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# What Evidence Exists on Individuals' Sustainable Consumption Practices in Africa? A Scoping Review Protocol

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#### ABSTRACT

The new paradigm shift in the discourse on sustainability and sustainable consumption globally and particularly in Africa, has led to the need to understand the consumption practices of people in order to strategize and safeguard scarce natural resources for posterity. This study aims to systematically review published research to answer the research question: what evidence exists on individuals' sustainable consumption practices in Africa? The study focuses on consumers' waste minimisation, sustainable food consumption, sustainable transport and sustainable energy consumption in Africa, to provide evidence for policy decisions and future research. The study adopts the 2015 Joanna Briggs Institute guidelines, Arksey and O'Malley's suggested scoping review framework, and Levac et al. 2010 recommendations. To present the results of this review, the Preferred Reporting Items for Systematic Reviews and Meta-analysis Extension for Scoping Review would be used. This study seeks to identify future strategies to encourage greater sustainable consumption practices in Africa households.

**Keywords:** Sustainable Consumption and Production, Waste Minimisation, Sustainable Food Consumption, Sustainable Energy Consumption, Sustainable Transport, Africa **JEL Classifications:** M31, P28, P36, Q01, Q56

# **1. INTRODUCTION**

Humans crave for too much materialism has led to the haphazard use and destruction of the earth's resources, which in turn has resulted in terrible environmental consequences, such as greenhouse gas emissions, environmental pollution, damage to the ecosystem, depletion and shrinking of natural resources (Ansu-Mensah and Bein, 2019; Guo et al., 2018; Seegebarth et al., 2016). The use of wood fuel (charcoal and firewood), have the capacity to fulfill the essential energy demands and play a key role in sustainable energy consumption and production (Gazull and Gautier, 2015; Sola et al., 2017). Wood wastage, deforestation and land degradation are some of the dire trepidations of woodfuel systems which in turn is related to unsustainable consumption and production (Chidumayo and Gumbo, 2013; Njenga et al., 2018). It is reported that about 93% of consumers depend on wood energy for their day-to-day food preparation and heating in Africa (Sola et al., 2017). Food consumption accounts for the increasing use of non-renewable natural resources across the globe. Thus, it is often characterised by malnutrition and obesity in low-andmidlle income countries, and high-income countries respectively (Csutora and Mózner, 2014). Evidence shows that about 20-30% of greenhouse gas emissions and deforestation are attributed to food consumption and production (Welch and Southerton, 2019). Therefore, a switch to a more sustainable food consumption and production (SFCP) is necessary in order to make abundant food available for posterity as SFCP is a significant facet of sustainable development (Verain et al., 2012). Waste minimisation is "preventing and/or reducing the generation of waste at source; improving the quality of the waste genertated, such as reducing

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the hazard, and encouraging re-use, recycling and recovery." (Pongracz et al., 2004). In brief, waste minimisation comprises recycling, re-use, reduction, and recovery. Waste minimisation also focuses on the reduction of the volume of all wastes produced. In Africa, poor waste management is a major concern in most African countries, especially in the urban and peri-urban areas partly due to increasing population growth and this contributes to environmental degradation. Hence, waste minimisation strategies are needed by African nations.

Individuals, communities, businesses, local and national governments are encouraged to make strenuous efforts for a change in behavioural lifestyles related to waste minimisation, food consumption, energy use, and transport use (Fielding et al., 2010; Fudge et al., 2013; IPCC, 2015). Similarly, life choices and decisions that consumers make on either to use particular products and services or to live a certain lifestyle truly have an effect on the earth, humankind's well-being and nature's resources (Fudge et al., 2013). And this exposes humans to immense risks (Fielding et al., 2010; Fudge et al., 2013). Researchers have powerfully contended that the present consumption levels and practices are indeed unsustainable, and thus, impact on sustainable development globally (Chaplin and Wyton, 2014; Guo et al., 2018). The fight to ensure a sustainable environment became significant during the launch of the Millennium Development Goals (MDGs) in the year 2000 (UNDP, 2015). The MDG 7 helped reduce the potential hazards from the irresponsible usage of products causing harm to the environment (UNDP, 2015). Sustainability is very multifaceted and important because it 'balances' all concerns of its three dimensions of environmental, social and economic (Burgiel, 2015). Sustainable development may refer to the attempt to meeting the needs of the present-day generation without causing any harm to posterity's ability to meet their needs (Brundtland et al., 1987).

