



**DISCIPLINE OF ETHICS**

**SCHOOL OF RELIGION, PHILOSOPHY AND CLASSICS**

**COLLEGE OF HUMANITIES**

**TITLE: AN ETHICAL EXPLORATION OF THE EFFECTS OF THE INCREASED  
COMMERCIALIZATION OF ETHNOMEDICINE PRODUCTS ON THE  
ENVIRONMENT: THE CASE OF THE CITY PROVINCE OF KINSHASA,  
DEMOCRATIC REPUBLIC OF CONGO**

**BY**

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**Dissertation Submitted in Partial Fulfilment of the Degree of Master of  
Arts in Ethics, in the School of Religion, Philosophy and Classics,  
College of Humanities,  
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**2022**

## **Declaration**

I, Mbala Mizingu Simon, declare that:

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**Supervisor: Prof. Beatrice Okyere-Manu**

Signed:



Date: 25 August 2022

Date: 25 August 2022

## **Dedication**

To all the people who fight for the protection and care of the natural environment.

## **Acknowledgements**

I would like first to thank God the Almighty Father for the gift of life and health that he never ceases to bestow on me, without my merit. To Him be Glory, Honour, and Power forever.

A special mention must be made to my supervisor: Prof. Beatrice Okyere-Manu. I thank her for fostering in me the capacity to think proficiently and ingeniously to make this research project a success.

My heartfelt appreciation goes to the Consolata Missionaries Institute for their support. It is much appreciated.

Many thanks to Sister Monica Honeywill and Anne Blaylock who helped me with the proofreading.

I am also indebted to my siblings, Sister Marie Odette, Ritha, Marie Ndona, Charles and Bopaul Mbala and my nephews and nieces for their prayers and encouragement.

To my friends, Mido Mafungu, Gisele Ateka, Eveline Mulebu, Blanche Kasiala, Father Jacques Kuziala, Father Joseph Ngumba, Dr. Yves Mutombo, Dr. Jean Pierre Kabwanga, Dr. Nicky Kambuma, Christian Tshimbalanga, Sonya Kiangala, Maman Antho Mpika and Shadi Mlambo for their immeasurable support.

Finally, I reiterate my gratitude to all those who are dear to me and whose names do not appear here. May you all be blessed.

## **Abstract**

This study presents an in-depth investigation into the way the population of the City Province of Kinshasa (the Kinois people) have become involved in the new phenomenon of the commercialization of ethnomedicine products and its long-term effects on the environment.

This topic has received little research attention, particularly in the area under focus. The research is motivated by the fact that the Kinois people are facing a significant challenge in terms of the extinction of their forests, shrubs and animal species. This has created environmental pollution with direct consequences such as climate change, flooding and high temperatures. This research ethically interrogates the effects of the commercialization of ethnomedicine products and its contribution to the environmental crisis in the area under focus. A review of the literature and environmental stewardship and consequentialism theories were used as lenses to analyse the data collected.

This study made use of the qualitative method. The research design comprised an exploratory case study of sellers of ethnomedicine products. Purposive sampling was used to select 12 experienced sellers and data were generated through one-on-one interviews with each of the participants.

The findings show that the Kinois people acknowledge that they have been contributing to environmental issues through the cutting of plants, tree barks and animal bones. Although government regulations have been put in place to control these practices, the problem persists due to the Provincial Government's inability to enforce the regulations. This requires the population to be conscious of the need to work and care for the environment. It was also found that the socio-economic conditions of the country, including unemployment and poverty, have forced the Kinois people to commercialize ethnomedicine products to ensure their survival.

Various recommendations are given including the need to prioritize environmental education. The study ends with some suggestions for further research.

**Key words:** Ethnomedicine, environmental crisis, Kinshasa, ethical effects, deforestation, climate change, commercialization.

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## **List of Abbreviations**

|           |   |
|-----------|---|
| AIDS:     | Acquired immunodeficiency syndrome                            |
| BBC:      | British Broadcasting Corporation                              |
| CAM:      | Complementary and alternative medicine                        |
| COVID-19: | Coronavirus disease (an infectious disease caused by a virus) |
| CPK       | City Province of Kinshasa                                     |
| DEP:      | Department of Environmental Protection                        |
| DRC:      | Democratic Republic of Congo                                  |
| FPP:      | Forest Peoples Programme                                      |
| GEO:      | Global Environment Outlook                                    |
| HIV:      | Human immunodeficiency virus                                  |
| IDPs:     | Internally displaced persons                                  |
| KZN:      | KwaZulu-Natal   |
| MESD:     | Ministry of Environment and Sustainable Development.          |
| NEAP:     | National Environmental Action Plan                            |
| TM:       | Traditional medicine  |
| UNDP:     | United Nations Development Programme                          |
| UNEP:     | United Nations Environment Programme                          |
| USA:      | United States of America                                      |
| WHO:      | World Health Organization                                     |
| TAC:      | Technical Assistance Center                                   |

# **CHAPTER ONE**

## **GENERAL INTRODUCTION TO THE RESEARCH**

### **1.0 Introduction**

This chapter presents the general introduction to the research. It consists of the background and motivation for the study, problem statement, aim of the study, key research question, research sub-questions, key research objective and research sub-objectives. A preview of the methodology and the theoretical framework is also provided. This is followed by the significance and the delimitations of the study. The chapter ends with an outline of the structure of the study and a conclusion.

### **1.1 Background and motivation**

From time immemorial, the general belief in Africa is that African ancestors have always conserved nature because it feeds, heals and sustains people. Mamba, cited in Bienvenu Mundala (1999:1), argues that ethnomedicine extracted from plants and other local products handed down through generations have kept the Congolese people in good health, despite the crisis in the country's provision of healthcare. Available statistics reveal that more than 4 000 traditional medicinal practitioners specialise in plant therapy, ritualism, and spirituality in the Democratic Republic of Congo (DRC). This is endorsed by Julian Inglis (1993:6), who contends that throughout the ages people have had an intimate "knowledge of plants, animals, and natural phenomena, the development and use of appropriate technologies for hunting, fishing, trapping, agriculture and forestry, and a holistic knowledge, or 'world view', which parallels the scientific discipline of ecology". Thus, it can be said that ethnomedicine has played an indispensable role over the centuries in the life of African people in general, and the Congolese people of the City Province of Kinshasa (from here on referred to as the CPK) in the DRC in particular. Ethnomedicine is generally believed to be an indispensable way of healing as well as a culturally believed custom. It is one of the forms of healing that has existed over time. People use many plants, roots and animal skins, developed in their respective communities, to treat various diseases. Claude Marodon (2018:5) argues that even though sub-Saharan Africa and the Indian Ocean Islands account for 60 000 of the world's higher plant species (about 25% of the whole earth), less than 8% of the 1 100 medicinal herbs traded internationally originate from Africa. This is due to the knowledge of the traditional utilisation

of African herbs being infrequently documented but rather passed on verbally from generation to generation by narrators and traditional therapists.

The Congolese people have a rich and diversified ancestral medicinal knowledge, irrespective of their level of education, age, position in society (noble or low caste), marital status, or whether they live in rural settlements or urban cities (Pathy, Flavien, Honoré, Vanhove and Van Damme, 2021:8). In most instances, ethnomedicine or “traditional” medicine is often regarded as the most appropriate mode of treatment for local people (Rukangira, 2001:180). Healing is part of human nature (Porterfield, 2005:14) and it is common knowledge that the majority of people seem to prefer traditional medicine to modern western medicine and, as such, utilize it first as a remedy aid. However, the increased commercialization of ethnomedicine products has become both a reality and a concern and it is against this backdrop that this research took place.

There are two ways to understand the increased commercialization of ethnomedicine products in the CPK. First, some traditional healers or practitioners use rituals or other procedures to treat illnesses that have afflicted their people. They go to the forest to obtain some roots, tree barks and leaves, and kill animals to obtain their bones, skins and teeth without harming the forest or negatively affecting the animal population. This implies that the care of nature, through its protection, has existed in several African cultures. According to Holmes Rolston (2003:517), indigenous African people used to take proper care of and had obligations for their natural resources. Second, there are men and women who either buy or extract ethnomedicine products (the roots, barks, leaves and animal parts mentioned above) from the forest and thereafter sell them for commercial purposes without considering the effect that this practice is having on the environment and its natural resources. It is this latter practice that is the focus of the study.

The motivation for this research was drawn from the fact that to date, the area under study, that is, the CPK, is faced with a huge challenge in terms of the destruction of its forests, bushes, animal species, and pollution of the environment. Numerous complaints have been registered by states and governments of Africa in general, and the DRC in particular, regarding the misuse of flora and fauna including forests and lands which affect the environment. According to Ameenah Gurib-Fakim (2006:6), “the African continent is reported to have one of the highest rates of deforestation in the world. The paradox is that it is also a continent with a high rate of

endemism with the Republic of Madagascar topping the list at 82%”. Simply put, maintaining the forests, flora and fauna that protect the world against climate change and environmental pollution has become a critical challenge in African countries.

On the one hand, the increased commercialization of ethnomedicine products is aggravated by the absence of enforcement of the regulations to protect the forests put in place by the Provincial Government of Kinshasa. On the other hand, the cutting of trees by the population for their very survival and the multinational enterprises for their business activities is mitigating factors. A workshop on forest governance and decentralization in Africa, held in April 2008 in South Africa, was part of the regional discourse on the problem of deforestation. It was a way to increase dialogue within the African continent, and to explore the challenges associated with increased trade of the products of African forests. These challenges have become unavoidable in the current debate on deforestation and its impact on global climate change (Yako and Oberle, 2010: XXI).

Among the causes of the environmental crisis in the CPK are social, political and economic factors, and issues of ethnicity and urbanization (Mwambazambi, 2010:56). This means that the current actions of the Congolese on the environment such as deforestation, desertification, pollution and the commercialization of ethnomedicine products will have an impact on future generations and determine their behaviour towards nature. Environmental protection measures by many African governments have been achieved through creating awareness among citizens. However, this is still insufficient as it requires time, resources, and international and continental understanding to achieve much impact. Emmanuel Mutyaba (2018:94) highlights that all creatures are interlinked in that destroying one affects the other, and the well-being of one depends on the other. It is the responsibility of humans to take care of nature and to destroy it, is to destroy humankind itself.

Arising from the foregoing, therefore, it becomes crucial to ethically explore the effects of the increased commercialization of ethnomedicine products and their potential contribution to the environmental crisis in the area under study. The outcome of this research could help the government authorities in the Province of Kinshasa to better enforce policies to manage the issues surrounding the commercialization of ethnomedicine products. Conscious of the issues looming in this sphere the researcher believes that this research needed to be urgently done. Thus, this topic (and research) is situated within the framework of environmental stewardship

ethics and seeks to conscientize all Congolese to improve their attitude towards nature. The Congolese population needs to take care of their environment and their ethical values according to their own culture, economy and politics. More fundamentally, this research sought to give attention to the important issue of the commercialization of ethnomedicine products by the Congolese people and its effects on the environment through the lenses of the environmental stewardship and consequentialism theories.

## **1.2 Problem statement**

The commercialization of ethnomedicine products has increased. This increase has been exacerbated by the current COVID-19 pandemic, during which many people in the study area are using ethnomedicine products as prophylactic measures. As alluded to earlier, despite the availability of western medicine, a majority of the population prefers natural products to treat all their ailments. Therefore, the business of selling ethnomedicine products has become very lucrative. The products are sold in large quantities in different public places, such as on public transport, at funerals, restaurants, street corners and other places of leisure. Interestingly, these ethnomedicine products have often manifested negative side effects on users because they are not regulated by any formal health institution. Consequently, the commercializing of ethnomedicine products has led to a loss of credibility in its quality. The products, however, continue to be bought and the reality of the last few decades (and the current pandemic) has shown that this increased commercialization of ethnomedicine products is likely to continue for years to come.

The socio-economic conditions of the Congolese people, the incidences of poverty, the massive displacement of the population from the countryside to the urban areas, including the political instability of the country, are factors that seem to have pushed many of them to become completely dependent on natural resources to survive (Kasika, Vasombolwa and Lejoly, 2016:479). It is inevitable that, through the process of human activities interacting with the environment, the tendency for abuse of the environment becomes more pronounced, thereby negatively impacting the environment as the chances of its renewal are minimal. Furthermore, the concerns over climate change and its resultant consequences including pollution, population growth, inequality in land use and ownership, deforestation, and their effects on the environment (the environmental crisis) have been heightened worldwide over the years. According to Robert Lauer (1978:505) and Robin Attfield (2018:3), the environment has been



affected by human activities such as hunting, building, mining and farming, thus resulting in pollution, deforestation, desertification, and the loss of species of various kinds.

Environmentalists, like Roger Gottlieb (2019:5), believe that these crises in developing countries such as those in Latin America, Africa and Asia are shocking and show that the world is neither stable nor safe. Jan Oosthoek and Barry Gills (2013:1) believe that “humanity, and with it, all life on earth, stands at a crossroads”. Corroborating this claim, Charles Ehrhart and Michelle Twena (2006:6) observe that “Climate change will affect people in Africa more than anywhere else in the world due to the nature of changes they are facing...” and these include the above-mentioned population growth, inequality in land ownership and use, deforestation and the sharing and use of natural resources. A similar concern is expressed by Pope Francis (2015:19), who opined that the earth is currently witnessing worrying warming of the climate. Current and ongoing debates on environmental concerns indicate that the environmental crisis has brought together governments and scientists to look for reasons and answers to face the crisis.

It is interesting to note that, since the United Nations Conference on the Human Environment in Stockholm in 1972 (United Nations, 1972), the United Nations Conference on Environment and Development in Rio de Janeiro in 1992 (United Nations, 1992), and the Paris Agreement in 2015 (United Nations, 2015), the reality of the environmental crisis seems to have dawned on governments globally and they have committed themselves to work for the betterment of the environment. The Rio de Janeiro Conference Report (United Nations, 1992:2), in its principle 10, indicates that:

Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

The above conferences called upon governments, state institutions and the populations of the earth to preserve and enhance the natural environment for the well-being of humans and non-humans. Didier Buwani (2017:7) argues that “the issue of climate change is not only a scientific, political and economic problem, but it is also an ethical concern”. This means that

climate change and related environmental issues are the results of human actions not based on ethical principles. Therefore, humans have an ethical responsibility concerning nature.

African environmental ethicists such as Philomena Aku Ojomo (2011:102) and Segun Ogungbemi (1997:265), have expressed the same concern about environmental challenges with a particular focus on the African context. Ogungbemi (1997:266) maintains that “because of the desire to develop like Europe and the United States of America, African governments and international corporations have engaged in mass destruction of our ecosystems”. The land and water exploitation to get natural resources and their commercialization do not reflect respect for the ecosystems.

Undoubtedly, Africa as a continent and the CPK in particular, have inevitably become a victim of this global scourge which has negative effects not only on the economy but also on the well-being of both humans and non-humans. While environmental protection measures put in place by the Provincial Government have been increasing awareness among citizens, they are still insufficient since they require time, resources, and international and continental understanding for an impactful manifestation. There is also the argument (that this study will address) that governments in Africa in general and that of the CPK specifically, do not fulfil their obligations as expected in putting in place proper environmental information and communication initiatives that could inform the population of the responsibilities they have in protecting the environment.

The literature review (see Chapter two) reflects that few studies have been conducted showing any link between the increased commercialization of ethnomedicine products and its effects on the environment. This reality has prompted the need for this study, that is, an ethical exploration of the increased commercialization of ethnomedicine products and its potential effects on the environment in the CPK. Achieving a balance between the commercialization of ethnomedicine products and the effect that this has on the environment necessitates good provincial policies and governance. The moral stewardship of individuals, society and government, each in their spheres of life, is essential for the good care of the natural resources and the environment. Various ethical questions emerge including whether it is right to commercialize ethnomedicine products and what moral conduct should be adopted for the well-being of the environment. This study has become necessary as a result of the global phenomenon of climate change and its impact on the environment.

In summary, the problem that this study addresses is that by commercializing ethnomedicine products, such as trees, plants, roots, leaves and animal parts, the Kinois, that is, the people living in the CPK, do not necessarily realize that this practice contributes to environmental degradation resulting in climate change. This has a direct and ultimately negative impact on the life of the people and that of the animal and plant species.

### **1.3 Aim of the study**

In light of the above problem statement, the overall aim of the study was to undertake an ethical exploration of the increased commercialization of ethnomedicine products and its effect on the environment, with particular focus on the CPK through the lenses of the ethical stewardship and the ethical consequentialism theories.

To achieve the aim, the following key research question and sub-questions and key research objective and sub-objectives were posed:

### **1.4 Key research question**

This research sought to respond to the following key question:

What are the ethical effects of the increased commercialization of ethnomedicine products on the environment in the City Province of Kinshasa?

### **1.5 Research sub-questions**

The following sub-questions were posed:

1. What accounts for the increased commercialization of ethnomedicine products in the City Province of Kinshasa?
2. How does the increased commercialization of these products affect the environment in the City Province of Kinshasa?
3. What regulatory measures have been put in place as checks and balances to control the over-commercialization of these products?
4. How can the ethical theories of environmental stewardship and consequentialism inform sellers of these products of their responsibilities towards the environment?

### **1.6 Key research objective**

The key objective of the study was:

To explore the ethical effects of the increased commercialization of ethnomedicine products on the environment in the City Province of Kinshasa.

### **1.7 Research sub-objectives**

Stemming from the key objective above were the following sub-objectives:

1. To determine what accounts for the increased commercialization of ethnomedicine products in the City Province of Kinshasa.
2. To determine how the increased commercialization of these products affects the environment in the City Province of Kinshasa.
3. To identify the regulatory measures that have been put in place as checks and balances to control the over-commercialization of these products.
4. To determine how the ethical theories of environmental stewardship and consequentialism can inform the sellers of these products of their responsibilities towards the environment.

### **1.8 Preview of the methodology adopted**

The methodology is perceived “as a set of procedures that can be followed for achieving an objective” (Rubenstein-Montano, Liebowitz, Buchwalter, McCaw, Newman and Rebeck, 2001). Hence, the objective in terms of this study was to explore the increased commercialization of ethnomedicine products to determine the effects it has had on the environment in the CPK. The research approach adopted for carrying out the study was a qualitative one using the interpretative paradigm. Data were assembled through both primary and secondary sources. For the primary data, the technique for data collection was one-on-one semi-structured interviews using a voice recorder and notes. For the secondary data, relevant books, journals and other publications, both physical and online, were identified through a systematic review of the literature and analysed to establish a basis for the study. The interpretative approach assisted in generating themes from the responses given by the participants and these enabled the researcher to get information on and provide an understanding of the uninvestigated gaps concerning the topic. In so doing, the researcher hoped to provide some insight and knowledge and formulate general conclusions that point out the ethical effects of the commercialization of ethnomedicine products on the environment in the CPK. In addition to the above approach, the researcher also observed how the Kinois people made ethnomedicine products their business, thereby enriching the data collected.

## **1.9 Preview of the theoretical framework**

The theoretical framework that underpinned this research comprised the ethical stewardship and the ethical consequentialism theories. The study used both theories to describe and prescribe the reality of the commercialization of ethnomedicine products which has become an important subject of interest and concern in the CPK.

The first theory, that is, the ethical theory of stewardship, requires humans to look after the “creation” with more lucidity and responsibility. This theory equips one with a rational and moral understanding of the need for the good treatment of the natural environment. The idea is that the current generation will be cognisant of their responsibilities towards the environment. African ethics promotes the concept of the interrelatedness of everything in nature and the concept of nature-relatedness permits humans to co-exist calmly with nature and treat it in a worthy manner for its stability and sustainability (Ogungbemi, 1997:270). Ogungbemi (1997:266) argues that in African societies, the moral code of not taking more than one needs from nature and which he refers to as the “ethics of care” should be promoted. In a similar vein, Godfrey Tangwa (2004:389), in his eco-bio-communitarianism, highlights the recognition and acceptance of harmonious interrelationships between nature, plants, animals and humans. This recognition and acceptance should be expanded for the protection of the environment. Humans’ contribution to the environment is to be good stewards with the mission of treating nature with fairness and respect to assure its (and humans’ own) well-being.

The second theory that reinforced this study is the consequentialism theory. As an ethical theory, consequentialism determines the goodness of possible present and past actions through analysis of the consequences of those actions. The theory outlines that a good action produces good results, while actions that produce bad results can be ethically prevented (Elliott and Karlana, 2018:159). According to Scheffler (1988:1), “consequentialism in its purest and simplest form is a moral doctrine which says that the right way to act in any given situation is the one that will produce the best possible outcome”. This theory was considered appropriate for the study because it provided information that could help to describe and develop the ethical awareness needed by the Kinois people to take good care of nature and protect the environment. The CPK would thus be a beneficiary, and this could be considered a common good. It is morally wrong to ignore the magnitude of the commercialization of ethnomedicine products and the harm that it is causing to the environment.

### **1.10 Significance of the study**

The CPK is facing various environmental threats including pollution, climate change, flooding, desertification and the decline of biological diversity. The significance of this research resides in the fact that its findings will provide information on the effects of the increased commercialization of ethnomedicine products on the environment of the CPK; findings that are arguably applicable to other African countries as well. More specifically, the significance of the study lies in the fact that certain ethical elements such as care, protection and respect for nature that are important for the environment and sustainability will be highlighted. As a result, the findings could contribute to the moral consciousness of the Kinois people in terms of their being informed on caring for nature and co-existing in peaceful harmony with it.

By exploring and giving particular attention to the environmental issues that are affecting the CPK, the Kinois people could be better sensitized to these issues and a collective awareness concerning the issue of environmental change in the area could be promoted and developed.

The study could assist in creating an awareness among the commercial sellers of ethnomedicine products of the policies put in place by the Provincial Government of Kinshasa to manage the use and selling of those products and what impact their practices are having on the environment.

A further reason why this research is significant lies in the fact that while environmentalists and scientists have been discussing the problems associated with the environmental change for decades, they appear to have spoken less on the commercialization of ethnomedicine products and its contribution to environmental degradation and, in the case of this study, the CPK.

This research will add to the literature on both ethics and environmental issues by providing a fresh ethical perspective on the effect that the commercialization of ethnomedicine products is having on the environment with specific reference to the CPK.

Finally, the researcher hopes that this research will provoke further investigations on the role played by ethnomedicine products and their increased commercialization in negatively impacting the environment in other parts of the world.

### **1.11 Research delimitations**

Although other provinces in the DRC might also be experiencing the increased commercialization of ethnomedicine products and the resultant impact that this is having on their environments, this study, due to time and resource constraints and a need to narrow the focus of the research, was delimited to the CPK. Investigating the situation in other provinces of the DRC can be the subject of subsequent research.

The second delimitation of the study was to focus on the way the Kinois people themselves (in the form of sellers of ethnomedicine products) responded or reacted to the increased commercialization of ethnomedicine products and its effects on the environment. Again, due to the same constraints outlined above, the perspectives of other role players in the commercialisation of such products were not sought.

### **1.12 Outline of the study structure**

This study is divided into eight chapters as outlined below:

#### **Chapter one: General introduction to the research**

The first chapter provides the background and motivation for the study. This is followed by the problem statement, the aim of the study and the key and sub-research questions and objectives. A brief overview of the research methodology and theoretical framework is given. The significance and delimitations of the study are then outlined and the chapter ends with an overview of the structure of the study and a conclusion.

#### **Chapter two: Literature review**

The second chapter focuses on the literature relevant to the topic under study. Firstly, the chapter defines ethnomedicine and describes the nature of its uses and the commercialization of ethnomedicine products and its effect on the environment. Secondly, the chapter defines the environmental crisis and examines the causes of the crisis, its effects on humans and non-humans and the efforts made to address the crisis. In doing so, the gap in the literature is pointed out, thus establishing a basis for the current study as well as further studies.

### **Chapter three: Commercialization of ethnomedicine products in the City Province of Kinshasa**

The third chapter explores the environmental issues affecting the CPK such as climate change, atmosphere pollution, desertification, erosion and flooding due to the increased utilization and abuse of the forests surrounding the CPK by its inhabitants. The chapter, in short, traces the history of the commercialization of ethnomedicine products in the area.

### **Chapter four: Theoretical framework**

The fourth chapter provides the theoretical framework for the study, highlighting the strengths and weaknesses of the theories underpinning the study, and how the theories were applied. Two theories, namely, the theory of stewardship and the theory of consequentialism were deployed to explore the increased commercialization of ethnomedicine products and its effects on the environment in the area under study.

### **Chapter five: Research methodology**

The fifth chapter comprises the research methodology employed to conduct the study. Content includes the research design, type of study, sample and sampling method, data collection tools, data analysis, validity, reliability and rigour, and the ethical considerations relating to the study.

### **Chapter six: Presentation of findings**

The sixth chapter presents the findings of the study that stemmed from the data collected via one-on-one interviews with the sellers of ethnomedicine products. The findings are presented according to the themes that were derived from the analysis of the participants' responses. In addition, the fieldwork experiences of the researcher are briefly described.

### **Chapter seven: Discussion of findings**

Chapter seven discusses the findings of the study in light of the relevant literature and the theories and research questions underpinning the research. The discussion is organized under themes as was done in Chapter six.

### **Chapter eight: Summary, main findings and recommendations**

Chapter eight, the final chapter, provides a summary of the research and the main findings. A further delimitation is provided and a brief outline of the challenges experienced by the



researcher is given. This is followed by the study recommendations and suggestions for further research. The chapter (and study) ends with a conclusion.

### **1.13 Conclusion**

In this introductory chapter, the researcher provided content that is going to be further developed in the remainder of the study. The researcher realized that the commercialization of ethnomedicine products has emerged as a phenomenon in the CPK and one which is having negative effects on the environment as well as an impact on the social, moral, and political lives of the Kinois people. The researcher is of the view that ethnomedicine products have been known for years as an efficient means of treatment of illness. Many people across the world, particularly in African countries, and those in the CPK in particular, utilise ethnomedicine products to maintain and restore their basic health and physical and mental well-being. The researcher further observed that the current increased commercialization of ethnomedicine products by the population seems to be a contributory factor to the environmental degradation that the CPK is facing.

The literature review chapter which follows concentrates on scholars' perspectives of ethnomedicine and the environmental crisis in the CPK, Africa and worldwide.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

The preceding chapter presented the overall structure of the study by showing why it is suitable and pertinent to the current society. It included the background and motivation for the study, the problem statement and aim, the research questions and objectives and the significance of the study. The researcher highlighted that ethnomedicine products have always existed in African traditional culture as a remedy and are culturally accepted. The chapter also raised the issue of the increased commercialization of ethnomedicine products that has become a reality in the CPK. By cutting plants, roots, tree barks, and by killing animals to use their skins, teeth and bones in the practice of selling ethnomedicine products, the Kinois people have been negatively impacting their environment. Thus, while the commercialization of ethnomedicine provides remedies for illnesses and the like and also provides a means for the Kinois people to survive, these benefits are at the expense of the environment.

The current chapter comprises an extensive and critical review of the relevant literature, and to identify gaps in previous related studies that provide an impetus for this study. The chapter begins with a discussion of ethnomedicine and ethnomedicine products. It then discusses the environmental crisis in Africa including its causes and effects as well as the efforts to address it. The gaps in the literature are then highlighted and the chapter ends with a conclusion.

