selected from six (6) secondary schools located in five (5) out of the twelve (12) sub-counties within Kiambu County i.e. Limuru, Githunguri, Kiambaa, Gatundu and Kiambu Town (see map in Appendix D), intended to be representative of school-going youth from Kiambu County. The sample size that was issued with the survey instrument had seven hundred (700) students, of whom six hundred and ninety-eight (698) responded (99.7%).

### 3.4.1 Limitations of the sampling procedure

Kiambu County has twelve (12) sub-counties and has over three hundred (300) secondary schools with over eighty-nine thousand (89,000) enrolled students. The study population was rather large and covered a vast geographical area (approximately 2,449 $km^2$) making it difficult to obtain a sample frame. Convenience non-probability sampling was deemed by the Researcher to be practicable under these circumstances.

One shortcoming with convenience (non-probability) sampling however, is the risk that it may not exhibit the range of characteristics typically found in the larger population. To counter this flaw, the researcher attempted to reach an appropriate sample size to meet the guidelines by Creswell on sample sizes of at least three

hundred and fifty (350) individuals for a survey research; indeed, Creswell suggests that "the larger the sample, the less the potential error is that the sample will be different from the population" (Creswell, 2012).

## 3.5 Description of the Data Collection Instrument

The main data collection instrument for the study was a questionnaire (Appendix C). This tool is commonly used in survey research designs. The questionnaire was designed in a way that it would collect both quantitative and qualitative data from the study sample.

### 3.5.1 Description of the Survey Questions

The design of the questions in the research instrument was guided by the research objectives and questions, as well as the variables described in the conceptual framework (sections 1.4, 1.5 and 2.7). The questions comprised of five (5) close-ended questions whereby pre-set answers were provided to ease the process of statistical analysis. Four (4) open-ended questions were also included to gain an insight into the participants' personal views on the topics in subject. To codify open ended responses, the researcher identified common themes and grouped these into categories (section 3.7).

To provide a common setting against which to measure the respondents' perceptions regarding water conservation, a simple case/story was set at the beginning of the survey, around which key questions in the instrument were based. In the closed-ended questions, each respondent was required to rank three possible responses in order of their importance to themselves. In each instance, the three response options provided were intentionally designed to lean towards deontological, utilitarian and virtue ethics respectively. These questions were intended to obtain quantitative data for addressing the research questions. The open-ended questions were designed to obtain the qualitative data needed for the analysis, by asking both 'what?' and 'why?'. Table 3.1 below shows the relationship between the Survey Questions and the Research Questions they relate to.

| Research Question | Survey Question |
|---|---|
| Main Question: To what extent does Virtue Ethics positively influence decisions-making concerning water conservation among the youth in Kiambu? | Question 1 – Question 9 |
| Sub-question 1: To what extent is Virtue Ethics used as an ethical framework for decision-making regarding water conservation among the youth in Kiambu? | Question 1 - Question 4 |
| Sub-question 2: What reasons do the youth in Kiambu with an inclination to virtue ethics approach regarding water conservation have for their preference? | Question 5 - Question 6<br>Question 8 |
| Sub-question 3: To what extent is Virtue Ethics likely to have an enduring influence on choices regarding water conservation, irrespective of place and time? | Question 7<br>Question 9 |

**Table 3.1 Summary of conceptual framework of the study**

### 3.6 Description of the Data Collection Procedure

The Researcher began the data collection process by submitting a letter to the schools' Principals (Appendix B) to seek their permission to undertake a survey with the students in their respective schools.

Next, a trial run of the questionnaire was undertaken at one school (Muna Secondary School) using ten (10) students. This was done to test the survey instrument before rolling it out to the rest of the study sample. The feedback received from the prototype enabled the Researcher to adjust the questions in the instrument by: (i) simplifying the phrasing of some statements which the trial- run students had reported as being difficult to understand; and (ii) shortening the survey instrument to fit onto a single sheet printed on both sides - to make it less daunting for them.

The Researcher proceeded to issue each school with between 100 – 150 questionnaires each. The students who volunteered to participate were given time to read and fill the survey; most were reported to have completed it within 30 minutes and with minimal assistance from their teachers. Within a week of issuing the surveys, the Researcher collected all completed documents from each school, and participants were thanked for their support in taking part in the study.

### 3.7 Description of the Data Analysis Procedure

The data collection was intended to culminate in a statistical investigation that could help the researcher address the research questions and make a conclusion on the research hypothesis (section 1.5). According to Creswell (2012), the grading of attitudinal data implies use of an ordinal scale because they "ask participants to rank order of importance" on various issues (Creswell, 2012). The study did this by using an ordinal scale to rank the 'order of importance' of responses in the survey instrument in the close-ended questions (i.e. most important, second in importance, least important).

Mixing of the quantitative data (from the closed-ended questions) with the qualitative data (from the open-ended questions) was enabled by identifying recurrent themes that could be codified and statistically analysed.

The researcher used Microsoft Excel programme to undertake the analysis of all the data collected in the questionnaires, and to develop representative tables, charts and graphs. The generalisations made from the data analysis, while being restricted to the study population (section 3.3), might be used to inform similar research to compare outcomes.

### 3.8 Assurance of Research Quality

It was anticipated that the data collection and analysis procedures described above would return scores that are reliable and valid. Reliability here refers to the consistency of data collected by the survey instrument, whereas Validity implies that the data collected from the sample is generalizable to the larger population it represents because of its stability and consistency (Creswell, 2012).

The researcher tested the 'internal consistency reliability' of data by administering the final survey instrument only once and then examining whether an individual's scores remained internally consistent (closely related). The researcher also tested the scores from the instrument for their validity by examining whether the results and

their interpretation were relevant to the purpose they were intended for, i.e. "the more the responses fit what the instrument is intended to measure, the better the evidence for validity" (Creswell, 2012).

To improve response rates, the questions were kept clear, short and easy to respond to; instructions were also made as clear as possible. The researcher made the effort to undertake a pilot test (prototype) of the research instrument with a small number of individuals from the study sample, and based on their feedback, the necessary amendments were done on the final survey which was administered.

### 3.9 Ethical Considerations

The Researcher made an effort to adhere to ethical principles, to include respect for the rights of participants to confidentiality, anonymity, right of response, and avoidance of prejudice. Permission from the study participants was sought by means of an introduction letter as well as a brief note at the beginning of the survey (see Appendix B and Appendix C).

Information disclosure involved letting the study participants know what topic was being studied and for what purpose. Participants were also treated with due regard for their dignity as persons. In the spirit of "giving back" to the study participants, the Researcher anticipates sharing a brief summary of the findings with the schools' administrations, as practical feedback regarding the relationship between virtue ethics and water conservation among the youth.

In addition, the Researcher has made an effort to observe a high degree of professionalism to: complete the research in a highly satisfactory and timely manner; accurately reference all sources of secondary data used in order to give credit to the original authors; use the actual findings of the research in testing the hypothesis; and refrain from imposing personal convictions that would result in a biased research.

# CHAPTER 4: PRESENTATION OF RESEARCH FINDINGS

## 4.1 Introduction

This chapter presents the data collected using the survey instrument. The data analysis was undertaken using Microsoft Excel. The discussion is structured around the research questions below:

**Main Research Question:** To what extent does Virtue Ethics positively influence decisions-making concerning water conservation among the youth in Kiambu?

i. **Sub-question 1:** To what extent is Virtue Ethics used as an ethical framework for decision-making regarding water conservation among the youth in Kiambu?
ii. **Sub-question 2:** What reasons do the youth in Kiambu with an inclination to Virtue Ethics approach regarding water conservation have for their preference?
iii. **Sub-question 3:** To what extent is Virtue Ethics likely to have an enduring influence on choices regarding water conservation, irrespective of place and time?

The analysed data has been summarised and presented in the form of tables, pie charts, line graphs and bar graphs. These are accompanied by brief descriptions to interpret the data presented, but without drawing any broader conclusions concerning their implications to the study.

## 4.2 General Response Rate

| Participants | Questionnaires Administered | Questionnaires Returned | Response Rate |
|---|---|---|---|
| Students | 700 | 698 | 99.7% |

**Table 4.1 Response rate for survey questionnaire**

Of the 700 respondents to whom the survey instrument was administered, 698 respondents responded, to achieve a 99.7% response rate as shown in Table 4.1 above. This was higher than the expected response of 350 respondents intended to meet the guidelines by Creswell on sample sizes for a survey research (section 3.4).

### 4.2.1 Respondents Gender Distribution

Figure 4.1 below shows that among the students who participated in the survey, 53% were male and 47% were female, indicating a relatively small difference of about 6% higher male representation in the sample. For comparison purposes, data from the County Government of Kiambu shows that the enrolment rate in secondary students has 44,777 (50.3%) males and 44,288 (49.7%) females (Kiambu County, 2018).