The aim of goal number 12 of the Sustainable Development Goals (SDGs) is to ensure sustainable consumption and production patterns and lay emphasis on the need for households to attain sustainable consumption and production by 2030 (Shittu, 2020). One of the important necessities for sustainable development is sustainable consumption and production (Wang et al., 2018). Sustainable consumption and production comprise all efforts geared towards improving the creation of material and products and how they are marketed, purchased, used and discarded after their life span (Zu, 2013). Similarly, sustainable consumption may be defined as the use of products and services that respond to the elementary needs, improves life's quality, consume rationally, as well as decreasing toxic waste throughout the period of the product or service, and in so doing, the needs of posterity are not threatened (Abdulrazak and Quoquab, 2018; Lim, 2017). Relatedly, sustainable consumption behaviour (SCB) includes the purchase of only sustainable products/goods, the use of energy-efficient appliances, waste minimisation (recycled waste and purchasing products prepared with recycled material), sustainable food consumption, and shifting to ecologicallyfriendly transport means (Dhandra, 2019). 'Products' as used in the aforementioned explanation connote 'sustainable products' which are environmentally friendly and safer (Cerri et al.,

2018; Kumar et al., 2017), whereas 'services' denotes advice that could be got to ensuring energy-related decisions, policies and renovations, waste minimisation, sustainable transportation systems, sustainable food consumption and knowledge for consumers' to make decisions (Salo et al., 2016). Therefore, in this study, sustainable products and services refer to the eventual outcomes of individuals' SCB and practices regarding energy use, waste reduction (recycling), food consumption, and transport use (Fielding et al., 2010). It is worth-noting that the concept of sustainability and sustainable consumption is essential and ought to be part and parcel of everyone's daily lifestyle, safeguarding the scarce resources on earth for future generations (Sharma and Rani, 2014). To provide evidence-based information that can potentially help shaped policies to safeguard the earth's threatened resources as well as reveal literature gaps for future investigations on sustainable consumption and production practices in Africa, a systematic scoping review will be beneficial. Moreover, research gluts in sustainable consumption and production practices will be ascertained when a systematic scoping review is conducted.

# 2. OBJECTIVE AND RESEARCH QUESTION OF THE REVIEW PROTOCOL

This study will mainly aim to systematically search and examine literature and map evidence on sustainable consumption practices, focusing on consumers' waste minimisation, sustainable food consumption, sustainable transport, and energy usage in Africa. This study will also hope to find evidence on factors influencing individuals' consumption and production practices related to the above domains of waste minimisation, sustainable food consumption, sustainable transport and sustainable energy use. The study's research question is: What evidence exists on individuals' sustainable consumption practices in Africa?

The sub-review questions will be as follows:

- What are the individuals' waste minimisation practices towards sustainable consumption in Africa?
- What are the individuals' food consumption practices concerning sustainable consumption in Africa?
- What are the individuals' sustainable transport practices regarding sustainable consumption in Africa?
- What are the individuals' sustainable energy practices in relation to sustainable consumption in Africa?
- What are the factors influencing sustainable consumption and production practices related to waste minimisation, food consumption, transport and energy use in Africa?

The Population, Concept and Context (PCC) mnemonic designed by (Joanna Briggs Institute, 2015) used to determine the eligibility of the proposed scoping review question is displayed in Table 1.

# **3. METHODS**

#### 3.1. Protocol Design

It is worth mentioning that scoping review protocols are beneficial in that they represent a series of literature that exists around a research field or subject of interest. Also, scoping review protocols help identify research gluts/gaps (where lots of research has been done) for a full systematic review study. Again, for a thorough systematic review or a follow-up primary study, the scoping procedure is a suitable approach (Arksey and O'Malley, 2005). Therefore, a systematic scoping review protocol seeking to examine existing evidence on individuals' sustainable consumption and production practices will be useful. Consequently, the authors will reasonably adopt the modified scoping review framework of Arksey and O'Malley's (Arksey and O'Malley, 2005), Levac et al. 2010 recommendations (Levac et al., 2010), Joanna Briggs Institute guidelines of 2015 (Joana Briggs Institute, 2015) and the Collaboration for Environmental Evidence Guidelines and Standards for Evidence Synthesis in Environmental Management, Version 5.0, (Pullin et al., 2018) to guide the present scoping review.

