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RESEARCH

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When wildlife becomes food: Legal definitions of game meat and their implications for conservation, food safety, and One Health in Southern Africa

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Abstract

Introduction: The sustainable, safe, and legal use of wild species is central to the Kunming–Montreal Global Biodiversity Framework, yet in Southern African Development Community (SADC) countries, legal definitions of game meat, animal, and trophy remain fragmented across conservation, animal health, meat industry, and food safety laws. This definitional inconsistency creates regulatory ambiguity with implications for conservation outcomes, food safety, trade, and zoonotic disease risk. *Methods*: This study applied a comparative legal analysis of national legislation from SADC member states, examining statutory definitions across wildlife conservation, animal health, meat industry, and food safety frameworks. Definitions were systematically extracted, categorized, and compared across jurisdictions and benchmarked against selected non-SADC countries and international standards (Codex Alimentarius and World Organisation for Animal Health [WOAH]). *Results*: The results showed that wildlife legislation in all SADC countries defines animals and regulates wildlife products, but the scope and biological coverage of "animal" vary substantially, affecting species protection, enforcement thresholds, and downstream regulation of meat. In addition, most SADC countries do not explicitly recognize game meat as a food category. Where defined, meat is often treated as a wildlife derivative rather than a food product, leaving inspection, hygiene, and disease control weakly anchored in food safety and animal health law. Furthermore, trophy definitions are relatively consistent in identifying durable animal parts, but critical divergence exists where meat is included within trophy definitions, collapsing the distinction between symbolic hunting outcomes and consumable food products. Definitional ambiguity at the wildlife–food safety interface undermines legal certainty, weakens disease surveillance, and constrains sustainable wildlife economies. *Conclusion*: Harmonizing core definitions, recognizing game meat as food once it enters trade, separating trophies from consumable products, and aligning national laws with Codex and WOAH standards are essential steps for strengthening conservation, public health, and One Health governance in SADC and beyond.

One Health impact statement

This study addresses critical regulatory gaps at the wildlife–food interface in Southern Africa, where inconsistent legal definitions of "animal," "meat," and "trophy" undermine both conservation and public health. By harmonizing these definitions, SADC nations can strengthen zoonotic disease surveillance and ensure the legal, safe trade of game meat. A One Health approach suggested by the study, which recognizes that societal actors including conservationists, veterinarians, and food safety authorities must collaboratively design governance systems to manage wildlife and game meat sustainably, needs to be implemented in the region. This transdisciplinary approach can be done by engaging stakeholders to coproduce regulations and standards, harmonizing definitions of "animal," "meat," and "trophy" to reduce zoonotic spillover risks and support rural livelihoods. Integrating ecological, veterinary, and social science knowledge enables governance outcomes across human, animal, and environmental health, demonstrating added value that could not be achieved through sectoral action alone. Practical solutions, such as recognizing game meat as a formal food category, facilitates a unified governance framework that manages pathogen spillover risks while supporting sustainable wildlife economies and rural livelihoods.

Keywords: game meat, wildlife legislation, food safety regulation, legal definitions, trophy hunting, zoonotic disease risk, One Health

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Introduction

Target 5 of the Kunming–Montreal Global Biodiversity Framework, adopted by the Conference of the Parties to the Convention on Biological Diversity (CBD), states that:

> "Ensure that the use, harvesting and trade of wild species is sustainable, safe and legal, preventing overexploitation, minimizing impacts on non-target species and ecosystems, and reducing the risk of pathogen spillover, applying the ecosystem approach, while respecting and protecting customary sustainable use by indigenous peoples and local communities" (CBD, 2022).

Unambiguous legal definitions are foundational to ensure that the use, harvesting, and trade of wild species are sustainable, safe, and legal. Yet in the context of Southern African Development Community (SADC) countries, where wildlife utilization spans conservation (Zvidzai *et al*., 2025), food security (Bersaglio *et al*., 2025), rural livelihoods (Thakholi *et al*., 2024), and public health (Magwedere *et al*., 2015), game meat is treated inconsistently: defined in some laws, undefined in others, and in certain cases subsumed under trophy categories. This inconsistency creates ambiguity across policy domains. For example, in Tanzania, Kagembe *et al*. (2024) noted that integrating the game meat selling industry into the meat industry act is difficult because game meat continues to be regulated as a trophy once it enters trade. This approach contradicts the purpose of establishing a game meat selling industry, which is to classify game meat as food and facilitate its broader domestic consumption. Similarly, in Zambia, Mukanganwa *et al.* (2025b) reported that butchers are required to secure two separate permits: one certifying ownership of the trophy, which authorizes possession of the game meat, and another permitting its sale. This presents challenges and legal gaps in inspection, mainly because meat inspectors are guided by regulations/standards that do not define game or game meat/trophy, these definations are defined in the conservation legal framework but not in the food safety framework (Kagembe *et al*., 2024; Mukanganwa *et al*., 2025a). Yoh *et al.* (2025) highlighted that terms such as "wild meat," "game," and "bushmeat" present a significant collaboration barrier across disciplines, due to inconsistent terminology. The study further indicated that such variations in terminology can introduce biases when assessing risks and may also shape prejudiced perceptions of food practices in certain regions. Addressing these challenges is important as game meat regulation, control, and policy have attracted attention following zoonotic disease outbreaks (Mukanganwa *et al*., 2025b). Concerns have also been expressed that existing food safety regulations are inadequate in preventing risks along the food chain and that established food safety standards often do not extend to game meat (OECD, 2021).

