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RESPONDING TO CHALLENGES IN TOURISM IN THE ERA OF CLIMATE CHANGE IN ZAMBIA

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ABSTRACT

Tourism is a vital driver of the global economy, Zambia inclusive. According to the World Travel and Tourism Council (WTTC), the direct contribution of travel and tourism to world GDP in 2012 was US\$ 2.1 trillion. However, the tourism sector is highly vulnerable to climate change. This is because tourism depends on environmental resources while climate defines the length and quality of tourism seasons. At the same time, tourism contributes to the emission of greenhouse gases (GHG), the cause of global warming. Many types of tourism in Zambia are weather dependent and by extension, climate dependent. It is, therefore, very likely that climate change may affect tourism sector in Zambia. Climate change can reduce, increase and prolong heat waves or change the patterns of annual rainfall received in Zambia. Using literature review, this paper presents direct impacts and indirect impacts of climate change to the tourism sector and also proposes response strategies to climate change mitigation and adaptation in the Zambian context. Responses such as mainstreaming ESD, teacher education, research engagement, community-based approach, sustainability education among others are proposed.

KEYWORDS: Tourism, Climate change, Disasters

1. INTRODUCTION

Tourism as an industry is increasing in both volume and economic importance. The industry has the potential of boosting the economy of Zambia, thereby reducing over reliance on the mining industry. Several places, that only a few years ago were inaccessible, are now becoming very popular holiday destinations. However, the ecosystems of many of these resorts (Luangwa National Park, for example) are particularly vulnerable to climate change disasters.

The Inter-governmental Panel on Climate Change (IPCC) (2001) observed that global and regional temperatures are rising. Climate models also suggest a future warming of 0.2 - 0.3°C per decade and this is likely to impact negatively on the tourism sector in Zambia. Climate change increases disaster risk by increasing weather and climate hazards, and by increasing the vulnerability of communities and economic activities to natural hazards, particularly through ecosystem degradation, reductions in

water and food availability. All these can threaten the prospects of tourism in Zambia. The impacts of climate change disasters on tourism are likely to manifest themselves in a number of different ways according to local conditions. Many of these impacts will develop indirectly through increased stresses placed on environmental systems.

For some countries, (Kenya, for example) tourism could be one of the greatest sources of income. Tourist activities are inextricably linked to climate and are therefore sensitive to climate change, which will affect the relative attractiveness of destinations and hence the motive for international tourists to leave their country of origin.

Compelling pieces of evidence indicate that global climate has now changed compared to the pre-industrial era and is anticipated to continue to change over the 21st century and beyond. The (IPCC, 2007) declared that ‘warming of the climate system is unequivocal.’ The global mean temperature has increased approximately 0.76°C between 1850–1899 and 2001–2005 and the IPCC (2007) concluded that most of the observed increase in global average temperatures since the mid-20th century has been ‘*very likely*’ (> 90% probability) the result of human activities that are increasing Green House Gas (GHGs) concentrations in the atmosphere. Even if atmospheric concentrations of GHGs were stabilized at current levels, the Earth would continue to warm as a result of past GHG emissions and the thermal inertia of the water bodies. Future changes in temperatures and other important features of climate will manifest themselves differently across the regions of Zambia. The Stern Review (2006) on the Economics of Climate Change found that the costs of taking action to reduce GHG emissions now, are much smaller than the costs of economic and social disruption from unmitigated climate change. Our lifestyles, economies, health and social wellbeing are all affected by climate change, and although the consequences of climate change will vary on a regional basis, all nations and economic sectors will have to contend with the challenges of climate change through adaptation and mitigation. Tourism is no exception and in the decades ahead, climate change will become an increasingly pivotal issue affecting tourism development and management, particularly in Zambia (United Nations World Tourism Organization, 2003). Against this background, this paper explains responses to disasters in tourism in the era of climate change. The presentation will equally show how climate change disasters affect tourism in Zambia. Response strategies will then be explained therein.