The Arskey and O'Malley framework which will initially be used for the scoping review protocol comprise; *Identification of the research question, Identification of relevant studies (literature searches), Study selection, Data charting, and Collating, summarizing and recording the results* (Arksey and O'Malley, 2005).

# **3.2. Identification of Relevant Studies (i.e., Searching for Articles)**

A detailed and comprehensive searching involving some bibliographic databases will be made. This will enable the capturing of all appropriate studies relating to sustainable consumption and production practices in Africa. To obtain relevant studies for this review, a complete search will be done in the following electronic databases: GreenFILE via EBSCOhost, Science Direct, Web of Science, Forestry via SABINET, SCOPUS, and Energy Conversion and Management. These databases were selected in consultation with an experienced librarian and the number was limited to six due to access constraints and lack of external funding for this project. Nonetheless, we will additionally search Google Scholar (https://scholar.google.com/) for relevant articles. To separate the keywords, Boolean terms such as, AND/OR, will be used. The keywords to be used to search for relevant studies in the databases are as follows: "consumer" OR "human" OR "people" AND "sustainable consumption" OR "practice" OR "production" OR"sustainability" AND "food consumption" OR "waste minimisation" OR "energy use" OR "energy utility" OR "energy practice" OR 'transport use' AND "Africa" OR "Algeria" OR "Angola" OR Benin OR Botswana OR Burkina Faso OR Burundi OR Cameroon OR Cape Verde OR Central African Republic OR Chad OR Camoros OR Democratic Republic of the Congo OR Republic of the Congo OR Djibouti OR Egypt OR Equatorial

Table 1: The PCC framework used to determine the
eligibility of the studies for the review question

P: Population	Consumers
C: Concept	Sustainable consumption: The use of products and services to satisfy basic needs without causing harm such as pollution to the natural environment and safeguarding the natural resources for posterity
C: Context	Practices: This will include waste minimization approaches perform by consumers as well as their transport and energy usage aimed at safeguarding the earth's natural resources for posterity

Guinea OR Eritrea OR Ethiopia OR Gabon OR Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Ivory Coast OR Kenya OR Lesotho OR Liberia OR Libya OR Madagascar OR Malawi OR Mali OR Mauritania OR Mauritius OR Morocco OR Mozambique OR Namibia OR Niger OR Nigeria OR Rwanda OR Sao Tome and Principe OR Senegal OR Seychelles OR Sierra Leone OR Somalia OR South Africa OR South Sudan OR Sudan OR Swaziland OR Tanzania OR Togo OR Tunisia OR Uganda OR Zambia OR Zimbabwe.

# 3.2.1. Pilot search

Where possible, a subject heading will be included and syntax adjusted to suit the database. Publication year and study design will be removed during the database search, but the search language will be limited to English. A pilot search done/carried out in GreenFILE via EBSCOhost, Science Direct, and Google Scholar to indicate the viability to conduct the proposed scoping review process is illustrated in Table 2.

We will further search for relevant data from the reference lists of the included studies using a snowball approach. We will continue to search for additional relevant articles for inclusion during the study duration. Adequate documentation of each search record, such as the date of the search, database, and the number of retrievable articles will be reported. The recording of the search characteristics will consist of the following: search date, the database, keywords search, and the number of retrievable and eligible studies.

Moreover, all the citations found during searching will be exported into Mendeley. Finally, a modified Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) guideline as suggested by Moher et al. (2009) would be followed. The results of the screening of this scoping review protocol would be presented as illustrated in Figure 1.