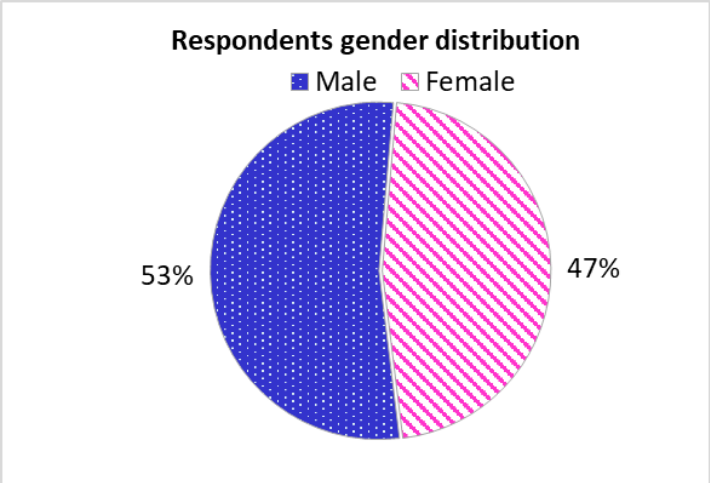


**Figure 4.1 Gender distribution of the survey respondents**

### 4.2.2 Respondents Age Distribution

The youngest respondents were aged 13 years and the eldest (note this was only one individual) was aged 26 years. As shown in Table 4.2 and Figure 4.2 below, the mean age of the respondents was 15.3 years. This might imply that the majority of respondents were students in Form 1 and Form 2 because, in the researcher's observation, it is the most likely age of students at these levels in the 8-4-4 education system.

| | Min | Max | Mode | Mean | Median | Standard Deviation |
|---|---|---|---|---|---|---|
| Years | 13 | 26 | 15 | 15.31 | 15 | 1.455 |

**Table 4.2 Distribution of respondents' age**

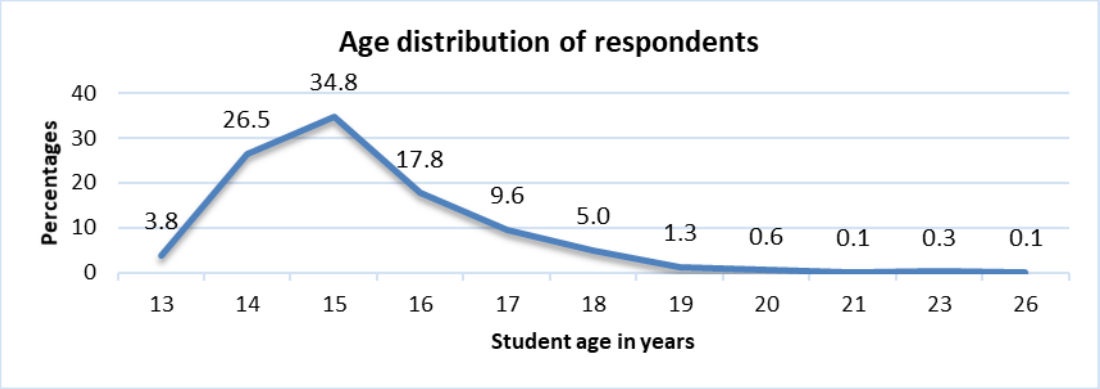


**Figure 4.2 Respondents age distribution**

### 4.3 Students Responses to Closed-Ended Questions

The survey had a total of nine (9) questions, of which the first five (5) were closed-ended. In Question 1- Question 4, the respondents were requested to rank in order of importance, three different approaches to addressing a moral dilemma given in a case at the beginning of the survey. The case was simple, concerning care for water, and using the example of a water tap that has been left open and losing water as a result. In every instance, the first approach was deontological, the second was utilitarian, and the third was on virtue. The ranking was as follows: '1 = least important', '2 = second in importance' and '3 = most important'.

Question 5 required the respondent to select only one of three possible approaches to the same situation. Like questions 1-4, the first approach was deontological, the second was utilitarian, and the third was virtue oriented.

Table 4.3 below summarises the ethical approach selected by respondents as being 'most important' in the respective survey question.

| Survey Question | Deontology | Utilitarianism | Virtue Ethics |
|---|---|---|---|
| 1 | 47% | 34% | 34% |
| 2 | 32% | 27% | 65% |

| | | | |
|---|---|---|---|
| 3 | 40% | 15% | 58% |
| 4 | 48% | 24% | 48% |
| 5 | 25% | 17% | 58% |

**Table 4.3 Summary of 'Most Important' ethical approaches selected in survey questions 1 - 5**

The following sub-sections present the findings based on the data collected from these close ended questions (i.e. Question 1- Question 5) of the questionnaire.

### 4.3.1 Main Motivation for Preventing Water Loss

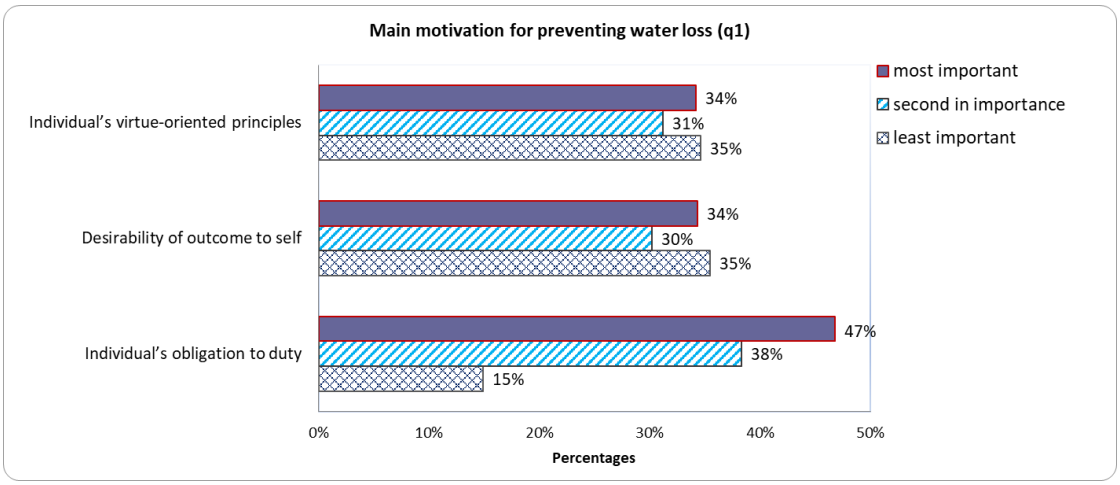


**Figure 4.3 Students motivation for preventing water loss**

Question 1. When thinking about the loss of water from the tap, what for you would be the best reason for doing something about it?

| Chart Legend | Selected response as given in the questionnaire |
|---|---|
| Individual's virtue-oriented principles | I have a habit of protecting water wherever I am and at all times, and so I will do something about the open tap. |
| Desirability of outcome to self | I would not want the water to get finished because there would be no water for me to drink when I am thirsty at school, and so I will do something about the open tap. |
| Individual's obligation to duty | I must be obedient to the school rules which tell us not to waste water, and so I will do something about the open tap |

**Table 4.4 Response options for Question 1**

The students were asked to rank in order of importance to themselves, what they thought to be the best reason for doing something about the loss of water. Figure 4.3 (and Table 4.4) above show that 47% of the students who responded are most motivated to act by their obligation to be obedient to the school rules. In second place there was a tie : 34% of respondents selected the desirability of outcomes to

the individual, i.e. not wanting to experience thirst as a result, as their most important motivator for doing something about the water loss; 34% of respondents leaned towards a virtue-oriented ethic as their most important motivation by selecting the response that they generally have a habit of saving water at all times.

### 4.3.2 Main Basis Supporting the Decision to Prevent Water Loss

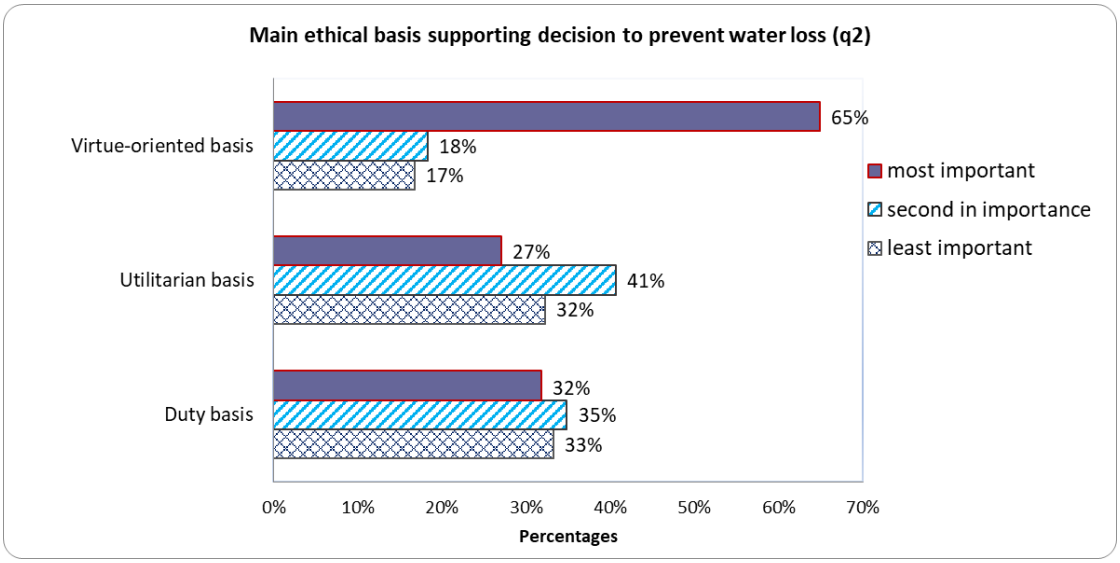


**Figure 4.4 Main ethical basis supporting decision-making on water conservation**

Question 2. When thinking about why it is good to conserve water, I strongly believe that:

| Chart Legend | Selected response as given in the questionnaire |
|---|---|
| Virtue-oriented basis | Using water carefully is good because by protecting water I also help others, and this makes me become a better person |
| Utilitarian basis | Using water carefully is good because it will help me not to lack water for my use when I need it |
| Duty basis | Using water carefully is good because I have a duty to respectfully follow the rules on water use |

**Table 4.5 Response options for survey Question 2**

The students were asked to rank in order of importance to themselves, what they strongly believed to be the main reason why it was good to conserve water. As shown in Figure 4.4 (and Table 4.5) the largest percentage (65%) were the respondents who deemed as most important that using water carefully was good because it helped others and that this made them better people. 32% of the respondents deemed as most important that using water carefully was good because it was dutiful to follow the rules regarding water usage. Finally, only 27%

of respondents regarded a utilitarian basis as most important by selecting the response that using water carefully was good because it would help them not to lack water for their use.