2. LITERATURE REVIEW

2.1 How climate change affects tourism in Zambia

The tourism industry and destinations in Zambia are clearly sensitive to climate variability and change. Climate defines the length and quality of tourism seasons and plays a major role in destination choice and tourist spending. In many destinations, tourism is closely linked with the natural environment.

Natural resources including wildlife and forests are threatened by major climatic hazards such as extended droughts, which lead to land degradation and loss of soil fertility, as well as forest fires caused by human activities (Ministry of Tourism, Environment and Natural Resources, 2007). The 1992

drought in Zambia resulted in the death of many hippopotamuses in South Luangwa National Park and the migration of most animals from the park. In 2005, the drier conditions induced changes in condition of elephants. Elephants were skinner not robust as they normally are and foraged closer to the river reflection of quality of range (MTENR, 2007). MTENR (2007) also noted that Luangwa valley experienced extreme high-water levels in February, 2007, which affected all the tourism operators in the south Luangwa. The park was inaccessible and camps and lodges were closed for a while. In Zambia, climate change (resulting in high temperatures and drought) seems to be jeopardizing regeneration of Miombo forests, which normally regenerate easily and fast to enhance bio-sequestration and subsequent reduction in carbon accumulation.

MTENR (2007) noted that extreme weather is affecting wildlife and flora alike. Lack of rain in Zambia's South Luangwa region, for example, means that animals had to scavenge for roots to make up for poor pastures. Vegetation has also been affected, with landscapes translating into scores of petrified trees in dried out areas.

Dry spells affect the occurrence of traditional ceremonies that depend on certain weather patterns, for example, the Kuomboka Ceremony of the Lozi people of western Zambia that highly depends on availability of flood water as a garment (Namafe, 2006). UNDP (2010) points out that if extreme weather changes continue, in about 50 years, all that will remain of the Victoria Falls, known as the "7th wonder of the world", could turn into an empty ravine. Since Zambia's tourism industry rests on the country's natural resources, this would have devastating economic effects.

2.2 Impacts and Adaptation at Tourism Destinations

Scott (2002) noted that the tourism industry (destinations, inclusive) is clearly sensitive to climate variability and change the world over. Climate defines the length and quality of tourism seasons and plays a major role in destination choice and tourist spending. In many destinations, in Zambia, tourism is closely linked with the natural environment. Climate variability affects a wide range of the environmental resources in Zambia that are critical attractions for tourism, such as wildlife productivity and biodiversity, water levels and quality. Climate also has an important influence on environmental conditions that can deter tourists, including infectious disease, wildfires, insect or waterborne pests. In Zambia, climate change impacts affect tourism destinations, their competitiveness and sustainability both directly and indirectly.

2.3 Direct climatic impacts

Climate is a principal resource for tourism, as it co-determines the suitability of locations for a wide range of tourist activities, is a principal driver of global seasonality in tourism demand, and has an important influence on operating costs, such as heating, cooling, irrigation, food and water supply and insurance costs. Uncertainties related to tourist climate preference and destination loyalty require attention if the implications for the geographic and seasonal redistribution of visitor flows are to be projected in Zambia. High temperatures in the national parks have direct influence on the growth of

vegetation. It affects the development of good pastures and distorts general plant growth thereby destroying home for wild animals. This also may lead to high mortality of wild animals and change of migratory routes in search of water and good pastures. This leads to reduction in accessibility of certain national parks in Zambia if not taken care of. The IPCC (2006; Mubita, 2018) concluded that changes in a number of weather extremes are probable as a result of projected climate change, including: higher maximum temperature and more hot days over nearly all land areas (very likely), more intense precipitation events over many land areas (very likely), and longer and more severe droughts in many areas (likely). Such changes will affect the tourism industry through increased infrastructure damage, additional emergency preparedness requirements, higher operating expenses (for example, insurance, backup water and power systems, and evacuations), and business interruptions.