The term "game meat" describes meat sourced from legally hunted wild or game animals (Lindsey *et al*., 2015). Sometimes, the term used is "wild game meat" (Giuggioli *et al*., 2018; Marescotti *et al*., 2021). This is different from bushmeat, which refers to meat from wild animals obtained through illegal hunting, such as hunting without licenses or permits, hunting in prohibited areas, using banned methods, or killing protected species, as well as restricted sexes or age classes (Lindsey *et al*., 2015). Game meat is further categorized as farmed or wild game depending on its source (Mukanganwa *et al*., 2025a). Kagembe *et al.* (2024) recommended revising the CBD (2011) definition of wild meat hunting, which includes harvesting wild animals in tropical and subtropical areas for both food and non-food uses, so that it instead focuses exclusively on hunting wild animals for meat worldwide. Mukanganwa *et al.* (2026) and TRAFFIC, in a report by Kagembe *et al.* (2024), distinguished bushmeat from game meat, within the overall context of the trade in wild animal meat. The report defines bushmeat as meat that has been harvested illegally for subsistence or trade, while game meat is defined as meat legally harvested for subsistence or trade in Tanzania, as per the national Game Meat Selling Regulations. Feussom *et al*. (2024) defined bushmeat as all non-domesticated land mammals, birds, reptiles, and amphibians hunted for their meat.

In drafting food law and developing legal food definitions, internationally agreed sources such as Codex Alimentarius should be used, along with other national legislation on related subjects, if any (Vapnek and Spreij, 2005). Codex defines meat as "meat is that derived from domestic ungulates, domestic solipeds, domestic birds, lagomorphs, farmed game, farmed game birds (including ratites) and wild game." The World Organisation for Animal Health (WOAH) defines meat as all edible parts of an animal. In European Community (EC) Regulation No. 853/2004, "meat" means "edible parts of the animals referred to in points 1.2 to 1.8, including blood." In the United Kingdom, under the Poultry Meat, Farmed Game Bird Meat and Rabbit Meat (Hygiene and Inspection) Regulations, Statutory Instrument 1995 No. 540, "meat" means "all parts of a bird or rabbit which are fit for human consumption"; "farmed game meat" means "the meat of farmed game birds." "Wild game meat" means "all parts of wild game which are suitable for human consumption and which have not undergone any preserving process other than chilling, freezing, vacuum wrapping, or wrapping in a controlled atmosphere." According to the Australian Standard for the Hygienic Production of Wild Game Meat for Human Consumption (AS 4464:2007) (FRSC Technical Report No. 2), wild game meat means "the edible part of any wild game meat for human consumption and includes the activities of harvesting, field storage, processing and transport." The IUCN–World Conservation Union General Assembly Resolution 2.64 (IUCN World Conservation Congress 2000) adopted the term "wild meat" to refer to meat and other products derived from wild animals for human consumption (IUCN, 2000).

The list of definitions in the food law serves as a reference point for terminology about which doubts may arise in the enforcement of the law (Vapnek and Spreij, 2005). It is therefore necessary for relevant government agencies to consider bridging this regulatory gap (Kagembe *et al*., 2024) if it exists. Precise definitions determine the scope of protection for wild species, the applicability of hygiene and inspection regulations, and the legal status of customary use by indigenous peoples and local communities. Where definitions are vague, enforcement becomes inconsistent, legal interpretation becomes contested, and conservation outcomes are compromised. It is understood that definitions commonly vary from one jurisdiction to another (Tian *et al*., 2023). Exploring the differences in depth in their possible implications for conservation practice, trade, and public health is important to the region and for the SADC wildlife economy. Hence, the objective of this paper was threefold: to examine how "game meat" and related terms are defined in national laws, how definitions vary across jurisdictions, and how these variations shape conservation and food safety.

Methods

STUDY DESIGN

This study employed a comparative legal analysis, following a structured review of statutory definitions relevant to game meat and related regulatory concepts as previously done by Tian *et al.* (2023).

DATA COLLECTION

The literature search was conducted from October 2025 to December 2025. Relevant documents are not limited to scholarly databases. Therefore, the Google search engine was used to gather information on acts and regulations. These documents (Table 1) were searched using the following keywords: wildlife regulations, game meat regulation, animal regulations, conservation acts, animal health act, disease act, meat regulations, meat act, meat standards, and food safety acts in combination with the country. Legislation was included if it provided an explicit definition of wild animal, game, or game meat or related categories.

Table 1. An overview of key national legal instruments governing wildlife conservation, animal health, meat industry regulation, and food safety across SADC countries that were reviewed in this study.

Country	Wildlife conservation	Animal health	Meat industry	Food safety
Botswana	Wildlife Conservation and National Parks Act, 1992	The Animal Diseases Act, 2003	Livestock and Meat Industries (Meat Inspection and Control of Red Meat Abattoir) Regulations	Food Act, 1993
Malawi	National Parks and Wildlife Act, 2017	Control and Diseases of Animals Act [Chapter 66:02]	Meat and Meat Products Act [Chapter 67:02]	–
Namibia	Nature Conservation Ordinance 4 of 1975	Animal Health Act, 2011	Abattoir Industry Act, 1976 Meat Corporation of Namibia Act, 2001 Meat Industry (Amendment) Act (No. 21 of 1992) Guidelines for the Harvesting and Processing of Wild Game in Namibia, 2016	Namibia Food Safety Policy, 2014
Mozambique	Law No. 5/2017 (Law on the Protection, Conservation and Sustainable Use of Biological Diversity)	Decree No. 26/2009 (Animal Health Regulation)	–	–
South Africa	National Environmental Management: Biodiversity Act, 2004	Animal Health Act, 2002	South Africa, Meat Safety Act, 2000 Standard for Post-Mortem Meat Inspection and Hygiene Control at Game Meat Establishments (VPN/10/2007-01) Standard for the Microbiological Monitoring of Meat, Process Hygiene and Cleaning (VPN/15/2010-01) Standard for the Ante- and Post-Mortem Meat Inspection and Hygiene Control at Point of Game Harvest (VPN/09/2017-01)	Foodstuffs, Cosmetics and Disinfectants Act, 1972
Tanzania	Wildlife Conservation Act, 2019 Tanzania, the Wildlife Conservation (Game Meat Selling) Regulations, 2019	The Animal Diseases Act, 2003	Meat Industry Act, 2006	Tanzania Food, Drugs and Cosmetics, 2003
Zambia	Wildlife Act, 2015	Animal Health Act, 2010	Public Health Act (Meat, Butcheries and Abattoirs) Regulations	Food Safety Act, 2019
Zimbabwe	Parks and Wildlife Act, 1975	Animal Health Act [Chapter 19:01]	Public Health (Abattoir, Animal and Bird Slaughter and Meat Hygiene) Regulations, 1995 Harare (Meat) Bylaws, 2017 Bulawayo (Game Meat) Bylaws, 1969	Food and Food Standards Act [Chapter 15:04]