#### **2.1 Ethnomedicine**

Charles Anyinam (1999:128) opines that “in the existing literature, explicit discussion of ecological dimensions of ethnomedical practices is almost non-existent even though, to a large extent, the practice of ethnomedicine is an important vehicle for understanding indigenous societies and their relationships with nature”. This implies that there has not been much literature concerning the link of ethnomedicine utilization with the environment. Hence, the researcher acknowledges that although studies on ethnomedicine have been done focusing on the CPK and worldwide, no literature on the increased commercialization of ethnomedicine products and its effects on the environment could be identified. It is against this background that the researcher accessed a selection of these studies and publications drawn from several

different contexts and cultures in order to define and explore the field of ethnomedicine. The few selected scholars who have researched ethnomedicine are mentioned in this review.

Scholars have generally agreed that it is uncommon to find a concise definition of ethnomedicine. Pamela Erickson (2007:1) asserts that the term (also referred to as a concept) seems to be extrinsic to many people for the simple fact that it signifies things other than biomedicine and that it is more related to ethnicity. Thus, according to Erickson (2007:1), ethnomedicine is the study of medical systems or healing practices of a cultural group using various medical therapies for diagnosis and treatment.

The approach to ethnomedicine adopted in this study is corroborated by Charles Hugues, cited in Erickson (2007:2) who attests that “ethnomedicine scrutinizes the beliefs and practices thus, referring to diseases that are products of indigenous cultural development and are not explicitly derived from the conceptual framework of modern medicine”. Ethnomedicine thus emanates from the traditional cultures of people. A wider meaning of ethnomedicine is given by Charles Good, also cited in Erickson (2007:3) who claims that the term ethnomedicine should be understood as a system that includes variable configurations. It implies a totality of humans’ beliefs, awareness and connections with nature that pertain to illness, its control and health standing. In this perspective, an ethnomedical system involves the whole community and its health issues, organized temporarily and shifting gradually (Zezeza and Kalipeni, 1999:130). Hence, it could be said, and in line with the position held by Forster and Anderson (1978:5), that ethnomedicine is an expression that indicates the entire medical ability, expertise, values, beliefs and usage of autochthonous individuals and involves all clinical and non-clinical occupations linked to the health of every individual.

Pragmatically, ethnomedicine is part of the inherent culture of people and it reminds one to understand that it takes its roots from the ancestors and is transmitted to others, namely, healers. Some of these healers are both secular and sacred (Erickson, 2007:7). Furthermore, most healers inherit the calling to become healers from their family, or by initiation or self-learning, while observing other people in the vicinity. Lamentably, Erickson (2007) seems to limit the practice of ethnomedicine to a particular group of initiated people. The researcher is of the opinion that in many countries in Africa, anyone can be involved in the commercialization of ethnomedicine products not only those people who have been trained to practice ethnomedicine.

Fabrega, cited in Isaac Sindiga (1995:18), defines ethnomedicine “as the study of the different ways in which people of various cultures perceive and cope with illness, including making a diagnosis and obtaining therapy”. Concomitantly, Ampofo and Romauld also cited in Sindiga (1995:19) define ethnomedicine as the “totality of all knowledge and practices, whether explicable or not, used in diagnosing, preventing or eliminating a physical, mental or social disequilibrium and which rely exclusively on past experience and observation handed down from generation to generation, verbally or in writing”. In this sense, the understanding of the concept of ethnomedicine depends on the way each culture discovers and solves its health-related issues. Furthermore, Sindiga (1995) contends that there should be an understanding between ethnomedicine and biomedicine since both contribute to the healthcare of the people in the community. Sindiga (1995) also believes that although biomedicine perceives illness as a physical malfunction, it should appreciate the richness and the power of ethnomedicine products and healers, as this will improve the abilities and knowledge of healthcare workers in society.

Sindiga (1995:24) points out that conflicts occur in the modern world when western education discourages indigenous practices. Indeed, when examined closely, Sindiga’s position above seems convincing. However, it is at most limited for the simple reason that he does not link ethnomedicine with the environment where it takes its roots.

Despite being utilised in various communities in Africa, there are not many studies that have been carried out on the commercialization of ethnomedicine. This applies particularly in the context of the CPK, where the researcher was unable to find any literature concerning the increased commercialization of ethnomedicine products and its effect on the environment.

According to Marsha Quinlan (2011:381), “ethnomedicine is the area of anthropology that studies different society’s notions of health and illness, including how people think and how people act about well-being and healing”. In terms of this perspective, each society has its own view of what ethnomedicine is, although many views have some similarities. Quinlan (2011) observes that the term ethnomedicine has various meanings within the literature. For instance, in the American anthropological literature, the term ethnomedicine is generally linked to healthcare. As for Westerners and biological literature, the term ethnomedicine is linked to medicinal and therapeutic usages. In this regard, the term ethnomedicine includes knowledge

in relation to health. Quinlan (2011:397) argues that “anthropologists examine the diversity of ethnomedical beliefs and practices between individual cultures, and compare ethnomedical trends at the regional and global levels”. She believes that ethnomedicine seeks to understand “the internal logic of medical systems”, of a given society and culture.

Quinlan (2011: 387) distinguishes three types of ethnomedicine, namely, ethnomedicine of the body, ethnomedicine of the mind or ethnopsychiatry, and ethnopharmacology. In terms of ethnomedicine of the body, each culture has its own understanding of the body. A human body is not only physical but comprises an entire individual with obligations toward the needs of the family and community. Ethnomedicine of the mind or ethnopsychiatry refers to mental health and illness. The third, ethnopharmacology, examines medicines within certain cultures. According to Quinlan (2011), these explanatory models are part of the ethnomedical system.

The researcher is of the opinion that Quinlan defines and analyses ethnomedicine in the context of medical systems, analysing how it is used to treat illness while focusing on a particular culture or society. She does not mention the effects of ethnomedicine in relation to the natural environment and, therefore, does not pay attention to the study area of the current research, namely, the commercialization of ethnomedicine and its effect on the environment.

According to the World Health Organization (WHO) (2002:1), traditional medicine involves numerous sorts of indigenous medicine. It comprises remedies which utilize herbal medicines, animal parts, and minerals. Herbal medicines incorporate material, preparations and the completed product. The WHO considers ethnomedicine to be widespread, extending into the health systems worldwide. It notes that “In Africa, up to 80% of the population uses traditional medicine to help meet their health care needs” (WHO, 2002:1). The broad use of ethnomedicine products in many countries of Africa (and the CPK) is mainly due to the majority of the population being poor do not have access to modern medicine, insufficient good health facilities but still rely inevitably on ethnomedicine for their health needs. The WHO has a strategic plan to ensure the security, efficiency and quality of ethnomedicine products by creating awareness among the African population. Moreover, it is also expanding “its TM/CAM [traditional medicine/complementary and alternative medicine] evidence-base, to identify which TM/CAM therapies are of proven safety and efficacy, and to generate greater public health credibility for TM/CAM” (WHO, 2002:46). However, what is missing in this approach is the linking of ethnomedicine and its effect on the environment.

Although each of the aforementioned scholars has their own definition of the term ethnomedicine, their approaches to the term are similar in the sense that they all consider ethnomedicine as a cultural practice pertaining to a certain culture or society. However, the definition that the researcher considers to be most useful is that of Sindiga (1995:4). In terms of his definition, ethnomedicine is seen as “an integral part of every culture developed over many years. It is socially acceptable”. The terms medical system and ethnomedical system bear close similarities, since both contribute to the healthcare of people. This definition of Sindiga is a convincing one; however, it needs to be noted that he links the term ethnomedicine to the socio-cultural context and not to the environment.

## **2.2 The nature of the use of ethnomedicine products**

Since time immemorial, people have shown an intimate knowledge of plants, animals and natural phenomena that parallels the scientific discipline of ecology (Inglis, 1993:6). As a result, scholars have argued that ethnomedicine plays a major and vital role in the welfare and the growth of people and will continue to do so (Antwi-Baffour, Bello, Adjei, Abdulai and Ayeh-Kumi, 2014:50). Furthermore, ethnomedicine products have been curing people through natural resources, such as herbal preparations, and usually in traditional settings. It is an essential form of healing and cultural practice that exists. Samuel Baquar (1995:143) opines that countries in Asia, Latin America and Africa make use of ethnomedicine because of its easy availability and low prices. Made from natural plants, trees, and roots, ethnomedicine has, as noted above, played a significant role in people’s lives and continues to do so. In China, ethnomedicine products account for around 40% of all healthcare delivered. The percentage of the population which has used complementary and alternative medicine at least once is 48% in Australia, 70% in Canada, 42% in the United States of America (USA), 38% in Belgium, 75% in France, 80% in Africa and 75% in the DRC. The consumption of ethnomedicine products is increasing rapidly in different areas of the world (WHO, 2002:1). It is thus evident that ethnomedicine has kept its efficacy in many developing countries and has extended its reach to developed countries as well.

In his book titled, *Healing in the History of Christianity*, Amanda Porterfield (2005:18), opines that everything in nature, comprising each plant, animal, and organ in the human body, has a purpose and should, therefore be allowed to interact harmoniously. Interestingly, African people, particularly the Congolese, have a great wealth of diverse ancestral medicinal

knowledge, regardless of their level of education, age, rank, social stratification, marital status, or whether they live in a rural village or an urban area (Pathy et al., 2021:8). In Ethiopia, for instance, 90% of the people make use of herbal remedies to help prevent or cure disease as part of their health needs (Mahomoodally, 2013:1). In other African countries such as Ghana, Mali, Nigeria and Zambia, the foremost therapy for 60% of children with high fevers as a result of malaria is the utilization of ethnomedicine products (Kassaye, Amberbir, Getachew, and Mussema, 2006:127).

The same views are shared by Baquar (1995:140) when referring to Kenyan culture. Baquar (1995) believes that ethnomedicine products have great healing potential and they are exploited commercially by many people. Although this position of Baquar is associated with Kenyan culture in the rural areas, it is also applicable to the Congolese context, due to the factors of proximity and cross-boundary cultural similarities between the two countries. It is, therefore, noteworthy to say that ethnomedicine products use in Africa in general, and in the CPK, DRC in particular, is long-established and has significant potential in healing disease. However, one can also say that in these aforementioned countries, and particularly in the CPK, there has been an increase in the use of ethnomedicine products which has had negative effects as well, not only on the environment in these areas but also on people's health.

Francis Lewu and Anthony Afolayan (2009:929), contend that the utilization of ethnomedicine products or herbal medicine is linked to the culture of humans. In South Africa, research has shown that 80% of South Africans have used ethnomedicine products or herbal medicines for their physical and psychological well-being at different stages of their lives. This is due to the great human and fauna and flora diversities of the country that are possibly responsible for the enormous knowledge base of traditional medicine that exists in the country. It can be said that ethnomedicine, as a natural product, has been of great help in many African countries and elsewhere.

Ethnomedicine products play an indispensable role in the lives of people. For example, when a person breaks an arm or leg, he or she can be treated indigenously through ethnomedicine products such as plants, leaves and tree barks and the results are very positive. The people get cured without experiencing any other complications. This human approach to nature shows the importance and respect that traditional African people accord to ethnomedicine products. In

this respect, Charles Anyinam (1995:322) states that in several indigenous societies where the practice of ethnomedicine predominates, individuals allocate sanctity to some places of their land and consider these places with devotion, respect and reverence. Mountains, lakes and rivers, for example, are represented by gods, deities and spirits and such environmental features are considered to have power.

The use of ethnomedicine products has been a source of recourse for human beings for years, as it helps them to interact with nature. In South Africa, for instance, the markets for the commercialization of ethnomedicine products thrive without control with, for example, street markets remaining well patronised and the demand for healing herbs and plants being on the increase. This is evident in the noticeable increase in the street trade of medicinal plants (ethnomedicine products) in both city and countryside markets in the provinces of KwaZulu-Natal and Mpumalanga (Mander, Ntuli, Diederichs and Mavundla, 2007:190).

The following section reviews the definition, nature and consequences of the environmental crisis as viewed by some scholars.

### **2.3 The environmental crisis in Africa**

The deterioration of the environment in Africa as a result of socio-economic and political upheavals was noted as long ago as the 1920s (Swearingen and Bencherifa, 2019:21). The crisis is, however, a worldwide one and widely commented on in the media. The term “environment” is a broad one, and it is difficult to find a concise definition that gives it adequate meaning and interpretation. Simply put, it means “nature” and thus is related to the natural landscape together with all its non-human features, characteristics and processes including both the biotic (living) and abiotic (non-living). Ideally, there should be an interaction between humans and other species. Many environmental crises occur due to the disruption of an environmental system, whether done consciously or unconsciously, leading to a change in another species of nature (Daley and Kent, 2015:6). Daley and Kent (2015) argue that the environmental crisis cannot be solved directly by environmentalists or other specialists but rather by all people changing their attitude and behavior towards nature. The scholars outlined the present environmental crisis with its numerous varieties of economic, socio-political, and technological problems.



The term environment thus encompasses the features and the products of both the natural world and those of human civilization. On the one hand, and in a broader sense, the environment includes and is concerned with nature itself. Ecology, on the other hand, as a science related to the environment and nature, is concerned with animals and plants and is that branch of biology that deals with the relations of living organisms to their surroundings, their habits, and modes of life (Sands, 2003:15). The environment is important to humans since they need to breathe, walk, drink and feed. The planet earth provides for all these necessities for both humans and non-humans.

Scott Taylor (2009:1244) describes the environmental crisis “as a dramatic, unexpected, and irreversible worsening of the environment leading to significant welfare losses”. According to Taylor (2009), every change in the environment raises great concern and leaves behind tragic facts. He links the environmental crisis to economic and population growth and concedes that the crisis has various attributes, that is, it can be a small probable event, it is distinctive, difficult to retrieve, and uneasy to foresee. These apply to all kinds of crises, either environmental, financial, social, or political. Taylor (2009) traces three preconditions for a crisis, namely, failures in governance, a positive feedback effect, and an ecological system displaying a tipping point. Put together, these preconditions can lead to a crisis. Taylor (2009:36) is of the view that the current happenings of climate change have aggravated the environmental crisis.

In a related context, Sander Van der Leeuw (2009:44) notes that the environmental crisis is linked to society. She explains a crisis as “an extreme deterioration of the relationship between a society and its natural environment, a time when that relationship functions very poorly, or not at all”. In other words, when both the society and the environment change so fast, the society is unable to keep up a suitable relationship with its environment and also, at the same time, ensure its existence.

Maurya, Ali, Ahmad, Zhou, De Silva Castro, Khan and Ali (2020:2) opine that deterioration of environment involves all the biotic and abiotic elements like air, water, soil, plant, animals, and other living and non-living elements of the planet earth. They further argue that the utilization of chemicals for enhancing the growth of plants plays a major role in the deterioration of the soil, soil erosion, salinity as well as the losses in the production of quality crops.

The environmental crisis is complex and numerous. Three reasons can be adduced for this situation. The first is that the crisis is global in that it directly or indirectly affects all the people on earth. The industrialized way of life is rapidly spreading across the planet's surface and the pressures on the natural environment are increasing. However, while most environmental problems are rather regional or local, climate change is strictly global, and no country is excluded. All countries contribute to it to a greater or lesser degree and all are now suffering from its effects. The second reason is that the environmental crisis is not marginal but structural, which calls into question the deep orientations of industrial organizations. This is especially true in the area of energy – whether it is biomass, nuclear or solar, no energy is free, clean and unlimited. The third reason for the complexity of the environmental crisis is that “the number of parameters is high. On a purely physico-chemical level, laboratories fail to account for it. They are faced with significant and seemingly irreducible uncertainties. The only observation that is reliable, is the one that currently takes place with the real climate” (Flipo, 2014:19). All these reasons show that the phenomenon of climate change does not spare any country.

Various summits have been organized and held by countries across the world to debate and find solutions to the environmental crisis. For instance, the Kyoto Protocol was a result of such global meetings to address the environmental crisis. In Article 3, Paragraph 2 of the Protocol, countries agreed to “implement policies and measures as a way to minimize adverse effects, including effects of climate change, effects on international trade, and social, environmental and economic impacts, especially developing countries Parties...” (United Nations, 1998).

Like the rest of the world, the African continent and the CPK more specifically are also affected by the environmental crisis. In the view of Gufu Oba (2020:1), the imposition of western scientific knowledge and its impacts must be perceived in terms of how the evolution processes were influenced by a common hypothesis, especially the African environmental crisis. This hypothesis opines that the African environmental crisis was influenced mostly by indigenous systems of resource use, and the aim of what Oba (2020) refers to as “imperial science” was to correct this by introducing new technologies and enlarging economic production while promoting environmental preservation as well. However, local African communities were not involved in this process in terms of the identification of environmental and developmental issues. Simply put, imperial science created a misconception concerning environmental changes by not only blaming African indigenous systems and land use for the crisis but also

by failing to recognize indigenous knowledge, causing more damage under the name of “development” initiatives. Therefore, imperial science could not associate local communities with the presupposed African environmental crisis. Oba (2020:1) utilizes the term “African environmental crisis hypothesis” deliberately as inferring “the destruction of the natural environment by indigenous systems of land-use such as crop over-cultivation and livestock overgrazing”. The hypothesis originated in the thinking of western science before being used for planning development in Africa. For many decades, the environmental crisis has destabilized the African continent in different aspects of life and in such a way that it is experiencing delays regarding its integral development when compared with the rest of the world.

When discussing the environmental crisis in the African context, environmental ethicists like Ogungbemi (1997:265) perceive the problem from three points of view, that is, one that derives from ignorance and poverty; science and technology; and political conflict and global economic forces. In effect, and according to Ogungbemi (1997), to understand the current environmental crisis that is paralyzing humanity, it is crucial to think about traditional and contemporary societies that have both become exposed to the current environmental challenges. Discussing the first point concerning ignorance and poverty, Ogungbemi (1997) contends that most of the African population who reside in rural sectors are subjected to enormous challenges due to the scarcity of fundamental services such as pure water supply, health facilities and electrical power. The land allocated to rural dwellers is often substandard and they, therefore, have to make do with what few resources are available. The daily utilization of the rivers results in pollution because of human waste that exposes the rural population to water-borne diseases such as typhoid, cholera and rashes on the body. Bushes and wood from trees are used for fuel for cooking and to generate heat thus deforestation and a lack of firewood are common in African traditional settings. In addition, the burning of firewood contributes to atmospheric pollution of the environment and thus negatively impacts the natural air that all breathe.

Besides ignorance and poverty, modern technology also contributes to the crisis. Desiring to evolve like western countries such as the USA for instance, African governments have engaged in massive destruction of their natural ecosystems (Ogungbemi, 1997:266). Ogungbemi (1997) further points out that while several African countries have huge mineral wealth, largely owing to political conflict, international economics and corruption, they don’t fully benefit from these

mineral resources. Ogungbemi (1997) highlights that traditional Africans have a love and respect for nature which they believe to be divine and, therefore, deserves to be protected and conserved, and not to be destroyed through the commercialization of its products.

In the opinion of Ojomo (2011:102), African people used to live in a peaceful society, with decent moral considerations towards their environment. Yet, with the permanent changes happening in some populations' cultures, influenced and dictated by external decision-makers, African governments, in general, are undergoing drastic developmental challenges that have had negative effects on their countries' environments. This crisis, however, and as pointed out, is a global concern whose menace and harm do not exclude any society around the world.

Tangwa (2006:389) demonstrates his idea of an African orientation in environmental ethics on the metaphysical worldview which includes the "recognition and acceptance of interdependence and peaceful coexistence between earth, plants, animals, and humans". This metaphysical view supports the manner in which humans are naturally humble and respectful in their relations with other human beings and have a caring attitude to other natural species. Simply put, they encourage the action of "live and let live". For instance, Tangwa (2006:390) cites his own culture, the Nso people from his home country Cameroun, who respect nature and the rest of creation. This illustrates the conciliatory interrelation between humans and nature in the traditional African culture. The position illustrated by Tangwa in his environmental theory is relevant to the present study because it considers a harmonious connection between the world, plants and people to provide a possible solution to the environmental crisis that is, as has been emphasized, affecting the entire world including the CPK. This position represents one of the ultimate expectations of the current research.

In her book titled *Kinshasa, City and Environment*, Francis Nzuzi (2008:4) maintains that one of the causes of the environmental crises in the CPK is urban poverty which would be another source of environmental deterioration. The citizens, by exploiting the environment through unrestrained deforestation to get charcoal and agricultural products, tend to be concerned with their own profits rather than with the welfare concerns of the CPK. It is interesting to note that a small number of Congolese citizens seem to renounce the cutting of trees to produce charcoal and firewood. For this author, the citizens appear oblivious to the dangers of their actions regarding the environment. This observation will either be validated or refuted in the course of the study.

The causes of the environmental crisis are discussed below.

## **2.4 Causes of the environmental crisis**

Holla, Ristvej and Titko (2018:8) underscore the various elements contributing to the environmental crisis and these can be examined in accordance with the measure of harm that they cause in different societies. The impact of the crisis is manifested in various ways that can be felt by human beings such as floods, earthquakes, tornados and heat storms. In new urban areas, where there are massive numbers of inhabitants, coping with such events is very difficult. The environment is damaged by several factors that generate destructive effects in the short and long term. According to Cîrstea Dragoş (2013:1448), all begins with the lack of a base in ethical principles, the lack of moral responsibility and religious orientation, the lack of environmental education, over-development, over-consumption, and the lack of social responsibility of most organizations.

Maurya et al. (2020:3) claim that the main issues of the environmental crisis comprise “modern urbanization, industrialization, overpopulation growth, deforestation and natural flood, typhoons, drought, rising temperatures [and] fires” – issues that are currently paralyzing all of humanity. Their claim is corroborated by Tien Aminatun (2013:30) who notes that the environmental crisis and its fundamental sources are related. Their effects on citizens are determined by the population dimensions, the amount of consumption and pollution manufactured by the same population, and the sources of supply utilized. Aminatun (2013) adds that the causes of the environmental crisis in the world are interlinked and they have a negative impact on the population such as air and water pollution, biodiversity exhaustion, food supply issues, and waste production.

Discussing the environmental crisis in Vietnam, Nguyen Chi (2013:6) contends that atmospheric pollution, deforestation, climate change and global warming are all related to overpopulation. Additionally, Chi (2013) contends that the environmental impact of people is based on three elements: The first is the population size, the second is the approximate number of units of resources utilized by every individual, and the third is the quantity of environmental deterioration and pollution generated by every unit or element of resource utilized. With technological developments, humans have a great influence on and domination of the environment through their activities. There is, therefore, a considerable expansion in resource

and energy utilization. However, the views of Chi above are applicable in the context of Vietnam, his country, and not in the context of the CPK, the focus of this study.

Vijay Anand (2013) has rightly argued that the causes of the current environmental crisis are manifested in various ways such as land degradation due to improper soil utilization, pollution (air, water, noise and land), overpopulation, landfills, deforestation and natural causes including earthquakes and volcanic eruptions. These causes contribute to the environmental crisis, resulting in climate change, desertification, the loss of various natural species and food insecurity. Furthermore, the expansion of the global economy also causes, both directly and indirectly, emissions to the atmosphere (UNEP, 2007:44). In this perspective, Geist and Lambin, cited in Tchatchou, Sonwa, Ifo and Tiani (2015:3), indicate that the direct causes of deforestation and forest degradation are as follows:

The extension of the infrastructure for transport (roads, railways, etc.), markets, population growth, and public services, such as the development of the electricity and water networks; the expansion of agriculture (permanent agriculture, itinerant agriculture, cattle ranching, colonization of land); the extraction of timber (commercial extraction, firewood, poles, production of charcoal; other factors, such as the environmental predispositions, biophysical factors and social factors.

According to Geist and Lambin in Tchatchou et al. (2015), the causes of the environmental crisis are grounded on economic, demographic, technological, political, institutional, and cultural factors. Attfield (2018:3) also points out that deforestation and soil erosion are some of the processes by which human beings have changed the natural world.

Given the above, it is evident that the environment is being damaged and this not only affects people but also animal and plant species around the world as well.

Martin-Schramm, Spence and Stivers (2015:3) in their research on human-environment interactions, demonstrate that a complex set of social, political, economic, technological, and cultural variables, sometimes referred to as driving forces, influence the human activities that cause change worldwide. Likewise, Paul Stern, Oran Young and Daniel Druckman (1991:3) identify various driving forces. Firstly, population growth: Individuals make demands on the environment to fulfil their needs such as food, water, clothing and shelter. The increase of human activities on the environment has led to a massive increase in pollutants. Secondly,

economic growth: Human economic activities are numerous and they affect the environment worldwide. Thirdly, technological change: Currently, based on the technology utilized, population activities can raise or lower impacts on the environment. Fourthly, political-economic institutions: The impact of political and economic markets at the national and international level can also cause some environmental crises either deliberately or unintentionally. Finally, attitudes and beliefs are also believed to have a pronounced influence on the environment. Simply put, these scholars believe that the above-mentioned driving forces are interconnected.

On the same note, Prem Xalxo (2007:128) demonstrates how the world has been changing rapidly due to human activities and how this endangers the global life support system. He asserts that:

In the urbanized and industrial cities, the factories, industries, vehicles, electrical apparatuses, lack of proper sanitation, and unsafe dumping places constitute causes of environmental crisis. Soil is also damaged by mono agriculture, meadows may be destroyed by overgrazing, and forests are harmed by excessive cutting. The problem of soil, water, air, noise, and solid waste pollution has increased in correlation to the expanding population. It has dramatic effects not only on the life and health of human beings but also on nature.

Xalxo (2007) believes that the effect of the breakdown of the interrelation between humans and nature has become more perceptible and more severe. This is noticeable in the CPK, where overexploitation of natural resources, pollution, and deforestation are among the major issues.

A United Nations Environment Programme (UNEP) (UNEP, 2011:26) report has indicated that the high number of internally displaced persons (IDPs) in the DRC moving from one province to another has resulted in “large-scale environmental degradation ... [and] ... resource scarcity and competition have emerged as serious issues. The most pronounced environmental impact has been deforestation by displaced people, as they strive to meet their energy (fuelwood and charcoal) and housing needs”. This has also impacted Kinshasa, being the capital city and one of the provinces of the country, and where many Congolese people move to look for a better life. Many of these people are involved in informal commerce that necessitates the destruction of the environment through the cutting of trees and leaves and selling them in the marketplace to get money for their survival.

In the section that follows, the effect of the global environmental crisis on humans is discussed.

## **2.5 Effect of the environmental crisis on humans**

The environmental crisis has serious effects on human beings the world over. According to a report by the Center for the Research on the Epidemiology of Disasters (CRED, 2015:10), countries like the USA and China report the largest numbers of natural disasters. For example, in the year 2014, about 48% of the disasters recorded took place on the Asian continent and 85% of the people who have died in the disasters were in Asia. These statistics starkly validate the argument that the environmental crisis can have destructive effects on human beings. When the air is affected, it becomes harmful for humans to breathe. In urban areas, where factories have been built, the areas become polluted and toxic with serious health issues such as throat and eye irritations, coughing and breathing difficulties (DEP, 2016:20). It needs to be said that considerable changes can be observed in big factories and the different means of transport (cars, railways and aeroplanes, for example) and in technologies such as robotics, biotechnology and information technology, all of which contribute to the pollution of the environment. Usually, it is the poorest countries that are most affected by the environmental crisis. This is highlighted by the Bolivian Bishop's Conference, cited by Pope Francis (2015:29), which stressed that "the deterioration of the environment and social degradation affects the most vulnerable people on the planet. Everyday experience and scientific research show that the gravest effects of all attacks on the environment are suffered by the poorest".