2.4 Indirect environmental change impacts

Environmental conditions are such a critical resource for tourism in Zambia, a wide range of climate induced environmental changes will have profound effects on tourism at the destination. Changes in water availability, biodiversity loss, reduced landscape aesthetic, altered agricultural production, increased natural hazards, erosion and inundation, damage to infrastructure and the increasing incidence of vector borne diseases will all impact tourism to varying degrees. In contrast to the varied impacts of a changed climate on tourism, the indirect effects of climate induced environmental change are likely to be largely negative (Stern, 2007).

2.5 Destination Vulnerability Hotspots in Zambia

The integrated effects of climate change will have far reaching consequences for tourism businesses and destinations. Importantly, climate change will generate both negative and positive impacts on the tourism sector and these impacts will vary substantially by market segment and geographic region. The implications of climate change for any tourism business or destination will also partially depend on the impacts on its competitors. A negative impact in one part of the tourism system may constitute an opportunity elsewhere. For instance, western province of Zambia takes advantage of the floods in a traditional ceremony called *Kuomboka*.

2.6 General impacts of climate change on tourism

Climate change can have significant impacts on tourism, affecting both natural attractions and the travel industry as a whole. Here are some of the effects of climate change on tourism:

- (a) *Changes in weather patterns*: Climate change can result in changes in weather patterns, including increased frequency and severity of extreme weather events such as storms, hurricanes, and droughts. These changes can affect the attractiveness of destinations and lead to cancellations and reduced tourism demand. (UNWTO, 2019)
- (b) *Impacts on natural attractions*: Climate change can also have significant impacts on natural attractions such as coral reefs, glaciers, and wildlife. For example, coral reefs are threatened by ocean acidification and warming waters, which can lead to coral bleaching and death. This

can reduce the attractiveness of destinations that rely on coral reefs for diving and snorkeling activities. (Ceballos-Lascurain, 2015)

- (c) *Changes in seasonal patterns*: Climate change can also lead to changes in seasonal patterns, with earlier springs, later autumns, and longer summers. This can affect the timing of peak tourism seasons and lead to shifts in the timing of tourism demand. (Gössling et al., 2012)
- (d) *Risks to infrastructure*: Climate change can also pose risks to tourism infrastructure, such as airports, roads, and hotels. For example, rising sea levels and increased storm surges can threaten coastal infrastructure, while increased frequency and severity of wildfires can threaten tourism infrastructure in forested areas. (UNWTO, 2019)
- (e) *Impacts on the tourism industry*: Climate change can also have wider impacts on the tourism industry as a whole, affecting everything from air travel to hotel operations. For example, increased energy costs associated with climate change mitigation measures can increase the cost of air travel, while increased demand for sustainable tourism can create new business opportunities for eco-friendly hotels and tour operators. (UNWTO, 2019)

3. RESPONSE STRATEGIES

In this context, *adaptation* is defined as adjustments to natural or human systems in response to experienced or future variability and extreme events or their effects, which may be beneficial or adverse. It is therefore considered as a function of the present or future vulnerabilities.

3.1 Localization and contextualization: The concept of localization and contextualization falls on the idea that people learn best when experiences in their learning spaces have meanings and have relevance in their lives. Localization is the adaptation of a product or service to meet the needs of a particular language, culture or desired population's "look-and-feel." According to Mubita (2021) a successfully localized service or product is one that appears to have been developed within the local culture. In this context, localization may help in coming up with local solutions meant to mitigate and adapt to climate change using local indigenous knowledge, culture, language and resources (Mubita, 2021 and Mubita, 2018). In this context, for example, local tourist attractions that are threatened by extinction due to climate change can be preserve using local concepts, approaches and methods proposed by local people. This may help sustain business in the tourism sector.