DATA ANALYSIS

Extraction of definitions: Using doctrinal legal analysis (Tian *et al*., 2023), definitions were extracted by locating verbs such as "means," "includes," "refers to," and "comprises."

Cross-jurisdiction comparison: Definitions were compared across countries to examine consistency, alignment with international standards, enforcement implications, and intersections between conservation and food safety legislation.

Conceptual categorization: Definitions were grouped into major conceptual clusters: "wild animal," "game meat," "trophies," and related terms.

Identification of gaps and ambiguities: Gaps were identified through undefined or partially defined terms, overlaps between categories, and variation across jurisdictions.

Positionality statement: The author's comparative and doctrinal legal analyses are hermeneutic processes of interpretation. The statutory definitions of "animal," "meat," and "trophy" were approached from a legal-interpretive perspective that recognizes these terms as socially constructed categories with direct implications for conservation, food safety, and public health. The author's position is that of a scholar working within a One Health governance framework: Texts were interpreted not as neutral technical artifacts but as instruments whose clarity or

ambiguity shapes zoonotic disease surveillance, enforcement, and sustainable wildlife economies. This perspective acknowledges that the author's analysis is situated, interpretive, and oriented toward harmonization of legal definitions to strengthen governance systems at the wildlife–food interface.

Results

Establishment of the category of game meat in SADC legal text: Definitions that matter in conservation and One Health (all relevant regulations).

CONSERVATION ACTS

Wildlife conservation laws in all countries primarily cover wild/game animals. They also regulate the trade of game meat.

ANIMAL LEGAL DEFINITION

Animal legal definition was included in a study focusing on game meat definitions because a number of meat definitions reference meat; hence, it will be important to know the animal definition. Table 2 presents a comparative overview of how "animal" is defined in wildlife conservation legislation across SADC countries. The results highlight substantial variation in scope and terminology, with implications for how wild species are regulated within conservation, food safety, and animal health frameworks.

MEAT LEGAL DEFINITION

Table 3 summarizes how "meat" is defined in wildlife conservation legislation across SADC countries. The results reveal marked variation in terminology and scope, particularly in whether meat is framed as a food product or as a wildlife derivative, with important implications for regulation, inspection, and trade.

Malawi and Mozambique use related terms. Malawi uses the term "specimen," which means "any wild plant or animal, alive or dead, whether or not native to Malawi, and any readily recognizable part or derivative of such plant or animal." Mozambique uses the term "hunting remains," which is defined as "animal parts that do not fall within the definition of trophy, in particular the meat and fresh (not tanned)." To indicate variations, Mozambique also defines specimen "as sample of any material or living being. More specifically, it individually designates an identifiable part, used as a representative sample for the study of the properties of a population of the species or subspecies to which it belongs." While Tanzania defines specimen as "any animal or plant, whether alive or dead," of all the countries, Namibia specifically states game meat; the other countries just define "meat."

TROPHY LEGAL DEFINITION

Table 4 presents a comparison of how "trophy" is defined in wildlife conservation legislation across SADC countries. The results not only show considerable consistency in identifying durable animal parts but also reveal important differences in scope, particularly where meat is included within trophy definitions, with implications for game meat regulation and enforcement.

In Malawi, it is stated as government trophy, whereas in Zimbabwe, it is stated as state trophy.

ANIMAL HEALTH LAWS

Animal health and related laws are of paramount importance to game meat because they form the basis of the control of diseases in the primary production of game and game meat. Only two countries, Malawi and Mozambique, have game/wild animals in their definitions. In Malawi, the Control and Diseases of Animals Act of 1967 (amended) defines animals as "any bull, cow, ox, heifer, calf, sheep, goat, horse, mule, donkey, pig, domestic fowl and any game animal as defined in the definition of the expressions 'game' or 'game animal' contained under the Game Act." In Mozambique, Law No. 5/2017 defines wild animal as "mammal, bird, and reptile belonging to non-domesticated species, living in a state of freedom, captivity, or domestication, intended for scientific, economic, or recreational purposes."

MEAT INDUSTRY ACTS

Meat industry acts are essential for protecting public health by establishing enforceable standards for meat inspection, hygiene, and disease control. They provide legal clarity on what constitutes

Table 2. Comparative overview of how "animal" is defined in wildlife conservation legislation across SADC countries.