Like the rest of the globe, the environmental crises in Africa have been common in the last few decades. Countries like Mozambique have suffered from tropical cyclones, droughts, and floods due to their geographical placement. Mozambique is located where the trade winds of the northern and southern hemispheres converge and which provoke rainfall patterns in Southern Africa. Gilberto Biacuana (2009:5) notes that "the long low-lying stretches of coastal areas (about 2 700 kilometres in length) make Mozambique one of Africa's most vulnerable countries to climate change". The most recent tropical cyclone in Mozambique was "Eloise" which shook the country on the 23<sup>rd</sup> January 2021. There was also the drastic rainfall and flooding in Taraba State in North-eastern Nigeria on the 9<sup>th</sup> and 10<sup>th</sup> July 2021 in which hundreds of homes were damaged. On the 11<sup>th</sup> August 2021, around 7 000 people in the Alibori Department of North-eastern Benin were displaced because of flooding. Similarly, the recent volcanic eruption of Nyiragongo in the DRC on 21<sup>st</sup> May 2021 is a sign of the environmental crisis. This eruption caused a massive displacement of humans and animals and destroyed around 3,500 houses in the northern part of the city of Goma. Khandhlela and May, cited in Wilfred Sumani (2018:99), highlight that "severe flooding in the Limpopo Province of South



Africa destroyed 45 000 traditional dwellings”. These examples show that the environmental crisis in Africa has resulted in the loss of human lives and the destruction of habitats.

The physical and mental well-being of many people has become threatened by the increases in global climate change and air pollution. As a result, “malnutrition, deaths, diarrhea and other diseases and injuries due to extreme weather events, and increased frequency of cardio-respiratory diseases caused by higher concentrations of ground-level ozone in urban areas” have occurred (Schaefer and Winright, 2013:74). It is mainly children who suffer the impact of these negative occurrences in the form of, for example, infection of their respiratory systems.

The environmental crisis in Africa has incensed indigenous African ethicists and they have added their voices to environmental ethics discourses. Tangwa (2004:390), one such ethicist, opines that there should be a respectful coexistence between humans and the rest of creation. It is difficult to overlook the effects of the world environmental crisis on human beings, animals, and plant life (Mwambazambi, 2010:54) and the CPK is a part of this crisis. According to Musoke Mutyaba (2018:94), traditional African morality requires humans, the only rational creature on earth, to be responsible for the well-being of all creatures.

In line with this, the United Nations report on the environment in Africa (UNEP, 2013:3) addressed policy-makers and various partners in the context of national development. It urged that the environment and health deserve priority attention in Africa. In effect, the report shows that in Africa, indoor and outdoor air pollution poses serious health issues to the population. Outdoor air pollution is a big challenge in large African cities experiencing rapid urbanization such as Addis Ababa, Cairo, Dakar, Johannesburg, Kinshasa, Lagos and Nairobi. The rapid growth in the number of used vehicles and deplorable road infrastructure in many of these cities result in congestion of traffic arteries and atmospheric pollution. Outdoor air pollution alone is responsible for the death of nearly 800 000 humans per year worldwide and this occurs mostly in cities. The UNEP (2013:3) cites a WHO report of 2007 which states that 40 000 of these deaths occurred in Africa. On the ground, the harmful effects of outdoor air pollution on health issues include respiratory and skin diseases as well as allergies. As alluded to above, the group primarily affected are children; poor people are also vulnerable. The negative health effects and many disasters experienced by the poor due to climate change and environmental pollution push them to migrate and this is especially the case in Africa. As emphasized by Pope Francis (2015:25):

Climate change is a global problem with grave implications: environmental, social, economic, and political and for the distribution of goods. It represents one of the principal challenges facing humanity in our day. Its worst impact will probably be felt by developing countries in the coming decades. Many of the poor live in areas particularly affected by phenomena related to warming, and their means of subsistence are largely dependent on natural reserves and ecosystemic services such as agriculture, fishing and forestry. They have no other financial activities or resources which can enable them to adapt to climate change or to face a natural disaster, and their access to social services and protection is very limited.

Nzuzi (2008:220), highlights that many people in the CPK are regularly suffering from illnesses brought about by breathing toxic air due to an increase in carbon monoxide levels caused by the increase in the number of vehicles on the road as well as congested traffic. The people staying in the area and surrounds suffer significant health effects such as lung and skin infections, angina, chest and stomach pains, and eye diseases. However, the effects of the environmental crisis are not only experienced by humans but non-humans as well, since all species are part of nature.

The section that follows focuses on the effect of the environmental crisis on non-humans.

## **2.6 Effect of the environmental crisis on non-humans**

The discussion above has pointed out that the health effects of the environmental crisis have resulted in remarkable harm to humans. The crisis has also resulted in harm to non-humans and natural species in general. It is generally believed that animals are more sensitive than humans in the sense that their adaptation to an unknown environment is difficult to comprehend. It is also believed that when animals are affected by the changes in their way of life, they tend to migrate to other places.

The environmental crisis constitutes a huge challenge for non-human species in the sense that they face difficulties to which they are not accustomed in their habitual environment. They are threatened because of the disappearance of their habitat caused by the over exploitation of forests coupled with desertification. Like humans, animals and other non-humans also experience health issues once exposed for long periods to toxic air. This exposure brings about defects, sterility, and several diseases to the animals (DEP, 2016:20) and this exposure often leads to the extinction of natural species.

According to Daisy Wain (2016:7), the effect of the environmental crisis can lead to:

Acid rain damage: caused by the combination of NO<sub>x</sub> and SO<sub>x</sub> with rainwater. It can damage trees, causes soils and waters to acidify therefore making them unsuitable for some wildlife and plant life, it also speeds up the decay of buildings, statues and sculptures. Eutrophication: high concentration of nutrients (e.g. nitrogen) can cause algal blooms that starve the water of oxygen and can destroy ecosystems and food webs. Haze: when the sunlight encounters tiny pollution particles in the air, a haze is formed, which can obscure the clarity, colour, texture and form of what we see. Effects on wildlife: like humans, wildlife can experience health problems including birth defects, reproductive failure and disease. Crop and forest damage: ground-level ozone can reduce growth and survivability, as well as increase susceptibility to disease, pests and other environmental stresses.

Núria Almiron and Catia Faria (2019:37), referring specifically to “nonhuman animals” assert that:

In nature, nonhuman animals are often injured, starving or ill, and they have to cope with psychological stress in the face of extreme weather conditions. However, due to climate change, free-living animals are now also confronted with increased habitat loss, reduced and degraded food and water resources, and the resulting increased psychological trauma.

The above illustrates that in African countries, the environmental crisis has caused a series of natural hazards. Of all these hazards, drought is the most common with economic implications of poor agricultural yields or no yields at all. Countries to the northwest part of the continent such as Burkina Faso, Mauritania, the Gambia, Mali, Niger and the DRC are affected. The key element in the case of droughts is none other than global climate change. Indeed, climate change models suggest that droughts will gradually increase in most African countries due to global warming triggers. These triggers include rapid population growth, the effects of European colonization, changes in agricultural practices and technology, and government policies (Swearingen and Bencherifa, 2019:21).

In the view of Beatrice Okyere-Manu (2018:4), the global environmental crisis has affected and caused a massive displacement of humans and animals and impacts the well-being of present and future generations of both human and non-humans. Furthermore, in light of the current and rapid increases in the extinction of animal and plant species, a report of the World Commission on Environment and Development (WCED, 1987:127), emphasizes that:

The loss of forests and other wildlands extinguishes species of plants and animals and drastically reduces the genetic diversity of the world's ecosystems. This process robs present and future generations of genetic material with which to improve crop varieties, to make them less vulnerable to weather stress, pest attacks, and disease. The loss of species and subspecies, many as yet unstudied by science, deprives us of important potential sources of medicines and industrial chemicals. It removes forever creatures of beauty and parts of our cultural heritage; it diminishes the biosphere.

The above implies that even though species extinctions have occurred in the past, this has happened through natural procedures but current human activities are intensifying these extinctions. This suggests that in the generations to come, there will be a smaller number of animals able to reproduce and this, no doubt, will have an impact on the number of animals living and available. Hence, in his article titled, "Minding animals, minding earth, nature, kinship, and heart", Marc Bekoff (2003:62) emphasizes the necessity of caring for animal species, respecting them for what they are, and treasuring their own world prospects. By extrapolation, in the CPK, there is a great risk of animal extinction because of the destruction, through human activities, of forests and habitats.

What are the efforts being made to address this crisis which affects all humanity and the CPK, in particular? This question will be examined in the section below.

## **2.7 Efforts being made to address the environmental crisis**

Several organizations have created an awareness of and sensitized the public to the reality of the environmental crisis and its consequences. They have also taken steps toward addressing the issues and problems associated with environmental degradation and it can be said that noticeable and important results have been attained in terms of environmental management in the past years. Scientists, states, and governments through multilateral institutions have made efforts to address the environmental crisis as revealed in available studies and reports, some of which are highlighted here. Various summits have also been organized and held by countries across the world to debate and find solutions to the crisis. For instance, in addressing this matter, Principle 13 of the *Declaration of the United Nations Conference on the Human Environment* (Stockholm Conference) (United Nations, 1972) states that "in order to achieve a more rational management of resources and thus to improve the environment, States should adopt an integrated and coordinated approach to their development planning to ensure that development is compatible with the need to protect and improve the environment for the benefit

of their population”. The *Declaration* calls for nations and individuals to protect and enhance nature for the betterment of all. Additionally, the Kyoto Protocol was also a result of such global meetings to address the environmental crisis. In terms of Article 2 of the Protocol, countries agreed to “implement policies and measures as a way to minimize adverse effects, including effects of climate change, effects on international trade, and social, environmental and economic impacts...” (United Nations, 1998), particularly in developing countries.

In Africa, countries like South Africa, have put in place policies to fight environmental crises such as the carbon tax, introduced to reduce greenhouse gases. The countries cooperate in the management of earth’s goods, especially through educating individuals to take environmental responsibility (Warner, 2011:119). Similar efforts concerning the environmental crisis are being made by local governments in African countries, including those in the DRC. The Global Environment Outlook (GLO) for Local Government (UNEP, 2012:8), notes that:

As part of its jurisdictional responsibility and in response to identified needs, a well-functioning local government provides appropriate framework conditions and incentives, moderates, stimulates ideas, innovates and provides examples to make continuous local improvements and mitigate negative local change. A local government’s proximity to local needs, local stakeholders and local realities makes it better equipped than any other government level to determine the local pathway to sustainability. Local government can drive local policies and processes to address climate change, air pollution, biodiversity loss, land degradation, water dynamics and chemical and waste issues, among others. In consultation and cooperation with stakeholders, there are several approaches that local governments can use to move towards environmental sustainability.

These efforts require the commitment and responsibility of leaders to discuss the issues of climate change and other environmental challenges that the world in general and the African continent are facing today. Pope Benedict XVI (2009:50) emphasized that “human beings legitimately exercise a responsible stewardship over nature, in order to protect it, to enjoy its fruits and to cultivate it in new ways, with the assistance of advanced technologies, so that it can worthily accommodate and feed the world’s population”. For instance, some of the developed countries like Australia and the United Kingdom are campaigning for the use of bicycles for public transport in order to reduce pollution in the cities.

Nonetheless, Sumani (2018:101) believes that it is not enough for African governments to just make policies such as carbon tax and others. They need to police them as well because most of

the policies do not address the environmental crisis properly. In this regard, the GLO for Local Government (UNEP, 2012:3) observes that “policy is largely focused on addressing the pressures or symptoms of change rather than the underlying drivers or root causes. Population growth and economic development are seen as the drivers of global environmental change, with particular facets exerting pressure: energy, transport, urbanization and globalization”. The report highlights the necessity for and the major role that states and institutions can play in preserving nature for the well-being of humans and non-humans.

In a similar vein, the DRC developed its National Environmental Action Plan (NEAP) in 1997 with funding from the United Nations Development Programme (UNDP). The policy focused attention and resources on environmental protection. As a result, each province in the DRC was required to develop its own unique plan for managing and protecting its natural environment (UNDP, 1997:6). The main problems pinpointed in the NEAP were:

Daily destruction of the environment as a result of extreme poverty, population growth and general ignorance about environmental matters; Water pollution, together with the absence of national water quality standards; Soil erosion and degradation in areas with high population densities due to poor management practices; Air pollution resulting from agriculture, industry and the energy industries; Urban degradation and insalubrious conditions resulting from a combination of poor planning, the inability of municipal authorities to control the influx of migration to the cities, as well as population growth; and Deforestation, illegal forestry, intense levels of poaching and illegal mining in protected areas (UNDP, 1997).

To counteract these problems, the NEAP suggests several strategies that can be adopted to feasibly control the biological resources of the CPK.

In the next section, the researcher highlights the gap identified in the review above and which provides a basis for the study.

## **2.8 The study gap**

This research aimed to ethically explore the effects of the increased commercialization of ethnomedicine products on the environment in the CPK.

In all the literature reviewed for this research, it is noteworthy that scholars and scientists, such as Anyinam (1999), Erickson (2007), Foster and Anderson (1978), Baquar (1995), Antwi-

Baffour et al.(2014), Sindiga (1995), Quinlan (2011), Lewu and Afolayan (2009), Ngbolua et al. (2016), Taylor (2009), Swearingen and Bencherifa (2019), Oba (2020), Ogbungbemi (1997), Tangwa (2004), Okyere-Manu, Morgan and Antwi (2021) and Nzuzi (2008) have written on both ethnomedicine and the environmental crisis in Africa and the DRC. These scholars seem to have equated the term ethnomedicine with biomedicine and medical systems, linking it to anthropology and indigenous culture and which is concerned with the treatment of illness with a focus on a particular culture or society. They have also attributed the causes of the environmental crisis to, amongst others, overpopulation, modern technology, climate change, flooding and pollution of the atmosphere.

However, these studies have not explicitly mentioned or linked the increased commercialization of ethnomedicine and its effects, from an ethical perspective, on the environmental crisis are, specifically in the CPK, DRC. It is this unexplored gap that is of interest to and the subject of this current research. This study is, therefore, an important contribution not only to the literature on ethnomedicine but also to the global discourse on climate change and its consequences on the environment.

## **2.9 Conclusion**

This chapter was dedicated to the literature review and has been organized thematically. Besides the short introduction, the chapter presented various definitions of ethnomedicine according to the different perceptions of scholars. In the chapter, the researcher noted that ethnomedicine is a complex concept, and therefore needed to be approached disparately and in context. Scholars consider ethnomedicine as being part of a medical system, a traditional practice which diagnoses and treats different illnesses in a given culture and society. There is a clear connection between the researcher's understanding and Sindiga's (1995) conception of ethnomedicine because the latter perceives ethnomedicine as an important part of each and every social culture. The importance of ethnomedicine and its impact on the environment was discussed in the chapter.

The chapter has also defined and discussed the environmental crisis including its causes and effects on humans and non-humans. The changes in the environment that the world in general and the CPK, in particular, are facing today are the consequences of human activities. Simply put, humans by overexploiting nature, endanger and demolish it and, therefore, turn out to be the victim of their own actions. The chapter ended with a description of the gap in the literature that was addressed by the study.

The next chapter focuses on the commercialization of ethnomedicine products in the CPK. The role and importance of ethnomedicine products to the Kinois people will be discussed.



## CHAPTER THREE

### COMMERCIALIZATION OF ETHNOMEDICINE PRODUCTS IN THE CITY PROVINCE OF KINSHASA

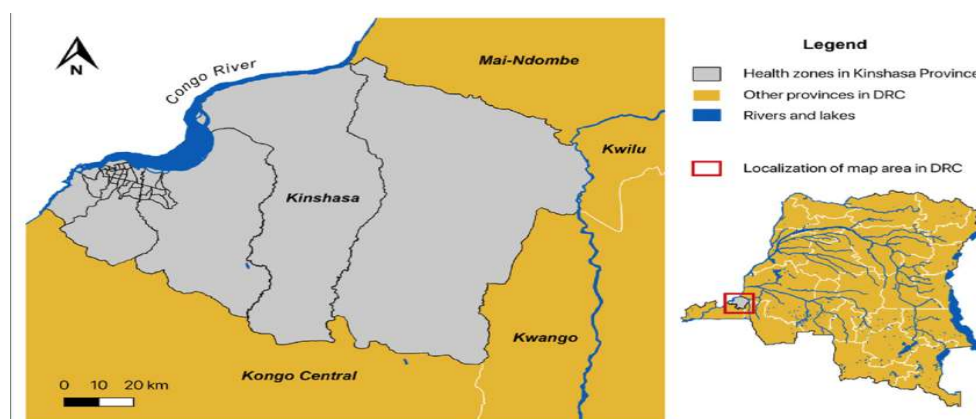
#### 3.0 Introduction

The previous chapter comprised a review of the relevant literature. The significant themes related to the study were outlined and discussed. Various definitions of ethnomedicine were given with several scholars explaining the concept as being equivalent to biomedicine and medical systems. It is related to anthropology and traditional culture and concerns the curing of illness in a given culture or society. Also discussed was the environmental crisis including its causes and its consequences on the lives of humans and non-humans. The gap which this study addressed was also highlighted.

This chapter discusses the commercialization of ethnomedicine products in the CPK. The researcher explores the situation in the CPK regarding issues such as climate change, atmosphere pollution, desertification, erosion, and flooding due to the increased utilization and abuse of its forests. The chapter starts by presenting the area under study, pointing out some historical facts about the CPK, its geographical and administrative situation, the climate, vegetation and ethnography. The role and importance of ethnomedicine, the concept of commercialization, and the commercialization of ethnomedicine products in the CPK are then discussed. The chapter ends with a conclusion.

#### 3.1 Study area

Figure 1 below provides a map of the CPK and its location within the DRC as a whole.



### ***Figure 1: Map of the City Province of Kinshasa and the DRC***

Source: [www.researchgate.net](http://www.researchgate.net)

### **3.2 Brief history of the City Province of Kinshasa**

In 1881, Stanley founded a post that he named Leopoldville after the King of the Belgians, Leopold II. In 1923, Kinshasa (or Léopoldville as it was then named) was only an urban district but it became a legal city in 1941. The Law of January 5, 1975, made it the eighth Region of the Republic, with the creation of new administrative bodies. Upon independence in 1960, the population in Léopoldville was 400,000, making it the largest metropolitan area in Central Africa. In 1966 the City was renamed Kinshasa and by 1996 had an estimated population of four million people. Kinshasa is considered one of the great cities on the African continent. Kinshasa, being the capital of the DRC and the seat of the political and administrative institutions maintains close relations with all the other cities of the country (Kinyamba, Nsenda, Nonga, Kaminar and Mbalanda, 2015:11). It has the administrative status of a province (hence it being referred to as the CPK).

### **3.3 Geographic location of the City Province of Kinshasa**

As noted, Kinshasa is the capital of the DRC and it is also the biggest city in the country. It is located in the west of the DRC, south of the Congo River (see Figure 1) and at the western exit of Pool Malebo. It is one of 26 provinces in the country comprising an area of 9,965 km<sup>2</sup> thus occupying a large area. The CPK is bordered by the Bandundu, Mai-Ndombe, Kwilu and Kwango Provinces in the North and East, the Bas-Congo Province in the south, and the Republic of Congo in the west (Kinyamba et al., 2015). Its median altitude is 360 m above sea level. The CPK is situated between 4°18' and 4°25' S latitude and between 15°15' and 15°22' E longitude (Ngbolua et al., 2016:414).

### **3.4 Hydrography of the City Province of Kinshasa**

The hydrography involves the Congo River and its principal headspring on the left bank that, for the most part, traverses the City from South to North. It includes some rivers including the N'Djili, Nsele, Funa, Lubudi, Lukaya and Mai Ndombe rivers to mention a few (Kapagama and Waterhouse, 2009:2).

### **3.5 Climate of the City Province of Kinshasa**

Due to its low altitude, the CPK has a climate which is tropical and humid. It has two seasons throughout the year – the dry season which begins from June to September, and the rainy season which begins from October to May (Ngbolua et al., 2016:414). The average annual temperature is 25°C and the average annual rainfall is 1 400 mm. Generally, it rains for 112 days a year on average with a peak of 18 days of rain in April. The relative humidity of the air averages 79 % (Kinyamba et al., 2015:9).

### **3.6 Vegetation of the City Province of Kinshasa**

The vegetation includes forests, savannas and the aquatic and semi-aquatic valleys of the Congo River. Each type of vegetation is linked to a number of ecological parameters (Kinyamba et al., 2015:12). The effects of the vegetation on the environment are, therefore, noticeable. According to these scholars, the initial vegetation such as the gallery forests along the rivers (and that characterized the CPK) are almost no longer in existence due to their intensive exploitation by the population of the CPK.

### **3.7 The ethnography of the City Province of Kinshasa**

The CPK comprises a mixture of people. This is due to it receiving people from various tribes who migrate to the capital City from all corners of the country to look for better welfare for themselves. However, it is the people from the Bas Congo and Bandundu provinces that predominate due to the closeness and accessibility of these two provinces. The DRC consists of 450 tribes disseminated across the country. The most predominant spoken languages in the CPK are the four national languages, Lingala, Tshiluba, Swahili and Kikongo (Ngbolua et al., 2016:414).

According to the World Urbanisation Review (United Nations, 2021), the size of the population of the CPK is now estimated at 14 970 460. When compared to the estimated size of the population in the year 1950, that is, 201 905, it can be said that the population has increased dramatically since then. The growth represents a 4.38% annual increase.

Figure 2 below depicts a map of the DRC that indicates the countries that it shares borders with.



**Figure 2: Map of the DRC**

Source: <https://www.britannica.com>.

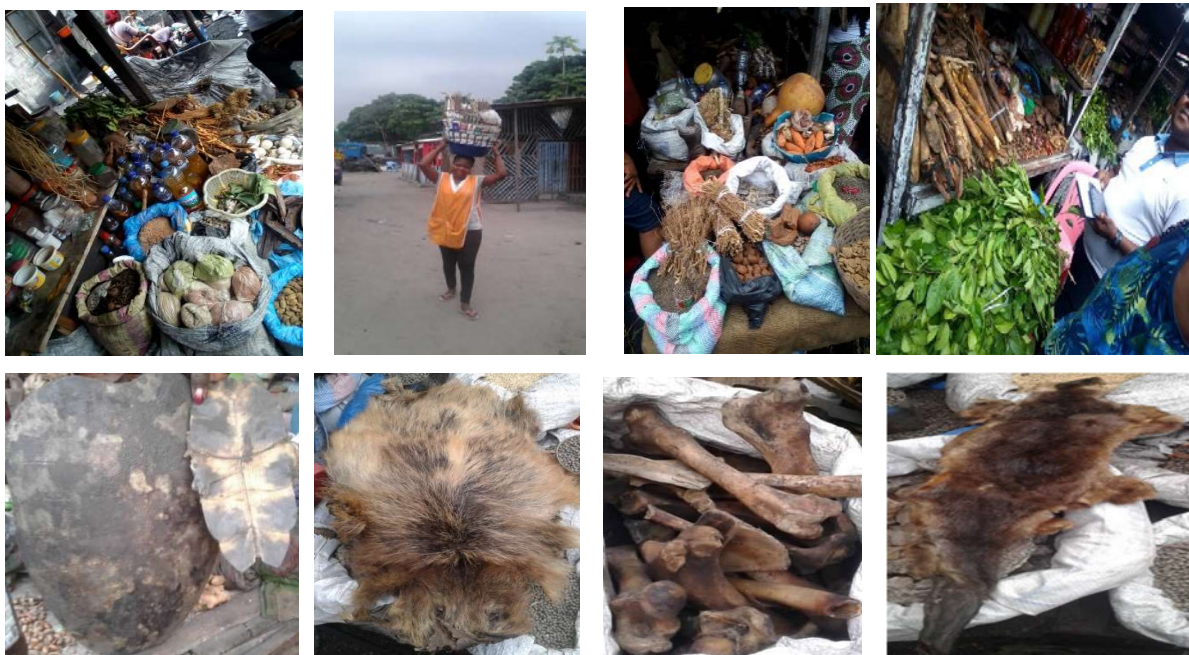
### **3.8 Role and importance of ethnomedicine in the lives of the Kinois people**

Ethnomedicine (traditional medicine) products in the CPK are used for numerous treatments and play (and have played) an essential role in the lives of the Kinois people. As outlined in the preceding chapters they are made from numerous substances including natural plants, tree barks and roots, and the skins, bones and teeth of animals. Ethnomedicine products have been known to have great potential for maintaining health and curing diseases which is why they are exploited commercially by many people in the area. Julian Inglis (1993:6) contends that from time immemorial, people have had an intimate “knowledge of plants, animals, and natural phenomena ... which parallels the scientific discipline of ecology”. They are one of the forms of healing that exist. Many of the inhabitants of the CPK have a great deal of confidence in the treatments and the cures offered by ethnomedicine products and arguably, the majority of the population believes more in ethnomedicine products than in biomedical ones.

In a fundamental sense, it could be argued that both ethnomedicine and biomedical products have an impact on the environment as a result of the activities associated with their respective practices. However, it is worth emphasizing that the focus of this study is on ethnomedicine products, their commercialization and the effect that this has on the environmental crisis in the CPK.

The majority of people commercialize animal bones, skins, teeth, tree barks, plants, leaves, roots and herbs as ingredients for preparations, all of which are rooted in the environment. It is, therefore, inevitable that the negative effect of their use on the environment is both noticeable and significant. Hence, human beings should not ignore the necessity of other life forms in their search for well-being because human life and nature complement each other (Xalxo, 2007:9). Furthermore, the future of human existence is based on a peaceful and compatible co-existence of human beings with other species of nature. Living in a country with significant economic and other challenges, it is perhaps not surprising that ethnomedicine products have become a field of interest for many people in the CPK.

Figure 3 below contains photos of different plants, roots, and other ethnomedicine products used by the people of the CPK to treat their illnesses as well as a photo of a young woman walking in the street selling her products.



***Figure 3: Photos showing different plants, roots, animal skins, bones and other ethnomedicine products as well as a seller of such products***

The following sections discuss the concept of commercialization and the commercialization of ethnomedicine products.

### **3.9 Concept of commercialization**

According to the researcher, to appreciate the commercialization of ethnomedicine products, it is necessary to examine the concept of commercialization from an economic point of view. Will Kenton (2020) describes the concept of commercialization as a process of bringing new products or services to a market. In terms of this description, the wider act of commercialization involves production, distribution, marketing, sales and customer support to attain the commercial success of the new products or services. Thus, commercialization is an economic concept which refers to engaging for profit. Pratt and Nemerov (1997:34) state that the objective of commercialization is to test the products, get feedback from investors and attract them to a new commercial product that can be introduced onto the market. According to these scholars, commercialisation can be difficult and costly, in the sense that mistakes can be made, and these can become a great obstacle to the project plan. Therefore, the purpose is to present particulars of the products including retailing and financial goals and to join them into one workable plan to bring forth success in the market.

In this study, the concept of commercialization is centred on the making of a profit from the sales of ethnomedicine products. Many of the Kinois people who are commercializing ethnomedicine products are doing so for the purpose of their own survival and have taken on this activity as their own personal business. This will be further discussed below.

### **3.10 Commercialization of ethnomedicine products in the City Province of Kinshasa**

Ethnomedicine products have always existed in Congolese society but their increased commercialization has not attracted research attention. As indicated, there are many Kinois people now engaged in the commercialization of ethnomedicine products that are extracted from natural plants and animal parts. It is commonplace to observe that some people in the area under focus engage in such practice without considering the drastic harm it does to the environment. The use and commercialization of ethnomedicine products from the natural environment in such an unfavourable manner, has tended to result in negative consequences including climate change, flooding, soil erosion, the weakening of biodiversity, air pollution and desertification. This undoubtedly affects not only the CPK but has implications for Africa and the rest of the world.