3.2 Mainstreaming Education for Sustainable Development (ESD)

One of the objectives of the United Nations Decade of Education for Sustainable Development (UNDESD) is to mainstream ESD into all levels of education by taking measures equal to the task. ESD is a vision of education that would empower tourism practitioners to assume responsibility for creating a sustainable future to cope with environmental challenges such as climate change. It aims at educating those involved in tourism with a sustainable kind of thinking and cosmo-planetary consciousness with a holistic world outlook with a culture of sustainability, high socio-cultural needs and deep ethical moral values (Thomas, 2003 and Mubita, 2018). Building capacity for decision making that consider the long-term future of economy, ecology and equity, many would argue, is

essentially an educational enterprise (Milupi, Mweemba, & Mubita, 2023). ESD should be in the context of tourism. All the learning activities in the tourism context should incorporate ESD themes to provide a holistic learning environment. The curriculum in the Zambian schools must be reoriented (at all levels of learning) to incorporate environmental hazards and disasters that may affect tourism and the environment at large. Moreover, local communities should be sensitized in matters of environmental sustainability and climate change. This can be through village campaigns, using local languages so that everyone is involved in the 'fight'. ESD in the tourism sector should be designed to implement various activities in the areas of teacher education, sustainability education and community empowerment.

3.3 Teacher Education: This specifically means the preparation of teachers as well as the sustaining of their knowledge or education bases and pedagogy through capacity building initiatives. Teacher education refers to the procedures, and provision designed to equip teachers with the knowledge, attitudes, behaviors, and skills they require to perform their tasks effectively in the classroom, school, and wider community (Mubita *et.al.* 2021). If teachers are empowered with the necessary climate change and tourism education, they will impart it in learners and the community. This may help in building capacities needed in the mitigation of climate change challenges. Further, resource materials can be developed to be used by teacher educators and students in teaching information on sustainable tourism management (Mubita *et.al.* 2021).

3.4 Research engagement: Research engagement refers to the interaction between researchers and research end-users for the transfer of knowledge, methods, approaches, technologies, methods or resources (Lako and Mubita, 2021). Engagement with research can lead to significant benefits for everyone involved in management of tourism resources in Zambia. Through research, new tourism management strategies are discovered and implemented. These new strategies can help in mitigation and adaptation in relation to climate change challenges faced in the tourism sector. The hospitality industry also may use research to identify a change in trends and market, allowing them to evolve yet stay ahead of their competitors. Gathering data from several years ago can help the tourism industry in Zambia understand change in the market and anticipate future trends related to climate change in this context. Research engagement was also noted by Lako and Mubita (2021) as a way of bring forth new ways of managing systems available in the context of time.

3.5 Climate Change and Sustainability Education: There should be reorientation of thinking in order to empower every one, young and old, to act in all locally relevant ways (Milupi, Mweemba, & Mubita, 2023). Tourists, tourism investors and every citizen must be introduced to sustainability education and climate change education, and must be involved in the planning process. The main goals of climate education include building a sustainable future, inspiring action and practicing influencing skills at the social and personal levels. It is imperative not only to learn to understand climate change in-depth but also to change one's own behaviour and actions. Sustainability Education can encourage people to change their attitudes and behavior; it also helps them to make informed decisions (Mubita

et.al. 2021). In the classroom, young people can be taught the impact of global warming and learn how to adapt to climate change. This will provide answers to climate change challenges faced by the tourism sector in Zambia.

3.6 Community Based Approach to Natural Management (CBANRM): Community-based natural resource management (CBNRM) is a people-centered approach to the integration of conservation of the natural resource base (water, soil, trees and local biodiversity) and development. This area has enormous potential for development in the tourism sector as a means of responding to effects brought by climate variability in Zambia. According to Milupi *et. al.* (2021), beyond conservation, CBNRM empowers local communities, enables them to pursue rural development and poverty reduction, and promotes democracy and good governance in local institutions. The locals must be involved in planning and education to address climate change challenges using readily available local resources (Milupi *et. al.*, 2020; Mubita *et. al.*, 2020). Milupi *et.al.* (2022) also noted that promotion of ESD at community level requires a great deal of focused attention in terms of planning and orientation. Continuing tourism-based education can be under taken by various stakeholders such as outside agencies, Non-Governmental Organizations and the teaching fraternity.

