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## Global Ecology and Conservation

journal homepage: <http://www.elsevier.com/locate/gecco>

Original Research Article

## Women in wildlife trafficking in Africa: A synthesis of literature

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## ARTICLE INFO

## Article history:

Received 5 March 2020

Received in revised form 17 June 2020

Accepted 17 June 2020

## Keywords:

Bushmeat

Conservation criminology

Corruption

Gender

Illegal wildlife trade

Organized crime

Poaching

Wildlife law

## ABSTRACT

Wildlife trafficking is an illegal industry that some estimate is worth \$5–23 billion USD annually; it occurs in over 120 countries around the world and involves multiple taxa of species, including mammals, corals, reptiles, bony fishes and birds. Across source, transit and destination geographies of wildlife trafficking networks, wildlife trafficking harms people, wildlife and ecosystems. African countries, their wildlife and their people feature significantly across all these trafficking spaces. Amongst the corpus of literature on wildlife trafficking in Africa, the role of women is rarely explored. Women comprise approximately half of the earth's population and thus have the potential to be at least half of the problem causing, and solutions resolving, wildlife trafficking risks. The role of African women in wildlife trafficking remains mostly unknown and under addressed by conservation science and policy. We synthesized the existing literature on roles of women in wildlife trafficking published between 2010 and 2019, creating a novel gender-integrated conceptual framework to guide our synthesis. Our conceptual framework for women in wildlife trafficking includes six primary and 31 secondary roles. Beyond using the conceptual framework for profiling trends and gaps in the literature, we consider how and where the roles of women in wildlife trafficking could be mainstreamed by conservation biologists, criminologists and other stakeholders. Efforts to overcome challenges to combatting wildlife trafficking will likely benefit from increased attention to, and mainstreaming of, the role of women in wildlife trafficking. Such efforts will require evidence upon which to anchor and goalposts upon which to aim; without attending to the roles of women in wildlife trafficking, such evidence will not exist for conservation.

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## 1. Introduction

Wildlife trafficking<sup>1</sup> (i.e., taking of protected species and their illegal trade) and illegal wildlife trade (i.e., unlawful harvest of and trade of live animals and plants or parts and products derived from them), (Wyatt, 2013), creates risks to species and societies in which they occur. These environmental risks have implications beyond species extinction and animal welfare.

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<sup>1</sup> Wildlife trafficking and illegal wildlife trade (IWT) are used interchangeably in this paper to mean the poaching or other taking of protected or managed species and the illegal trade in wildlife and their related parts and products (UNODC, 2016).

Wildlife trafficking is associated with corruption, money laundering, degradation of the rule of law, national insecurity, spread of zoonotic disease, undercutting sustainable development investments, erosion of cultural resources and convergence with other serious crimes such as money laundering. Although wildlife trafficking is occurring in at least 120 countries around the world, Africa is home to many high-profile species, protected areas and people touched by the global criminal economy (e.g., pangolin scales to Asia; African grey parrots to Europe; cheetah cubs to the Middle East; African vulture brains from Cameroon to South Africa) (Buij et al., 2016). Wildlife trafficking in Africa is underscored by the cross-border and trans-boundary nature of the crime, diversity of human and wildlife populations and community-based management regimes. The wider economic impact of illicit trading in natural resources, of which wildlife trafficking is a central part, is estimated at US\$120 billion per annum, which is 5% of Africa's GDP (African Development Bank, 2016). An estimated 24 million jobs are lost to illicit trade through displacement of legitimate employment opportunities, which is about 6% of overall employment in Africa. The loss in tax revenue is approximately US\$3.6 billion; some estimates suggest curbing illicit activities such as wildlife trafficking could create 25 million more jobs across the continent (African Development Bank, 2016). Wildlife trafficking poses a threat to national, regional and international conservation efforts. As it is the trend globally, wildlife trafficking is projected to increase if not more holistically addressed by the government, conservation and other partner sectors.

Africa, although megadiverse, remains a focal point for global wildlife trafficking research, policy, and practice. Regional weaknesses in the area of law enforcement, border and customs control, corruptibility of private and public actors and well-established transnational criminal networks are blamed for the burgeoning trade in illegal animal and plant species, as well as other traditional crimes (Kar and Spanjers, 2014). Illegal wildlife trade (IWT) has a direct bearing on efforts of African governments to achieve their Sustainable Development Goals (SDGs) – including SDGs 1 (No Poverty), 8 (Decent Work and Economic Growth), 15 (Life on Land), 16 (Peace, Justice and Strong Institutions), 17 (Partnerships for the Goals) – and thus also has direct relevance to the work of many other government ministries (Vandome and Vines, 2018). As evidenced by the SDGs and policy documents such as Agenda 2063, it is now commonly understood that overcoming IWT is as much a development challenge as a conservation one. It is also widely understood that this IWT challenge has a bearing on economic growth, land-use and management practices, local partnerships and strong institutions (Vandome and Vines, 2018).