It is important to stress that the natural environment of the CPK is under threat through its unregulated exploitation. The increased use and commercialization of ethnomedicine thus contributes to the phenomenon of the environmental crisis in the area and, of course, elsewhere where such actions occur. To examine the situation more closely, it can be said that the urban planning policy of the CPK is not well implemented. This is why slums grow like mushrooms on the peripheries of the city often in dangerous spaces such as next to factories that are harmful to health. Usually, the slum occupants do not have another place to inhabit and are obliged to stay where they are despite the inhospitable conditions. It is worrisome that the Provincial Government of Kinshasa has yet to take action in anticipation of these issues and to avoid the kind of chaos that may occur. Mwambazambi (2010:54) observes that it is insuperably difficult to overlook the effects of the worldwide environmental crisis on humans and non-humans.

In his book titled *Kinshasa, City and Environment*, Nzuzi (2008:xii) echoes the above emphasizing that the environment in the CPK is under threat through the unregulated exploitation of forests and bushes and the commercialization of natural resource products by its population. Nzuzi (2008) considers that this situation is most probably due to the region's rapid and disorderly spatial growth, and social-economic issues experienced as a result of this growth. Comparing urban city life with its rural counterpart from the environmental point of view, Nzuzi (2008) believes that in the rural environment there are certain features like mountains, hills, forests, rivers, lakes, rocks and cliffs that are well respected because it is believed that the ancestors and the spirits live there. These traditional beliefs have existed for ages and have contributed to the protection of natural resources and the preservation of the environment (Nzuzi, 2008:7). In this sense, the Congolese people living in the rural areas appear to be the real conservators of nature, contrary to the inhabitants of the CPK who tend to destroy nature through the increased commercialization of ethnomedicine products. Nzuzi (2008) points to the need to sensitize the provincial authorities and the people of Kinshasa to environmental education and the need for urban planning that is sustainable and protects the natural environment. Nzuzi's observations about the environmental issues in the CPK are commendable and relevant and considered applicable to the study.

It is also important to emphasize that the majority of Kinois people who are in the business of commercializing ethnomedicine products are using indigenous medicine extracted from natural plants. In doing so, and as mentioned above, they do not consider the drastic harm being done to the environment. As a result, the environment of the CPK is deteriorating day by day, which



in turn affects the Kinois people in the form of health-related issues. In a similar vein, Anyinam (1999:129) maintains that the “recent decades have seen significant changes occurring within several aspects of ethnomedicine as a result of environmental degradation and tremendous changes in modern social and economic systems”. This suggests that through the years, the use of ethnomedicine has impacted both positively and negatively the natural ecosystem like forests, rivers and mountains. Anyiam (1999) adds that the utilization of ethnomedicine is important in various cultures of indigenous people worldwide and that its use has an immediate connection with local ecosystems.

There should, therefore, be a delicate form of balance between human beings, nature, and other species that live on earth. Human beings have the capacity to exercise their capabilities without hampering those of other species. For instance, in the CPK, people have been cutting down forests for commercial purposes in that they make money through the selling of firewood and charcoal. Nzuzi (2008:8) argues that the Kinois people have developed an economic attitude towards the trees which they consider a high-value raw material as they bring an income from being sold on the market in the form of, for example, timber, firewood and embers. Simply put, from an economic point of view, the Kinois people regard trees as having commercial value. The increase in the commercialization of ethnomedicine products is undoubtedly an expression of great poverty and an indicator of the current crisis being experienced by the Kinois people. They earn their daily living through small commercial activities such as the sale of pure water, cigarettes, peanuts, natural plants, tree roots, animal parts, and the like. A majority of the people who participate in these informal activities, earning very little, do so to survive in the city (Ayimpam, 2014:35). The result of such increased commercialization of ethnomedicine products in the CPK and other African cities is, as has been emphasized, the environment’s sustainability being negatively affected. Thus, the environment is damaged and this, as has also been emphasized, affects not only the people but other species as well and this effect is not only local but worldwide.

Environmentalists are worried that changes in the environment and weather endanger a way of life that depends on natural resources (BBC World Service Trust, 2010:7). In different corners of the CPK, more and more sellers of ethnomedicine products are offering their products to the population without considering whether or not there are side effects associated with taking the products. They locate themselves in the main areas when selling their natural products, and call themselves practitioners or traditional healers. They explain the usefulness and effectiveness



of their products to people who pass by to entice them to purchase the products. Some of these people are, no doubt, fake practitioners who have not received any training associated with administering the products. Furthermore, it is also said that some of the people who are commercializing ethnomedicine products along with the local citizens are expatriates from West African countries such as Nigeria, Mali, Senegal and the Ivory Coast. In their various advertisements on radio and television and in the newspapers, these people promise to cure all kinds of diseases, including incurable ones like HIV/AIDS. It is thus perhaps not surprising that their client bases are increasing as people unhesitatingly patronize their ethnomedicine products.

Interestingly, ethnomedicine has also emerged as a solution for many African populations (Antwi-Baffour et al., 2014:50), including those of the DRC in that they always turn to ethnomedicine products as a remedy to help them cure different illnesses in their local communities. For these scholars, although ethnomedicine is broadly utilized worldwide and in Congolese society, it also has the problem of not being officially recognized by, amongst others, the conventional health practitioners. Questions arise about its composition, mode of administration and usage, given that it is not subject to the strict regulations and requirements of conventional medicine as stipulated by mainstream national and international health organizations.

### **3.11 Conclusion**

This chapter gave a concise overview of the CPK – the capital and also one of the 26 provinces comprising the DRC. The researcher started by presenting the study area of the research, its geographic location, hydrography, climate, vegetation, and ethnography. The purpose of providing this information is to enable readers to have a clear idea of the area under study. The researcher also highlighted the role and importance of ethnomedicine in the lives of the Kinois people and its commercialization in the CPK. It was pointed out that ethnomedicine products are made from natural plants, roots, tree barks, leaves, animal skins, teeth and bones and are commercialized by the Kinois people to help ensure their survival. The fact that this practice has negative consequences on the environment is ignored. Thus, the chapter demonstrated that due to socio-economic issues, many of the people living in the CPK are involved in the increased commercialization of ethnomedicine products, to earn money to feed their families. The contents of this chapter, therefore, constitute a further foundation on which the study rests.

The next chapter focuses on the theoretical framework employed to underpin the study. The two theories, stewardship and consequentialism, are used as the lenses through which to explore the effects on the environment of the commercialization of ethnomedicine products in the CPK.

## **CHAPTER FOUR**

### **THEORETICAL FRAMEWORK**

#### **4.0 Introduction**

The preceding chapter presented the study area, its geographic location, hydrography, climate, vegetation, and ethnography. It also highlighted the role and importance of ethnomedicine in the lives of the Kinois people and the effects of the commercialization of ethnomedicine on the environment. The chapter concluded by discussing the commercialization of ethnomedicine in the CPK.

This chapter discusses the theoretical framework used to underpin the research. The two theories used to guide the research were the ethical theory of stewardship and the ethical theory of consequentialism. Both theories were applied to place this research in its proper context. In doing so, the researcher underscores the current situation that the CPK is facing in terms of climate change, atmospheric pollution and flooding. The chapter analyses both theories and points out their main weaknesses and strengths. It does, however, begin with a brief discussion of what a theoretical framework is. It then goes on to define the stewardship theory and this is followed by a discussion of the arguments for and against the theory. A similar approach is adopted for the ethical theory of consequentialism, that is, a definition followed by arguments for and against the theory. The chapter ends with a conclusion.

#### **4.1 Defining theoretical framework**

A theoretical framework is a systematic structure that guides a researcher to be in line with the research focus. Scholars such as Sharon Ravitch and Matthew Riggan (2016:4) affirm that a theoretical framework “shapes the design and direction of the study and guides its development”. According to Grant and Osanloo, cited in Dickson Adom (2018:6), a theoretical framework is a base on which related research is built. This implies that it helps in finding problems that the research plans to investigate, including suggestions and solutions to the problem/s.

#### **4.2 The ethical theory of stewardship**

As outlined in the introduction above, this is the first of the theories discussed.

#### **4.2.1 Defining the ethical theory of stewardship**

The first theory that guides this research is that of environmental stewardship through an ethical lens. The pioneers of this theory, among others, are Lex Donaldson and James Davis (1989). Historically, stewardship was understood as a way to protect a kingdom while those legally in charge were away or, more usually, to govern on behalf of an underage king (Block, 1993: xxiv). The researcher aligns with Block's understanding in that stewardship does not only secure people's responsibility for the present situation regarding the environment but also emphasizes the need to maintain the environment for future generations as well and in this regard, all humans have obligations and responsibilities to their fellow beings. Ethically, humans have a moral duty to look after nature by nurturing and using its resources responsibly. They should, therefore, adhere to a code of conduct in terms of acceptable behavioural patterns that respect one's own rights and those of others (Cossin and Boon, 2016:4).

Stewardship can be viewed from a variety of perspectives or "senses", namely, corporate or business, religion, and environmental. In the corporate or business sense, stewardship focuses on individuals being responsible in spheres that expand beyond their own lifestyles. In this perspective, people as stewards have an indelible role to play in accomplishing change through their influence in different areas, that is, at personal, organizational, and societal levels (Cossin and Boon, 2016:32). In the religious sense, Robin Attfield (1991:7) states that "The association of stewardship with longstanding theistic traditions, whether Jewish, Christian or Islamic, has aroused objections that it is for these reasons an expression of a pre-modern hierarchical, oppressive and/or sexist society". God, as Creator, owns the universe and everything in it. He reigns over it and assigns humans the role of representing Him in this world. God's uniqueness identifies Him as the only One to whom humans are accountable as stewards (Rodriguez, 1994:4). This claim reminds one that humans are not owners of the earth, but the administrators. This perspective is also corroborated by Jürgen Moltmann (1993:220) who states that humans are created by God and included in three essential connections, "they rule over other earthly creatures as God's representatives and in his name; they are God's counterpart on earth, the counterpart to whom he wants to talk, and who is intended to respond to him; and they are the appearance of God's splendour, and his glory on earth". Therefore, humans have a duty to care for and preserve the planet and maintain its fertility for the ages to come (Pope Francis, 2015:41). In the sense of the environment, Jennifer Welchman (2012:303), states that environmental stewardship is related to "the responsible management of human activity affecting the natural environment to ensure the conservation and preservation of natural

resources and values for the sake of future generations of human and other life on the planet, together with the acceptance of significant answerability for one's conduct to society". The need for people to live in a harmonious relationship with the earth is indispensable.

#### **4.2.2 Arguments in favour of the ethical theory of stewardship**

Human beings, as stewards, are accountable to nature because of their ability to reason. Corroborating this view, Heguel, cited in Mark Alznauer (2015:4), states that "only humans can have responsibility, because of being the unique animal to evaluate their moral actions". The major role of the environmental ethics theory resides in the fact that it imparts people with knowledge of and adequate respect for the natural environment. Robert Staib (2017:14) cites the *Macquarie Dictionary* which describes a steward as "one who manages another's property or financial affairs; one who administers anything as the agent of another or others". For this scholar, the term "steward" is one of the processes of looking after the environment for humans, nature and its biodiversity, for future generations. In the view of Attfield (2014:1), stewardship "involves being a trustee or guardian of goods such as time, money or other resources, and has in recent times been applied to the human responsibility for the care and management of the natural world". In other words, stewardship concerns being a guardian and taking responsibility.

According to Worrell and Appleby (2000:269), stewardship can be understood as "the responsible use (including conservation) of natural resources in a way that takes full and balanced account of the interests of society, future generations, and other species as well as private needs, and accepts significant answerability to society". This indicates that environmental stewardship concerns humans taking ethical responsibility for the natural environment. This position by Worrell and Appleby is appropriate for this study as it concedes that the work of stewards can be seen in terms of taking care of and showing respect for the environment.

In the views of Cockburn, Cundill, Shackleton and Rouget (2019:7), the role of stewards is to utilize the natural riches responsibly and carefully for their good, the ecosystem, and the benefit of the entire community. Tracy Isaacs (2011:10) opines that it is very important for individual stewards to understand themselves as playing possibly small, but certainly valuable, parts. When they think of their actions in this way, moral possibilities increase. This implies that the human essentiality is to reinforce the value that respects human dignity, nature, integrity, and

the rights of others, and also because individuals are also part of the common moral obligation. For instance, an individual who is busy cutting down trees in a forest should not, therefore, consider the forest as a place of destruction but rather show considerable care and protection for it. The individual stewards have the responsibility to ensure the protection of the forest.

Considering the above, it can be said that stewardship is the “responsible and wholehearted management of entrusted assets so as to pass them on in better condition” (Boon and Goyder, 2019:21). Moreover, to be ethically a steward, in the context of the theory under focus, is to take care of others as well as oneself and this comprises three elements: The first element is stewardship as a will; it requires individual engagement and personal motivation. This means that an individual steward protects and increases value for other humans and non-humans. Simply put, to be a steward means to have a sense of responsibility or commitment that goes beyond the obligation of a principle but to implement it. In this way, an individual steward should be the protagonist of the change h/she wishes to see in humanity. This necessitates action, commitment and leadership, not only words. The second element is that stewardship links the past, present and future. This means that stewardship includes a sense of legacy from the past and responsibility for the future. The third element concerns interdependence; here the steward focuses on efficient interrelationships with nature (Boon and Goyder, 2019:23).

Comfort Okpala and Cam Caldwell (2019:1) opine that stewardship is one of the many theories of governance that comprise the ethical responsibility to act on behalf of others and to honour the responsibility of service rather than one’s own self-interest. For these scholars, ethical stewards reveal five qualities usually identified as indispensable for attaining trustworthiness and credibility. The first quality, *Character*, requires the need to place the interests of others before oneself, honour one’s obligation and show integrity that constructs relationships. The second quality is *Caring* and this requires that stewards are committed to the well-being of others in treating them equitably. The third quality is *Competence* and here, stewards need to have abilities to do things knowledgeably. The fourth quality, *Capacity*, requires that stewards should be able to implement the action plans and turn them into a reality. The final quality is *Conscience* and here stewards reveal their inmost capacity to do the right thing and to cultivate a sense of responsibility towards people in society and nature.

The above-mentioned five qualities are known as necessary qualities for the achievement of leadership. To be a good leader is to be someone who is trustworthy towards his or her

employees. Additionally, the phrase of the great Indian leader, Mahatma Gandhi, is relevant in this context: “Become the change that you want to see in the world”. Gandhi’s life is famously reported to have reflected his message. This may also be applied to the way African people, in general, and those of the CPK in particular should work for the protection of their environment by becoming perfect stewards who always care for their natural environment. Humanity’s contribution to the environment is to be a good steward with a mission and obligation to treat nature with fairness and respect in order to ensure its own well-being. It is for this reason that Pope Francis perceives the world existing as a complex balance of parts. Human beings, gifted with intelligence, must respect and recognize this cosmic balance and attempt to maintain and stay within this balance. The earth necessitates respect and tenderness because it was “here before us and it has been given to us” (Pope Francis, 2015:67).

In the organizational context, Cam Caldwell (2018:144) in his book titled *Leadership, Ethics, and Trust*, states that “The underlying assumption of stewardship theory is that the optimization of the organization’s long-term best interests best serves the owners and all stakeholders. Thus, cooperation and trust become a key theme of organizational relationships and affirm the importance of each participant and the mutuality of relationships”. This implies that the creation of reciprocal trust allows an organization to increase long-term benefits for all stakeholders.

From the African perspective, it can be said that the stewardship theory is well perceived because African ethics promotes the interconnection of everything in nature and the need to treat it decently. For Ogungbemi (1997:270), the notion “ethics of nature-relatedness” is understood as a way for humans to have a mutual or reciprocal relationship with the environment and preserve it. This implies that the ethics of care is indispensable to African traditional understanding of the protection and conservation of the environment. African people promote a mutual relationship with nature. In the same vein, Tangwa (2004:389) in his eco-bio-communitarianism, highlights the interconnection and harmonious coexistence between people and other living beings. This interconnection and coexistence should be expanded for the protection of the environment. This is emphasized by Felix Murove (2016:77) who postulates that the principal moral characteristics of African traditional society are inclusivity and care. This ethic of inclusivity helps individuals feel part of common belonging in society, by looking after the weak members, orphans, widows, old-aged, and nature as well.

Cossin and Boon (2016:32) opine that the interrelatedness of all human life, the respect for nature and individuals in society including the generations to come, are part of stewardship. In this perspective, Van Putten, Boschetti, Fulton, Smith and Thebaud (2014:4) state that “Stewardship theory considers the possibility that, over time, individuals can become stewards of a particular object or set of objects, and that this can develop based on trust, reciprocity, autonomy, and alignment of objectives”. In other words, all humans have the capacity to take responsibility for their surroundings as good stewards. From the African perspective, the relationship of human beings is ancestral. According to Bondolfi (1989:117), “This relationship has particular socio-cultural connotations and has been handed down to us historically through a series of ideal and normative descriptions, as well as by the quality of myths and iconographic material”. African people communicate with nature in various ways. For instance, some animals and birds can play the role of watches for humans in the sense that they indicate time by giving signals or sounds which are understandable to humans. Others also give signals to indicate danger occurring in the surroundings such as a snake or a ferocious animal. These examples illustrate the relatedness between human beings and the environment. Nature is our common home, our sister and mother who opens her arms to welcome us and with whom we share our life. We breathe her air, and we receive life and refreshment from her (Pope Francis, 2015:7). This also shows the power that nature possesses with regard to human beings.

Accordingly, Van Putten et al. (2014:5) maintain that the environment possesses a great value in itself and, therefore, merits preservation at all times despite the service it might give. For instance, in some African villages in deep rural areas, people do not need to go to the hospital when they are sick. They know what kind of plant to get, process and transform in their traditional way for it to become a medicinal product to use. Furthermore, the richness of African culture is such that a majority of people use traditional medicines naturally, that is, without transforming them because they may lose their efficacy. This point emphasizes the fact that African culture, in general, respects nature and its living beings. This respect is also seen in various villages when a hunter only shoots one animal for the simple fact that he wants to ensure that different animal species can mate and reproduce for future needs. For instance, in the Mbala tribal area in the Kwilu and Kwango Provinces of the DRC, there are some places in a forest where it is forbidden to urinate or cut trees and it is described as a “sacred forest”. People cannot go to that particular forest and do what they want. The reason for not being allowed to urinate is that the smell of urine will disturb the ancestors and is, therefore,



disrespectful. Also, by cutting trees, ancestors will no longer have any shelter. The intention here is also to preserve the environment.

It is, therefore, understood today more than ever before, that nature cannot be isolated from human beings. We are part of it, involved in it and thus in continual interplay with it (Pope Francis, 2015:80). This point of view by Pope Francis is relevant to this research because it acknowledges the major role that humans can play by being stewards of the natural environment. The ethical theory of stewardship reminds and motivates individuals to recognise their moral duty of being accountable to society and to the environment in which they live. It is considered suitable to secure the present and the future of people by working for the protection of the environment, and this underlines the necessity for creating a new society founded on ethical values. More so, the ethical theory of stewardship consists of taking responsibility for the care of both the community and the environment. Indeed, it is only human beings that can have a sense of conscience and responsibility, promoting the integral development of people. Furthermore, the theory helps each individual to develop skills, self-confidence, honesty, achievement, maturity, responsibility, and the enhancement of community (Byrne, 1983:11). This theoretical model was considered relevant by the researcher and was thus employed to strengthen the study. It also provided information that would help to develop the awareness of the ethnomedicine sellers concerning how they commercialize their products in the context of looking after the ecology of their environment.

The ethics of stewardship becomes effective by it underlining the necessity for creating a new society founded on ethical values, one in which everyone has the responsibility of working for the good of people in the society and caring for the natural environment. As stewards, people are invited to exercise prudence in the exploitation of natural resources.

#### **4.2.3 Arguments against the ethical theory of stewardship**

The ethics of stewardship theory has been challenged by Jensen and Meckling (1976), cited in Donaldson and Davis (1991:50), who argue that the model in the organizational context is individualistic and based on the notion of the inherent conflict of interest between the owner and the manager as a steward. In their view, the manager will not work to increase the returns of the owner by safeguarding his or her interests, because the owner only looks at his benefits rather than those of the manager.

A further criticism is from Clare Palmer (2006:75) who contends that the stewardship of nature, either Christian or otherwise, is deeply anthropocentric and un-ecological. It legalizes and encourages the expansion of individual and humanity's utilization of the natural world. Simply put, Palmer believes that stewardship, as an environmental theory, favours human dominance of the natural environment irrespective of being from a Christian perspective or not. This is due to the simple fact that human beings have been ruling over the environment at their own convenience. Some feminist theorists raised a related criticism. Noticing the "influence of Christian institutions on the development of this concept, institutions they regarded as sexist, elitist, and authoritarian, some argued it was inherently sexist and inequalitarian, as well as being speciesist and anthropocentric". The stewardship theory, therefore, should be declined as a support for moral conduct with regard to the environment (Welchman, 2012:13). This is reinforced by Pope John Paul II (1991: No 37-38), who asserts that:

Instead of carrying out his role as a co-operator with God in the work of creation, man sets himself up in place of God and thus ends up provoking a rebellion on the part of nature, which is more tyrannized than governed by him. Not only has God given the earth to man, who must use it with respect for the original good purpose for which it was given to him, but man too is God's gift to man. He must therefore respect the natural and moral structure with which he has been endowed.

The environment is God's gift to everybody; therefore, individuals should utilize it with respect with regard to the needy and the entire world. When the environment is reduced into an unimportant thing through flagrant abuse by human activities, humanity's sense of responsibility fades (Pope Benedict XVI, 2009:48).

The stewardship theory has also been criticized by the environmental philosophers, Routley and Richard (1980) who, in their essay titled, "*Human chauvinism and environmental ethics*", point out that stewardship is incompatible with profound environmental ethics since it involves policies of total intrusion. In a similar vein, Attfield (1991:10) contends that a series of opponents have claimed that stewardship implies individuals' intrusion (with all of humanity) to increase the production of natural riches. Simply put, the willingness of individuals to use nature and its riches end up replacing God, the Master of all creatures. Thus, this theory challenges human behaviours concerning the environment.

#### **4.3 The ethical theory of consequentialism**

The second theory used in the study was the consequentialism theory and it is discussed below.

### **4.3.1 Defining the ethical theory of consequentialism**

Consequentialism states that the moral quality of an action is determined by its result, and the moral evaluation of an action depends on the production of its good effects (Driver, 2011:1). Furthermore, consequentialism maintains that the moral quality of an individual's actions, or character, is merely determined by the effects of the action or its character which is nothing else than the good, and understood in the sense of happiness. In the views of Elliott and Karlana (2018:159), consequentialism determines the goodness of the possible present and past actions through an analysis of the consequence of those actions. The theory contends that good actions produce good results, while actions that produce wrong results are ethically preventable. This implies that the good action is the one that produces happiness (rather than harm), and they are morally allowed. Scheffler (1988:1) opines that "Consequentialism, in its purest and simplest form, is a moral doctrine which says that the right way to act, in any given situation is the one that will produce the best overall outcome" and one that gives equivalent weight to everyone's interests.

### **4.3.2 Arguments in favour of the ethical theory of consequentialism**

Espen Gamlund (2012:31) distinguishes two kinds of consequentialism: The first kind is egoistic and particularistic consequentialism which concerns the consequences of an action that affect a person's self or a certain group such as a clan, comrades, inhabitants or race. Here, the state of being morally good is based on the consequences for an individual agent or a limited group. In other words, the egoist actions tend to be pleasurable to the individuals as intended. It can, therefore, be said that the increased commercialization of ethnomedicine products depicts the spirit of egoism leading to destruction of environment. The second kind is universal consequentialism. It considers the way the consequence of an action affects the participants. Here, the quality of being morally good depends on the consequences for all affected people or sentient beings. Another attribute associated with the theory of consequentialism is the act of utilitarianism. In the view of Ben Eggleston (2017:2), an action is regarded as utilitarian or right if, and only if, it results in at least as much overall well-being as any act the agent could have performed. This means that in any circumstances, an agent's act is right as long as s/he maximizes pleasure, and wrong if s/he does not. This is to say that results and consequences that expand good moral actions are usually regarded as the most excellent. Simply put, utilitarianism argues that actions are right based on their ultimate usefulness that yields higher results for the majority or benefit for the entire community. It portrays the African spirit of concern for the common good, to do the highest good for the greatest number. Fundamentally,

utilitarianism takes its roots in the seventeenth and eighteenth centuries in British philosophy through the works of Jeremy Bentham (1748-1832) and later John Stuart Mill (1806-1873). (Elliott and Karlana, 2018:159).

The other major argument in favour of consequentialism states that whatever kind of values a person or organizational representative embraces, the proper answer to those values is to promote them. This implies that the person needs to respect and honour the values because they are important and need to be promoted. Furthermore, the values to promote and honour by the agent may be perceived to be linked with intellectual understanding, individual loyalty and political liberty (Pettit, 1991:231).

The theory of consequentialism was considered appropriate for the study because developing the ethical awareness of the people of the CPK will involve taking good care of nature and the protection of the environment, and doing so can be seen as contributing to the common good. There are consequences to the use and commercialization of ethnomedicine products. It is morally wrong to ignore the extent to which their use and commercialization are harming the environment. With this theory, and given the above, the researcher is confident of its relevance and applicability to the study.

#### **4.3.3 Argument against the ethical theory of consequentialism**

As with the stewardship theory discussed above, the consequentialism theory is not without its criticisms. For instance, Marc Ruegger (2005:3) argues that consequentialism constitutes a moral theory that is particularly intrusive and demanding. It alienates moral agents of their relationships and personal commitments with others. It pushes the agent to focus on the general consequence of an action and not on their personal obligations. Similarly, Elinor Mason (2009:20) asserts that the theory focuses exclusively on the consequences of an action without considering the actual action itself. This theory emphasizes the end results (the consequences) and neglects the actions or means, that is, whether they are good or bad or right or wrong. The consequence of an action can be good despite the action itself being immoral or wrong.

Another objection in response to the values that every individual or institutional agent must adopt comes from other opponents of consequentialism who opine that “at least some values call to be honoured whether or not they are thereby promoted” (Pettit, 1991:231). In addition, consequentialism perceives the link between values and agents as non-instrumental, in the

sense that agents are required to let their actions illustrate chosen values even though, in general, this makes the achievement of the values a minor one.

In the view of Jared Rudolph (2011:67), every action has consequences that can be described in two ways, namely, time and scope, and these are interwoven. On the one hand, an action in order to be evaluated by its consequences, its consequences should be evaluated from a given time. For instance, suppose that an act was to be carried out on Sunday, its consequences would be assessed by the condition of events that derived from that act either on Monday or Tuesday. Thus, the act might have created good consequences on Monday and bad consequences on Tuesday. Thereby, the time when an act is judged can determine if that act was bad or good. Here, both the procedure of an act and its result are important. On the other hand, some actions, to be assessed on their consequences, the scope of the effects should be limited. In other words, the scope of the effect is the extent of the result for which somebody may be ethically responsible. Rudolph (2011:68) argues that for consequentialism to contribute to moral imperatives, limitations should be set in terms of the time and the scope of the consequences that are to be assessed.