3.7 Use of Information Communication Technologies (ICT): Information and communications technology (ICT) plays a profound role in any business growth. It improves communication, automates business operations, and enhances the transparency of projects managed (Chirwa and Mubita, 2021). In the context of this paper, ICT based applications can help in reducing climate changes impacts on environment that will finally help the tourism sector in using ICT in climate monitoring in Zambia, provide real time observation, reduce cost, decrease power consumption, lively tracking, real time data processing and analysis. Computer models represent the most utilized method of forecasting global climate change. Computer scientists also process data sets used to forecast rising global temperatures that may affect tourism.

The biggest impact ICT players can have on climate change in Zambia's tourism sector is the ability to enable the tourism sector of the economy to reduce the greenhouse gas (GHG) emissions. This is through innovating new technologies that are more energy efficient, and also by providing the connectivity for digital solutions that reduce energy use. Chirwa and Mubita (2021) also noted that use of ICT is vital in all sectors of the economy including education.

3.8 Legislation: There should be a strong policy framework aimed at developing tourism in Zambia in this era of climate change. The rules and laws should aim at developing responsible tourism as a strategy for environmentally sound programmes which enlists the participation of local communities, traditional leadership, the government and other stake holders in conserving natural resources and promoting environmental understanding and education biased towards climate change and tourism. The Tourism Act should take cognizance of the importance of the national government, local governments and communities and the tourism related industries in the proper development and

sustainability of tourism in this era of climate change. The local government units and local communities should play an active role in promoting responsible, low impact and high value conservation tourism, emphasizing the importance of raising the community's climate change awareness. Where the legal frame work is available, there is need to reinforcement.

3.9 Other response needs in Zambia

Climate change is a significant challenge for the tourism industry in Zambia, as the country's natural attractions and wildlife are vulnerable to the impacts of climate change. The following are some ways that Zambia can respond to these challenges in tourism in the era of climate change, with relevant in-text citations and references:

Develop climate-resilient tourism infrastructure: Zambia can invest in climate-resilient tourism infrastructure that is designed to withstand the impacts of climate change. For example, building structures that are elevated and more resistant to flooding, using renewable energy sources, and incorporating green technologies that reduce carbon emissions (UNWTO, 2019).

Diversify tourism offerings: Zambia can also diversify its tourism offerings beyond natural attractions and wildlife, such as cultural and historical sites, to reduce dependence on climate-sensitive tourism activities. This can include promoting community-based tourism initiatives that offer visitors a more immersive and authentic experience of local cultures (Gössling et al., 2012).

Encourage sustainable tourism practices: Zambia can promote sustainable tourism practices that reduce the environmental impacts of tourism activities, such as minimizing waste and conserving water and energy. This can also include promoting eco-friendly tourism activities such as low-impact hiking, bird-watching, and cultural tours (UNWTO, 2019).

Foster public-private partnerships: Zambia can foster public-private partnerships to address the challenges of climate change in the tourism industry. This can include collaborating with the private sector to invest in climate-resilient infrastructure and sustainable tourism practices, as well as working with communities and local authorities to develop effective adaptation and mitigation strategies (Ceballos-Lascurain, 2015).

By adopting these strategies, Zambia can respond to the challenges of climate change in the tourism industry and promote sustainable and resilient tourism practices that benefit both visitors and local communities.

4. The way forward to adaptation and mitigation in tourism

Concern about climate change is increasing worldwide and the IPCC (2001) has made it clear that global climate change is only just beginning. The impacts of climate change on the tourism sector will steadily intensify, particularly under higher emission scenarios. Climate change would redistribute

climate resources for tourism geographically and seasonally and poses a risk to ecosystems around the world. The nature and intensity of climate change impacts will differ for tourism destinations around the world. The most vulnerable regions are in developing countries (Zambia, inclusive), which generally have less adaptive capacity (IPCC, 2007). This will be a particular challenge for tourist destinations and host communities. Climate change impacts on the tourism sector could influence other economic sectors, such as agriculture and local business networks supplying tourism. Conversely, the tourism sector in Zambia must also be cognizant of the implications of climate change adaptation in other economic sectors, which could have significant impacts on tourism.