### 4.3.3 Telos Providing the Moral Justification for Conserving Water

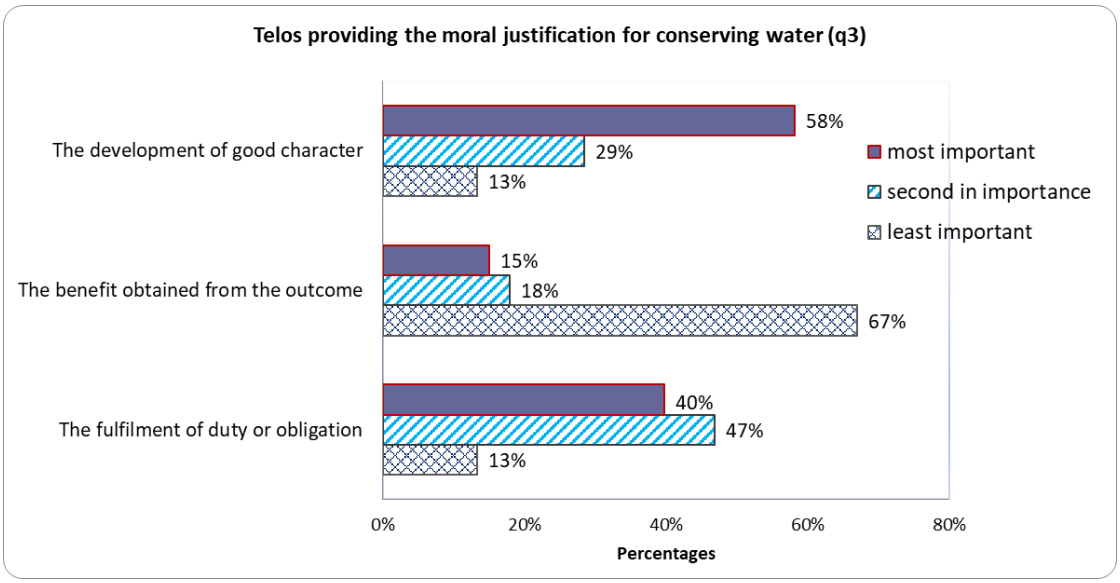


**Figure 4.5 Telos providing the moral justification for conserving water**

Question 3. Doing something about the water tap that was left open at school gives me a chance to:

| Chart Legend | Selected response as given in the questionnaire |
|---|---|
| The development of good character | Improve myself and my personal habits by practicing how to do the right thing |
| The benefit obtained from the outcome | Become recognised by my fellow students and my teachers for doing the right thing |
| The fulfilment of duty or obligation | Show my obedience to the school rules by doing the right thing |

**Table 4.6 Response options for survey Question 3**

In Question 3 students were asked to rank in order of importance, what for them was the end they sought (telos) by actually doing something about the open tap. For the majority (58%), the most important end for doing something about the water loss was to improve personal habits by practicing how to do what they thought was the right thing. Up to 40% of the respondents deemed that the most important end for closing the tap was that it enabled them to fulfil an obligation to school rules. The largest proportion of respondents (67%), considered as *least* important, the

benefit of a positive recognition by others as the ultimate end sought by their action (see Figure 4.5 and Table 4.6 above).

### 4.3.4 Preferred Ethical Approach for Making Moral Decisions in General

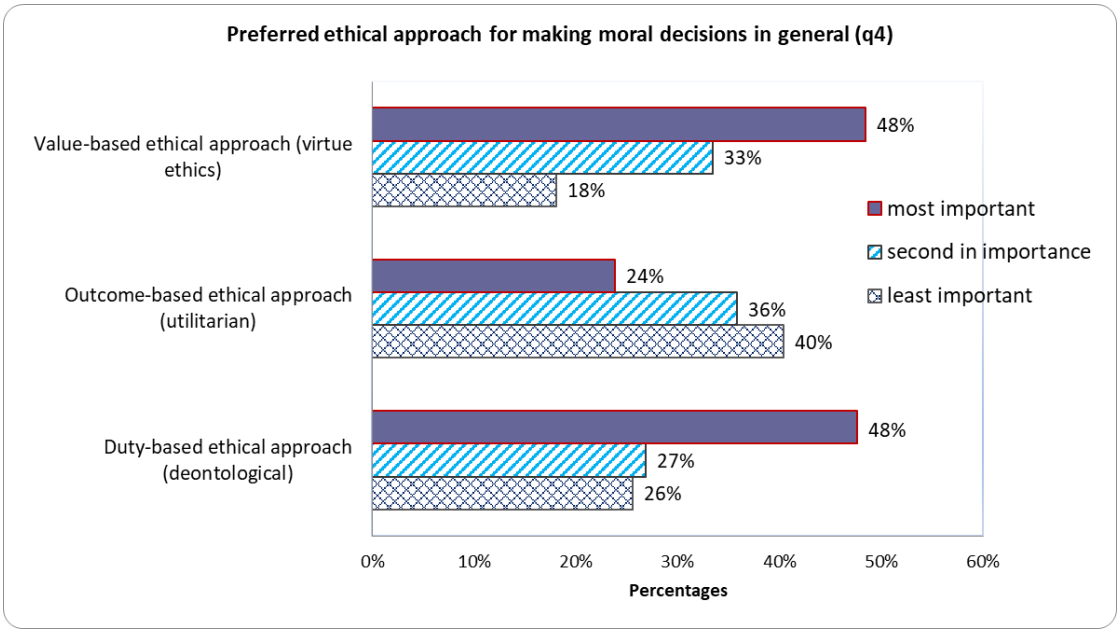


**Figure 4.6 Preferred approach for making moral decisions in general**

Question 4. Please read the following statements. How well do they match with how YOU normally make decisions about good and bad behaviour?

| Chart Legend | Selected response as given in the questionnaire |
|---|---|
| Value-based ethical approach (virtue ethics) | It is important to have a good character in all situations. Good character (e.g. self-control, honesty, etc.) is the most important guide when deciding what the right thing to do is. |
| Outcome-based ethical approach (utilitarian) | It is important to think about the effect of my actions on my happiness. The benefit I get is the most important guide when deciding what the right thing to do is. |
| Duty-based ethical approach (deontological) | It is important to follow the rules at all times. Obeying rules is the most important guide when deciding what the right thing to do is. |

**Table 4.7 Response options for survey Question 4**

In question 4, respondents were required to read three statements, each describing a different approach to making moral decisions; one option presented a deontological approach, the second a utilitarian one, and the third was virtue-based. They were then asked to rank in order of importance to themselves, which statement resonated best with how they would normally make decisions about good and bad behaviour.

Figure 4.6 (and Table 4.7) above shows that there was an equal proportion of respondents for whom obeying rules was the most important guide when deciding what the right thing to do is (48%), and for whom a good character was the most important guide when deciding what the right thing to do is (48%).

However, 33% of respondents felt that character was second in importance when it came down to making moral decisions in general, whereas 27% felt that obligation to duty was second in importance. Only 24% of the respondents deemed that the consequence of their action was the most important guide when deciding what the right thing to do is.

### 4.3.5 Respondents' Recommendations for Promoting Water Conservation

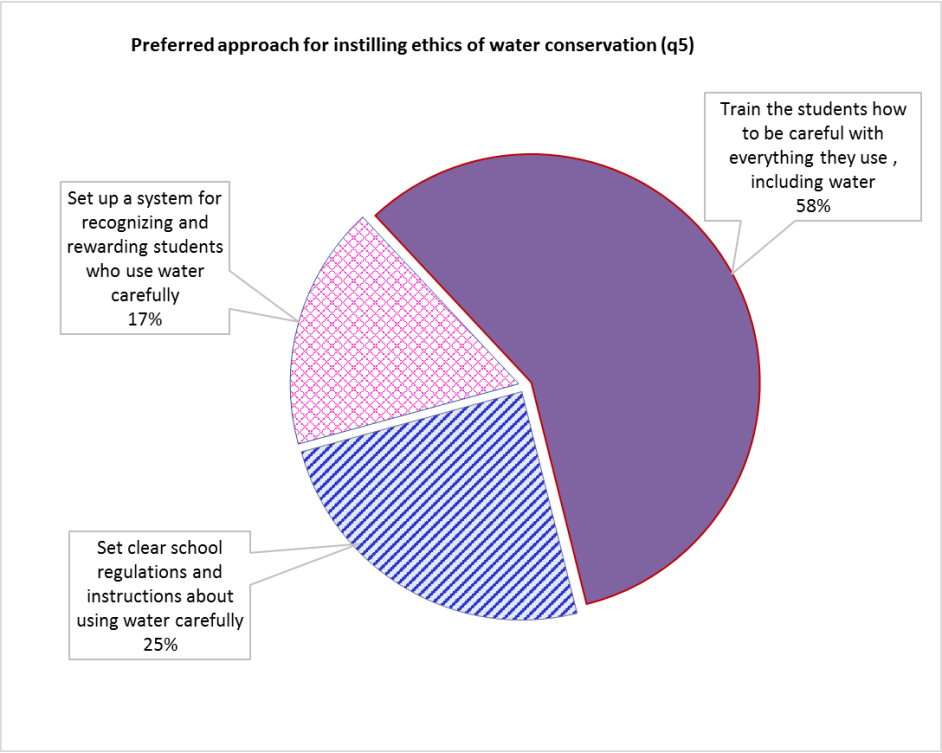


**Figure 4.7 Respondents' preferred recommendation for promoting water conservation**

Question 5. If you had to advice the Head Teacher of your school, which ONE of the three options below would be the best way to make students use water carefully?