#### **4.4 Conclusion**

This chapter explored the two theories that were deployed to guide this research, namely, the environmental stewardship and the consequentialism theories. In the first section of the chapter, the researcher started by briefly outlining what a theoretical framework is. It then went on to define the stewardship theory and explored some arguments both for and against the theories. Here, the researcher brought in the considerations of some African ethicists regarding the interrelatedness between human beings and the environment and that they should, therefore, cohabitate amicably to assure their mutual sustainability. In the following section of the chapter, the consequentialism theory was discussed. As with the previous theory, it was also defined and the arguments for and against it were put forward.

The next chapter, Chapter five, presents the research methodology adopted for the study.

## **CHAPTER FIVE**

### **RESEARCH METHODOLOGY**

#### **5.0 Introduction**

In the preceding chapter, the two theories that underpinned the study were discussed. The researcher explained that the use of the stewardship and consequentialism theories were both essential in the attainment of the aim of the study, that is, to ethically explore the increased commercialization of ethnomedicine products and its effect on the environment with a specific focus on the CPK. In the discussion both the arguments for and against the two theories were put forward.

The current chapter gives details regarding the research methodology adopted for the study. It describes the research design, namely, a case study, the sampling method and sample, the data collection tool, namely, a semi-structured interview guide, the interview process sources of data, the data analysis, and the concepts of validity, reliability and rigour. The chapter ends with the ethical considerations of the study and a conclusion.

#### **5.1 Research methodology**

Carol Bertram and Iben Christiansen (2020:25) opine that methodology deals with how researchers engage in acquiring knowledge and this comprises the way in which relevant data are collected and processed. Research methodology is either qualitative or quantitative or both, and these approaches can be applied to any research, depending on the nature of the research and the researcher's choice.

In this study, a qualitative methodology was deployed to achieve the study's aim. It will be recalled that the study sought to explore the observable fact of the increased commercialization of ethnomedicine products and its effect on the environment in the CPK. To do this the research, as noted, adopted a qualitative paradigm whereby the target audience for the study, that is, the sellers of ethnomedicine products, was reached out to. It was anticipated, given their appropriateness, that they would be willing to participate in the research for data collection purposes. A qualitative approach was considered efficacious by the researcher for determining the experiences and perceptions of the sellers of ethnomedicine products. As pointed out by

Håkansson (2013:4), qualitative methodology concentrates on understanding meanings, opinions, and behaviours to reach tentative assumptions and theories.

Berg and Lune, cited in Gomanjira (2019:22), define the qualitative research method, “as the approach by which a researcher attempts to understand and describe phenomena and a specific institutional reality by analyzing words, attitudes, behaviors, reports and views of the social actors in their natural setting”. This implies that to have an understanding of the real-life situation of the Kinois people and their experiences and perceptions relating to the commercialization of ethnomedicine products, the researcher needs to explore it from their own point of view, from the “inside”. However, it does need to be pointed out that the researcher, coming from the same country (the DRC) already had a good understanding of the practice. Catherine Dawson (2007:19) states that “Qualitative research explores attitudes, behaviour and experiences through such methods as interviews or focus groups”. Constance Fisher (2006:xv) notes that the qualitative method permits participants to openly express their views without being influenced by anybody and concentrates on the “quality of experience and actions as lived by persons”.

It is important to mention that for certain scholars, the qualitative approach is a less powerful research methodology as opposed to a quantitative approach; by perceiving the situation from the “inside” rather than from the “outside” (as would occur with quantitative research), the level of subjectivity is increased which, therefore, makes the research less reliable (Jonker and Pennink, 2010:89). However, for the researcher, this methodology was the only approach that allowed for a deep and meaningful perception of the real-life situation of the ethnomedicine product sellers of the CPK. The researcher was of the view that the qualitative methodology was indispensable for the simple fact that it enabled him to accomplish the research both efficiently and effectively given the nature of the data collected and the location of the target participants. The qualitative methodology, without doubt, allows the researcher to understand the reasons behind the commercializing of ethnomedicine products in the CPK and get people’s personal experiences and perspectives.

The following section discusses the research design adopted for the study.

## **5.2 Research design**

For Gounder (2012:11), all methods utilized by the researcher while undertaking his/her research and the issues involved are designated as research methods. It includes data accessibility and the tools utilized by the researcher to provide an answer to a problem. A qualitative design, comprising the methodology as enunciated above, and other elements highlighted below, was used to explore and describe the commercialization of ethnomedicine products and its effects on the environment in the CPK. The research design is how the researcher envisages the assembly and analysis of the data will be effectively done to respond to the research query (Bertram and Christiansen, 2020:46). In the view of Hancock, Ockleford and Windridge (2009:7), a qualitative design accords with social situations worldwide and seeks to respond to queries like why humans comport in the manner they do, how their views are shaped, and how they are influenced by their customs.

Similarly, De Vaus (2002:1) suggests that “Research design refers to the strategy that you choose to integrate the different components of the study in a coherent and logical way, thereby, ensuring you will effectively address the research component; it constitutes the blueprint for the collection, measurement, and analysis of data”. Qualitative research thus helps in understanding the circumstance in which the issues happen on the ground. This study relied considerably on the elements and principles associated with a qualitative research methodology as highlighted above. Bertram and Christiansen (2020:47), state that there are a variety of research styles, such as case studies, ethnographic research, life histories, action research, participatory research, surveys, experimental research, correlational studies, and impact evaluations. This study embraced a case study research design and this is discussed below.

### **5.2.1 Case study**

In the view of Robert Yin (1989:23), a case study is perceived as empirical research that attempts to investigate contemporary happenings within their real-life circumstances. It utilizes various sources for the gathering of data. Peter Rule and Vaughn John (2011:4) describe a case study as organized and in-depth research of a particular case in its setting. Thus, a case study focuses on one aspect of reality, looking at it deeply (Gary, 2010:3). The case may be a person, a group of people, an organisation, a country or a phenomenon. It is naturally descriptive for the simple fact that it captures the realities or actions of a given issue (Bertram and Christiansen, 2020:48). As stated by Pamela Baxter and Suzan Jack (2008:544), a case study allows the researcher to explore a phenomenon within its context by making use of a diversity



of data. According to these scholars, a case study design is relevant because it focuses on “how” and “why” queries and the behaviour of the people included in the study cannot be influenced. Furthermore, a case study allows the researcher to explore the data within a particular sphere. It usually assembles a sector or several persons as a target of research (Zainal, 2007:2).

There are various types of case studies. Yin (1984), cited in Zainal (2007:3), mentions three types, namely, exploratory, descriptive and explanatory. First, exploratory case studies “set to explore any phenomenon in the data which serves as a point of interest to the researcher”. The questions requested in exploratory case studies are general ones such as, for example, “What do Kinois people use to get their ethnomedicine products?” The goal of these general questions is to open up possibilities for further investigation of the phenomenon being observed. Second, a descriptive case study “describe[s] the natural phenomena which occur within the data in question, for instance, what different strategies are used by a reader and how the reader uses them. The goal set by the researcher is to describe the data as they occur” (Zainal, 2007:3). Descriptive case studies can be in narrative form and provide responses to questions which happen within a phenomenon. Third, explanatory case studies “examine the data closely both at a surface and deep level in order to explain the phenomena in the data” (Zainal, 2007:3). Simply put, the goal of an explanatory case study is to elucidate the connection between the cause and effect of a phenomenon.

Zainal (2007:4) points out that a case study has both advantages and disadvantages. Regarding the advantages, firstly, a case study helps to manage the data within the context of its utilization, that is, where it occurred. Secondly, both qualitative and quantitative approaches may be utilized to gather data. Thirdly, and as Zainal (2007:4) explains, “The detailed qualitative accounts often produced in case studies not only help to explore or describe the data in real-life environments but also help to explain the complexities of real-life situations which may not be captured through experimental or survey research”.

In terms of the disadvantages of case studies, it is argued that case studies lack rigour. For example, the researcher may become careless and permit equivocal evidence or information that can affect the outcomes and conclusions of the research (Zainal, 2007:5). Second, from a scientific point of view, case studies often challenge the researcher to generalize the findings and conclusions to a sizeable population but this could be a problem considering the small number of participants often utilized in case studies (Yin, 1984:21). Third, case studies may

generate a huge amount of data. As a result, the researcher may be unable to organise them in a systematic way (Zainal, 2007:5).

Given the advantages outlined above, and despite the disadvantages identified, the researcher is of the view that the case study as a design was suitable for the study. It provided an approach to explore the increased commercialization of ethnomedicine products and its effects on the environment in the CPK through data collected from those identified as being pertinent to the objectives of the study, that is, the sellers of the products. It also assisted in determining the reasons for what was occurring in the CPK in terms of the commercialization of ethnomedicine there and why it was happening. Furthermore (and in line with the first reason mentioned above), it assisted the researcher to gather relevant data to respond to the research questions upon which the study was based through interviews with people who had relevant experiences and observations regarding the use and selling of ethnomedicine products (Schensul, 2011:19). For this study, the CPK was the case study area and the sellers of ethnomedicine products were the units of analysis (Baxter and Jack, 2008:25).

Finally, in the view of Mayer and Greenwood (1980), an exploratory case study is utilized when little previous research provides guidance on a modern event and the circumstances in which it occurs. Given the lack of research on the issue of the commercialization of ethnomedicine products and its effect on the environment (as has been pointed to in an earlier chapter), this was a further reason why the exploratory case study was considered appropriate for this research.

A question that remains unresolved is how did the researcher select the participants? The response to this question is discussed below.

### **5.3 Sampling method and sample**

In this section, the sampling method adopted and the sample selected are elaborated on.

#### **5.3.1 Sampling method**

Bertram and Christiansen (2020:71) state that sampling in empirical research involves selecting a small part of a population to represent that population. Sampling is indispensable in research in that it saves time and other resources as it allows a researcher to study a portion of a population considered representative for a study without having to include the entire population

(Strydom and Delpont, 2005:194). Samples in qualitative research are generally purposive, meaning that the participants or interviewees (in the case of this study) are chosen for the sake of being able to yield appropriate data for the research (Patton and Cochran, 2002:9). Furthermore, sample sizes in qualitative studies are generally small (as was the case in this study). These and other points are elaborated on below.

Scholars like Bertram and Christiansen (2020:72) and Strydom and Delpont (2005) point to there being two principal methods of sampling, that is, random sampling or probability methods on the one hand and purposive sampling or non-probability sampling methods on the other. In random sampling, every individual to be researched has the same possibility (or probability) to be included in the sample. However, purposive or non-probability sampling does not permit such a possibility. In short, probability sampling depends on randomisation in selecting the sample, while non-probability sampling does the selection in the absence of randomisation.

For this study, a purposive or non-probability sampling method was utilized to identify the sellers of ethnomedicine products. In purposive sampling, the researcher identifies individuals who he or she believes are best able to respond to the questions posed; in other words, the selection of the sample was based on the subjective judgment of the researcher (Datta, 2018:2). The participants for this study were the actual sellers (commonly known as street hawkers) of ethnomedicine products and were thus considered by the researcher to have adequate knowledge of and experience on the increased commercialization of these products in the CPK. The selected participants were contacted formally by telephone and online through the Zoom and WhatsApp platforms and their consent to participate in the study was secured.

### **5.3.2 Study sample (research participants)**

As noted above, the participants for the study were sampled from a segment of the population of the CPK, in the DRC. Twelve participants were selected comprising six adult males and six adult females between the ages of 20 to 60 years old, all of whom had been selling ethnomedicine products for three or more years. They were thus all experienced sellers of the products. These demographic details are summarized in Table 1 below. While provision had been made to interview more sellers, this was found to be unnecessary as after the 12<sup>th</sup> interview it was realized by the researcher that the point of saturation had been reached, that is, no new data relating to the issues under investigation were forthcoming and what was being said by the participants was becoming repetitive (Grady, 1998:26).

***Table 1: Summary of demographic details of participants***

| Code name | Sex    | Age | Selling experience |
|-----------|--------|-----|--------------------|
| A1        | male   | 29  | 5                  |
| A2        | male   | 33  | 10                 |
| A3        | male   | 37  | 16                 |
| A4        | male   | 40  | 14                 |
| A5        | male   | 55  | 21                 |
| A6        | male   | 56  | 25                 |
| B1        | female | 26  | 4                  |
| B2        | female | 29  | 6                  |
| B3        | female | 36  | 3                  |
| B4        | female | 41  | 8                  |
| B5        | female | 52  | 9                  |
| B6        | female | 49  | 7                  |

## **5.4 Data collection tool**

In using qualitative data collection tools, the researcher was aware of the plethora of options to generate or collect data available and these include interviews of various types, observation and the use of artefacts such as photographs (Hancock, Ockleford and Windridge, 2009:16; Bertram and Christiansen, 2020:96). The researcher made use of an interview thus collecting “verbal data” (Flick, 2014:195) or orally expressed information. The interview as a data collection tool is discussed below and this is followed by the actual process followed by the researcher in conducting the interviews.

### **5.4.1 Interview**

An interview in qualitative studies is considered a reliable data collection tool since it helps the researcher to further explore people’s knowledge, ideas on what they like or dislike, their thinking, attitudes, and experience (Bertram and Christiansen, 2020:98). Bertram and Christiansen (2020:96) define an interview as a conversation between a researcher and the study participants. The purpose of interviews is to provide a sound perception of social situations in which precise understanding is demanded (Gill, Stewart, Treasure and Chadwick,

2008:292). Moreover, the interviewees provide important information related to the study that the researcher can depend on.

The study used a semi-structured interview as the data collection tool. This involves the construction of an interview guide (see Appendices 5, 6 and 7) and with questions organized in an informal format that provides opportunities for follow-up questions to generate incidental information. Interviews are relevant in generating first-hand information on the topic under study. They help participants provide profound and significant information to the interviewer. The interview guide comprised a series of open-ended questions to determine the opinions and experiences of the interviewees on the topic under study. Opened-ended questions provide participants room to respond to questions deeply and freely (Bertram and Christiansen, 2020:90). They also provide participants with the chance to interact with the subject in more detail and a comprehensive manner.

#### **5.4.2 Interview process**

The interviews with the participants were tape-recorded and permission to do so was given by participants. As Driscoll (2011:20) notes, the procedure to eradicate prejudice in a study is to record the interviewees' responses instead of depending on one's memory. Recording interviews allows the researcher to give his or her full attention to what is being said by the interviewee and not be distracted by having to take notes. Indeed, the one-on-one nature of the interview enables a researcher to concentrate exactly on the content of the participant's answers, giving attention to content, gestures and body movement. This increases the ability of the researcher to gain support, assure confidentiality, and expand empathy (Guest, Namey and Mitchell, 2013:113). Having guided one-on-one interviews concerning a field of specific interest (Greeff, 2011:292) helps participants to spontaneously open up and to give well-founded information. Hence, this type of data collection method can be seen as ideal for acquiring credible findings.

Importantly in terms of the interview process and due to the COVID-19 pandemic with its restrictions on travel and the need for social distancing wherever possible, the interviews were conducted online through the Zoom and WhatsApp platforms as agreed to by the participants. In terms of the process adopted, the participants, prior to the actual interview sessions, received an e-copy of each of the two research documents, that is, the consent form (see Appendices 2, 3 and 4) and the interview guide (see Appendices 5, 6 and 7) containing the questions requiring

responses. This helped participants to familiarize themselves with the document and to provide knowledgeable answers to the questions. In line with Bertram and Christiansen (2020:96), the researcher's role was to assist the interviewees to be freely engaged in the conversation, talking conveniently and comfortably about the topic, and responding in the way that they would like to.

The interview guide was translated into both French and Lingala, two of the common Congolese languages spoken in the CPK. In terms of the language used in the actual interviews a flexible approach was adopted, that is, the interviews could be conducted in either French or Lingala (the researcher is fluent in both languages) and it was left to the participants to decide what language would be used. There was thus no language barrier.

The participants shared freely and confidently their experience of the commercialization of ethnomedicine products in the different areas of their businesses. As has been pointed out in an earlier chapter, this activity serves as their major source of income by which they take care of themselves and their families.

Finally, and as envisaged, the interviews lasted between 30 to 45 minutes, depending on the varying peculiarities of the participants such as, for example, their response speed and the need of the researcher to ensure adequate coverage of the relevant issues.

## **5.5 Sources of data for the study**

Considering the essence of this study, the data utilized to answer the research questions and for subsequent analysis were procured from both primary and secondary sources as outlined below.

### **5.5.1 Primary sources of data**

As indicated in the discussion above, the research was guided by data collected from one-on-one interviews with the sellers of ethnomedicine products. Qualitative interviews, as pointed out earlier, enable the researcher to explore people's knowledge and ideas on what they like or dislike, their thinking, attitudes, and experiences (Bertram and Christiansen, 2020:98). The qualitative approach helped the researcher understand the circumstance in which the issues relating to the commercialization of ethnomedicine products were identified, managed and handled. The data that emerged from the one-on-one interviews are primary.

According to Thakur (2009:6), primary sources of data are “those data which are collected afresh and for the first time and thus happen to be original in character and known as primary data”. The direct collection of primary data increases the study’s originality and trustworthiness. It also helps the researcher get “concealed” information needed, that is, information emanating from the participants themselves and not contained in other sources. The participants’ perspectives and experiences provided the researcher with fresh and accurate information (or data) on the issues related to the commercialization of ethnomedicine products in the area under study.

### **5.5.2 Secondary sources of data**

According to Thakur (2009:9), secondary sources of data are “those data which have been collected by someone else and which have already been passed through the statistical process or analyzed by someone else”. Secondary sources of data are convenient in the sense that they might be easily manageable since the information is already analyzed by specialists. Thus, it helps researchers not to always assemble or generate new data for their studies (Bertram and Christiansen, 2020:114). In terms of this study, the studies reported on in the review of the literature were the secondary sources of data used. The review findings were organized into themes to enable the researcher to get relevant and objective information that served to provide background to and an understanding of the ethical issues involved with the commercialization of ethnomedicine and its effect on the environment in the CPK. The sources used in this regard included relevant books, journal articles, and academic papers both in hardcopy and in digital format. The use of search engines such as Google Scholar and ResearchGate, a social networking site that provides free access to academic research, helped identify relevant secondary sources.

After the data that had been collected via the one-on-one interviews, the data were analyzed and this is described below.

### **5.6 Data analysis**

According to the Technical Assistance Center (TAC) (2009:7), data represented in either a verbal or narrative format are qualitative data. These kinds of data are collected through open-ended questions in interviews and other less structured situations. Qualitative data generally comprises textual or visual data (Bertram and Christiansen, 2020:132). An easy way to reflect what qualitative data are is to use the term “words”. In terms of data analysis, De Vos et al.

(2011:333) describes it as “the process of bringing order, structure and meaning to the mass of collected data”.

After having recorded the interviews, the researcher spent time listening to the audio responses of the participants and then transcribed them, and these transcriptions collectively constituted the data required and used for analysis. As earlier indicated, interviews were managed in both Congolese languages, that is, Lingala and French, after which were translated into English and this was done by a reliable and capable translator sourced in the area.

There are two approaches to qualitative data analysis. In the first approach, inductive analysis, the researcher identifies categories, themes or patterns in the data and afterwards develops general conclusions or theories based on the themes identified. Conversely, in the second approach, deductive analysis, the researcher works from the general to the particular, from the top down. It is narrower and more theoretically informed and focused. The strength of the inductive approach is that the researcher is not confined by an established set of concepts, but can permit the data to speak for themselves. Furthermore, inductive analysis is more open-ended and exploratory (Bertram and Christiansen, 2020:133). Thematic (or inductive) analysis allows the researcher to connect several theories and the views of the interviewees and subsequently collate them with the data assembled throughout the research. Inductive analysis was applied in the study. Thus, from the interviews to the analysis and presentation of data, the researcher structured or collated the data into themes or categories using the inductive approach to ensure that the study research questions were addressed.

### **5.7 Validity, reliability and rigour**

In this qualitative study, the concepts of validity, reliability and rigour were adhered to in order to help ensure the quality of the research. Validity and reliability are key aspects of all research (Brink, 1993:35).

Harding (2013:5) elucidates validity as “the extent to which conclusions drawn from research provide an accurate description of what happened or a correct explanation of what happens and why”. To do this, the researcher is required to bear in mind the notion of validity. Bashir, Afzal and Azeem (2008:41) affirm that constant refinement of the sampling and data collection tools during the data gathering procedure raises the validity of the research.



To help ensure the validity and trustworthiness of the research data, the study depended on participants who were sellers of ethnomedicine products. As indicated earlier, the participants were considered knowledgeable and experienced regarding the commercialization of these products. Also as indicated, the interview guide containing the questions asked was sent to the selected participants before the interviews took place. This was done for them to familiarize themselves with the questions asked and, arguably, assisted in them giving more informed and thoughtful answers at the time of the actual interviews. There was also the possibility that they could have got their fellow sellers to share their opinions on the matters asked about, thus providing further validity (and richness) to their responses.

According to Bertram and Christiansen (2020:204), reliability “is the extent to which the test, measure or instrument can be repeated with the same or a similar group of respondents, and still produces the same (or very similar) results”. Simply put, reliability is specifically applied in experimental research, while the researcher carries out the same experiment time and again, to assure that the identical results were reached every time. Given the nature of qualitative studies, such repeats are, for obvious reasons, not practical or feasible.

To ensure the reliability of the data gathered in this study, the participants, that is, the sellers of ethnomedicine products were equally selected and were well informed by the researcher on how to perform their task, for example, how to answer the questions and this assisted in ensuring that the data were assembled under the same or quite similar conditions. Furthermore, as mentioned, all the interviews were recorded and afterwards translated from Lingala and French to English. Also as mentioned, the researcher sourced a translator who was fluent in all three of the languages and one can assume that the translations were accurately done. In this regard, during both the transcription and translation processes, the audio-recorded responses were played and listened to thoroughly to ensure that, at any stage, no content was left out and that the transcribed accounts were accurate and thus trustworthy. An important action in ensuring both reliability and validity of the data was that, prior to the actual analysis, the transcribed responses of a participant were shared with him or her for verification purposes. In other words, to ensure that their views were faithfully captured. No problems were experienced in this regard.

Finally, in the views of Emma Bell, Nivedita Kothiyal and Hugh Willmott (2016:5), rigour “is often invoked as an ostensibly objective, universal means of evaluating research quality”. In

other words, it is the quality of being precise and accurate. To ensure the rigour of the information gathered, the study focused on “quality” when selecting participants, those considered as experienced in the commercialization of ethnomedicine products to provide data that were accurate and thus valid.

## **5.8 Ethical considerations**

In all research, ethical principles need to be well observed and this study was no exception with the ethical considerations of the study, as per the University of KwaZulu-Natal’s ethical guidelines, being scrupulously adhered to. Ethical approval for the study was given (see Appendix 1) and each participant was sent a consent form which was read and signed by them (see Appendices 2, 3 and 4). The form outlined the purpose of the study and why their participation was important. It was explained that their participation was completely voluntary and they were free to withdraw from the study at any stage. In addition, the researcher made it known that there was no payment for their participation. This latter point in particular had the purpose of clearing any misunderstanding that could occur. The consent form also stated that their responses would remain confidential, that is, no names would be mentioned in the study. This was well observed by the researcher and in terms of this, each respondent was identified by a code as reflected in Table 1 above and it was this code that was used when reporting a respondent’s views. The data collected were for the purposes of the study only and their storage and disposal were and would be done in terms of the University’s research protocols. Finally, in accordance with the dictum “do no harm”, there were no known or anticipated risks or harm that could accrue to the participants due to their involvement in the research.

## **5.9 Conclusion**

This chapter presented a detailed elucidation of the methodology utilized for the study. The study used a case study design and adopted a qualitative approach in the form of a semi-structured interview guide. Purpose sampling was used to select 12 participants half of who were male and half female between the ages of 20 and 60 years. All participants were sellers (street hawkers) of ethnomedicine products in the CPK and all had three or more years of experience in doing so. Online one-on-one interviews were conducted with the participants in a language of their choice. The data collected were analyzed using thematic analysis in an inductive approach. Validity, reliability and rigour of the research were discussed and the ethical considerations adhered to by the researcher were outlined.

In Chapter six which follows, the findings of the study are presented.

## **CHAPTER SIX**

### **PRESENTATION OF FINDINGS**

#### **6.0 Introduction**

The preceding chapter presented the methodology used for the study. Aspects described and discussed included the study design, the sampling method, the data collection tool used and the validity and reliability of the research. The chapter ended with an outline of the ethical considerations of the study that were adhered to and a conclusion.

This chapter presents the findings that emanated from data collected via the one-on-one interviews with the sellers of ethnomedicine products. This will provide a basis for the discussion of the findings in the succeeding chapter (Chapter seven). The chapter comprises two sections: The first section deals with the presentation of the findings according to the themes that were derived from the analysis of the participants' responses. These themes are used to organise the findings for the researcher to answer the research sub-questions posed in Chapter one of the study. The researcher analysed the themes through the lens of the theoretical framework which comprised the stewardship and consequentialism theories. The second section highlights the researcher's fieldwork experiences and the way he managed them.

#### **6.1 First theme: Ethnomedicine products**

In this section, the various plant species as identified by the participants during the interviews are listed. It should be emphasized that the ethnomedicine products sold in the CPK are taken from the surrounding forest. Commonly, it is the practice among ethnomedicine sellers to categorize their products according to the effectiveness of the treatments that they afford to clients.

It was found that the majority of participants use the same kind of ethnomedicine products for their business. Among the most common ethnomedicine products repeatedly cited by participants are Tangawisi (ginger), Kongo bololo (bitter leaf), Kimbiolongo (*Mondia whitei*), Ngadiadia (*Garcinia cola*), Likasu (cola nut), Mukongo ya nkoba (Turtle bark), and Kita mata (*Heinsia crinite* stem bark)<sup>1</sup>. Among the several illnesses and conditions that these

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1. For more information, see: <https://www.bushdoc.co.uk/products/heinsia-crinite-stem-bark-rubiaceae-kita-mata-dr-congo-rainforest>.

ethnomedicine products treat are typhoid, sexual impotence, infections, stomach aches, infertility, hernias, diabetes, haemorrhoids, and back pain. Interestingly, the same plant can be used to treat more than one disease. Table 2 below lists the various plants, the parts used, and the illnesses they treat as utilized by the sellers of ethnomedicine products in the CPK.

From the responses, it was evident that tree plants, roots and barks are the most used by the participants, the abuse of which leads to the destruction of the natural environment. The researcher holds the view that this practice, that is, the increased use and commercialization of ethnomedicine products constitutes an environmental threat to the forest surrounding the CPK.

**Table 2: Plant species, local names, parts used, and illnesses treated**

| <b>Species/family names</b>                              | <b>Local names</b> | <b>Parts used</b> | <b>Treated illnesses</b>               |
|--|--------------------|-------------------|--|
| Bitter leaf  | Kongo bololo       | Leaves            | Typhoid, fever, malaria, stomach-aches |
| Cola acuminata/cola nut (Malvaceae)                      | Makasu             | Roots, bulbs      | Stimulant, migraine headache           |
| Zingiberofficinale (Zingiberaceae): Ginger               | Tangawisi          | Roots             | Backpain, haemorrhoid, infection       |
| Aframomum melengueta (Zingiberaceae): Grains of paradise | Mondongo           | Seeds             | Angina, low back pain                  |
| Gorilla  | Mokomboso          | Bones             | Physical force                         |
| Heinsia Crinite stem bark (Rubiaceae)                    | Kitamata           | Roots             | Sexual impotence                       |
| Mondia whitei (Apocynaceae)                              | Kimbiolongo        | Roots             | Fertility, antidepressant, aphrodisiac |
| Garcinia kola (Clusiaceae)                               | Ngadiadia          | Raw seeds         | Constipation, snake bite               |

Source: Ngbolua et al. (2016).