Country	Legislation	Definition
Botswana	The Botswana Wildlife Conservation and National Parks Act of 1992	"any vertebrate or invertebrate animal or bird and the eggs and young thereof, but does not include a fish, except in a national park or a game reserve, or a domestic animal or bird, or the eggs and the young thereof"
Malawi	The Malawi National Parks and Wildlife Act of 2017	"any member of the animal kingdom and includes man"
Mozambique	Law No. 5/2017, of 11 May – the Law on the Protection, Conservation and Sustainable Use of Biological Diversity	.....
Namibia	The Namibia Nature Conservation Ordinance 4 of 1975	"means specially protected game, huntable game, huntable game birds and exotic game"
South Africa	South Africa Biodiversity Act	"any wild mammal"
Tanzania	The Tanzania Wildlife Conservation Act of 2019	"any kind of vertebrate and invertebrate animal and the young and egg thereof, other than domestic animals"
		"a mammal, amphibian, bird, reptile, insects and includes eggs and young of the aforementioned"
Zambia	Wildlife Act, 2015	"a vertebrate animal, and includes a mammal, bird, fish, reptile and amphibian and the egg of a bird or reptile, but does not include a human being"
Zimbabwe	The Zimbabwe Wildlife Act of 2015	"any kind of vertebrate animal and the eggs and young thereof, whether live or dead, other than domestic animals and fish"

Table 3. Summary of how "meat" is defined in wildlife conservation legislation across SADC countries.

Country	Legislation	Definition
Botswana	The Botswana Wildlife Conservation and National Parks Act of 1992	"the fat, blood and flesh of any animal, whether fresh, dried, tinned or otherwise preserved"
Malawi	The Malawi National Parks and Wildlife Act of 2017	……
Mozambique	Law No. 5/2017, of 11 May – the Law on the Protection, Conservation and Sustainable Use of Biological Diversity	……
Namibia	The Namibia Nature Conservation Ordinance 4 of 1975	"the meat of any game, whether fresh, salted, smoked or dried, or in the process of being smoked or dried; includes the bones in, or attached to, such meat; and also comprises the whole carcass of any game which is dead"
South Africa	South Africa Biodiversity Act	……..
Tanzania	The Tanzania Wildlife Conservation Act of 2019	"includes the fat, blood or flesh of any animal whether fresh, dried, pickled or otherwise preserved"
Zambia	Wildlife Act, 2015	"meat includes fat, blood or flesh, whether fresh or dried, pickled or preserved"
Zimbabwe	The Zimbabwe Wildlife Act of 2015	"the flesh, including the fat, of any animal, whether fresh, dried or tinned or otherwise preserved"

Table 4. A comparison of how "trophy" is defined in wildlife conservation legislation across SADC countries.

Country	Legislation	Definition
Botswana	The Botswana Wildlife Conservation and National Parks Act of 1992	"trophy" means any horn, ivory, tooth, tusk, bone, claw, hoof, hide, skin, hair, feather, egg, or other durable portion whatsoever of any animal, whether processed or not, which is recognizable as a durable portion of such animal
Malawi	The Malawi National Parks and Wildlife Act of 2017	any specimen of any protected species, endangered species or listed species the absolute ownership of which has not passed to any person under the provisions of this act
Mozambique	Law No. 5/2017, of 11 May – the Law on the Protection, Conservation and Sustainable Use of Biological Diversity	"the durable parts of wild animals, in particular the head, skull, horns, teeth, leathers, hair and bristles, nails, claws, hooves and eggs, nests and feathers, provided these have not lost their original look by any manufacturing process"
Namibia	The Namibia Nature Conservation Ordinance 4 of 1975	"the skin, shell, feet or head, or any part thereof; of game or any other wild animal, but shall not include any such skin, shell, feet or head, or any part thereof; which has lost its original identity as a result of a *bona fide* manufacturing process"
South Africa	South Africa Biodiversity Act	"means any part of a wild animal or exotic animal that is hunted by a hunting client and that is retained as a token or memento of the hunt."
Tanzania	The Tanzania Wildlife Conservation Act of 2019	"any animal alive or dead, and any horn, ivory, tooth, tursh, bone, claw, hoof, skin, meal, hair, feather, egg or other portion of any animal and includes a manufactured trophy"
Zambia	Wildlife Act, 2015	"a horn, tooth, tusk, bone, claw, hoof, skin, hair, egg, feather or other durable part of a game animal or protected animal, whether added to or changed by the work of a human being or not, that is in such form as to be recognizable as a durable part of a game animal or protected animal, and includes meat"
Zimbabwe	The Zimbabwe Wildlife Act of 2015	"any horn, ivory, tooth, tusk, bone, claw, hoof, hide, skin, hair or other durable portion whatsoever of any animal, whether processed or not, which is recognizable as the durable portion of any animal; and the egg of any animal; and anything of which the durable portion of any animal forms a part…"

meat for human consumption, enabling effective enforcement and traceability. Only three countries, Tanzania, South Africa, and Zimbabwe, include game in their legislation. The Tanzania's Food, Drugs and Cosmetics Act of 2003 mentions game twice: "The inspector may deal with poultry, game and fish in the same manner as if the poultry, game and fish were carcasses or animals for slaughter." South Africa's Foodstuffs, Cosmetics and Disinfectants Act of 1972 defines an animal as "any member of the animal kingdom, including game."

Zimbabwe has Public Health (Abattoir, Animal and Bird Slaughter and Meat Hygiene) Regulations of 1995. The regulations define an animal as "bovine, sheep, goat, pig, rabbit or game animal other than a bird." Statutory Instrument No. 37, 2017, Harare (Meat) Bylaws, 2017, defines game meat as "the flesh (including the offal and fat) of a game animal or bird that is intended for human consumption." The second bylaws are Bulawayo (Game Meat) Bylaws of 1969. The bylaws define a game animal as "any elephant, hippopotamus, zebra, and all cloven-hoofed animals, but does not include domestic bovine, ovine, caprine, porcine, or equine animals. It defines game meat as meat or offal's derived from a game animal."