| Selected response as given in the questionnaire | Ethical Approach |
|---|---|
| Train the students how to be careful with everything they use, including water | Value-based ethical approach (virtue ethics) |
| Set up a system for recognising and rewarding students who use water carefully | Outcome-based ethical approach (utilitarian) |

| Selected response as given in the questionnaire | Ethical Approach |
|---|---|
| Set clear school regulations and instructions about using water carefully | Duty-based ethical approach (deontological) |

**Table 4.8 Response options for survey Question 5**

In the final close-ended question, the students were asked what advice they would give their Head Teacher, if given the opportunity, on the best way to make students use water carefully. There were three possible options presented, one option presented a deontological approach, the second a utilitarian one, and the third was virtue based. 58% of the respondents deemed as best, the option to train students how to be careful with everything they use, including water (a value based ethical approach). In second place was a deontological ethical approach selected by 25% of the respondents; they considered that the best advice was to set clear school regulations and instructions about using water carefully. And finally, 17% of the students considered a utilitarian approach whereby a system of recognising and rewarding students who use water carefully would be the best advice for the Head Teacher of the school. (Refer to Figure 4.7 and Table 4.8 above)

### 4.4 Students Responses to Open-Ended Questions

The survey instrument (Appendix C) included four (4) open-ended questions that were intended for collection of qualitative data from the respondents. These questions (i.e. Question 6-9) had two steps; the first step was to establish what action the respondent would take under a particular circumstance, and the second step asked the respondent to briefly explain *why* they would undertake the said action.

The open-ended questions presented an opportunity for survey respondents to include information that reflects on their perceptions, feelings or attitudes towards the topic under discussion. The anonymity of the survey helped in encouraging responses that were likely to reflect an honest viewpoint on the issues discussed.

### 4.4.1 Selection of Virtue-Ethics-Leaning Respondents

From the total number of filled questionnaires, the Researcher deliberately selected those in which respondents had shown a tendency for response options that had a virtue ethics approach. The selection was determined by selecting questionnaires in which: (i) The respondent's answer in Question 4 (on how the respondent *normally* makes decisions about good and bad behaviour) showed the virtue ethics approach selected as 'most important'; and (ii) two (2) or more of the top options selected in the other closed-ended questions (i.e. Question 1, 2, 3 and 5) were also virtue-oriented, as opposed to deontological or utilitarian. This would indicate a minimum of 3 out of 5 responses (or ≥60 %) virtue-oriented responses selected by the same individual.

The rationale for separating the questionnaires in this manner, was to narrow down the analysis to only virtue-ethics-leaning respondents, and then proceed to assess their responses to the open-ended questions in detail, for the purposes of answering the research sub-question 2 and sub-question 3 more definitively.

Table 4.9 below shows the number of the selected questionnaires which have been used for the analysis of the open-ended questions in sections 4.4.1.1 to 4.4.1.4.

| No of questionnaires | No. of questionnaires with ≥ 3 out of 5 (≥60 %) virtue-oriented responses selected by the same individual | % of questionnaires with ≥ 3 out of 5 (≥60 %) virtue-oriented responses selected by the same individual |
|---|---|---|
| 698 | 198 out of 698 | 28% |

**Table 4.9 Questionnaires with predominantly Virtue-ethics based responses (≥3 out 5 responses)**

#### *4.4.1.1 Reasons for Recommending a Virtue-Oriented Approach in Promoting Water Conservation Among Students*

In question 6, respondents were asked to give reasons why they chose a particular area of recommendation to the Head Teacher, on what they considered as the best way of instilling a culture of water conservation among the students (Question 5).

Figure 4.8 (and Table 4.10) below show the responses to Question 6 from the selected respondents.


**Figure 4.8. Reasons for recommending a virtue ethics approach in promoting water conservation among students**

Question 6. In your own words, please explain WHY you have chosen the answer in Question 5 above (i.e. about what recommendations one could give to those in authority)?

| Summary of Responses | Frequency of Response | Percentage |
|---|---|---|
| Students learn the value of water and environment in general | 20 | 11% |
| Students learn to care about future needs by caring about today | 13 | 7% |
| Students learn to be careful even after they leave school | 17 | 10% |
| Students can learn to care without expecting rewards/recognition | 11 | 6% |
| Training students on values can build character and good habits | 72 | 41% |
| Enforcing regulations helps students do what is required of them | 33 | 19% |
| Rewarding students helps them do what is right | 11 | 6% |
| Total | 177 | 100% |

**Table 4.10 Responses to Question 6**

From Figure 4.8 above the bar chart shows that the highest percentage (41%) of responses recommended the Head Teacher to train students on care for water because students have the capacity to be taught values, habits and character. Other responses that also appear to follow a value-based ethic were: students can be taught to value water (11% of responses); they can become careful with water even in future after leaving school (10% of responses); and they can learn to care for water without expectations of reward or recognition (6%).

19% of the responses had a more deontological approach and recommended the Head Teacher to enforce regulations as that is what would make students do what is required of them. About 13% of the responses were utilitarian in their view of what to recommend to the Head Teacher; of these, 6% felt that rewarding students would help them do what is right and 7% claimed that by making students care for water today they would safeguard its availability for their use in the future.

#### *4.4.1.2 Ethical Basis for Decision-Making under a Different Contextual Setting*

In Question 7, the Researcher intended to establish if water conservation would be done as a stable habit of character, regardless of the place/contextual circumstances. Respondents were asked if while at a different school they would close a tap they had discovered was left running. The implication here was that they would not necessarily be bound by the rules of a school they did not belong to, nor were they likely to benefit directly from their action. Figure 4.9 (and Table 4.11, Table 4.12) below show the responses to Question 7 from the selected respondents.

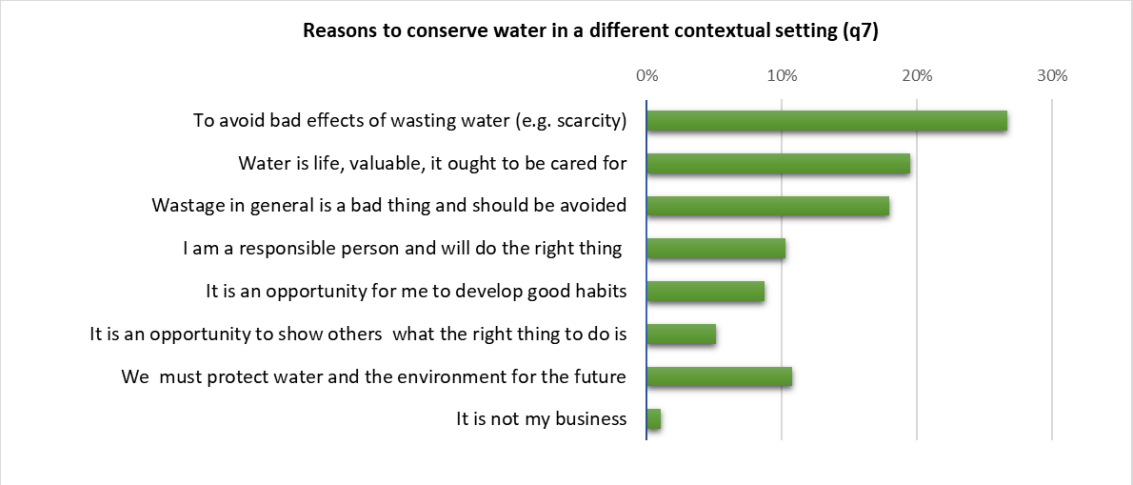


**Figure 4.9 Reasons for conserving water in a different contextual setting**

Question 7. If you were visiting another school and you saw a water tap left open there, what would you do, and WHY?

| Action selected | Frequency | Percentage |
|---|---|---|
| Close the tap | 164 | 99% |
| Leave it open | 2 | 1% |

**Table 4.11 Responses to part 1 of Question 7 (Action)**

Question 7. If you were visiting another school and you saw a water tap left open there, what would you do, and WHY?

| Summary of Responses | Frequency of Response | Percentage |
|---|---|---|
| To avoid bad effects of wasting water (e.g. scarcity) | 52 | 27% |
| Water is life, valuable, it ought to be cared for | 38 | 19% |
| Wastage in general is a bad thing and should be avoided | 35 | 18% |
| I am a responsible person and will do the right thing | 20 | 10% |
| It is an opportunity for me to develop good habits | 17 | 9% |
| It is an opportunity to show others what the right thing to do is | 10 | 5% |
| We must protect water and the environment for the future | 21 | 11% |
| It is not my business | 2 | 1% |
| Total | 195 | 100% |

**Table 4.12 Responses to Question 7 (Reason for action taken)**

On finding an open tap while at a different institution (place), 99% of the respondents said they would go ahead and close it (Table 4.11). Reasons given are shown in Figure 4.9 and Table 4.12 above. The main reasons given for preventing water loss even at another school included: it was necessary so as to avoid the bad effects of wastage e.g. water scarcity, shortages etc. (27% of responses); water is a valuable commodity and everyone has a responsibility to care for it (19% of responses); wastage in a general sense is a bad thing (18%); and we need to protect our environment, including water, for the future (11%). Two (2) respondents (1%) stated that they would not close a tap left open if they were at another school because it was not their business to do so.