## **6.2 Second theme: Reasons for engaging in the commercialization of ethnomedicine Products**

The first research question read as follows: What accounts for the increased commercialization of ethnomedicine products in the CPK? The question was simplified to assist the participants; thus, it was worded: How long have you been in the business of selling ethnomedicine products?

It will be recalled that the conception of the increased commercialization of ethnomedicine products and its effects on the environment was elucidated under the literature review (Chapters two and three) and the theoretical framework of the environmental stewardship and consequentialism theories (Chapter four). Both theories help to describe the current environmental problems being experienced in the CPK and the ways of assuring the environment's protection. As revealed in the previous chapter when describing the sample, all participants had spent three or more years in the commercialization of ethnomedicine products in the area under study.

For instance, participant A1, a 29-year-old man in relating his experience of selling ethnomedicine products stated:

*I have been involved in the selling of ethnomedicine products for five years. I was initiated into the business by my grandmother. During the initiation process, I used to come with a pen and a handbook and recorded each explanation she gave me, especially on the mixing of ethnomedicine products. After a few years, I began mixing the products on my own and began to sell them.*

This participant was very excited and happy to account for his experience in this sector.

Participant A2, a 33-year-old man, stated that he had been selling ethnomedicine products for about 10 years. He moves from one street to another and to public places to sell his products around the CPK.

Participant A3, a 37-year-old man stated that he started the practice of selling ethnomedicine products in 2005:

*I was exposed to the business by my mother who taught me how to prepare the products and sell them to people who have issues such as conception. Currently, many people*

*who know me give their orders to me, or they come to seek treatment from me as a result of the efficacy of my products.*

Participant A4, a 40-year-old man, stated:

*I began selling ethnomedicine products a long time ago, since 2007. I started in my village, Tshikapa, and later, I came to the City Province of Kinshasa where I continued with the same practice. It helps me earn money to take care of my family.*

Participant A5, a 55-year-old man, stated:

*I started the commercialization of ethnomedicine products long ago, since the year 2000, it is part of my family practice. I inherited it from my ancestors who transmitted the knowledge to my parents and the parents transmitted the knowledge to us, their children. It is through the selling of these products that I manage to look after my family, I feed my kids and I send them to school.*

This participant displays his products at the marketplace, called ‘Marché de la liberté’<sup>2</sup>.

Participant A6, a 56-year-old man opined that he had been commercializing ethnomedicine products for about 25 years. He stated:

*I am from a very poor family. My parents could not afford enough money to send me to school. At home, to get something to eat, we had to struggle. My father was born in the village. He knew many trees and plants of the forest and what diseases they were helpful for. So, I was initiated by him, and after he passed away, I continued with the practice till today. It is through this business that I assure the survival of my family.*

Participant B1, a 26-year-old woman stated:

*I have been selling my products for four years. I used to spend time with my father who always explained to me the names of some ethnomedicine products and the sicknesses that they can cure. Some years after, I started accompanying my friend who used to go around selling his products. This encouraged me to do the same business.*

Another view is from participant B2, a 29-year-old woman who stated:

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<sup>2</sup> Marché de la liberté (liberty market), is one the biggest markets, built under the presidency of Laurent-Désiré Kabila, located in Masina municipality, district of Tshangu in the CPK.

*I started this business of selling ethnomedicine products at the age of fourteen when I visited my grandparent during holiday time. On weekends, I used to be sent by my grandfather to sell the products. It is through this that we used to get some money to meet a few family needs. A few years after, in 2015, I had finished my secondary school, and since I did not have money to go to the university, I got into this business of ethnomedicine products.*

Her experience was also affirmed by participant B3, a 36-year-old woman who stated:

*I started selling ethnomedicine products three years ago. When I grew up, my parents were unemployed. Life in the family was very difficult. My grandfather used to sell ethnomedicine products such as tree plants, roots and leaves in front of the house and I was always staying with him. I inherited it from him. I have continued with the practice. I go to sell my products on the streets and other much-frequented areas where a huge number of people gather for their different functions such as playgrounds, funeral homes, restaurants, and public pubs.*

Participant B4, a 41-year-old woman stated that she began selling ethnomedicine products in 2013. She had been displaying the products in a marketplace called ‘Marché mangobo’<sup>3</sup> (Mangobo market) and giving some others to her children who go to sell them at the preferred open places such as markets, restaurants, funerals and sports grounds

In the same vein, participant B5, a 52-year-old woman stated:

*I have been involved in commercializing ethnomedicine products for the last ten years.*

This participant also sells her products at the same marketplace as participant B4.

Finally, participant B6, a 49-year-old woman stated:

*I have spent seven years selling ethnomedicine products, which has been helping me to manage my family.*

In summary, the participants described their experiences regarding their involvement in the commercialization of ethnomedicine products in the CPK. They almost all expressed similar

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<sup>3</sup> Marché mangobo (Mangobo market), is one of the markets located in N’djili, in the CPK.



views in that they sell these products to earn money and, therefore, are able to take care of themselves and their families. Being involved in such commerce (for many years in some instances), most of them revealed that they got the knowledge of ethnomedicine products through initiation by their grandparents and parents. This finding is in line with the views of Iragi, Rusaati, Nfizi, Masumbukp, Gendusa, Furaha and Kang (2021:1) and Kasika, Vasombolwa and Lejoly (2016:479), who reported that the socio-economic and the political unreliability of the country do not allow all Congolese citizens to access modern healthcare. Thus, many of them depend totally on medicinal plants to cure their different illnesses.

### **6.3 Third theme: Sources of ethnomedicine products**

This theme emerged from responses to the question: Where do you get these products from?

All the participants gave similar responses in that ethnomedicine products came from the forest. For instance, participant A1 stated:

*I get my products from the forest in the villages surrounding the City Province of Kinshasa such as Dumi, Menkao, Kimpoko, and I also get others from the people coming from Bas Congo, Bandundu and Tshopo provinces.*

A related response was given by participant A2:

*I get my products from the forest in the Bateke valley, Mbankana, and Nsele.*

All these villages are in the CPK.

Participant A3 stated:

*I go to get my products from the forest of Maluku, Nsele, and also along the N'djili river. Others, I get them from the people who bring them from other provinces like Equateur, Bas-Congo, Kwango, Kwilu, etc.*

Participant A4 stated:

*I buy my products from the people around the City Province of Kinshasa, and I also get them from my cousins who bring them straight from our village.*

Participant A5 stated that he got his products from the forest of Mayindombe while participant A6, similar to participant A4, stated:

*I go to buy the products at the marketplaces, and also from the people who come from the villages surrounding the City Province of Kinshasa.*

Participant B1 provided more detail concerning her sources:

*I do go to the forest around villages of the City Province of Kinshasa to get my products. However, when I don't feel well healthwise, I go to buy them at the taxi ranks. Some traders travel to other provinces of the country to buy the products from the villagers, and they come back to the city and start selling them. I buy the products from them and in my turn, I go to sell them on the streets.*

Indeed, it can be argued that the Kinois people's involvement in the commercialization of ethnomedicine products is due to the socio-economic realities of the country that do not allow them to live a decent life with their families. Not having any choice, they tend to engage in serious struggles and are often abandoned to their sad fate. The forest around the CPK has almost disappeared for the simple fact that the overpopulation and the precarious situation of people in Congolese society have pushed them to fend for themselves, in their own way. This they have done by exploiting the forest through the cutting of trees, plant roots, barks, leaves, and hunting animals and commercializing these practices through the selling of ethnomedicine products. This finding is not different from the reported position of Theodore Trefon (2016:15) who maintains that many of the Congolese people are directly or indirectly dependent on the forests for their livelihood. This also aligns with the view of Lushombo (2015:727) who opines that the Congolese people "eat, drink and breathe from the forests, cutting them down constitutes a loss not only of food, but also of health, security, and life". The forest provides them with the basic necessities to assist them to farm, fish, hunt, build and, of course, sell ethnomedicine products through the utilization of medicinal plants.

Furthermore, the above aligns with the views of Kengoum, Pham, Moeliono, Dwisatrio and Sonwa (2020:7) who assert that the places where significant exploitation of the forests in the DRC occurs are situated close to big cities such as Kinshasa, Lubumbashi and where the population can reach 1 000 inhabitants/km<sup>2</sup>. This results in forest degradation or desertification that is currently visible on the ground, particularly in the CPK.

In summary, this section has shown that the majority of participants get their ethnomedicine products from the forest but how they do so differ. For instance, some participants get them

straight from the forest surrounding the CPK, while some go to the markets and buy them from other sellers, who in turn get them from the neighbouring forest or forests in surrounding provinces such as Bandundu, Bas Congo and Equateur. Such practices undoubtedly show that the people exploit the forest for their daily necessities to deal with the challenges and issues encountered in their lives. All this requires a wise and intelligent utilization of their forest to ensure it, and the natural environment in general, are protected and sustained.

#### **6.4. Fourth theme: Effect of the commercialization of ethnomedicine products on the environment**

To answer the second research question, that is, How does the increased commercialization of these products affect the environment in the City Province of Kinshasa? the researcher asked the participants what effect their business had on the environment.

As mentioned in the review of the literature in Chapter three, the increased commercialization of ethnomedicine products has caused many threats to the environment, particularly in the area under study. During the interviews, some of the participants said that they are aware of the harm that the increased use of ethnomedicine products has brought to the environment but since they do not have any alternatives to earn a living, the practice remains.

Participant A3 stated:

*I am aware that this practice has negative effects on the environment because by cutting trees and digging the soil, we are provoking erosions and flooding in nature.*

Likewise, participant A4 stated

*I like doing this business of ethnomedicine products because it is rewarding. But this practice of commercializing ethnomedicine products has brought many harms to the environment and to humans.*

Participant A5 provided more detail stating:

*This practice of commercializing ethnomedicine products has brought many harms to our forests and environment. Because when we are cutting trees, roots, and plants, and killing animals, we are not thinking of planting them back or replacing them. As a result, the forest is getting destroyed and dry.*

Indeed, the commercialization of ethnomedicine products has affected the forest negatively. By engaging in the practice, the forest is no longer a forest but is beginning to comprise of bushes only which is starting to create many issues for the environment. There is a diversity of benefits that the forest brings to nature for the well-being of the people. In the context of the CPK and with the DRC having a tropical climate the forest, for example, provides through its trees the purified air that one breathes as well as shade. Cutting trees, therefore, impacts the air that we breathe and weather conditions such as rainfall patterns that, in turn, impact agriculture.

Participant A1 would agree with the above and he opined:

*The forest plays an indispensable role because it helps us have rain and lessens the heat. By killings natural species, and cutting down trees, and root plants as we do nowadays, we have been exposed to high temperatures in the Capital City of Kinshasa and this will remain for long.*

This finding is in line with the view of Nzuzi (2011:78) who wrote about the increased number of people in urban areas, the lack of access of citizens to electricity, the employment crises, and the growth of urban agriculture. As a result, the few trees that protect the garden by affording shade are cut down to, for example, provide firewood and make way for new construction.

Participant B1 also acknowledged her and her colleagues' role:

*I do believe that myself and other ethnomedicine sellers are in one way or another also contributing to the environmental issues, particularly in the City Province of Kinshasa.*

In contrast, Participant A6 was unconcerned about the effects on the environment. He stated:

*I don't care about what can be the negative effects of getting ethnomedicine products in the forests. The most important thing for me is that I just go to the forest to collect what I want for my business. The rest of the harm that may result from it is not my preoccupation.*

Given the above responses, it is evident that participants, with a few exceptions, recognized that when they go to the forest to get their products such as tree barks, roots, plants and animal parts to satisfy their needs, considerable damage is being done to the environment and that in future, they may no longer be able to get what they want. This would be a result of some of

these products no longer being generated as they have not been replaced and the soil has become infertile. They thus acknowledge that they are among those who contribute to the destruction of the environment.

Participant B2 gave attention to the effect on animals in particular:

*This business brings harm to the natural environment in the sense that when we throw, for example, some toxic substance into rivers or watercourses to catch fish, it kills them and the same applies to animals. To consume fish and animals in this way is dangerous to people's health. Nowadays, it has become very difficult to hunt animals. The reason behind this is that the forest has almost disappeared around the City Province of Kinshasa.*

The participant continued:

*We used to go to the forest to get the products or do hunting around the City Province of Kinshasa, and we could easily kill animals to get their bones, teeth, and heads which could help us in the mixture of our products. But currently, to get all these products has become very difficult. To get some leaves, plants, tree barks, or hunting, one has to go very far to get them, to a place where some few forests have remained.*

The finding above that it is increasingly difficult to obtain the ethnomedicine products is congruent with Anyinam (1995:323) who highlighted that the “procurement of plant and animal species needed by indigenous medical practitioners currently requires long-distance travel. This affects not only operational costs of providing traditional medical services, particularly in urban areas but also the forms of herbal medicine prepared”. Thus, the depletion of the forests and animals is not only impacting their availability but also the travel costs of the sellers who increasingly are having to move beyond their neighbouring forest to get these products. This, of course, will impact the prices the products are sold for.

Participant B3, interestingly, admitted to being unaware of the harm being done to the environment which illustrated a certain naivete on her part. She stated:

*I don't go often to the forest, so I don't know what the harm could be caused by the commercialization of ethnomedicine products. If I happen to go, my work is only to get my products and come to sell them to the people.*

The findings above validate Trefon (2016:12), who believes that the Congolese forests are vulnerable and that their long-time sustainability is unknown. Furthermore, many people (and not only the sellers) are aware that some activities such as the commercialization of hunting and the cutting of trees, plants and roots are harmful to the environment. However, they continue with the practice. For instance, participant B5 explained that, given the high rate of unemployment, the majority of the Congolese, specifically the Kinois people, seek to create their own job opportunities to ensure their survival and this includes the selling of ethnomedicine products. She added:

*Many people are not able to afford enough money to go to the hospital when sick; they make use of ethnomedicine products to cure their illnesses.*

This finding is also emphasized by scholars, including Kapagama and Waterhouse (2009:10), who said that unemployment and hyperinflation have greatly contributed to the growth of the informal sector. The growth of this sector assists in the survival of a population whose only hope in braving the increasingly intolerable conditions of poverty in society is to rely on their aptitude and ability for resourcefulness.

In a related view, Aninyam (1995:323) states that environmental change resulting from social and human works has caused a serious shortage of certain herbs and animal species utilized for curative purposes. He adds, “as forests are degraded into woodland savannas, savanna to scrublands and bushes, and scrublands to desert characteristics in many parts of the Third World, certain species of plants are disappearing altogether”. This scenario is similar to the case of the CPK, where these issues are becoming of increasing concern for the population.

Participant B6, however, was the only participant who was able to articulate what needed to be done to counter the effects of the commercialization of ethnomedicine products on the environment. She stated:

*While buying my products from the people who go to get them to the forest, I urge them that when they go there, they should get the mature roots, plants, or leaves, and they are supposed to leave the small ones to grow because they are still going to help in future when they shall need them again. But if those trees, roots, and leaves, are cut in a disorderly way, and the species as well killed without control, they get finished and die; it will be, therefore, difficult to have them anymore.*

Ideally, the Kinois people should have a clear understanding of climate change and the need to protect their environment, despite the inability of the provincial authorities to withstand the consequence of the climate crisis. This would help in avoiding the serious environmental degradation of natural resources such as deforestation, soil erosion, and deterioration of the quality of the soil, air and water to which the city and its environs are exposed (Mobimba, 2016:95).

In summary, the individual responses from participants demonstrated that they are aware that the increased commercialization of ethnomedicine products in the CPK is having negative environmental consequences. For example, participant B3 stated:

*There are a lot of changes in the environment in the City Province of Kinshasa and I feel that I am also contributing to this issue since I am also using the forest in an unfriendly way. Nowadays, our kids do not know important trees, plants or other species of nature because the forest has disappeared.*

This response is in line with Pope Francis' (2015:23) view that the present loss of numerous plants and animal species due to human activities may remain and even increase with future generations (Pope Francis, 2015:23). It is worth noting that contemporary men and women have transformed nature into an object, which can be harmed and/or exploited at whatever time and at will, thereby leading to environmental destruction (Ickowitz, Slayback, Asanzi. and Nasi, 2015:15). The main causes of this destruction in the DRC include, among others, bush fires, abusive and unregulated hunting, anarchic exploitation of timber, general poverty of the population, misuse of traditional harvesting of medicinal and food plants, and the use of certain traditional or contemporary fishing methods such as the poisoning of rivers. These negative effects, including the aforementioned misuse of traditional harvesting of medicinal plants for the commercialization of ethnomedicine products, are noticeable in the lives of both humans and non-humans.

## **6.5 Fifth theme: Regulations managing the commercialization of ethnomedicine products**

In this section, the researcher attempts to answer the third research question: What regulatory measures have been put in place as checks and balances to control the over-commercialization of these products? To ease participants' understanding the question was reformulated as follows: Are there regulations governing the sale of these products? Thus, the question asked

here was to determine participants' awareness of the regulations and control measures put in place by the Provincial Government of the CPK to serve as checks and balances for the people who commercialize ethnomedicine products.

Concerning the existence of regulations authorizing the exercise of ethnomedicine products in the DRC, the Ministerial Order No. 1250 of 25/10/2002/, Article 11, attests that:

No one can exercise and continue to exercise the profession of a traditional practitioner in an urban agglomeration and in an environment deemed extra-customary if he does not have a Traditional Healing Art License, the authorization to open a traditional medical care centre, or, where applicable, an agreement issued and regularly renewed under the conditions and by the authorities designated by the Ministry of Health.

Participants appeared to be aware of the regulations. According to participant A1, there are indeed regulations governing the exercise and the sale of ethnomedicine products in the CPK. Elucidating, he stated:

*I personally, do not have any official document allowing me to sell my products. I just go to the streets, restaurants, funeral homes, bus stations, and other public places to commercialize my products and get money so that it can help me respond to my different personal needs and those of my family.*

This view was also shared by participant A3, who stated:

*I know that the regulations exist, but I don't have money that can allow me to go and get government or municipal documents, or to buy a place at the market where I can be displaying my products for selling. The reason why I just content myself walking around public places where I can meet people and manage to sell my products and get money to meet the daily needs of my family.*

The participant added:

*You are a Congolese, and you know very well the current social and economic living conditions of our country, the Democratic Republic of Congo. There is unemployment in our society. A lot of people have finished their studies but there are no job opportunities. Everyone has to battle tenaciously to earn their living.*

Participant A4 admitted that:



*There are regulations, but in our country, the Democratic Republic of Congo, we do not respect those regulations. Because the authorities who are supposed to respect those regulations do trample on them. As you know, in case you are arrested by the state agents, it is just a matter of 'talking' well with them. There is nothing better than talking when there is an issue. This is the reason why I do not bother getting the document from the urban authority which allows me to sell my products. Because I just talk when the time arrives.*

This participant's views suggest that on the African continent in general, and in the DRC in particular, when someone says "I talk" to the authorities, it means that, that particular person wants a "favour" from the authorities by the offering of monetary gratification. The arrangement is made in secret between the arrested person and the authorities. The CPK is not exempt from this practice. This is illustrated in the words of participant B1:

*I know that the regulations concerning the commercialization of ethnomedicine products in the City Province of Kinshasa in the Democratic Republic of Congo exist like in any other country around the world. I do see the agents from the provincial government who walk around selling their documents and receiving taxes. They do tell us that since we sell these products, we need to get an official document and be recognized by the provincial authority. But I don't see the necessity of getting their document. First of all, I don't have enough money for that, I struggle to get something to feed myself and my family. Secondly, I don't see the need of buying that document because I don't display my products at a marketplace. I walk around the streets, bus stations, and soccer grounds where I can easily get clients who buy my products. So, the presence of the provincial agents does not scare me at all.*

According to participant B4, the majority of sellers of ethnomedicine products believe that the regulations exist but that they are only concerned with the large suppliers of products that sell in big quantities. She explained that:

*If the regulations exist, they only apply to the people who buy the products in large quantities, and not for people who buy in small quantities to resell as I do. Therefore, I believe the regulations do not concern me.*

These findings suggest that the participants who are involved in commercializing ethnomedicine products (also called ‘vendeurs ambulants’<sup>4</sup> or street vendors) are located in different corners of the CPK. They move from street to street and house to house selling their products. They also, as previously mentioned, take advantage of places where large crowds are gathered such as at funerals, restaurants and bus stations. They are informal sellers who generally do not possess the official documents from the authorities but the latter “allow” them to do their business. If they are confronted by such an authority (state agent), they try to bribe them by giving them something, after which they are then let go. This kind of negotiation between the product sellers and the state agent is commonly called “le pot de vin”<sup>5</sup>, and both parties continue with their work. In case the person does not collaborate, he or she is taken to the office and fined a lot of money.

The above situation, as pessimistic and irresolute as it is, is affirmed by the opinions of a majority of participants interviewed. The state agents themselves are not well remunerated by the provincial authorities, thereby creating avenues for corruption to thrive. This persists in weakening the economy and public management in all sectors of Congolese society. Marie Chêne (2010:2), quoting Global Integrity, contends that all this happens due to ineffective government organizations, poor administration, and low remuneration coupled with a deficiency of inspection functions. These provide public employees with the occasion and the motivation for extracting money from the people. For instance, participant B5 explained:

*For me, I cannot worry myself to get an official paper of authorization to sell my products. The state agents who come to tell me about regulations are just pretending, what they need is to get money and that money goes into their pockets.*

The social conditions in Congolese society have degenerated and this exposes people and makes them more susceptible to corruption. Although the current President of the DRC, Felix Antoine Tshisekedi Tshiyombo, talks about “l’Etat de droit” (the State of law) which should be applied to everybody in terms of respecting the laws of the country, there is little proof of a change in terms of corruption. Consequently, the “Repeated political crises, poor infrastructure, an underdeveloped regulatory environment, a lack of institutional capacity and weak rule of law continue to hinder economic development prospects and create fertile ground for

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<sup>4</sup> Vendeurs ambulants (street vendors/hawkers), are the people who sell all kinds of goods on the public road.

<sup>5</sup> Le pot de vin: is a sort of bribe, a gift smuggled to obtain an advantage illegally.

corruption” (Chêne, 2010:2). Furthermore, “corruption, lack of controls, fraud, impunity, and lack of transparency continue to characterize logging activities” (Lushombo, 2015:727). This clear evidence gives the impression that the country has almost lost its moral bearing. Each individual thinks only of his or her own interests to the detriment of the interests of the whole population. This situation aligns with the view of Nzuzi (2011:20) who stated that being plagued by the daily difficulties of life and the struggles for survival, the Kinois people excel in anti-values and condone corruption.

This scenario is explicitly captured by Richard Rwiza (2001:44) who asserts that “corruption is the root cause of the violation of the integrity of society. A remedy to such corruption consists in radical reform of the political strategies and systems used in the administration of justice”. However, the Provincial Government of Kinshasa still has a long journey to get there, for the simple fact that the current realities within the province reveal the lack of moral stewardship and the sense of dedication to serve the population on the part of the Congolese leaders.

However, one must take into consideration, as pointed out by some of the interviewees when asked about regulations, that it is not easy for the ordinary person who struggles to get something to eat, to be able to afford the money required for the registration of their products. For instance, participant B5 explained:

*I am unemployed for some years. I do have a family to look after, but the money I get out of commercializing my products is very little. I struggle to pay the rent, water, electricity, groceries, and the school fees for my kids. How will I get money to buy those documents because they are quite expensive?*

Another example is participant B6, who said:

*Personally, I am a small seller. The money that I get while selling my products is very little, it just helps me buy food to feed my family. Sometimes, I may walk all day without getting clients. So, I am unable to afford money for the official document.*

On one hand, the above examples of the poor financial situation of the majority of interviewees, reveal that they do not abide by the regulations simply because they cannot afford to buy the official documents related to their business. They sell ethnomedicine products solely to gain something to provide for their families. Furthermore, it can be said that this business has become so common that anybody can join. Those who are involved in the business do not

belong to any organized body and as such, it has attracted many unemployed persons as well as those who want to make quick money. In addition, the advent of COVID-19 encouraged even more people to enter into the business of selling ethnomedicine products. However, in the view of Okyere-Manu, Morgan and Antwi (2021:141), “If efforts are not made to regulate the activities of ethnomedicine practitioners, their activities could become one of the major causes of environmental resource dilapidation”, and this applies particularly to the CPK. While on the other hand, other participants who could afford to buy the necessary documentation, chose not to do so, thereby not abiding by the regulations put in place by the Provincial authority.

It must be noted that the people who have the necessary documentation are the official traditional practitioners and, being registered, they can be censured by the National Council of Traditional Practitioners. They are the only people officially empowered to treat people using their traditional products and to establish a decent place for selling their products. To elucidate this position, the former Health Minister, Félix Kabange Numbi Mukwampa, in his Ministerial decree n 1250 of 1 September 2013 emphasized the need for a census of traditional practitioners in the DRC, that is, to identify and register them. Article 4 of the decree states “A ‘traditional healer’ is considered to be an individual who usually gives advice on specific methods to preserve or improve health and treats human diseases, physicals or mental, by virtue of faith and spiritual counsels or by means used traditionally by the community believed to heal by helping nature or by stimulating it”. However, the regulations related to the commercialization of ethnomedicine products are not well implemented. Those few practitioners who have the necessary documentation claimed that the lack of public awareness of the regulations governing the sector of traditional medicine and the follow-up on these documents is not assured. One consequence of this situation is a shortfall in terms of revenue to the public treasury.

In summary, the above findings illustrate that the participants’ views regarding the regulations governing the commercialization of ethnomedicine products in the CPK are quite alike. However, traditional medicine is governed by regulations that are, in most instances, not known or, if known, not respected by the majority of the population. For the participants (and arguably the sellers of ethnomedicine products in general), their overriding consideration is to sell their products to enable them to meet their families’ daily needs. As a result, there is no abiding by the law and anyone can become and claim to be an ethnomedicine seller.

## 6.6 Sixth theme: The composition and administration of ethnomedicine products

In this section, the focus is primarily on the procedures that participants used for the mixture and the administration of their ethnomedicine products. The following question was asked to guide the interviewees in their responses: What constitutes the products? During the interviews, participants expressed similar views regarding the composition of their products and their mode of administration to the clients. A selection of participants' responses is reported below:

Participant A1 stated:

*My products are composed of tree plants, leaves, and roots. I sell them as they are, meaning that I first wash, and place them in a small basket or in a carton. I put certain products in water in small containers. The duration after the preparation is about one month. But before the end of a month, people already buy them.*

Participant A2 provided a similar explanation:

*My products are made of tree leaves, tree bark, roots, tortoise skin, and cola nuts. Based on my experience, I know that if I mix these products and the other one, I will get the kind of result which I want to treat for a determined sickness. For example, if someone is complaining of having back pain, I can be able to determine the problem that the person is having. It can be haemorrhoid and then administer the right products. Once well mixed up, the products may take a month before they expire.*

A follow-up question was asked of this participant to determine where the products are kept once they had been mixed. He answered:

*I keep my products in a cool place, not in the sun to prevent them from rotting, because I sometimes mix one product with another one, to make it become effective for good marketing to my clients.*

Participant A3 stated:

*My products are composed of three roots, plants leave, and animal teeth that I get from the forest. I sell them as raw as they are. Some, I mix and crush up until they become dust, then I put them in small plastics. Whilst others like roots or tree bark I mix them with water. These depend on people's sicknesses. For instance, a person may say that he or she is having stomach pain. I may directly guess that this particular person might have infections, and this is a kind of product that I am supposed to sell to them. Most people ask for products that can help them treat their backache, tiredness, sexual*

*impotence, haemorrhoid, etc. After the people have used the products, they come to give good feedback. The majority of them get cured.*

Participant B4 provided the names of some of the plants and roots used:

*My products are composed of different things such as mondongo, tangawisi, kimbiolongo, likasu and mupeshi peshi.*

Details of the plants and roots were presented under the first theme of this chapter.