Becken (2007) noted that as the financial sector incorporates a company's climate change strategy, or lack of one, into its investment criteria, it will influence credit rating and insurance rates. Climate change mitigation requires the transformation of energy and transportation systems country wide, with implications for the cost of travel and tourist mobility. Climate change also has the potential to have an adverse effect on the global economy and poses a security risk in some regions. Consequently, climate change is anticipated to have profound implications that could fundamentally transform aspects of the global tourism sector. The unmistakable conclusion of this report is that the significance of climate change to tourism is not in some distant and remote future.

Climate change is already influencing decision making within the tourism sector, including tourists, forward looking tourism businesses and investors, and international tourism organizations. The next generation of tourism professionals will need to contend with virtually all of the broad range of impacts outlined in this report. Given that climate change is expected to pose an increasing threat to tourism operations in many destinations, World Meteorological Organisation (2001) urges governments and the private sector to increasingly use climate information and to take additional steps towards incorporating climate considerations in tourism policies, development and management plans" (Michel, 2007). Tourism sector in Zambia can and must play a significant role in addressing climate change as part of its broader commitment to sustainable development and the United Nations Millennium Development Goals.

5. CONCLUSION

The tourism industry and destinations are clearly sensitive to climate variability and change. Climate defines the length and quality of tourism seasons and plays a major role in destination choice and tourist spending. In many destinations, tourism is closely linked with the natural environment. Climate affects a wide range of the environmental resources that are critical attractions for tourism, such as wildlife productivity and biodiversity, water levels and quality. Climate also has an important influence on environmental conditions that can deter tourists, including infectious disease, wildfires, insect or waterborne pests. Climate change disasters can be very detrimental to the tourism industry. Concerted efforts must be put in place as response strategies. These include mainstreaming ESD in the tourism context in all learning activities, enactment of policies that will favour the growth of the tourism sector, tourism education.

REFERENCES

- Becken, S and Hay, J. (2007). **Tourism and Climate Change – Risks and Opportunities**. Cleveland: Channel View Publications.
- Ceballos-Lascurain, H. (2015). **Tourism and climate change: impacts and adaptation**. *Climate Research*, 65, 171-173.
- Ceballos-Lascurain, H. (2015). **Tourism and climate change: impacts and adaptation**. *Climate Research*, 65, 171-173.
- Chirwa, C and Mubita, K. (2021) **Preparedness of teachers and learners in the integration of information communication technologies in the teaching and learning of geography in selected schools of Petauke District of Eastern Province in Zambia**. *International Journal of Research and Innovation in Social Science (IJRISS)*, Vol 5, issue 3, Pp 456-464
- Gibson, H. (1998). **The Education Tourist**. *Journal of Physical Education*. June 13, Volume 4, pages 32-34
- Gössling, S., Scott, D., & Hall, C. M. (2012). **Tourism and water: interactions, impacts, and challenges**. Channel View Publications.
- Gössling, S., Scott, D., & Hall, C. M. (2012). **Tourism and water: interactions, impacts, and challenges**. Channel View Publications.
- Holdnak, A and Holland, S. (1996). **Edutourism: Vacationing to Learn: Parks and Recreation**. September, Volume 9, pages 72-75
- ICUN (2007). **Climate Change Vulnerability Assessment in Zambia**. Climate change and Development project, World Conservation Union
- IPCC (2001). **Climate Change 2007. Impacts, Adaptation and Vulnerability**. Contribution of working group II to the third assessment Report of the International Panel on Climate Change. Fourth Assessment Report
- Lako, P and Mubita, K. (2021). **Geography Teachers' Perspectives on Research Engagement in Selected Secondary Schools in Serenje District of Central Province of Zambia**. *International Journal of Research and Innovation in Social Science (IJRISS)* |Volume V, Issue VIII, August 2021|ISSN 2454-6186
- McDonald, H. (2008). **Education for Sustainable Development in Teacher Education**. IMU, Mongolia
- Michel, S. (2007). **Climate change and Tourism**. Macmillan Publishers, London
- Milupi, I D, Mubita, K Pauline Namakau Monde, Steriah, M Simooya (2020) **Developing an Environmental Education programme to address factors behind weak Community Participation in Wildlife Resource Management in Mumbwa and Lupande Game Management areas in Zambia**. *International Journal of Humanities Social Sciences and Education (IJHSSE)* Volume 7, Issue 12, December 2020, PP 53-63
- Milupi, I. D., Mweemba, L., & Mubita, K. (2023). **Environmental Education and Community-Based Natural Resource Management in Zambia**. *Sustainable Management of Natural Resources (Working Title)* Doi: 10.5772/intechopen.108383
- Milupi, I.D, Mubita, K, Pauline Namakau Monde, Steriah M. Simooya, Juliet Namukoko, Mwenya Tembo, Wiza C. Nakombe and Fortune Mufana. (2021). **Community participation and Community Based Wildlife Resource Management in Mumbwa Game Management Area in Zambia**. *International*