FOOD SAFETY ACTS AND STANDARDS

Food safety acts regulate standards that address the preparation, composition, labeling, packaging, and storage of food, as well as

standards for human consumption. Only two countries, Tanzania and South Africa, include game in their legislation. Tanzania's Food, Drugs and Cosmetics Act of 2003 defines an animal as "all vertebrates, invertebrates or other fauna except man." The act mentions game twice: "The inspector may deal with poultry, game and fish in the same manner as if the poultry, game and fish were carcasses or animals for slaughter." South Africa's Foodstuffs, Cosmetics and Disinfectants Act of 1972 defines an animal as "any member of the animal kingdom, including game."

Discussion

This discussion was done mainly in reference to the legislation of selected countries. Selected countries (e.g., Kenya, Ghana, Rwanda, Germany, the United Kingdom, Australia, Brazil, Canada, the United States, Indonesia, and Malaysia) were included to provide international benchmarks. These jurisdictions were chosen because they represent: countries with game meat inspection systems, for example, Australia (Hampton *et al*., 2023), the European Union (Atanassova *et al*., 2008; Ramanzin *et al*., 2010; Giuggioli *et al*., 2018), and the United Kingdom (Goodall, 2022); countries with similar wildlife utilization and bushmeat contexts, for example, Kenya (Masudi *et al*., 2025), Ghana (Mendelson *et al*., 2003; Cowlishaw *et al*., 2005), and Rwanda (Ndayambaje, 2016); and countries where wildlife and food safety are clearly separated across legal frameworks, for example, Canada (Judge *et al*., 2022) and Brazil (Bragagnolo *et al*., 2019). This comparative lens helps situate SADC legal approaches within global regulatory practice and international standards.

DEFINITIONAL VARIATION OF "ANIMAL" IN WILDLIFE LEGISLATION

The results reveal substantial definitional heterogeneity in how the term "animal" is conceptualized across wildlife conservation legislation in SADC countries (Table 2). Rather than reflecting a shared legal or biological understanding, national definitions vary widely in scope, taxonomic coverage, and underlying legal intent, highlighting persistent semantic and regulatory fragmentation within the region. When situated alongside selected non-SADC jurisdictions, these findings indicate that definitional inconsistency is not unique to southern Africa but represents a broader global challenge in wildlife governance.

Some SADC jurisdictions adopt relatively broad and biologically inclusive definitions. Botswana, Tanzania, Zambia, and Zimbabwe define animals to encompass both vertebrates and invertebrates, often extending coverage to eggs and young. Comparable approaches are observed in Ghana, where "animal" includes vertebrates, invertebrates, their young, and parts or products (Wildlife Resources Management Act of 2023), and in Germany's Federal Nature Conservation Act of 29 July 2009, which extends the definition to eggs, developmental stages, and easily recognizable parts or products of wild fauna. Such wording aligns more closely with ecological realities and conservation objectives, particularly where wildlife exploitation involves multiple life stages or derived products.

In contrast, several countries employ narrow or functionally selective definitions that limit the scope of regulation. South Africa's focus on "any wild mammal" excludes birds, reptiles, amphibians, and invertebrates, thereby limiting statutory protection to a single taxonomic class. Similar selectivity is evident in Kenya, where wildlife legislation relies on schedules to designate game animals, effectively separating biological identity from legal relevance (Wildlife Conservation and Management Act of 2012). Australia's Game and Feral Animal Control Act of 2002 (New South Wales) follows a comparable model, defining game animals through enumerated lists rather than intrinsic biological characteristics. While administratively convenient, such approaches risk excluding ecologically significant species that fall outside predefined categories.

Namibia's definition departs further from biological criteria by embedding management status, such as "specially protected" or "huntable game," directly into the meaning of "animal." This mirrors a broader trend observed in Brazil (Law No. 9.605 of February 1998) and Canada (Canada National Parks Act), where primary environmental statutes do not define "animal" at all, instead relying on sector-specific or subsidiary legislation. The absence of a clear statutory definition may create interpretive gaps (Gupta *et al*., 2025), particularly where wildlife products intersect with food safety, trade, or public health regulation.

Several jurisdictions illustrate semantic complexities with direct regulatory implications. Malawi's inclusion of humans within the definition of "animal," while biologically defensible, introduces legal ambiguity in statutes intended to regulate wildlife use. Indonesia adopts a biologically expansive definition of animals across terrestrial, aquatic, and aerial environments, yet distinguishes wild animals based on retained wild characteristics even in captivity. The United States' Lacey Act similarly extends legal oversight to species normally found in a wild state, regardless of captive origin. Malaysia provides a particularly relevant example for wildlife–food system interfaces, explicitly defining parts or derivatives of wildlife to include meat, bones, skins, and other products, regardless of processing status (Wildlife Conservation Act, 2010). This explicit inclusion contrasts with many SADC statutes, where wildlife meat and derivatives are often implicitly regulated or dispersed across multiple legal instruments.

DEFINITIONAL VARIATION OF "MEAT" IN SADC WILDLIFE LEGISLATION

The results demonstrate definitional variation in how "meat" is conceptualized and regulated within wildlife conservation legislation across SADC countries (Table 3). While several jurisdictions adopt broadly similar formulations, important semantic differences persist in terminology, scope, and legal framing, with direct implications for wildlife governance, trade regulation, and food safety oversight. A number of countries, including Botswana, Tanzania, Zambia, and Zimbabwe, define meat expansively to include fat, blood, and flesh, regardless of the form in which it is preserved (e.g., fresh, dried, pickled, smoked, or tinned). These definitions emphasize the physical and consumable nature of meat rather than its regulatory status and are largely consistent with food-oriented understandings of animal-derived products. By explicitly including blood and fat, these jurisdictions acknowledge products commonly traded and consumed within both formal and informal wildlife meat value chains. Namibia stands out by explicitly defining "game meat" rather than "meat" in general, anchoring the definition to game species and extending it to include bones and entire carcasses. This approach provides greater regulatory clarity by directly linking meat to wildlife origin, yet it also embeds wildlife management logic into what is effectively a food product definition. While this may strengthen traceability within the wildlife sector, it risks reinforcing separation between game meat and conventional meat inspection frameworks.