The researcher considers it astonishing that most of the participants who are in this business not only do not have the necessary legal documents for their activities, they have not been recognized officially by the National Council of Traditional Practitioners or by the authorities and nor do they have the necessary formal training to exercise their jobs. Indeed, the majority of participants had little formal education and coupled with their lack of formal training the lives of the Kinois people seeking assistance from them are exposed to health risks. For example, the sellers of ethnomedicine products have no clear idea of the dosage to administer but guess. Article 3 of the Ministerial decree n 1250 of 25 October 2002 concerning the practice of traditional medicine and issued by the former Health Minister, Mashako Mamba stated that “Any practitioner of traditional medicine who habitually exercises his profession in any form whatsoever, will demonstrate moral integrity as well as honesty. Respect for human life, the physical or moral integrity of patients will take precedence over any other consideration”. It is evident that this is not adhered to. For instance, in 2021 an ethnomedicine seller’s unregulated practice led to the death of six of her children. Her mixture of traditional leaves and water for the purpose of purging proved to be fatal and this was due to an overdose of ethnomedicine products and a lack of knowledge in this particular area. This illustrates that many of the Congolese people who sell ethnomedicine products do so without having a deep knowledge of traditional medicine.

Figure 4 below depicts a mixture of ethnomedicine products displayed for selling purposes.



**Figure 4: Display of roots and barks mixed and crushed**

### **6.7 Seventh theme: The sustainability of ethnomedicine products**

The fourth research question was: How can the ethical theories of environmental stewardship and consequentialism inform sellers of these products' responsibilities towards the environment? The aim of this, the final research question, was to determine the ethnomedicine sellers' awareness and concern for the environment. To make the fourth research question easier for the participants to understand, they were asked: How are you ensuring the sustainability of these products?

It is worth once again noting that the utilization and selling of ethnomedicine products as a way of earning some money to assure one's survival in the CPK has increased rapidly, negatively impacting the environment. The responses of the participants are detailed below.

Participant A3 noted:

*I am aware that by cutting the natural products, I am not protecting the environment and I can see the way the climate around us is changing. There is too much heat, in the forest trees are no longer there because we are cutting them all the time without planting them and I am part of those who do that. If we were planting trees, they could have helped us a lot. I just assume that trees in the forest were created by God, therefore, even if I cut them, they will still push themselves, same applies to animals and fish.*

Participant A4 stated:

*I am just a street hawker. I buy my products from the traders and sell them without thinking about the possibility of safeguarding the environment.*

Participant A5's response corroborated that of A4:

*I don't know how to protect the environment. I just go to the forest, and I get the products, or I buy them from other traders, then I go to sell them. I don't bother about assuring the natural environment and its protection.*

A similar declaration was made by participant A6. According to him:

*In the Democratic Republic of Congo, we are blessed by God, since I was born and grew up, I used to go with my parents to the forest to get tree leaves, and roots and do hunting. The forest had been everything for me because it feeds and dresses me and my family. I also cut trees which I sell to people, they help them build their houses. When I cut these trees, I know that the others shall grow themselves naturally.*

Participant B1 stated:

*The forest is natural, there is no need for it to be protected, that is to say, even if you take what you need, it will still grow on its own even if you don't protect it.*

Participant B2 opined:

*It is the Congolese government that is at the root of the disorganization because they don't do the follow up on regulations put in place concerning the utilization of ethnomedicine products and educate people on the safeguarding of the environment.*

However, in contrast, participant B3 stated:

*I try to protect the environment. When I take the products in the forest, I do think of replacing them. For example, when I go to sell my products, I always keep out the seeds that I plant in my yard, I have planted some trees which can be of great benefit for me when they grow. This helps me to learn how to care for nature and also teach other people around me to do the same thing.*

And, in the same vein, participant B4 stated:

*Personally, when I buy my products after I have prepared them for selling, I keep some seeds or seedlings which I go to plant in our family plot, located in the suburb of the*



*City Province of Kinshasa, where I have planted agricultural products. There is a portion that I reserved for the planting of some ethnomedicine products. I do this so that one day, these products may grow, and I may use them for my business purposes.*

The findings elicited different views from participants regarding the sustainability of ethnomedicine products. On the one hand, participants explained that the forest is natural, and there is no need for it to be protected; they have existed since the creation of the world by God, and, therefore, cannot get depleted even though people had been making use of them. The same applied to animals and fish. On the other hand, participants understood the relevance of safeguarding the environment by planting seeds and seedlings at their plots or elsewhere to ensure the sustainability of their products and that their future needs will be met. However, it is the researcher's opinion that the majority of the participants are not well informed about the need to protect the forests and the harm they were causing to the environment as a result of their selling of ethnomedicine products.

To further determine if the environment could be better protected, a follow-up question was asked of one of the participants concerning how they saw their business in the future. The answer from participant B6 was negative:

*We don't think about the protection and the sustainability of the environment. The important thing for us is to make quick money through the business of the products.*

This finding, together with some of the responses given above, is an indication that there is an urgent necessity for environmental awareness of not only the sellers of ethnomedicine products but also the Kinois people in general – they all have the duty to take care of their environment. This is confirmed by Choy Yee Keong (2020:3) who states that “Environmental and moral education constitutes a *conditio sine qua non* for transforming changes in human environmental attitudes and behavior toward environmental sustainability”. This suggests that both environmental and moral education are crucial in Congolese society because they will assist people to cultivate a view of nature that minimizes the negative effect of their activities on the environment.

The theories of environmental stewardship and consequentialism are both appropriate and necessary in emphasizing the need for the ethnomedicine product sellers to recognize their moral duties and responsibilities concerning the preservation and sustainability of the

environment. Christine Gichure (2008:66), states that “As rational beings, we are morally responsible not only for the short-run consequences of our actions but also for the reasonably foreseeable ones”. This implies that the sellers of ethnomedicine products could be described as stewards when they respect the rules put in place by their society, and are accountable to their society, by preserving and sustaining their environment. In the same vein, Tangwa (2004:388) states that “As human beings, we carry the whole weight of moral responsibility and obligations for the world on our shoulders”. This implies that the Congolese society at large has a duty to protect themselves, others and their environment.

## **6.8 Researcher’s fieldwork experience**

The researcher developed a good relationship with participants before and during the fieldwork. The researcher also presented his status as a Catholic priest, a man of God, which enabled him to gain the trust of participants to interact with him. However, like any other research tool, in conducting online interviews with the study participants, challenges did occur. For example, there was a situation where the researcher missed an interview appointment with an expected participant, for the reason that he (the participant) had walked the entire day selling his products. He got home exhausted and, in addition, had to start cooking for his family. On another occasion, the researcher had to interrupt an interview as the participant needed to attend to an urgent issue relating to power and water supply. The participant had to rush to the tap to start fetching water and keep a reserve in the house as the instability of the power supply meant that it could go off (again) without any notification.

Furthermore, and understandably, some participants were hesitant to be interviewed because of the political situation of the country, which was (and remains) volatile, and thus creates a climate of mistrust between the law enforcement officers and the population. Also, some participants were afraid of being arrested in the sense that once they agreed to do the interview, they and their business would be exposed for not having the required documentation and for destroying the natural environment. This could well have resulted in them providing an “official account” (De Vos, Strydom, Fouché and Delport, 2011:360), that is, not expressing the reality of their experiences and situations. However, as pointed out above, the researcher was able to obtain the trust of the participants and it is in his opinion that these concerns of the participants were overcome and what was said by them in the interviews reflected the reality of their experiences and situations with regard to their businesses.

## 6.9 Conclusion

This chapter presented the primary data in the form of the findings gathered from the participants on the ground through one-on-one interviews. The findings provided a general view of participants' experiences and perspectives concerning their commercialization of ethnomedicine products. As planned, the study findings were presented thematically. In respect of the first theme, that is, the ethnomedicine products used, the researcher presented the plants and roots species used and the diseases they are meant to address. In terms of the second theme, the reason/s for engaging in the commercialization of ethnomedicine products, it was found that participants have been involved in the business of ethnomedicine for many years to assure their survival. Concerning the third theme, the sources of the ethnomedicine products, it was established that the majority of participants sources their products from the forest that surrounds the CPK. The fourth theme, the effect of commercialization of ethnomedicine products on the environment, the researcher found that the business of selling ethnomedicine products in an uncontrolled way was harming the environment and, therefore, contributing to environmental issues. On the fifth theme, that is, the regulations relating to managing the commercialization of ethnomedicine products, it was found that while the participants acknowledged the existence of such regulations, some admitted to choosing to ignore them. They did not bother to get the necessary documentation due to the costs involved and due to their being able to bribe state agents when threatened with arrest. The sixth theme relating to the composition and administration of ethnomedicine products presented descriptions of how the products were mixed and administered according to the treatment of diseases. In terms of the final (seventh) theme, the sustainability of ethnomedicine products, some participants affirmed that the forest is natural, implying that it was created by God, and its use cannot destroy it, while other participants, recognized the need for sustainability to plant seeds and seedlings to ensure that ethnomedicine products would be available in the future and that the environment would be sustained. The chapter ended with an account of the researcher's fieldwork experience.

In Chapter seven which follows, the findings which have been thematically presented above in relation to the research sub-questions will be discussed.

## **CHAPTER SEVEN**

### **DISCUSSION OF FINDINGS**

#### **7.0 Introduction**

The preceding chapter reported on the data generated from participants in one-on-one interviews through online platforms and with reference to the relevant literature and the theories underpinning the study. The findings from the participants on the ground were assembled and presented according to seven identified themes that emerged from the analysis of the participants' responses. The research sub-questions were also responded to.

Chapter seven focuses on the discussion of the findings. The discussion is organized under themes as was done in the foregoing chapter. The identified themes are: Recourse to the practice of ethnomedicine products by the Kinois people; importance and role played by ethnomedicine products; direct effects of the increased commercialization of ethnomedicine products on the environment; regulatory measures regarding the increased use of ethnomedicine products; and ensuring environmental protection in the CPK.

It is important to mention that the themes are scrutinized in light of the review of the literature and the two theories put forward, namely, the theories of environmental stewardship and consequentialism to achieve the aim of the study, that is, to ethically explore the increased commercialization of ethnomedicine products and its effect on the environment with particular focus on the CPK.

#### **7.1 Recourse to the practice of ethnomedicine products by the Kinois people**

The findings from the participants revealed that in the DRC in general and the CPK in particular, recourse to ethnomedicine products is essential. All 12 participants agreed that the majority of the Kinois people go back to nature for the treatment of their illnesses. This is due to various reasons such as the absolute poverty experienced by many of the Congolese population that puts modern medical products out of reach, the lack of good health facilities and poor road infrastructure. The study participants' involvement in the selling of ethnomedicine products was to generate money to ensure their and their families' survival. The participants listed the names of some products as reported in Section 6.1 of the previous chapter. For instance, participant A2 stated:

*I usually get or buy the products that are of great use to the clients such as kimbiolongo, kitamata, tangawisi, and ngadiadia because I know that they will definitely buy them.*

Similarly, participant A3 stated:

*Often my clients do order the products that they want me to get for them, and those products are very common in the market because they cure different kinds of diseases that the society is facing.*

In the opinion of most participants, the selection of products is based on the customers' preferences and on what is in most demand in the marketplace. Many of the participants gave testament to the efficacy of their products to cure a variety of ailments. The use of ethnomedicine is, however, not without danger. Failure to achieve the correct combination, dose and storage may produce a toxic brew. Coming from the DRC, the researcher's experience is that the majority of the population in Congolese society mix some tree plants and roots in their drinks such as *masanga mbila* (a traditional beer made from palm tree extract) and "modern" beer. These beers contain alcohol and mixing them with ethnomedicine products could be harmful.

The excessive use of these ethnomedicine products constitutes a threat in terms of the extermination of certain plant and animal species, particularly in the CPK as voiced by Nzuzi (2008:xii) in the review of the literature.

## **7.2 Importance and the role played by ethnomedicine products**

The interviews with the participants revealed that they had been involved in the business of ethnomedicine products for at least three or more years. As reported in the literature review (Section 2.2), ethnomedicine is indispensable in the lives of the Kinois people because the treatments prepared from native herbs, roots and leaves play and have played a pivotal part in the well-being of Africans in general, and those of the DRC in particular (Antwi-Baffour et al., 2014:50). In line with this understanding, it can be said that in the CPK, ethnomedicine products are long-established and have important potential in healing illnesses. Scholars such as Lewu and Afolayan (2009:929), Anyinam (1995:322) and Mander et al. (2007:190) stress the essential role that the use of ethnomedicine products plays in the culture of the people.

Research question one attempted to account for the increased commercialization of ethnomedicine products. Findings indicated that it is primarily due to the social conditions of the Congolese population. The majority of the population is poor and unemployed and does not have access to good health facilities or the means to take care of their families. For decades ethnomedicine products have helped them in curing their illnesses and getting what was needed was fairly simple. However, the use of ethnomedicine products has now been commercialized and this development has and is attracting many people. This has been very noticeable with the occurrence of the COVID-19 pandemic when many Congolese people increased the use of ethnomedicine products to cure themselves or to protect themselves from the virus. In addition, and as pointed by Kasika et al. (2016:479), the political instability of the country is among the factors that have pushed the Congolese citizens to fight for their lives and many are entirely dependent on natural resources to ensure their survival.

Some of the participants stated that they have been involved in selling ethnomedicine products for many years. It is evident that they acquired these products from several sources over and above obtaining them from the forest themselves. Some participants acquired them via siblings who brought them from their own provinces where they were born, while others purchased their products at different taxi ranks from traders who came from other provinces of the country to the CPK.

This study argues that although these participants describe their work experiences and the years spent in it, they generally conduct this business to earn money for their and their families' survival. Furthermore, although some participants were initiated into selling ethnomedicine products by their parents (or grandparents), they have not been formally trained and their businesses are not recognized by the state authorities. It is, therefore, noticeable (and possibly understandable) that participants have been involved in the commercialization of ethnomedicine products without always taking into account the tragic harm that it does to the environment. Such findings were also emphasized by Trefon (2016:15), who stressed that many of the Congolese population are dependent on the forests for their survival.

### **7.3 Direct effects of the increased commercialization of ethnomedicine products on the environment**

The increased commercialization of ethnomedicine products is having a negative effect on the environment. The majority of interviewed participants admitted that their involvement in the

business was causing harm to nature. As highlighted in the literature review, the utilization of these natural products in such an exploitative manner has been impacting the environment leading to developments such as floods, erosions, air pollution and global warming. This is clearly expressed by Kalenga (2010:54), who opined that the impact of the world's natural problems on humans and non-humans cannot be ignored. Participant A6 pointed out that he does not care about the negative effects that may occur after he has obtained the products from the forest. What matters for him are the products and the money he will earn by selling them.

In terms of the second research question concerning the effect of the increased commercialization of ethnomedicine products on the environment in the area under study, the collective responses of the participants, as alluded to above, pointed to them being aware of the harm they have been causing the environment. This harm manifests in climate change, land degradation, the loss of several natural species and food scarcity, and these developments may occur for years to come. Participant A6's response outlined in the paragraph above is apt here.

A related sentiment was voiced by participant B6 who stated:

*The commercialization of ethnomedicine products is harmful to the environment, mostly when people use toxic products in waters or forests; it ends up killing fish and animals.*

As reported in the literature review, Xalxo (2007:128) was more than clear when he expressed that the increase of human activities impacted the environment leading to, for example, a massive increase in pollutants that have negative effects not only on the life and health of human beings but also of non-humans and nature as well.

The majority of the Kinois people have been using herbal remedies to satisfy their health-related needs. The researcher is of the view that the most utilized product used in the remedies is the roots. This is corroborated by Ngbolua et al. (2016:412), who stated that of the several plants utilized in the preparation of herbal remedies, roots are the largest utilised plant portion constituting 35% of the total. Roots are followed by leaves (28%), fruits (10%), seeds (9%), barks (9%), stems (5%), and bulbs (2%). For instance, most young women use some of the roots and tree products to improve their bodies, while men chew roots and plants to improve their sexual performance. The extensive use of ethnomedicine products by the Kinois people constitutes an immediate and serious threat to the natural environment. Indeed, as a

consequence of the direct abuse of the environment, the CPK is lately experiencing weather patterns such as high temperatures, flooding and atmospheric pollution. Many Kinois people have been suffering from severe diseases such as flu, coughs and typhoid fever because their environment is unhealthy. Furthermore, exposure to air pollution and toxins creates defects, sterility, and several diseases in animals (DEP, 2016:20; Wain, 2016:7).

The findings show that the increased commercialization of ethnomedicine products is undoubtedly the expression of great poverty and an indicator of the current crises being experienced in the CPK. Affected by the daily difficulties of life and in a context of significant unemployment, the Kinois people have created jobs for themselves, ignoring the harm they are causing to the environment in doing so. Some participants, however, did point out that they planted seeds and seedlings in their yards or plots to preserve the environment and to plan for their future needs.

Observably, it can be said that in general, the majority of Kinois people have tended to lose hope and their moral conscience. Thus, it is evident that the current environmental issues in the CPK are a result of the population's behaviour towards their natural environment. The researcher agrees with Dragoş (2013:1448) who argues that the lack of basic ethical principles, lack of moral responsibility and environmental education, have resulted in the Kinois people destroying their environment. In this regard, participant B3 stated:

*Currently, it has become difficult for the kids in the City Province of Kinshasa to know the names of certain trees, plants, or other species of domestic and wild animals that they study at school because the forest has been destroyed.*

As mentioned in the literature review, deforestation, soil erosion, flooding and the loss of several natural species are partly the result of human activities that have transformed the natural environment (Attfield, 2018:3) in the area under study. In this context, the view expressed by Tangwa (2004:390) is relevant when he says that a “recognition and acceptance of interdependence and peaceful coexistence between earth, plants, animals, and humans” is essential. Similarly, Pope Francis (2015:27) emphasizes that all living beings are linked and, therefore, all should be treasured with love and respect for they all rely on each other. He further affirms that “The loss of forests and woodlands entails the loss of species which may constitute extremely important resources in the future, not only for food but also for curing disease and other uses” (Pope Francis, 2015:23).



According to the Ministry of Environment and Sustainable Development (MESD) (2016:36), the destruction of natural habitats and the development of human activities decrease hundreds of animal and plant species. Similarly, Nzuzi (2008:8), emphasizes that this negative behaviour of destroying the environment “has been further reinforced by a certain urban perception which symbolizes urbanity, city, modernity, civilization by the absence of the forest in the urban space”. Nzuzi (2008), adds that the first action of a Kinois citizen who has just bought a piece of land on which to build a house is one of deforestation. The clearing of the site is a sign of their presence and land ownership. However, the citizen does not realize that in doing so they are exposing the land to gully erosion. The deforestation of the forest in the CPK is also due to “popular beliefs” that affirm that large non-fruit trees can symbolize the headquarters of witches. As a consequence, it is considered necessary to cut them down (Nzuzi, 2008).

From the above discussion, the collective responses of the participants denote that the increased commercialization of ethnomedicine products through the cutting of trees, plants, barks, and animal species have been negatively impacting the environment. There is thus an urgent need for the Kinois people to preserve nature.

#### **7.4 Regulatory measures to curb the increased use of ethnomedicine products**

This theme is related to the third research question, which queried whether the participants or the Kinois people at large, were aware of regulations put in place by the government to act as checks and balances to control the over-commercialization of ethnomedicine products to protect the environment and the population’s health. What follows is a synopsis of the pertinent findings from the interviews with the participants.

As presented in Chapter six, all the participants admitted to knowing of the existence of regulatory measures, concerning the use of ethnomedicine products. Article 14, of Law no. 14/003 of February 2014 of the Congolese Environmental Community Paralegal Guide (FPP, 2017:27), relating to the conservation of nature, prohibits certain practices regarding protected species as outlined below:

- To collect, hunt, fish, capture, harass or deliberately kill specimens of protected species;
- To intentionally disturb these species, especially during the period of reproduction, dependency, hibernation or migration;
- To destroy, damage, remove, pick up the eggs of these species or modify the position;

- To damage or destroy the sites of breeding, resting areas or any natural habitat, where these species live at different stages of their life cycle;
- To hold, transport, exchange, sell or buy, offer or transfer free of charge, the specimens or any part thereof taken from the wild;
- To hold, assign, sell, buy or transport any product whose packaging or advertising ad contains specimens belonging to one of the protected species;
- To exhibit these specimens in public places.

Participant A1, for example, explicitly acknowledged the existence of the regulations and his lack of documentation:

*I do acknowledge the existence of regulations and I know that I operate without having any document authorizing me to commercialize my products. I just do this to earn money to take care of my family.*

This aligns with the explanation given by participant A3 who stated:

*I know that regulations exist, that is why I don't like displaying my products at a given place to avoid that the state agent may come to collect tax. I have opted to be walking around at targeted places to sell my products.*

It appears that some participants have willingly decided to become street hawkers of their products to avoid being taxed by the provincial agents or to purchase official documents that allow them to sell their products. The Kinois people know that the provincial agents are easily corrupted because they are not well paid, often going for months without receiving any wages. This shows that the authorities of the CPK do not take good care of their agents. As a consequence, this has led to a deterioration of public services.

Furthermore, the CPK does have regulations governing the environmental and forestry sectors. For instance, the MESD (2016:51), states that it:

Is responsible for the preparation and implementation of policies relating to the environment and nature conservation. It is directly responsible for the fight against all forms of pollution, prevention of desertification and the protection and regeneration of soils, forests, and woodlands, and the sustainable utilization of forest resources. It is also responsible for the protection of fauna and flora and the natural environment.

As was pointed out in the literature review, important results have been obtained in terms of environmental management and policy over the past years in the DRC. Scientists, states, and governments, through multilateral institutions, have been playing a major role in organizing efforts to address the environmental crisis (such as deforestation) through the MESD. Participants, however, accused the provincial authorities of not taking responsibility for paying the people after they have done their work. For instance, participant B1 said that her father had been working as a provincial agent in the CPK for some years collecting taxes from the traders of different products in the marketplaces. However, he was unable to feed his family or send his five children to school on the money he was earning. One day, when he decided to claim his rights, he was fired from his job. This is a reason why most state agents avoid complaining publicly, fearing that they may lose their jobs. Given the inadequate salary, they live on the bribery money collected from the citizens who are largely poor themselves. This participant blamed the Provincial Government for neglecting and violating their rights, but also for the poor salaries and living conditions of state agents.

Participant A4 clearly expressed that he did not care to obtain the official documents allowing him to sell his products because he just knows how to “talk” with the provincial agents when they meet him. As indicated by Trefon (2016:14), the provincial authorities could gain considerable international recognition by appropriating the need to minimize forest loss and degradation, just as they stand to lose credibility by not doing enough. Doing so needs commitment on their part and good governance on the part of the provincial authorities.

As mentioned in the literature review (Section 2.7), at the international level, the United Nations Conference on the Human Environment, held in Stockholm in 1972, called for nations and individuals to protect and enhance the human habitat for the amelioration of life for all (United Nations, 1972). Likewise, the Kyoto Protocol and policies were a result of such international meetings to address environmental issues and preserve and enhance the environment for the well-being of the people (United Nations, 1998). Trefon (2016:13), however, stated that although there are strategic frameworks, the DRC does not possess an official forestry policy. The government authorities rely more on international organizations and partnerships to achieve their aim of protecting their people and their natural environment.

Given the above findings, it is evident that while the participants know that there are regulations related to the environmental sector put in place by the provincial authorities, they have decided to overlook them. For example, participant A5 stated:

*Regulations exist, and they concern more the people who buy the products in big quantities because they have the means to do so, knowing that when they go to sell them, they will also earn good money. Unlike myself who just buys a small quantity and goes to sell them just to assure my survival. I feel that the regulations do not concern me at all.*

This response suggests that the participant does not care about the regulations and his personal involvement in buying the products even if in small quantities. His only concern is the money he earns from selling the products and does not consider the damage caused by those who come to sell the products to him and his collaboration in this. It can also be said that some of the participants are not well informed on the importance of the environment. In mitigation, however, and as the participant points out, he needs “to assure his survival” in the absence of other work opportunities.

The researcher is of the view that the poor leadership that characterizes the Provincial Government has unavoidably resulted in social chaos, which has ultimately provoked the destruction of the environment in the CPK by the population. The authorities do not enforce the regulations put in place to control the increased use of ethnomedicine products which, in turn, is having negative effects on their environment. They are also not proactive in that they wait for the issues to aggravate before they react. However, on a more positive note, and as already mentioned, the Provincial Government has been educating the Kinois people on the way they should be protecting their natural environment, by, for example, the planting of trees, cleaning the place where they stay to avoid pollution, and other kinds of actions. This, though, is not enough and the Provincial Government still has a long way to go in educating, on a continual basis, the Congolese people on the protection of their natural environment. Doing so is the Provincial Government’s responsibility given that it is a servant of the people, albeit a special kind of servant, since the people have given it the authority to lead and to perform certain responsibilities on their behalf (Shutte, 2001:181).

Regarding the composition and administration of their products, participants revealed that they mixed different kinds of products such as tree leaves, roots, plants and animal bones with water.

Others grind them into powder or sell them raw to their clients. They often do these mixtures by orders of the client, or according to the way they feel. However, this manner of mixing their products is not good for people's health. Most, if not all, are not trained about the health requirements and, furthermore, do not have the necessary tools to prepare their products. There are no laboratories and there is no information on the expiry dates, dosages and storage of the ethnomedicine products. Participant B5 was asked a follow-up question regarding the way of washing their products before selling them. She stated:

*I usually wash my products with tap water, and in case there is no water from the tap, I go to the springs to wash them, or I just sell them like that.*

It can be said that by not taking proper care of the products, people are highly exposed to health risks.

## **7.5 Ensuring environmental protection in the City Province of Kinshasa**

Research question four concerned the ethical theories of environmental stewardship and consequentialism and how they could inform the sellers of ethnomedicine products of their responsibilities towards the environment.

Some participants contended that the natural environment is God's creation. It is God who controls things such as the weather, temperature and climate. They thus believed that they can make use of ethnomedicine products as much as they want and the forest will regrow by itself. The responses from the participants to question four showed that there is a lack of awareness by the Kinois people concerning the protection of the environment. To believe that it is God who created the natural environment does not mean that people should damage it through their different activities such as cutting down trees and removing roots and plants. As mentioned in the literature review, this view is supported by Dragoş (2013:1448). He opined that everything starts with the lack of basic ethical principles, moral responsibility, environmental education and social responsibility as well as overconsumption on the part of most Congolese people. A consequence is climate change which has had an impact on the CPK (and which has been sufficiently recognized in this study). This is in line with the DRC's MESD (2016:82) which stated that the Congolese population is not sufficiently informed and sensitized on the importance of preserving the natural resources and using them sustainably. The majority of the people, even some officials, are unaware that these resources are being exhausted by the way they are currently being used. This ignorance leads to inefficiency and a waste of natural

resources. Participant B2 blamed the Provincial Government for not controlling and safeguarding the environment. The MESD (2016:81) argues that proper environmental education and information can provide the Kinois people with the ecological and ethical awareness, values and attitudes, skills and behaviours needed to promote sustainable use of natural resources.