### *4.4.1.3 Perception of the Moral Choices of Peers Concerning Water Conservation*

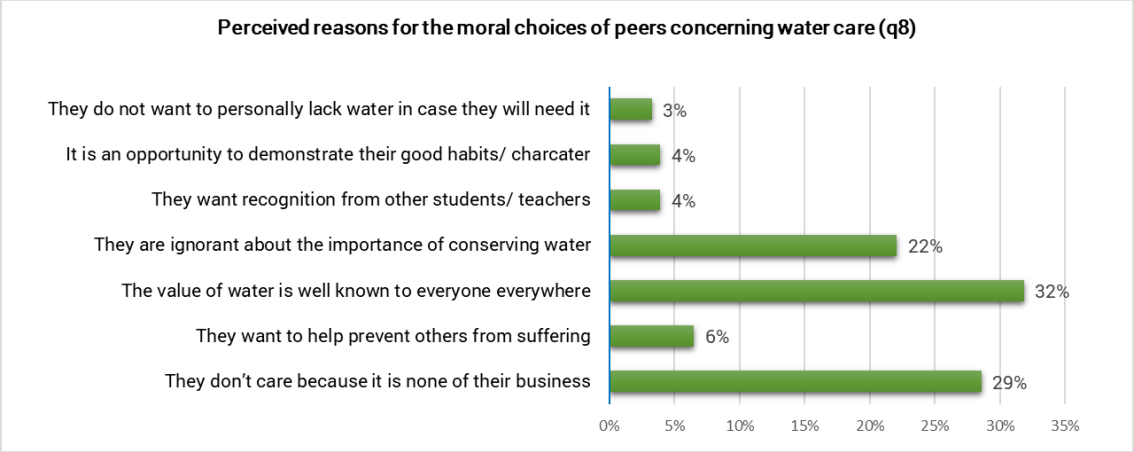


**Figure 4.10 Perceived reasons for the moral choices of peers concerning water conservation**

Question 8. What do you think most of the other students will do in the same situation in Question 7 above, and WHY?

| Action selected | Frequency | Percentage |
|---|---|---|
| Close the tap | 140 | 73% |
| Leave it open | 53 | 27% |

**Table 4.13 Responses to part 1 of Question 8 (Action taken)**

Question 8. What do you think most of the other students will do in the same situation in Question 7 above, and WHY?

| Summary of Responses | Frequency of Response | Percentage |
|---|---|---|
| They don't care because it is none of their business | 44 | 29% |
| They want to help prevent others from suffering | 10 | 6% |
| The value of water is well known to everyone everywhere | 49 | 32% |
| They are ignorant about the importance of conserving water | 34 | 22% |
| They want recognition from other students/ teachers | 6 | 4% |
| It is an opportunity to demonstrate their good habits/ charcater | 6 | 4% |
| They do not want to personally lack water in case they will need it | 5 | 3% |
| Total | 154 | 100% |

**Table 4.14 Responses to Question 8 (Reason for action taken)**

In question 8 the respondents were asked what they think their peers would do under the same circumstances discussed in Question 7 (section 4.4.1.2). The intention of asking this question was to try and reveal the true character of the respondent by inquiring about their attitude towards a situation where the responsibility for action was seemingly on somebody else.

From Figure 4.10 (and Table 4.14) above, a significant percentage of respondents (27%) perceived that their peers would not close the open tap because they did not care or that it was none of their business. Up to 22% of the responses gave the indication that students also felt that their peers might be ignorant about water conservation. The greater majority however (32% of responses) indicated that students perceived their peers would be appreciative of the value of water and would therefore close the tap. 6% of responses referred to compassion for the suffering of others as the driving force for closing the open tap. The least number of responses indicated that students perceived their peers would only close the tap for recognition (4%) or for their own private needs (3%).

#### *4.4.1.4 Implication of Time on the Ethical Approaches Concerning Water Conservation*

The final question, asked the respondents to try and imagine a time in the future when they were no longer in school. In this future they happen to be at a wedding ceremony and notice a tap left running. The respondents were required to give a response about what they would do about the tap and why. This question was intended to establish if the inclination to conserve water would endure even in future, and what would be the main ethical basis for it.

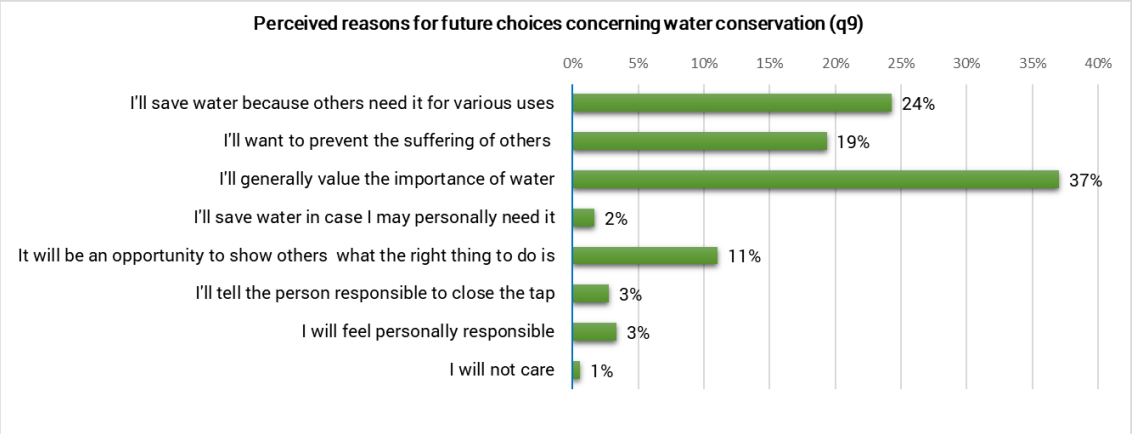


**Figure 4.11 Perceived future reasons for conserving water**

Question 9. Imagine it is 10 years from today and you are no longer in school. You attend a wedding ceremony and there are many people. You notice a water tap was left open by somebody. What would you do, and WHY?

| | Frequency | Percentage |
|---|---|---|
| Close the tap | 152 | 96% |
| Leave it open | 6 | 4% |

**Table 4.15 Responses to part 1 of Question 9 (Action taken)**

Question 9. Imagine it is 10 years from today and you are no longer in school. You attend a wedding ceremony and there are many people. You notice a water tap was left open by somebody. What would you do, and WHY?

| Summary of Responses | Frequency of Response | Percentage |
|---|---|---|
| I'll save water because others need it for various uses | 44 | 24% |
| I'll want to prevent the suffering of others | 35 | 19% |
| I'll generally value the importance of water | 67 | 37% |
| I'll save water in case I may personally need it | 3 | 2% |
| It will be an opportunity to show others what the right thing to do is | 20 | 11% |
| I'll tell the person responsible to close the tap | 5 | 3% |
| I will feel personally responsible | 6 | 3% |
| I will not care | 1 | 1% |
| Total | 181 | 100% |

**Table 4.16 Responses to Question 9 (Reason for action taken)**

96% of the respondents said that in the future if they encountered a situation where a tap had been left open, they would close it; 4% said they would leave it open. As shown in Figure 4.11 above, the latter revealed that the reason for this is that they would not care (1%) or that they would instruct somebody else to close the tap (3%). From the majority who said they would close the tap, the largest percentage of reasons given (37% of responses) was that they valued its importance. In 24% of responses, the reason given was that other people would need the water for various uses and so they would prevent its loss; closely related to this (19% of responses) was that they would want to prevent others from suffering the consequences of a water shortage.

## 4.5 Summary

This chapter presented both the quantitative and qualitative data that was collected using the research instrument. The information derived from these data has been summarised and presented in the form of tables, bar graphs and pie charts. These are accompanied by brief narratives that explain the general findings from the data

analysis, without drawing wider conclusions on their implications to the study. Chapter 5 overleaf presents the detailed discussion of these findings and relates them to the research objectives and questions.

# CHAPTER 5: DISCUSSION

## 5.1 Introduction

This chapter presents an in-depth discussion of the findings presented in Chapter 4 (Presentation of Research Findings) and based on the data collected from the survey. The research questions are addressed with justification from the research findings, and they are analysed within the theoretical and conceptual framework developed in Chapter 2 (Literature Review). Dimensions of virtue are also discussed and related to the research findings. The chapter concludes with a brief summary of the findings.

## 5.2 Virtue Ethics in Water Conservation within the Study Population

In sections 5.2.1 to 5.2.3 below, the analysis opens with a discussion of the research sub-question based on the findings presented in Chapter 4 and closes with some supplementary literature[2] on the topic.

### *5.2.1 Research Sub-question 1: To what extent is Virtue Ethics used as an ethical framework for decision-making regarding water conservation among the youth in Kiambu?*

The study findings reveal that indeed for some students it is their value systems and character that guide their moral decisions, even in settings where there are no rules necessarily being enforced upon them, or even where the outcome of their actions appear to benefit entities outside of themselves. There are those students who have been found to have a high likelihood for observing virtue-based ethics in a stable manner, irrespective of place or time (section 5.3.3).