In contrast, Malawi and Mozambique do not directly define "meat" in their wildlife legislation, instead relying on related proxy terms such as "specimen" (Malawi) and "hunting remains" (Mozambique). Malawi's use of "specimen" is exceptionally broad, encompassing any wild plant or animal, alive or dead, and any recognizable part or derivative. While this breadth may enhance conservation control, it lacks specificity for downstream processes such as trade, processing, or consumption. Mozambique's concept of "hunting remains," which explicitly includes meat and fresh (untanned) animal parts, creates a functional distinction between trophies and consumable products, yet still avoids defining meat as a stand-alone category. Further semantic complexity arises from the inconsistent use of the term "specimen" across jurisdictions. Tanzania defines a specimen simply as "any animal or plant, whether alive or dead," whereas Mozambique frames it

as a representative sample for scientific or classificatory purposes. These divergent meanings highlight the absence of a harmonized legal vocabulary and increase the risk of misinterpretation when wildlife products move across borders or regulatory domains.

Taken together, these findings suggest that the absence or overbreadth of meat definitions reflects an assumption that wildlife law is not the primary regulation for food products (Mukanganwa *et al*., 2025b). In contexts where bushmeat and game meat are widely consumed, particularly in SADC countries, this creates regulatory blind spots. Undefined meat may fall between conservation enforcement and food safety oversight, while overly broad definitions fail to address hygiene and zoonotic risks. Few jurisdictions explicitly link meat definitions to veterinary inspection or public health systems.

The international review reinforces these observations. Many jurisdictions, including Canada (Canada National Parks Act), Germany (Act on Nature Conservation and Landscape Management [Federal Nature Conservation Act of 29 July 2009]), Indonesia (Act of the Republic of Indonesia No. 5 of 1990 Concerning Conservation of Living Resources and Their Ecosystems), the United States (Lacey Act Amendments of 1981), Australia (Game and Feral Animal Control Act 2002 of New South Wales), the United Kingdom (Wildlife and Countryside Act of 1981), and Brazil (Law No. 9.605 of February 1998), do not define meat within wildlife or conservation statutes, assuming meat is regulated under food safety or veterinary law. Wildlife legislation instead focuses on species protection and trade control.

Where definitions exist, they mirror expansive SADC approaches. Kenya defines meat as fat, blood, flesh, or tissue of any game animal or protected species, regardless of processing (Wildlife Conservation and Management Act of 2012). Ghana defines bushmeat broadly to include flesh, bone, skin, and associated parts (Wildlife Resources Management Act of 2023). This makes Ghana the only country reviewed that used the term "bushmeat"; all other regulations were using "meat" or "game meat." Malaysia uses a hybrid model, defining "part or derivative" and explicitly listing meat (Wildlife Conservation Act of 2010), while Rwanda relies on the broad concept of "specimen" (Environment Law – Law No. 48/2018).

DEFINITIONAL VARIATION OF "TROPHY" IN WILDLIFE LEGISLATION

Within SADC, most countries explicitly define trophies (Table 4) but do so using differing legal logics. Botswana, Mozambique, Namibia, Zambia, and Zimbabwe primarily conceptualize trophies as durable and recognizable animal parts such as horns, tusks, skins, bones, and feathers regardless of limited processing. These definitions emphasize material durability and physical recognizability, implicitly distinguishing trophies from perishable wildlife products, particularly meat. This approach reflects a traditional hunting-oriented understanding of trophies as symbolic or collectible outcomes (Adhikari *et al*., 2021) rather than consumable goods.

South Africa departs from this material-based framing by adopting a purpose-based definition, describing a trophy as any part of a wild or exotic animal retained as a token or memento of the hunt. This emphasis on intent rather than physical characteristics introduces interpretive subjectivity, as identical animal parts may fall within or outside the trophy category depending on user motivation. While this approach aligns closely with recreational hunting practices, it complicates enforcement and creates ambiguity at the interface between hunting, trade, and consumption. Tanzania's definition is unusually expansive, encompassing live or dead animals, manufactured trophies, or other portions. This significantly broadens the regulatory reach of the state. However, such breadth risks semantic overextension, particularly where wildlife products enter food systems or commercial value chains, thereby blurring the boundary between conservation control and food regulation.

Zambia represents a critical outlier within SADC by explicitly including meat within the definition of a trophy. This definitional choice collapses the conceptual distinction between trophies as non-consumptive hunting outcomes and meat as a food product. From a regulatory perspective, this blurring has far-reaching implications, particularly for meat inspection regimes, zoonotic disease surveillance, and trade oversight. The inclusion of meat within the trophy category potentially places consumable wildlife products under conservation law frameworks that are not designed to address food safety or public health risks.

Malawi further illustrates definitional divergence by framing trophies in terms of ownership rather than material form, defining a trophy as a specimen of protected or listed species whose ownership has not passed from the state. Related concepts such as "government trophy" (Malawi) and "state trophy" (Zimbabwe) demonstrate subtle but legally consequential differences in terminology that may affect confiscation, custody, and disposal procedures.

When these SADC findings are situated within the broader international comparison, an additional and equally important pattern emerges: Many jurisdictions outside SADC do not define "trophy" at all. Countries including Canada, Germany, the United States, Australia (New South Wales), the United Kingdom, Indonesia, and Brazil do not reference trophies except Malaysia within their wildlife or conservation legislation. Where the term appears, in Malaysia, the term is not defined, possibly assuming a commonsense meaning, or addressed indirectly through other provisions on protected specimens, animal parts, or illegal trade.