It can also be said that given the lamentable socio-economic situation of the country in general, the majority of Congolese citizens prefer to move to the cities where they believe that job opportunities exist. In addition, Giraldes (2018:11) contends that “The countryside, almost everywhere, is becoming a desert and people keep moving by thousands into the cities, or more precisely to the immense metropolitan areas, often ‘robbed’ of what once were fertile fields, forests, and other natural habitats”. As a consequence, there is overpopulation and this, coupled with the high unemployment rate in the CPK, has resulted in the Kinois people; turning to the abusive use of the environment. And, as has been pointed out, the harmful consequences of this abuse are numerous.

In the discussion of consequentialism in the theoretical framework (Section 4.3), Ruegger (2005:3) argued that people focus more on the wider consequences of their actions, rather than on their responsibilities towards their actions. For instance, the Kinois people, by imposing their actions on the environment, only want to attain their objective of selling their products and earning money. They do so without considering the serious consequences that their actions have on the natural environment. This conforms with the view of Rudolph (2011:67) who argued that each action has its consequences. To earn money, the Kinois people proceed to cut down trees and remove plants and roots from the forest and what they are currently experiencing in society is the consequence of their actions. Mario Salomone (2006:81) stated that:

Not only can humans not presume to have dominion over nature that even God would not have acknowledged, but must accept the legitimate autonomy of nature and conserve its integrity. Humankind is not the master of the world but, by virtue of the intelligence that distinguishes humans from other creatures, can only be its wise administrator. And “stewardship” is precisely the term that humans repeatedly use to indicate this relationship with the world.

This implies that there ought to be harmonious and balanced relations between humans and nature. The researcher supports the view of Okyere-Manu et al. (2021:143) when they state

that “Our attitude and actions must be morally appropriate to respect the dignity and sanity of the environment”. Thus, the need to improve the living conditions of the Kinois people should be the main preoccupation of the provincial authorities. To illustrate this, Law number 11/009 of July 2011, Article 4, concerning environmental protection and enacted by President Joseph Kabila Kabange, emphasizes that:

The State guarantees all citizens the right to environmental education. In this context, the State, the Province, and the decentralized territorial entity participate, in the limits of their respective competencies, education, training, and awareness of populations to environmental problems as well as to environmental research. Public and private bodies create within themselves a function relating to the monitoring of the environmental management of their respective business sectors.

The researcher does, however, agree with the stance taken by some of the participants who had committed themselves to plant seeds and seedlings to replace the ones they had used and thereby protect and sustain the environment for future use. As noted in Chapter two (Section 2.3), Tangwa (2004:389), encourages the view of “live and let live”. This implies that respect for the natural environment should be part of human life and contribute to peaceful harmony. And, as reported under the theoretical framework (Section 4.2.1), these participants are being good stewards of nature. By replanting, they acknowledge their moral obligations of being responsible to society and to the environment which they inhabit thus assuring that the needs of both the present and future generations will be met. This confirms what Murove (2005:211) proposed: “Our interests should be linked to the interests of others so that we contribute positively towards those who will exist in the future”. From the findings, one can say that the Kinois people have a great moral responsibility, both at the individual and community level, to preserve their environment.

## **7.6 Conclusion**

This chapter discussed the findings that were presented in the previous chapter. The participants’ points of view were compared with the literature review and scrutinized through the lenses of the stewardship and consequentialism theories. The researcher presented the discussion under five themes that addressed the research questions of the study. It is evident that the majority of Congolese, including the Kinois people use ethnomedicine products to treat themselves and poverty and unemployment are two of the main factors for this. The products thus play an indispensable role in Congolese society, not only due to their apparent efficacy in treating illness and other conditions but also because their commercialization has provided

employment opportunities for the Kinois people enabling them to keep poverty at bay and provide for themselves and their families. However, it is also clear from the views of the participants (and the literature) that the commercialization of ethnomedicine products has had and continues to have negative effects on the environment. Participants agreed that there are regulations on the use of ethnomedicine products but they are not respected by either the sellers or the provincial authorities. Due to the lack of remuneration of the state agents, they engage in corruption turning a blind eye to the abuse of these products. Finally, it was evident to the researcher that, with a few exceptions, there was a lack of consciousness regarding environmental protection on the part of the study participants. Hence, there is a need for environmental education linking in with two theories that provided the lenses for the study and this is elaborated on in the final chapter.

Chapter eight, the final chapter, follows. A summary of the study, conclusions and recommendations are provided. Possible further areas for research will be indicated as well.



## **CHAPTER EIGHT**

### **SUMMARY OF THE RESEARCH, MAIN FINDINGS AND RECOMMENDATIONS**

#### **8.0 Introduction**

The previous chapter comprised a discussion of the findings as presented in Chapter six. The discussion was organized under five themes and the research questions guiding the study were responded to. The discussion took into consideration the relevant literature and the theoretical framework of the study.

Chapter eight, the final chapter, provides a summary of the study. This is followed by a summary of the main findings and the recommendations of the study. A further delimitation and challenges of the research, and some suggestions for further research are then provided. The chapter ends with a conclusion.

The principal objective of this research was to undertake an ethical exploration of the increased commercialization of ethnomedicine products and its effects on the environment in the City Province of Kinshasa. The qualitative method was utilized to achieve this objective and the following sub-questions were posed:

1. What accounts for the increased commercialization of ethnomedicine products in the City Province of Kinshasa?
2. How does the increased commercialization of these products affect the environment in the City Province of Kinshasa?
3. What regulatory measures have been put in place as checks and balances to control the over-commercialization of these products?
4. How can the ethical theories of environmental stewardship and consequentialism inform sellers of these products of their responsibilities towards the environment?

As indicated above, the following section briefly summarises the study.

## **8.1 Summary of the study**

Chapter one introduced the research. It pointed out that since time immemorial African people, in general, have been using ethnomedicine products such as plants, roots, animal skins and bones to treat the illnesses they experience in their particular communities. A majority of Kinois people prefer ethnomedicine products to modern western medicine to cure their illnesses and other conditions. Ethnomedicine is considered the proper mode of treatment for people (Rukangira, 2001:180) and the knowledge associated with it has been handed down from one generation to another. The study was motivated by the challenges of the destruction of the forest, bushes and species as well as the environmental pollution in the CPK. The research problem and the aim of the study were stated and the research questions and objectives to achieve the aim were given. The research methodology adopted and the theoretical framework utilized were previewed. The significance of the study and its delimitations were described. The chapter ended with an outline of the structure of the study and a conclusion as did all subsequent chapters.

Chapter two reviewed relevant critical works on ethnomedicine and the environment which formed the basis for the research. The chapter was organized thematically. In the first section, the varying definitions and explanations of ethnomedicine as conceived by scholars from several academic fields were put forward. This was followed by the nature of the use of ethnomedicine; the environmental crisis in Africa; the causes of the environmental crisis; the effects of the environmental crisis on both humans and non-humans and the efforts made to address the crisis. The researcher noted that although work had been previously done by scholars and scientists on ethnomedicine and the environmental crisis in general there was a study gap in terms of the commercialization of ethnomedicine and its effects on the environment, particularly in the CPK. This was the unexplored gap that provoked the researcher's interest and resulted in this study.

Chapter three explored the commercialization of ethnomedicine products in the CPK, in the DRC. The chapter noted that many Kinois people have been involved in commercializing ethnomedicine products for their and their families' survival. This chapter also provided a brief history of the CPK, its geographic location, the hydrography, the ethnography, the role and

importance of ethnomedicine in the lives of the Kinois people, and the concept of commercialization.

Chapter four defined and discussed the theoretical framework that accompanied the study, namely, the ethical stewardship and ethical consequentialism theories. Both theories were elucidated and the justifications for and against them concerning the study were offered. These theories were indispensable tools in assisting to explore the issues involved and suggesting solutions for the research problem.

Chapter five consisted of the research methodology adopted. Aspects covered were the research design (a case study); the sampling method (purposive sampling) and sample (12 selected participants); the data collection tool (one-on-one interview); the interview process; the sources of data (primary and secondary); the data analysis (thematic); and the concepts of validity, reliability and rigour. The chapter ended with the ethical considerations adhered to which included not mentioning the participants by name.

Chapter six presented the findings that emerged from the interviews with the study participants. The findings were reported under the themes: The ethnomedicine products; the reasons for engaging in the commercialization of ethnomedicine products; the sources of ethnomedicine products; the effect of commercialization of ethnomedicine products on the environment; the regulations managing the commercialization of ethnomedicine products; the composition and administration of ethnomedicine products; and the sustainability of ethnomedicine products. The chapter ended with the researcher's fieldwork experiences.

Chapter seven discussed the findings that were presented in the previous chapter. The discussion was organized, as done in Chapter six, under the identified themes. The research findings were discussed in relation to the literature review and the two theories that supported the study. In the discussion, it was pointed out that the Kinois people have an important moral responsibility to preserve their environment.

Chapter eight, the current chapter, and as pointed out in the Introduction, provides a summary by chapter of the study, a summary of the main findings and the recommendations emerging from the study. The chapter ends with the limitations of the research, suggestions for further research and a conclusion

## **8.2 Summary of the main findings**

The research paradigm embraced for the investigation was a qualitative one and explained in Chapter five (see Section 5.1). The design considered appropriate was the case study. It helped the researcher to explore the increased commercialization of ethnomedicine products and its effects on the environment in the CPK through data collected from 12 sellers of ethnomedicine products (see 5.2.1) via one-on-one interviews. Purposive sampling (non-probability sampling) was utilized to identify the 12 what could be described as “data-rich” participants. The participants freely shared their experiences and perspectives relating to the commercialization of ethnomedicine products.

On research question one, findings showed that participants have been involved in the business of ethnomedicine products for many years, using different sorts of plants, roots, barks and animal parts for their products. Findings also revealed that all the participants had recourse to and used the forest to get their ethnomedicine products. The disastrous economic situation that exists in the DRC and the need to ensure their survival forced the Kinois people to abusively exploit the natural environment.

On research question two, it was shown that the increased commercialization of ethnomedicine products has provoked real threats to the environment. Responses from participants indicated that they acknowledge the abusive exploitation of the environment. This has negative effects on both humans and non-humans.

On research question three, participants acknowledged the existence of regulations that govern the commercialization of ethnomedicine products. However, responses from the participants revealed that some of them are unable to get officially registered because they lacked the necessary finances to do so while others simply ignored doing so and resorted, if necessary, to bribing the state agents.

On research question four, findings indicated that some participants were conscious of the need to protect the environment through re-forestation to assure its sustainability for both the present and future generations. However, others considered the forest as God’s gift to the earth and, as such, cannot be obliterated despite its abusive exploitation. Thus, the findings revealed that an amalgamated conceptual framework comprising the environmental stewardship and consequentialism theories would provide an indispensable base in terms of strategies

emphasizing to the sellers of ethnomedicine products the utility of the environment, the consequences of not maintaining that utility, and the need for them to act morally when using nature.

Hence, there is a need for environmental education linking in with two theories that provided lenses for the study – the need for the ethnomedicine sellers to understand their roles as stewards of the environment and the consequences of their current actions on the environment. This will assist in assuring the sustainability of the natural environment for the Congolese population.

### **8.3 Further research delimitation and challenges**

This study does not pretend to have covered everything concerning the selling of ethnomedicine products and their effects on the environment in the area of study. The DRC, for example, has a diversity of cultures, traditional practices, and climatic conditions that differ from one province to another. This research was delimited to the CPK and its findings, given the diversity noted above, are not necessarily applicable to other provinces in the country.

Exploratory research such as this study could not be done without certain challenges that occurred. Due to the COVID-19 pandemic and other daily happenings, it was not always possible to contact participants at the scheduled times. Sometimes, it was difficult to properly capture some of the expressions used by the participants, particularly when expressing the names of their products which they only knew in their mother tongue. Lingala, being a national language and French an official language of the country, some words would escape them. However, the open-ended approach allowed the researcher to ask the participants some extra questions to clarify what was being said and help in ensuring understanding. The researcher is of the view that this study, being exploratory and introductory will, together with other research in the area under focus, help provide a basis for future research (see Suggestions for further research below).

### **8.4 Recommendations**

In this section, the researcher provides some recommendations based on the findings of the study, the theories used and the literature reviewed. The increased exploitation of the earth generally and in the area of study more specifically, has become a current phenomenon. To stop this phenomenon is difficult. However, the findings of this research confirm that the

Kinois people in general and the sellers of ethnomedicine products in particular, need to cultivate self-awareness and moral responsibility to achieve their effective development desires.

Regarding the increased use of the environment, the researcher recommends that environmental education and consciousness within Congolese society need to be urgently addressed. This can be done through various means of communication and platforms. The change of mentality that this, ideally, results in would produce a good relationship between human beings and the environment for the common good and for guaranteeing life for future generations. However, to achieve this will need a deep cultural, social, spiritual, and religious change (Boff, 1997:9). The Congolese government and non-governmental institutions should encourage and promote all public opinion makers engaged in raising the consciousness of the citizens of the DRC, including the Kinois people and the sellers of ethnomedicine products, to become stewards of their natural environment.

The researcher suggests that environmental education should have a priority in the education system of the DRC, in both schools and the universities. This will assist the Congolese citizens to love their country, know their history and protect their environment. One cannot hope for harmonious development, by neglecting the environment. The people should also be trained on how they are supposed to conserve nature by, for example, planting trees and plants.

Concerning the challenges faced by the Congolese citizens in getting involved in the commercialization of ethnomedicine products, the researcher recommends the Congolese authorities call for investment to create new job opportunities. This will help alleviate the poverty and the socio-economic issues that affect the entire stratum of Congolese society. Doing this will also help people not to destroy their natural environment because, being employed and being able to take care of themselves and their families, there will be no need to do so. The views of Boff (1997: 8) are appropriate here:

The will to dominate everything is bringing us under domination and holding us in subjection to the imperatives of degraded Earth. The utopia of improving the human condition has worsened the quality of life. The dream of unlimited growth has brought about the underdevelopment of two-thirds of humankind, and our delight in optimally using the Earth's resources has led to the exhaustion of vital systems and the breakdown of environmental balance.

Environmental protection has become a matter of urgency and a new social ethic needs to be restored, not only for those whose lives are directly dependent on nature and the environment (such as the sellers of ethnomedicine products) but for all sectors of society.

On the problems concerning governmental regulations that were acknowledged by all the participants in the study, it is recommended that the Congolese government should implement and enforce what is contained in the regulations ensuring that the regulations are followed and respected by all public institutions. Findings revealed that a majority of state agents fail to enforce the regulations but rather engage in corruption since they are not well remunerated. This serious ethical crisis and lack of moral responsibility as manifested in the actions of the Congolese government and leaders have ensured that the country has remained underdeveloped. Hence, the researcher firmly recommends that the Congolese authorities should lead by example by respecting the regulations that they themselves have put in place and take good care of their employees by paying them well. By their paying urgent attention to the population's grievances will probably assist in changing the mentality of the Congolese people, including their attitudes to the environment.

## **8.5 Suggestions for further research**

Future research could include the following:

1. Creating a deeper understanding of the natural products that are used for ethnomedicines. This should include accurate identification and the medical benefits for the population.
2. How the use of ethnomedicine products can be controlled for the betterment of the Congolese population. Such a study could help the Congolese government improve the environmental awareness of the population through education and taking moral responsibility.
3. Finally, a census of ethnomedicine practitioners could be conducted in the CPK (and other provinces), not only for those who are trained and who have opened official shops but also for those who sell their ethnomedicine products in the open markets – the street hawkers. This census will enable the Provincial Government to know the exact number of people involved in the commercialization of ethnomedicine products and so be able to accommodate them and promote their activities. This, ultimately, should have a positive impact on the environment.

## **8.6 Conclusion**

The research depended on a fairly extensive literature review and data collection from the field, supported by two theories for analysis and presentation. The research noted that in order to earn money for their and their families' survival, many Congolese rely on self-employment, which for many is the selling of ethnomedicine products. Ultimately, it is important to mention that the principal key research question that drove this study was: What are the ethical effects of the increased commercialization of ethnomedicine products on the environment in the CPK? The answer to this query was pursued through a sizeable amount of literature and empirical research. Both the theory of environmental stewardship and the theory of consequentialism reinforced the research and could be used to conscientize the sellers of ethnomedicine products about taking good responsibility for their environment.



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## List of Appendices

### Appendix 1: Ethical Clearance



24 December 2021

Rev Mzingu Simon Mbala (220105865)  
School Of Rel Phil & Classics  
Pietermaritzburg Campus

Dear Rev Mbala,

Protocol reference number: HSSREC/00003613/2021

Project title: An Ethical Exploration of the effects of the Increased Commercialization of Ethnomedicine products on the Environment: the case of the City Province of Kinshasa-Democratic Republic of Congo

Degree: Masters

#### Approval Notification – Expedited Application

This letter serves to notify you that your application received on 26 October 2021 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

This approval is valid until 24 December 2022.

To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

HSSREC is registered with the South African National Research Ethics Council (REC-040414-040).

Yours sincerely,



Professor Dipane Hlalele (Chair)

/dd

#### Humanities and Social Sciences Research Ethics Committee

Postal Address: Private Bag X54001, Durban, 4000, South Africa

Telephone: +27 (0)31 260 8350/4552/3587 Email: [hssrec@ukzn.ac.za](mailto:hssrec@ukzn.ac.za) Website: <http://research.ukzn.ac.za/research-Ethics>

## Appendix 2: Informed Consent Letter and Form (English Version)

### Informed Consent Letter



Dear Sir/Madam

My name is Mizingu Simon Mbala. I am a Master's candidate in Ethics Studies at the University of KwaZulu-Natal in South Africa. I am currently carrying out research, which focuses on **the ethical exploration of the effects of the increased commercialization of ethnomedicine on the environment: the case of the City Province of Kinshasa, Democratic Republic of Congo.**

I am interested in interviewing you so as to share your experiences in relation to the study. This project is being conducted under the supervision of Dr Beatrice Okyere-Manu (UKZN).

I am hereby seeking your consent for your participation in an interview session on the research interview guide to be forwarded to you as soon as approval is obtained in respect thereof. My interviews will be conducted online through zoom and WhatsApp platforms, and I have attached the interview guide for your reflections.

I look forward to hearing from you in respect of this request as soon as possible.

If you would like any further information or have any questions, please do not hesitate to contact me on my number/email below:

Cell phone number: +27730182242

Email Address: mizismbl@gmail.com

You can also confirm my credentials with my supervisor as well as my college research office. The details are as follows:

Supervisor:

Prof. Beatrice Okyere-Manu

Telephone Number: +27 (033)2605582

Email: [okyere-manu@ukzn.ac.za](mailto:okyere-manu@ukzn.ac.za).

HSSREC Research Office:

Telephone Number: 031 269 4557/3587/8350

Email: [hsrrec@ukzn.ac.za](mailto:hsrrec@ukzn.ac.za)

Thank you very much.



Mizingu Simon Mbala

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UNIVERSITY OF  
KWAZULU-NATAL  
INYUVESI  
YAKWAZULU-NATALI

## Informed Consent Form

Title: An Ethical Exploration of the effects of the Increased Commercialization of Ethnomedicine products on the Environment: the case of the City Province of Kinshasa, Democratic Republic of Congo.

Name of Researcher: Mizingu Simon Mbala

Email: mizismbl@gmail.com

### **For the participant:**

- I agree to participate in the above research that the researcher has informed me about. The researcher has explained the research and I understand what I will be partaking in.
- I am partaking because I have freely decided to partake.
- I am aware that the researcher will interview me and record the interview/make notes as I talk.
- I agree that the researchers informed me about this research before the interview schedule I have with him
- I have been informed by the researcher that my identity will remain anonymous
- I understand that the information I will give the researcher is strictly for research purposes and will be used in a moral way
- I understand that if I feel uncomfortable to continue with the interview I can stop at any time and the information gathered at the time of my withdrawal will not be used.
- I understand that there will be no monetary implications in agreeing to be interviewed
- I understand that I can call/email the researcher at any time after the interview
- I understand that I can keep this consent form
- I understand the above information and agree to participate in this research

Signature of interviewee.....Date.....

### **For the researcher:**

I have explained the content of this consent form to the interviewee and ensured that the interviewee understands the content of this form.

Signature of interviewer.....Date.....

### Appendix 3: Informed Consent Letter and Form (French Version)

#### Informed Consent Letter



### Appendix 4: Informed Consent Letter and Form (Lingala Version)

#### Informed Consent Letter



Ndeko Mwasi / Mobali,

Nkombo na ngai Mizingu Simon Mbala. Nazali moyekoli ya Études Éthiques o inivelesité (université) ya KwaZulu-Natal o Africa ya ngele (Afrique du Sud). Nazali kosala bolukiluki na ntina ya boteki mingi nkisi ya bokoko (ethnomédecine) o etúká ya Kisasa (Kinshasa), na ekolo Congo Démocratique. Nasepeli kotuna bino mwa mituna mpo na zwa makanisi ma bino na maye matali boluki boye. Mwango mwa mosala moye nde mokambemi na Dr Beatrice Okyere-Manu (UKZN).

Naponi kosangisa makanisi ma yo po na kotuna yo mwa mituna na ntina ya mwango mwa mosala moye molobami liboso. Masolo ma ngai na yo makosalema na nzela ya masolo ya zoom to WhatsApp, mpe na sangisi mituna miye mikokamba masolo ma biso mpe makosunga makanisi mayo. Na ko sepela mingi koyoka nsango ya yo.

Soki bozali na mituna to mpe bolingi koyeba mwa makambo misusu, kozela te, benga ngai na nimelo to na email o nse.

Nimelo ya telephone: +27730182242  
Adresse e-mail: mizismbl@gmail.com

Bokoki mpe koyeba makambo matali boyebi bya ngai mpo ya titele eye na botunaka molandeli wa ngai mpe bilo ya boluki.

Mpo ya koyeba manso botuna:

Molandeli:  
Prof. Beatrice Okyere-Manu  
Numelo ya Singa: +27 (033)2605582  
Adresse e-mail: [okyere-manu@ukzn.ac.za](mailto:okyere-manu@ukzn.ac.za).

HSSREC Bilo ya Boluki:  
Numelo ya Singa: 031 269 4557/3587/8350  
Adresse e-mail: [hsrrec@ukzn.ac.za](mailto:hsrrec@ukzn.ac.za)

Matondi mingi.

  
Mizingu Simon Mbala



**School of Religion, Philosophy and Classics**

**Postal Address:** Private Bag X01, Scottsville 3209, South Africa

**Telephone:** +27 (0) 33 260 5540 **Facsimile:** +27 (0) 33 260 5858 **Email:** [Mchunua@ukzn.ac.za](mailto:Mchunua@ukzn.ac.za) **Website:** [www.ukzn.ac.za](http://www.ukzn.ac.za)



Founding Campuses: ■ Edgewood ■ Howard College ■ Medical School ■ Pietermaritzburg ■ Westville

## Informed Consent Form



UNIVERSITY OF  
KWAZULU-NATAL  
INYUVESI  
YAKWAZULU-NATALI

## Mokanda ya Bondimi Koyanola

Titele: L'exploration éthique des effets de la Commercialisation accrue des produits d'ethnomédecine sur l'environnement: le cas de la Ville Province de Kinshasa, République Démocratique du Congo.

Kombo ya moluki: Mizingu Simon Mbala

Email: [mizismbl@gmail.com](mailto:mizismbl@gmail.com)

### Mpo ya mondimami:

- Na ndimi koyanola na mituna maye moluki azali kotuna ngai. Moluki alimboleli ngai bolukiluki mpe na ndimi maye na sengeli koyanalo.
- Nazali koyanola na mituna zambi na ndimi na motema mwa ngai mobimba.
- Nayebi ete moluki akotuna ngai mituna mpe akobomba biyano na ngai o telephone, mpe na ngonga wana akoza koma maye manso na zali koloba.
- Na ndimi ete moluki alimbolelaki ngai ntina ya bolukiluki boye mpe ndenge ya kosala yambo ya masolo na ngai na ye.
- Moluki ayebisaki ngai ete nkombo na ngai ekoyebana te.
- Na yebe ete biyano biye ngai na kopesa na moluki bikoza kaka na ntina ya maye asengeli na mango mpo ya bolukiluki bwa ye.
- Na ndimi ete soki na sepeli lisusu te kokoba na masolo na biso, na koki kotika na ngonga inso mpe maye na lobaki na ngonga na tikaki, moluki akosalela mango lisusu te.
- Na ndimisami ete ekozala na lifuti lyoko te na baye bakondima koyanola na mituna.
- Na ndimi ete na koki kobenga o nzela ya singa to mpe kotinda Mokanda epai ya moluki nsima ya masolo na ye na ngai.
- Na ndimi ete na koki kobomba mokanda moye ya bondimi koyanola.

Na ndimi maye manso mayebisami na bolukiluki boye mpe na ndimi ete na kosalela miango.

Sinyatili ya motunami.....Date.....

### Mpo ya Motuni:

Na limboli maye makomami okati ya mokanda ya bondimi koyanola epai ya motunami mpe na ko likya ete motunami ayebi ntina ya maye makomami o mokanda moye.

Sinyatili ya motuni.....Date.....

### Appendix 5: Interview Guide (English Version)



UNIVERSITY OF  
KWAZULU-NATAL  
INYUVESI  
YAKWAZULU-NATALI

- How long have you been in the business of selling ethnomedicine products?
- Where do you get these products from?
- What is the effect of this business on the environment?
- Are there regulations governing the sale of these products?
- What constitutes the products?
- How are you ensuring the sustainability of these products?

## Appendix 6: Interview Guide (French Version)



### Guide d'entretien

- Depuis combien de temps es-tu dans le commerce d'ethnomédecine?
- D'où procures-tu ces produits?
- Quel est l'effet de ce commerce sur l'environnement?
- Existe-t-il des réglementations régissant la vente de ces produits?
- Que contient ces produits?
- Comment assures-tu la durabilité de l'environnement après avoir obtenu des produits d'ethnomédecine?

## **Appendix 7: Interview Guide (Lingala Version)**



### **Kotuna Mituna**

- Osali mibu boni na mosala moye ya boteki nkinsi ya bokoko?
- Ozwaka nkisi yango wapi?
- Mabe nini mosala moye mozali komema na mokili?
- Ezali na mibeko miye mizali kokamba boteki ya nkisi yango?
- Nkisi eye esalemi na nini?
- Ndenge nini ozali kobatela mokili nsima ya kozwa nkisi yango?

## Appendix 8: Proof of Editing Letter

### Athol Leach (Proofreading and Editing)



31 Park Rd  
Fisherhaven  
Hermanus 7200  
Email: atholleach@gmail.com Cell: 0846667799

1 June 2022

To Whom It May Concern

This letter serves to confirm that I have edited the following Master of Arts (MA) in Ethics Dissertation by MBALA MIZINGU SIMON, STUDENT NUMBER: 220105865:

AN ETHICAL EXPLORATION OF THE EFFECTS OF THE INCREASED COMMERCIALIZATION OF ETHNOMEDICINE PRODUCTS ON THE ENVIRONMENT: THE CASE OF THE CITY PROVINCE OF KINSHASA, DEMOCRATIC REPUBLIC OF CONGO

The dissertation was edited in terms of grammar, spelling, punctuation and overall style. In doing so use was made of MS Word's "Track changes" facility thus providing the student with the opportunity to reject or accept the changes made on a chapter-by-chapter basis.

Please note that while I have, as far as possible, checked both the in-text references and those appearing in the list of references for consistency in terms of format, I have not checked the veracity of the sources themselves.

Both the tracked and final documents are on file.

Sincerely



Athol Leach  
(MIS, Natal)