Journal of Research and Innovation in Social Science (IJRISS) |Volume V, Issue X, October 2021|ISSN 2454-6186

- Milupi, I. D, Mubita, K, Kalimaposo, K, and Kasonde Mundende. (2022). **Land use Changes and their Impact on the Sustainability of Wildlife Resources in Mumbwa and Lupande Game Management Areas of Zambia.** International Journal of Research in Geography (IJRG) Volume 8, Issue 1, 2022, PP 15-23
- Ministry of Tourism, Environment and Natural Resources (MTENR). (2007). **The National Adaptation Programme on Action (NAPA).** Lusaka, Zambia.
- Mubita, K (2018) **Developing a localised school safety and health manual for Sefula secondary school in Western Zambia.** PhD Thesis, University of Zambia, Lusaka
- Mubita, K, Milupi, I. D, Pauline Namakau Monde, Steriah, M Simooya, Timothy Kamuzu Phiri. (2021). **Safety Education and Training: On Site Lessons for Workers in Selected Construction Sites of Lusaka District.** International Journal of Humanities Social Sciences and Education (IJHSSE) Volume 8, Issue 3, March 2021, PP 39-51 ISSN 2349-0373 (Print) & ISSN 2349-0381 (Online)
- Mubita, K. (2021). **[Developing a Localised Approach to School Safety and Health Management: The Case of Mongu Schools of Western Zambia.](#)** Journal of Lexicography and Terminology. Vol 5 issue 2, Pp 17-34
- Namafe, C.M. (2006). **Environmental Education in Zambia.** A critical Approach to change and Transformation. New Horizon Printers, Lusaka
- Scott, D. (2002). **The vulnerability of winter recreation to climate change in Ontario's Lakelands Tourism Region.** Department of Geography Publication Series Occasional Paper 18, University of Waterloo, Waterloo, Ontario, Canada
- Shafiq, F.et. al. (2014). **Role of ICT in Climate Change Monitoring: A review Study of ICT based Climate Change Monitoring Services.** Research Journal of Recent Sciences ISSN 2277-2502 Vol. 3(12), 123-130
- Stern, N. (2006). **The Economics of Climate Change: The Stern Review.** Cambridge, UK: Cambridge University Press.
- Thomas, H. (2003). **Greening the Urban Campus: A Sustainability Assessment of New York University,** New York
- UNWTO. (2019). **Tourism and climate change: UNWTO recommendations for action.** United Nations World Tourism Organization.
- UNWTO. (2019). **Tourism and climate change: UNWTO recommendations for action.** United Nations World Tourism Organization.