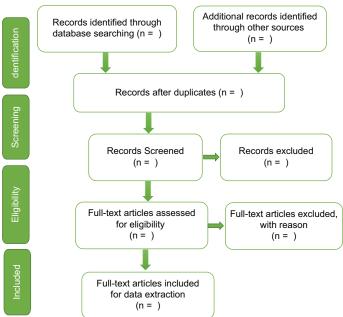


Table 2: Pilot search in GreenFILE v	ia EBSCOhost, Science Di	irect, and Google Scholar

Date	Database	Keywords	Search results
27/06/2021	GreenFile via EBSCO	"Consumption practice" OR "production" OR "food consumption" OR :"waste	106, 741
		minimization" OR "energy use" OR "energy practice" OR "transport use" AND	
		"sustainability" AND "Africa".	
27/06/2021	Science Direct	"Consumption practice" OR "production" OR "food consumption" OR "waste	414,961
		minimization" OR "energy use" OR "energy practice" OR "transport use" AND	
		"sustainability" AND "Africa".	
27/06/2021	Google Scholar	"Consumer" OR "human" OR "people" AND "sustainable consumption" OR	1,070,000
		"practice" OR "production" OR "sustainability" AND "food consumption" OR "waste	
		minimisation" OR "energy use" OR "energy utility" OR "energy practice" OR 'transport	
		use' AND "Africa" OR "Algeria" OR "Angola" OR Benin OR Botswana OR Burkina	
		Faso OR Burundi OR Cameroon OR Cape Verde OR Central African Republic OR	
		Chad OR Camoros OR Democratic Republic of the Congo OR Republic of the Congo	
		OR Djibouti OR Egypt OR Equatorial Guinea OR Eritrea OR Ethiopia OR Gabon OR	
		Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Ivory Coast OR Kenya OR	
		Lesotho OR Liberia OR Libya OR Madagascar OR Malawi OR Mali OR Mauritania	
		OR Mauritius OR Morocco OR Mozambique OR Namibia OR Niger OR Nigeria OR	
		Rwanda OR Sao Tome and Principe OR Senegal OR Seychelles OR Sierra Leone OR	
		Somalia OR South Africa OR South Sudan OR Sudan OR Swaziland OR Tanzania OR	
		Togo OR Tunisia OR Uganda OR Zambia OR Zimbabwe	

# 3.3. Article Screening and Study Eligibility Criteria

#### 3.3.1. Screening process

Screening for this study will be conducted in three phases to select relevant studies. Peter Ansu-Mensah (PAM) will conduct the database searches and title screening guided by the eligibility criteria at the first stage. All eligible studies will be imported into Mendeley. At the second and third stages PAM and Monica Ansu-Mensah (MAM) will independently screen the abstracts and full-text articles using the inclusion and exclusion criteria as a guide. Discrepancies between PAM and MAM responses at the abstract screening stage will be resolved through discussion until an agreement is reached. However, at the full-text screening stage, discrepancies between PAM and MAM responses will be independently resolved by Desmond Kuupiel (DK). Validity and credibility will be ensured through auditing and using Cohen's kappa test of inter-coder reliability coefficient which ranges from 82 - 100%. It is hoped that a perfect and acceptable agreement will be reached.

#### 3.3.2. Study eligibility criteria

This study will use as eligibility criteria stated at the inclusion criteria indicated below, in order to select the appropriate studies for the systematic review.

#### 3.3.2.1. Inclusion criteria

We will include studies that meet the following criteria:

- Studies involving all 54 African countries
- Studies reporting evidence on individuals' sustainable food consumption
- Studies reporting evidence on individuals' waste minimisation practices
- Studies reporting evidence on individuals' sustainable transport use practices
- Studies reporting evidence on individuals' sustainable energy use or practice
- Studies presenting evidence on factors influencing sustainable consumption practices
- Primary study designs (quantitative, qualitative, and mix-methods study designs)

• Publications in English language.

#### 3.3.2.2. Exclusion criteria

This study will exclude the following:

- Studies presenting evidence from non-African countries
- Studies focused on firms and organisations
- Studies reporting evidence on individuals' awareness of sustainable consumption
- Other types of reviews
- Studies published in French, Arabic, Portuguese, and other languages other than English.