[2] Literature referred to is primarily taken from Laudato Si' authored by Pope Francis, also mentioned in the Literature Review in Chapter 2. On this, the Researcher has followed the guidance provided during coursework (MAPE Research Methods 8109) to zoom in on one of the authors' works for the analysis.

With reference to the case given in the survey, 34% of respondents claimed they normally have a habit of protecting water at all times so they would not leave an open tap unattended (section 4.3.1). 65%claimed that protecting water was a good act because it not only helped others but also helped them to be better people (section 4.3.2). 58% of the respondents claimed that doing something to conserve water presented an opportunity for practicing a good habit and consequently improving themselves (section 4.3.3). And up to 48% of all respondents reckoned that having a good character was the most important guide when deciding what the right thing to do is in general circumstances (section 4.3.4).

At the heart of the argument for environmental virtue ethics is the acknowledging of the human origin of the deteriorating state of the environment. *Laudato Si'* resonates with this and says: "it would hardly be helpful to describe symptoms without acknowledging the human origins of the ecological crisis". (§101) (Francis, 2015)

If the main challenge to the environmental crisis is ethical, and decades of deontological and utilitarian ethical approaches are yet to yield the environmental restoration, then virtue ethicists are saying that it is time to include virtue ethics in the dialogue. Any strategies moving forward need to adopt an integrated approach that considers both the social and environmental dimensions of the ecological crises. As the findings show, Virtue Ethics should not be ignored in any discourse concerning the ethics of water conservation.

### 5.2.2 *Research Sub-question 2: What reasons do the youth in Kiambu with an inclination to virtue ethics approach regarding water conservation have for their preference?*

With reference to Question 5 of the survey instrument, the majority (58%) of all respondents would recommend a virtue-oriented approach in promoting water conservation by training students to be generally be caring, with everything, including water (section 4.3.5). Reasons for this recommendation were given under

Question 6, and they included among others, the perception that students are trainable – they can be taught values and good habits which they can continue to practice in the longer-term, students can learn to value water and the general environment, and that their present actions will impact their future (section 4.4.1.1). A few respondents gave reasons that were somewhat different to the above line of thought, 6% of the responses recommend the use of a reward system to encourage students to care for water and 19% recommended the use of rules and regulations to enforce students care for water (section 4.4.1.1)..

An interesting observation was however made from among the selected respondents whose responses were found to be predominantly virtue-ethics-leaning (198 out of 698 respondents or 28%, see Table 4.9). Question 8 asked respondents to state what they think their peers would do if faced with a situation where they had found a tap left open, but it was not within their school. While 99% of them said they personally would close the tap even in another school (section 4.4.1.2), up to 27% of them did not think their peers would do the same (section 4.4.1.3). They perceived that their peers would not care because they would consider it none of their business or that they were simply ignorant about the value of water. 73% however perceived that their peers would share the same good intentions as themselves, by claiming that other students would close the tap for reasons such as the value of water is well known to everyone and so no one would deliberately leave a tap running. Perhaps this observation could be a basis for reducing the percentage of virtue-ethics-leaning respondents, because the perception of peers might reflect their own true attitude to the situation.

The findings reveal that there are those students who consider that everyone ought to have care for water and imagine that this is a value that should come rather naturally to everyone. Virtue ethics is person rather than action based: it looks at the moral character of the person carrying out an action, rather than at ethical duties and rules, or the consequences of specific actions. The virtue ethics theory in this case would ask "*what sort of person* would walk past a running tap and leave it

unattended?" In Laudato Si' Pope Francis states that "authentic human development has a moral character" (§5) (Francis, 2015), it is therefore an impractical, perhaps even futile endeavour to try and restore a harmonious co-existence between humanity and the natural environment without consideration for the moral actions of men.

### *5.2.3 Research Sub-question 3: To what extent is Virtue Ethics likely to have an enduring influence on choices regarding water conservation, irrespective of place and time?*

The study tried to establish, using open ended questions, whether respondents would still opt for a virtue-oriented approach in making decisions about water conservation under different settings outside of their usual school location and also at a time in the distant future. Question 7 and Question 9 presented a different circumstance of location and time respectively (see section 4.4.1.2 and section 4.4.1.4).

In a different location, 99% respondents said they would close the tap and 1% said they would leave it open. The reasons given included among others, that water was valuable and its preservation would avoid the bad effects of water scarcity; that wastage is generally bad; that people need to protect their environment for the future; and that saving water was the responsible thing to do (4.4.1.2).

At a time in the distant future (the case in the survey gives an example of 10 years in the future), 96% of respondents said they would close a tap left open whereas 4% said they would not because it was not their responsibility, or because they would ask someone else to do it. For those who would close it, the reasons varied from preventing the suffering of others from water shortage, having value for water and not wanting to see it go to waste, and demonstrating to others what the right thing to do is (section 4.4.1.4).

These findings reveal that, although there are bound to be some exceptions, there are those students who will consistently rely on character as their main guide in making moral decisions concerning water conservation, and that this is something they would probably do in a stable and predictable manner irrespective of place or time. It is the contention of the Researcher that the impact of a virtue-based conservation ethic can yield far more enduring results by targeting the person.

## 5.3 Dimensions of Virtue Ethics Identified in the Research Findings

This section presents an additional evaluation of the data presented in Chapter 4. The intention is to provide a further breakdown of the research findings to supplement the analysis.

As discussed in the conceptual framework (section 2.7), three dimensions of virtue based on Aristotle's Virtue Ethics are taken into consideration in the discussion, namely that a virtue is an act done with (i) knowledge; (ii) for its own sake; and (iii) from a firm disposition of character, in order for the virtuous agent to flourish.

### 5.3.1 Right Reason

According to Aristotle's Nicomachean Ethics, virtue is associated with right reason (Nicomachean Ethics 1105a.20). This means that the agent should be able to make moral choices about voluntary actions through a rational determination. When people are aware of what is good, they are more likely to make better moral judgments about what ends to pursue with their voluntary acts.

If conserving water is virtuous (excellent), then virtuously caring for water requires the agent acts with a knowledge about why it is morally good to conserve water in the first place. It helps if the agent is able to rationalise why their voluntary acts would be considered as morally good, such that they would even recommend to others their preferred ethical approach to moral dilemmas, on the basis of their understanding.

The findings reveal that indeed there are some students whose basis for making moral decisions is their values. In Question 2 (section 4.3.2), up to 65% of all respondents claimed that for them, conservation of water was good, not because it would reflect on their observation of duty, or because it had an outcome that would benefit them, rather because they perceived the act would improve them interiorly as persons. In fact, the ethical approach with the highest percentage of respondents assigning to it least importance in Question 2, was the conservation of water as an observation of rules.

Findings form Question 5 (section 4.3.5) also reveal that the greater majority of respondents (58%) preferred a more value-based approach to promoting water conservation among students, that they would even want to recommend to their Head Teacher the benefits of training students on values – in this case, how to be careful with everything, including water. The minority of respondents (17%) said they would rather recommend a more utilitarian approach to the Head Teacher, favouring instead a system of reward and recognition as the best way to promote a culture of water conservation among the students. 25% of the respondents would recommend the enforcement of rules as the best way to achieve the same objective.

Question 6 (section 4.4.1.1) tried to establish what rationalising respondents had for selecting virtue-oriented responses in Questions 5. The majority of responses (41%) argued that values can be taught and learned. The implication is that making information available to people can help them make better choices on what is good and what ought to be avoided. 10% of the responses stated that the values that are taught can remain with the person, and that person will continue to have that value even after they leave school. Students can also learn how to care for water with the future in mind (7%), they can learn to value the environment (11%), and to care for it without the expectation that they ought to be rewarded for such care (6%). A smaller proportion of respondents rationalised that rules were needed to enforce good behaviour (19% of responses) or that good behaviour was best achieved through a system of rewarding right action (6%).

These findings give the general indication that a considerable number of youth do reason about their moral decisions using a value-based framework though the judgments behind their choices are varied.

### 5.3.2 For Its Own sake

Aristotle's ethics argues that there are certain things in life that are pursued for their own sake, and not for the sake of some other further end (Nicomachean Ethics 1105a.20). For Aristotle this can only be happiness, which alone is chosen for its own sake as an end in itself.

In environmental virtue ethics we can relate this by stating that if conserving water is virtuous, then virtuously caring for water requires that the agent appreciates its intrinsic value and deliberately conserve water for its own sake, i.e. not merely insofar as it tends to produce 'right action' (Sandler R. L., 2013).

The findings from Question 1 (section 4.3.1) showed that care for water by the students was, for the most part, done in response to obedience to rules. In fact, 47% of all respondents selected the option on 'obligation to duty' as being their most important motivation for closing the tap. Only 34% of the respondents claimed they would do something about the open tap because they valued water and would do the same action under any other circumstances anyway.

In Question 3 (section 4.3.3) the Researcher tried to establish what students sought as their ultimate end (telos) in caring for water. The intention was to identify the end goal pursued in caring for water using the case presented in the survey. Most respondents (58%) claimed that practicing a good habit would improve them interiorly - which indicates a virtue-oriented ethic, whereas 40% of the respondents claimed that their end goal was to demonstrate their observation of duty (deontological ethic). Interestingly, a significant 67% of respondents felt that

pursuing recognition or other benefit as an outcome was the least important end sought after in conserving water.