In contrast, Kenya (Wildlife Conservation and Management Act of 2012), Ghana (Wildlife Resources Management Act of 2023), and Rwanda (Environment Law – Law No. 48/2018), like many SADC states, provide explicit definitions that closely mirror the durable-parts definition. Kenya's definition is particularly comprehensive, encompassing live or dead animals and recognizable durable portions whether processed or not, while Ghana and Rwanda similarly emphasize durability and recognizability. Notably, none of these non-SADC definitions explicitly include meat, reinforcing the exceptional nature of Zambia's approach and highlighting a broader international tendency to conceptually separate trophies from consumable wildlife products.

Taken together, these findings reveal a dual problem: definitional fragmentation in regions where trophies are explicitly defined and definitional silence in many jurisdictions where the term is used but left legally unspecified. Both patterns generate regulatory uncertainty. In SADC, inconsistent inclusion or exclusion of meat and whole animals creates ambiguity at the wildlife–food safety interface. From a governance perspective, this lack of semantic alignment undermines harmonization efforts, complicates cross-border cooperation, and creates opportunities for misclassification, regulatory loopholes, and contested legal interpretation. These challenges are also prevalent in other jurisdictions where hunting, conservation, food security (van Vliet *et al*., 2019), and public health intersect.

DEFINITIONS IN ANIMAL HEALTH, MEAT INDUSTRY, AND FOOD ACTS

Within the SADC region, animal health legislation prioritizes domestic livestock, with limited or no explicit inclusion of game or wild animals. Where wildlife is mentioned, it is often referenced indirectly or through cross-linkages to wildlife conservation statutes rather than being operationalized within disease control systems. This is a common phenomenon as current policies, laws, and regulations are designed for domestic animals and not specifically for wildlife and wildlife product disease risk reduction (Kock and Caceres-Escobar, 2022). This constrains surveillance, reporting, and response mechanisms for diseases associated with game meat. A comparable pattern is observed in Canada (Health of Animals Act) and the United States (Animal Health Protection Act, 2002),

where animal health legislation focuses on livestock and explicitly excludes or omits game animals, despite the presence of commercial hunting and wild meat consumption. Similarly, the United Kingdom (Animal Health Act, 1981) adopts a broad species-based definition that includes wild animals but does not translate this inclusivity into clear animal health controls for game meat production. By contrast, Kenya (Animal Diseases Act, 2012) and Malaysia (Laws of Malaysia Act 647 Animals Act, 1953) employ broader statutory definitions of animals that theoretically encompass wildlife, yet these definitions are not supported by detailed regulatory provisions for game meat inspection or disease management. This mirrors the SADC situation, where definitional breadth does not equate to regulatory clarity.

SADC findings indicate that only a limited number of countries include game meat or game explicitly within meat industry or abattoir legislation. Even where inclusion exists, inspection requirements are rarely tailored to the realities of wildlife harvesting and processing. This was expected, as laws and regulations are biased toward domestic animals (World Bank and Food and Agriculture Organization of the United Nations, 2022). This contrasts with Australia (AS 4464:2007), where wild game meat is regulated through dedicated standards covering harvesting, field handling, processing, and transport. Australia's approach reflects a formalized commercial model that integrates wildlife into mainstream food safety governance, something largely absent in the SADC region. In Brazil, Decree No. 9,013 explicitly distinguishes wild animals, game species, and livestock within its inspection framework, including provisions for wild animals raised in captivity under veterinary oversight. This level of differentiation exceeds that found in most SADC countries and demonstrates that animal health systems can accommodate wildlife without undermining livestock-focused frameworks. This can offer a clearer inspection pathway than those observed in SADC. Ghana (Meat Inspection Regulations, 2020), unlike many SADC countries, provides guidance on inspection and hygiene of game meat. In Canada (Safe Food for Canadians Regulations) and the United States (Federal Meat Inspection Act), meat inspection legislation primarily targets livestock, with game meat often regulated at provincial, state, or local levels. This decentralization creates variability but still tends to provide clearer inspection expectations than in most SADC countries, where national silence leaves enforcement authorities without a mandate.

SADC food safety legislation frequently applies generic meat standards without explicitly addressing game meat. This is to be expected, as in many countries, food safety regulations and standards do not apply to game meat (OECD, 2021). Where game is mentioned, for example, in Tanzania, it is often treated equivalently to poultry or fish, overlooking wildlife-specific risks such as field slaughter, delayed chilling, and exposure to zoonotic pathogens. It is, however, important to note that the regulation mentions game meat, but it does not have specific game meat regulations (Kagembe *et al*., 2024). In contrast, EC Regulation No. 853/2004 explicitly includes wild game within its definition of meat and establishes specific hygiene requirements, creating a level of legal clarity that is largely absent in SADC legislation. The United Kingdom (Statutory Instrument 1995 No. 540), alongside EC-derived frameworks, provides explicit definitions of wild game meat and farmed game meat, including permissible processing methods. This specificity contrasts sharply with the SADC region, where such distinctions are rarely codified.

Internationally, Codex Alimentarius defines meat broadly to include domestic animals, farmed game, and wild game, reflecting a clear recognition of game meat as a legitimate food commodity. Similarly, the WOAH defines meat as all edible parts of an animal, without excluding wildlife. These international definitions stand in contrast to SADC national legislation, where game meat is often absent from statutory definitions altogether. The divergence suggests that the challenge in SADC is not a lack of international guidance but weak domestic transposition of global standards.