#### 3.3.3. Study quality appraisal

The quality of the studies that would be included in this scoping review would be appraised using the Mixed-Methods Quality Appraisal Tool (MMAT) version 2018. Again, the methodological quality of the entire studies included would be evaluated using MMAT. Also, the MMAT tool would be used to examine the study's relevance, design, methodology, adequacy, data collection, data analysis and the findings of the study that would be reported of the all-inclusive included studies. To help in identifying subtopics for a possible systematic review, meta-analysis or meta-synthesis, we characterised the included studies into the various study designs such as quantitative, qualitative, and mix methods.

#### 3.3.4. Data coding strategy

This systematic review study will code data for all the included studies. Data extraction for this systematic review will be performed using a tested data charting form designed using Microsoft Word. We will extract the following: *author and date, study title, aim of the study, study design, geographical setting (urban, peri-urban or rural), country, study population, type of product or service, consumption practice, and factors influencing consumption practices.* Any changes will be reported accordingly in the systematic review paper. To ensure consistency, PAM and MAM will independently conduct the data extraction from the included studies after thoroughly reading of each study. Any

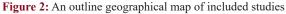
discrepancies between PAM and MAM will be resolved by DK to ensure accuracy. The data extraction form will be modified based on feedback from the two reviewers.

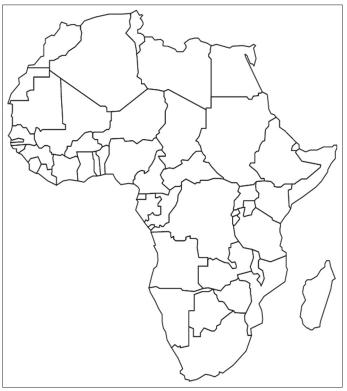
# 4. STUDY MAPPING AND PRESENTATION

To present the evidence base, the systematic review study will summarise and provide a narrative of all the included studies. The narrative report will be supported by a visual presentation in a geographical map (Figure 2) of where included studies were conducted, as well as numerous descriptive statistics, figures, and tables to indicate the volume and key characteristics of the included studies. Furthermore, we will relate the population to the following outcomes; waste minimisation, food consumption, energy use, transport use, factors influencing individual consumption practice and/or production practice.

This study's narrative report will also identify literature gaps subtopics for possible follow-up primary research. We will further identify subtopics for a systematic review and if possible with meta-analysis where there is sufficient research or glut.

This proposed scoping review study is being embarked upon to map out evidence on sustainable consumption practices towards energy use, waste minimization (recycling) and sustainable transport modes in Africa. Also, the study will provide information about sustainable products to individuals and households in order for them to make informed decisions. This is because the absence of information can stop them from choosing more eco-friendly products. The reporting of the systematic review results will follow Pullin et al.'s 2018 Collaboration for Environmental Evidence





Guidelines and Standards for Evidence Synthesis in Environmental Management (Version 5.0.).

Additionally, we will try to present the outcomes of the review at appropriate conferences or fora. We will also endeavour to disseminate this systematic review results via key stakeholder engagement, workshops, seminars, conferences and radio discussions to inform government, civil society, and research institutions' decisions. What's more, the results will be submitted to scientific journals for peer review and subsequent publication.

# **5. CONCLUSION**

A very detailed and painstaking methodology has been offered in this scoping review protocol. It is envisaged that the scoping review's results will undoubtedly provide and find current evidence on consumers sustainable consumption behaviors regarding waste minimization, food consumption, energy use, transport use and factors influencing sustainable consumption and production in Africa. Policy-makers, practitioners and researchers will find this proposed scoping study's results as beneficial review for future research and to impact policies and long-term planning. Various research gaps relating to systematic reviews, and primary research would be valued and welcomed so as to improve individuals' sustainable consumption practices in Africa.

# 6. FUNDING

No funding has been obtained yet for this study.

# 7. AUTHORS' CONTRIBUTIONS

PAM conceptualised and wrote the first draft. PAM brought his knowledge about sustainable consumption and production practices. DK designed this study's methodology. MAM assisted with the search strategy and contributed to the drafting of this study's methodology. DK meticulously made revisions and peerreviewed this protocol. PAM wrote the final draft. All the authors read and gave their approval to the final manuscript.

# 8. ACKNOWLEDGMENTS

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