For this dimension of virtue, the findings reveal that inasmuch as students do appreciate the interior growth that comes with practicing good habits, the majority are more strongly motivated to act if there are rules being enforced on them. One possible explanation for this could be that the respondents are all students in an institutional setting, whereby rules and regulations are the norm when it comes to inculcating good behaviour within the student population.

### 5.3.3 Firm Disposition of Character

For Aristotle, virtue is not manifested sporadically depending on prevailing circumstances; rather virtue is an enduring disposition of character (Nicomachean Ethics 1105a.20). A person with a certain virtue will exhibit a similar response under different circumstances and not just in one particular instance. Virtue is dependent on habits, which are in turn developed through repeated actions. In the case of this study, if conserving water is virtuous, then it will be done consistently as a stable trait in the agent's character.

When respondents were asked in Question 4 (section 4.3.4) which approach was the closest match to how they would normally make decisions on good and bad behaviour, an equal number of respondents (48% each) selected a duty-based or a value-based approach to making moral decisions in general circumstances. For the latter group, good character (e.g. self-control, honesty, etc.) was for them the most important guide when deciding what the right thing to do is. The least important approach to making moral decisions for most respondents (40%) was outcome-based whereby the personal benefit derived from an action was not an important guide when deciding what the right thing to do is.

Based on the findings from Question 7 (section 4.4.1.2) and Question 9 (section 4.4.1.4), the study established that even in a setting outside of the school or after the

passage of time, there were still students who would observe a virtue ethics approach when making moral decisions concerning water.

As explained in section 4.4, the Researcher attempted to "sift" out the respondents whose responses in the close-ended questions section were consistently leaning towards a virtue ethics approach; in total these made for 28% of all the respondents (see Table 4.9). Unfortunately, the study found that a few of these selected respondents stated that they would not close the water tap if they were in a different location (2 respondents) or in a time in the future after they had left school (4 respondents). In both cases the reason given was that they did not think that it would be their business to do something about the open tap. Fortunately, the greater majority, at least 96%, said they would still close the open tap even at a different location or at a time in the future. The reasons they gave ranged from the value they rendered to conserving water, to wanting to prevent the suffering of others from the effects of a water shortage/scarcity.

The study finds that some students, though relatively few (approximately 28%) will consistently rely on character as their main ethical framework for decision making, and who will continue to do so in a stable manner, irrespective of place or time.

## 5.4 Summary of the Discussion

The study found that there are number of students who apply virtue ethics as their main framework for making decision regarding water care and that their reasons for doing so vary from seeking to do what they consider are good habits that benefit the environment, others, as well as themselves. The study also found that in some cases, the respondents showed likelihood that they would still show a propensity for virtue-based care for water in different contexts outside their normal school environment.

# CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

## 6.1 Introduction

This chapter highlights the overall findings of the study based on the objectives that were set before it. The Researcher makes an argument for a greater integration of virtue ethics in the environmental conservation agenda, and proposes some recommendations for its integration into the education system. The chapter concludes with suggestions for further research.

## 6.2 Discussion of the Main Research Question

The study aimed to explore the extent to which Virtue Ethics positively influences decision-making concerning water conservation among the youth in Kiambu. This entailed exploring the extent to which Virtue Ethics is used as an ethical framework for decision-making, identifying the reasons why some youth prefer a virtue-based ethical approach, and exploring the extent to which Virtue Ethics is likely to have an enduring influence on moral choices regarding water conservation.

The main research question asked: "to what extent does Virtue Ethics positively influence decisions-making concerning water conservation among the youth in Kiambu?" Based on the data collected from the sample population, and discussed in depth in section 5.2 'Virtue Ethics in Water Conservation within the Study Population' (also section 5.3 on the dimensions of virtue), the study finds that Virtue Ethics is indeed used (approximately by one quarter of the sample) as the main ethical framework for decision making concerning water conservation, as examined in the discussion on research sub-question 1 (section 5.2.1) and the discussion on the virtue ethics dimension of 'right reason' (section 5.3.1) The study reveals that those who use a predominantly virtue-oriented approach, do so with positive intentions for the environment, for others and for self, as evidenced by the discussion on research sub-question 2 (section 5.2.2) and the discussion on the virtue ethics

dimension 'for its own sake' (section 5.3.2); and those who use a predominantly virtue-oriented approach, do so as a stable habit of character under different contextual settings, as examined in the discussion on sub-question 3 (section 5.2.3) and in the discussion on the virtue ethics dimension of 'a firm disposition of character' (section 5.3.3).

Although the Research observes that a relatively small proportion of youth will typically follow a virtue-based conservation ethic, the Researcher suggests that this may be indicative of the conditioning which students receive within the education system in Kenya, as it is characteristically deontological in its instruction and management of student conduct.

A different perspective on this aspect is taken by the study done by Otieno (2002) (discussed in section 2.6.1) which found that Kenyan youth did not reflect sympathy for nature and environment because primary and secondary school textbooks were "permeated with utilitarian ethics", which he claims is largely responsible for the destruction of the environment (Otieno, 2002).

Also noted in the analysis, is the occurrence of the apparently deontological and utilitarian reasons for making decisions, given by the virtue-ethics-leaning respondents. This was especially found in the analysis of the open-ended questions presented in Chapter 4 and discussed in Chapter 5 under research sub-question 2 and sub-question 3 (sections 5.2.2 and 5.2.3 respectively). On this observation the Researcher concludes that, the desire to observe school rules, or the desirability of outcomes (as the responses in question suggest), do not contradict virtue ethics. Instead, they imply a complementarity in the different ethical approaches when it comes to the ethics of conservation. What the research does argue for however, is the essential role that Virtue Ethics has in establishing an ethic of *character* which ultimately deals with the whole of the individual's life, and which provides guidance on "what attitudes and dispositions we ought and ought not to have regarding the environment" (Sandler R. L., 2013).

## 6.3 Validation of the Hypothesis

The null hypothesis stated that "there is *no relationship* between Virtue Ethics and decisions-making regarding water conservation among the youth in Kiambu. Environmental Virtue Ethics cannot therefore be effective as an ethical framework for water conservation among the youth.

The null hypothesis has been rejected based on the research findings. A relationship *does* exist between Virtue Ethics and decisions-making regarding water conservation among the youth in Kiambu

The research findings therefore confirm the alternative hypothesis which states: there is a positive relationship between Virtue Ethics and decisions-making regarding water conservation among the youth in Kiambu. Environmental Virtue Ethics can therefore be effective as an ethical framework for water conservation among the youth.

## 6.4 The Place of Virtue in Conservation Ethics

Virtue ethics, which deals with the whole of a person's life, is an integral part of the conservation debate, in the Researchers' opinion. An argument may be made for Virtue Ethics as a feasible conservation ethic on the simple basis that there cannot be a restoration of a deteriorating environment without first restoring a habit of care among the humans who consume its resources. The conservation of natural resources, including the conservation of water as a vital commodity, cannot be adequately implemented without consideration for the moral character of the very human beings whose activities directly impact it.

This view resonates with the argument in *Laudato Si'* that there cannot be "a renewal of our relationship with nature without a renewal of humanity itself" (§118) (Francis, 2015). A throw away culture is clearly inconsistent with a character that demonstrates virtues of self-control and justice towards the natural environment

and fellow men. Humanity therefore needs an ethic that is "genuinely capable of setting limits and teaching clear-minded self-restraint" (§105) (Francis, 2015).

How then, can we promote a culture within the youth to be frugal with water usage, to appreciate its intrinsic value, and to encourage others to do the same, without first addressing their character as acting agents?

There is a need to re-evaluate how the youth are being indoctrinated into becoming environmentally responsible citizens, and one way to do this through education in conservation ethics.

An attempt to raise up a generation of people who will care about water use, and mitigate against its wastage and the degradation of water resources, must instil certain values within that population; this includes instilling those values or rather character traits that make for the sort of person who would not deliberately bring about harm to the environment for personal gain or from a lack of care.

Further questions do arise on what would be considered a universally acceptable foundation for teaching environmental values in schools. In secular institutions for example, if such an education included Thomist principles on Natural Law to ground the teaching on environmental ethics, then educators may be accused of having a bias towards Catholicism. In another example, if the stewardship principle[3] was used as the foundational basis for environmental ethics, then those who do not believe in creationism[4] would also reject such a teaching.

*Laudato Si'* is cognisant of this dilemma and reminds people that the well-being of the environment affects all of humanity and so it requires a sort of integration of approaches, each bearing its own merit. It calls for a meeting of minds between the

[3] A principle which asserts that God has put all of creation under the care of man.
[4] A religious belief that God is the creator of all the universe and everything in it. It opposes the scientific theories which claim that the universe appeared through physical and biological processes.

scientific and religious communities, who can come together with their "distinctive approaches to understanding reality" and engage in a fruitful dialogue that will be of benefit to all (§62) (Francis, 2015).

> "Yet all is not lost. Human beings, while capable of the worst, are also capable of rising above themselves, choosing again what is good, and making a new start, despite their mental and social conditioning. We are able to take an honest look at ourselves, to acknowledge our deep dissatisfaction, and to embark on new paths to authentic freedom… I appeal to everyone throughout the world not to forget this dignity which is ours. No one has the right to take it from us" (§205) (Francis, 2015).

While the predominant approaches to environmental conservation and conservation ethics have indeed achieved significant strides over the years, Virtue Ethics brings to the table a very useful and practical ethical framework that is likely to achieve lasting and stable effects.