Overall, the SADC region shares important similarities with Kenya, Ghana, Malaysia, Canada, and the United States in its marginalization of game meat within animal health and food safety frameworks. However, it lags behind jurisdictions such as Australia, Brazil, the United Kingdom, and the EC, where game meat is explicitly defined and regulated within inspection and hygiene systems. What distinguishes the SADC region, particularly from other states, is the scale of game meat use (SADC, 2023) and its formalization (World Bank and Food and Agriculture Organization of the United Nations, 2022).

RECOMMENDATIONS

The findings of this study demonstrate that definitional ambiguity and regulatory fragmentation at the wildlife–food safety interface pose significant challenges for conservation, public health, and sustainable use of wildlife in the SADC region. Addressing these challenges is important, as the SADC Wildlife-Based Economy Strategy Framework emphasizes the harmonization of national wildlife policies and legislation to address transboundary conservation challenges and wildlife trade (SADC, 2023). It further recognizes that wildlife resources transcend national borders and therefore require coordinated regional governance frameworks rather than isolated national responses. Addressing these challenges requires coordinated legal and institutional reforms that recognize the multifunctional role of wildlife while maintaining clear regulatory boundaries. The following policy recommendations are proposed:

First, SADC member states should pursue *regional harmonization of legal definitions* relevant to wildlife use and trade. Core terms such as "animal," "game meat," "wild meat," "bushmeat," "trophy," and "specimen" should be defined in a consistent and functionally distinct manner across jurisdictions. Developing SADC-endorsed model definitions, aligned with Codex Alimentarius (Vapnek and Spreij, 2005) and WOAH terminology, would support national legislative reform while preserving state sovereignty. Harmonized definitions would reduce interpretive uncertainty, facilitate cross-border cooperation, and strengthen alignment with international biodiversity and food safety frameworks.

Second, *game meat should be formally recognized as a food category within national food safety and meat industry legislation*. Where wildlife meat enters trade or is intended for human consumption, its primary regulatory treatment should fall under food safety and public health law rather than conservation law. Explicit inclusion of game meat in food legislation would clarify inspection mandates, improve hygiene control, and strengthen traceability, while allowing conservation authorities to retain control at the harvesting and permitting stages.

Third, SADC countries should adopt a *function-based legal separation between trophies and consumable wildlife products*. Trophies should be clearly defined as non-perishable, symbolic, or collectible outcomes of hunting, whereas game meat should be classified as a perishable food product. Eliminating definitional overlap, particularly where meat is included within trophy definitions, would enhance legal certainty, reduce enforcement discretion, and prevent the misapplication of conservation rules to food safety contexts.

Fourth, wildlife should be more effectively integrated into animal health legislation and disease surveillance systems. Given the recognized zoonotic risks associated with wildlife use (Can *et al*., 2019; Wegner *et al*., 2022; Gallo-Cajiao *et al*., 2023), animal health laws should explicitly provide for the monitoring, reporting, and control of diseases in game species where meat enters food systems. Strengthening institutional coordination between wildlife authorities, veterinary services, and public health agencies through a One Health approach would improve early detection and management of pathogen spillover risks, consistent with CBD Target 5 (CBD, 2022).

Fifth, SADC should consider developing regional technical guidelines or minimum standards for game meat hygiene and inspection, drawing on established international models such as Australia's AS 4464:2007 and EC Regulation No. 853/2004. Even non-binding regional guidelines would provide practical direction to enforcement authorities in jurisdictions where national legislation is silent or underdeveloped and would support safer handling, processing, and marketing of game meat.

Sixth, national legislation should clarify the limits of conservation law once *wildlife products transition into food systems*. Explicit statutory or regulatory statements that defining a term within conservation legislation does not automatically extend conservation control into food safety contexts would help resolve jurisdictional overlap and guide courts and inspectors in statutory interpretation. Such clarification is particularly important in contexts where wildlife, public health, and trade regulations intersect.

CONCLUSIONS

Overall, the SADC findings demonstrate that definitional variation has significant practical and policy consequences. Inconsistent meanings of "animal" affect species coverage, enforcement thresholds, and the regulation of downstream uses such as meat inspection, trade, and zoonotic risk management. The lack of semantic harmonization undermines regional legal coherence and complicates alignment with international biodiversity, food safety, and public health frameworks. These results reinforce the argument that legal definitions are not merely technical details but foundational regulatory instruments. Without harmonized, biologically grounded, and product-inclusive definitions of "animal," wildlife legislation risks perpetuating regulatory gaps that can be exploited, particularly in emerging sectors such as the commercial game meat trade.

In conservation legislation, many SADC countries regulate meat in broadly similar physical terms; the lack of explicit recognition of game meat as a distinct legal category with Namibia as the primary exception creates semantic ambiguity. In most jurisdictions, "meat" remains legally indistinguishable from other wildlife derivatives unless contextually inferred. This ambiguity becomes particularly problematic at the interface between wildlife conservation law and food safety regulation, where clarity on origin, handling, and intended use is essential.

Regarding trophy/game meat, the results underscore the need for clearer, functionally distinct, and context-sensitive definitions of trophies within wildlife legislation. Explicit differentiation between trophies, specimens, and consumable wildlife products, especially meat, would enhance legal certainty, support effective enforcement, and reduce risks at the conservation–public health nexus. In respect to animal and meat legislations, SADC countries are part of a broader global pattern of definitional ambiguity, yet international standards and selected national models illustrate clear pathways for reform. Aligning SADC legislation with Codex and WOAH definitions, and drawing lessons from Australia, Brazil, and EC-based frameworks, would significantly strengthen food safety, disease surveillance, and zoonotic risk management in the region.

CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

ETHICS STATEMENT

The authors confirm that the research meets any required ethical guidelines, including adherence to the legal requirements of the study country.

AUTHOR CONTRIBUTIONS

Not applicable as this paper has one author.

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Data is available on request.

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