### 6.5 Recommendations

The Researcher recommends an inclusion of a value-based ethical education that begins at the primary school level, to inculcate within the students, certain environmental virtues that could form a lasting foundation for their decisions both in the present and future. Should these students find themselves in a place where there are no regulations being enforced to ensure sustainable use of resources for example, their character will suffice to make good choices. Even when they find themselves in a land of plenty where wastefulness will not have an immediate or direct effect on them, their character will suffice to cause them to be moderate. And even where there is nobody to recognise or reward them for their conservation efforts, their character would suffice to guide them to be caring towards nature.

On the matter of education *Laudato Si'* states that "the roots of the cultural crisis are deep, and it is not easy to reshape habits and behaviour. Education and training are key. Change is impossible without motivation and a process of education" (§15). An education in environmental responsibility as an act of love ultimately shapes the ways of acting that have a significant effect on the world (§211) (Francis, 2015).

### 6.5.1 Suggestions for Future Research

According to Ronald Sandler, there has been an increase in recent years of studies and other works on environmental virtue ethics, but this is an area that has remained as a "relatively underappreciated and underdeveloped aspect of environmental ethics" (Sandler R. , 2013). The Researcher had a great challenge in identifying literature on past studies that have addressed Virtue Ethics in the African and/or Kenyan contexts, and more specifically on the relationship between Virtue Ethics and Environmental Conservation. Likewise, there are hardly any baseline data or empirical studies available on the ethics of water conservation in the Kenyan context, let alone on virtue ethics. These areas are therefore recommended by the Researcher for more in-depth studies in future.

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## Appendix A: Timeline of Activities

**Draft Title of Research work:** Obligation, Consequence or Virtue: What inspires water conservation among youth? A case study of secondary school students in Kiambu County, Kenya.

**Table 6.1. Dissertation Timelines**

| Stage Description | Proposed Dates |
|---|---|
| Scoping of the Research study | July 2017 |
| Choice of Research Topic | July 2017 |
| Research Problem clarification, Research objectives, Purpose and Significance | July 2017 |
| Foundation Literature survey | July 2017 |
| Proposal of Research Methodology | August 2017 |
| Advanced Literature Review | August 2017 |
| Detailed Proposal of Research Methodology | August 2017 |
| Proposal Defense | November 2017 |
| Data Collection | February 2018 |
| Data analysis and Interpretation | March 2018 |
| Research Report writing – first draft | March 2018 |
| Submission of 5 thesis documents to SGS for examination | 3rd April 2018 |
| Documents to be sent out to examiners (Internal and External Examiners) | 6th April 2018 |
| Examiners to send back the assessed documents and reports | 27th April 2018. |
| Final Oral Defenses | 2nd - 16th May 2018 |
| Submission of Thesis Correction forms, Certification of Final Version of thesis forms and the final bound copies to SGS | 31st May 2018. |
| Graduation | 29th June 2018 |

## Appendix B: Request for Permission Letter

Insert Date

To:
The Head Teacher
(Insert School Address)

RE: Request for permission to collect research data from the students

I humbly wish to request your permission to conduct a survey among the students in (insert name) Secondary School, as part of my research study which is investigating what inspires youth to make ethical decisions about water conservation. The research will be completed as part of my requirements for a Masters Degree in Philosophy and Ethics form the Strathmore University.

This survey will use a questionnaire to collect data that will later be analysed to understand the perceptions among youth on water use and conservation in their everyday life. The survey questionnaire and consent form are attached for your reference. Willing participants will be issued a questionnaire and given one week to submit their responses.

I wish to give my guarantee that this study will be conducted in an ethical manner, respecting the dignity of the participants, and their right to confidentiality. There are no foreseeable risks to the respondents participating in this survey.

Your kind support and cooperation in conducting this survey will be appreciated. The research results will be made available to you on completion of the final report and I am happy to provide more information about the study if required to.

Thank you in anticipation of your favourable response.

Sincerely,

Pauline Marima
Student, Masters of Applied Philosophy and Ethics (MAPE)
School of Humanities and Social Sciences, Strathmore University, Kenya.

# Appendix C: Research Survey Instrument

19th February 2018

Dear student,

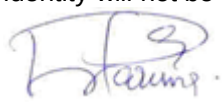
**RE: What motivates the youth to conserve water**

Thank you for accepting to take part in this survey. Your participation will contribute to a better understanding of the ways which we can encourage youth to make good choices about water use and protection.

A short story is presented at the beginning of the survey, on which most of the questions have been based.

There are 9 questions in total. It should take you about 15 minutes to complete all the questions.

You are assured that the Researcher will keep your responses private and your personal identity will not be required.



Pauline Marima,
Student, Masters of Applied Philosophy and Ethics (MAPE),
School of Humanities and Social Sciences, Strathmore University, Kenya.

QUESTIONNAIRE

| **Date:** | **Male** ☐ **Female** ☐ | **Age:** |
|---|---|---|

**Case: Amani and the Water Tap**

Amani is a student in a secondary school. Amani has noticed that there is a water tap in the school compound that was left open, and it is losing water. Amani knows that water is important, and that sometimes water in the area is not enough.

Amani needs to make a decision on what to do about this water tap. He knows the school rules about careful use of water. He knows that losing water could affect him if he became thirsty while at school and there was no water to drink. Amani also knows that being a careful person is a sign of good character.

Now, when answering these questions, think what YOU would do if you were Amani.

1. When thinking about the loss of water from the tap, what for you would be the best reason for doing something about it?

   In the shaded boxes below, order the answers according to their importance to you

   (3 = Most Important; 2 = Second in Importance; 1 = Least important)

| | |
|---|---|
| | I must be obedient to the school rules which tell us not to waste water, and so I will do something about the open tap. |
| | I would not want the water to get finished because there would be no water for me to drink when I am thirsty at school, and so I will do something about the open tap. |
| | I have a habit of protecting water wherever I am and at all times, and so I will do something about the open tap. |

2. When thinking about why it is good to conserve water, I strongly believe that:

   In the shaded boxes below, order the answers according to their importance to you

   (3 = Most Important; 2 = Second in Importance; 1 = Least important)

| | |
|---|---|
| | Using water carefully is good because I have a duty to respectfully follow the rules on water use |
| | Using water carefully is good because it will help me not to lack water for my use when I need it |

| | | |
|---|---|---|
| | | Using water carefully is good because by protecting water I also help others, and this makes me become a better person |
| 3. | Doing something about the water tap that was left open at school gives me a chance to:<br>In the shaded boxes below, order the answers according to their importance to you<br>(3 = Most Important; 2 = Second in Importance; 1 = Least important) | |
| | | Show my obedience to the school rules by doing the right thing |
| | | Become recognised by my fellow students and my teachers for doing the right thing |
| | | Improve myself and my personal habits by practicing how to do the right thing |
| 4. | Please read the following statements. How well do they match with how YOU normally make decisions about good and bad behaviour?<br>In the shaded boxes below, order the answers according to their importance to you<br>(3 = Most Important; 2 = Second in Importance; 1 = Least important) | |
| | | It is important to follow the rules at all times. Obeying rules is the most important guide when deciding what the right thing to do is. |
| | | It is important to think about the effect of my actions on my happiness. The benefit I get is the most important guide when deciding what the right thing to do is. |
| | | It is important to have a good character in all situations. Good character (e.g. self-control, honesty, etc.) is the most important guide when deciding what the right thing to do is. |
| 5. | If you had to advice the Head Teacher of your school, which one of the three options below would be the BEST way to make students use water carefully?<br>Choose only ONE answer by putting a tick (✔) in one of the shaded boxes | |
| | | Set clear school regulations and instructions about using water carefully |
| | | Set up a system for recognising and rewarding students who use water carefully |
| | | Train the students how to be careful with everything they use, including water |
| 6. | In your own words, please explain WHY you have chosen the answer in Question 5 above? | |
| | | |
| 7. | If you were visiting another school and you saw a water tap left open there, what would you do, and WHY? | |
| | I would…<br><br>Because… | |
| 8. | What do you think most of the other students will do in the same situation in Question 7 above, and WHY? | |
| | I would…<br><br>Because… | |
| 9. | Imagine it is 10 years from today and you are no longer in school. You attend a wedding ceremony and there are many people. You notice a water tap was left open by somebody. What would you do, and WHY? | |

| | |
|---|---|
| | I would…<br><br>Because… |

Thank you and congratulations for completing the survey! Your time and patience are highly appreciated.

## Appendix D: Map of Geographical Scope of the Study

The study population is comprised of secondary school pupils in Kiambu County. Kiambu County has 12 sub-counties and has over 300 secondary schools. The study population is not representative of the number of schools, rather it is more representative of school-going youth who attend school and also live in Kiambu County. The study population has been drawn from five (5) out of twelve (12) sub-counties.

The schools that were engaged in the study included the following:

1. Gitwe Girls Secondary School, **Githunguri** Sub-County, Kiambu County
2. PCEA Mukuyu-Ini Secondary School, **Gatundu** Sub-County, Kiambu County
3. Ngenia Boys Secondary School, **Limuru** Sub-County, Kiambu County
4. Muna Secondary School, **Limuru** Sub-County, Kiambu County
5. Gikanga Kageche Secondary School, **Kiambu** Sub-County, Kiambu County
6. ACK Karura Secoondary School, **Kiambaa** Sub-County, Kiambu County

The map overleaf shows Kiambu county and the location of the five sub-counties represented by the study population (i.e. Limuru, Githunguri, Gatundu, Kiambu and Kiambaa).

**Figure 12. Map of Kiambu Sub-counties**


Source: County government of Kiambu website (URL: http://www.kiambu.go.ke/about/administrative-political-units), 2018.