Perhaps in part because wildlife trafficking can involve multiple serious aspects of criminality, violence and violations of the rule of law, it is increasingly emphasized by conservation decision-makers and donors as being worthy of interdisciplinary and multi-sectoral investment—including by the scientific and foreign affairs communities. We know a diverse array of actors are involved in wildlife trafficking, including small opportunistic gangs of poachers, highly organized networks with extensive transnational links and high-tech equipment, individuals and associations who are professionally involved with endangered species such as game rangers, veterinarians, game farmers, law enforcement and security agents, government and embassy officials (Hübschle, 2014). Some suggest the global wildlife trade, both legal and illegal, is one sector in which actors and stakeholders are highly gender differentiated in terms of beliefs and practices (e.g., McElwee, 2012).

Our scientific understanding about the roles of African women in wildlife trafficking is unsophisticated. Available conservation literature on global wildlife trade long ago denoted an absence of gendered discussions as being problematic (Oldfield, 2003). Producers and traders of wildlife products are almost never defined by their sex in the major works on the subject, although one study from Vietnam revealed that hunting and consumption of wild animals can be tied into much divided gender norms (McElwee, 2012). Wildlife consumers in Asia are often described according to their sex (e.g., male vs. female consumption preferences and frequency) (Drury, 2011; Dougherty et al., 2019); unfortunately, this information is more limited for Africa. Conservationists lack insight about the different costs and benefits to men and women of participating in wildlife trafficking interventions along each link of the supply chain. We do not know if thinking about women's participation in interventions is necessary or sufficient for success, but common sense would suggest that ignoring half of the population is not the path to success. We do not know if differences signal different priorities or incentives to participate in efforts to reduce wildlife trafficking. We also lack insight about the nuances of women's participation in poaching, trafficking and selling illegal wildlife products, either directly, in supporting roles or as managers. Thus, policies, programs and projects designed to reduce wildlife trafficking may fail to achieve outcomes, be monitored and evaluated using accurate metrics and promote the voice of local scientists during science-policy discourse. Integrating gender concerns throughout policies, programs and organizations working on combating wildlife trafficking is called gender mainstreaming, and it is considered to be a reasonable evolution of the integrationist approach that is focused on allowing women access to development activities and bureaucracies. Efforts to gender mainstream require such nuanced information, currently missing, to inform the technical and political process (March et al., 2005).

The lack of knowledge on conservation crimes such as wildlife trafficking can be situated within the United Nations 2030 Agenda for Sustainable Development, an agenda envisaging the eradication of poverty, the systematic tack-ling of climate change and building peaceful, resilient, equitable and inclusive societies. This Agenda, unlike the MDGs, has a stand-alone Goal on gender equality and the empowerment of women and girls. There are gender equality targets in other Goals, and a more consistent call for sex disaggregation of data across many indicators in order to inform strategic interventions in critical areas (United Nations Women, 2019). The SDGs have received official endorsements by African governments and have been incorporated into many government action plans and national strategies (The Sustainable Development Goals Center for Africa, 2019). The African Union's (AUs) Agenda 2063 further focuses a spotlight on women's roles in Africa: Goal 7 Environmentally Sustainable Climate Resilient Economies and Communities) links to SDG 15 and Goals 17 (Full Gender Equality) and 18 (Engaged and Empowered Youth and Children) link to SDG 5. The African Union's Continental Report on the Implementation of Agenda 2063 (African Union Commission, 2020) recorded a 37% realization of gender equality against the

2019 target value, concluding that moderate efforts have been made. However, the lack of attention to women's roles in analyses of Africa-focused IWT is a significant mismatch between conservation science and strategic policy documents. Proposed problems associated with, and solutions to, IWT may be missed. If missed, IWT-specific problems inimical to women may fail to be recognized and contributions to success may not be rewarded. Thus, gender hierarchies and inequalities will be recreated and reproduced (March et al., 2005). As such, the objective of this paper was to explore the role of African women in wildlife trafficking to suggest possible avenues for future research, opportunities to fill data gaps and opportunities for conservation practitioners vis à vis gender mainstreaming.

## 2. Materials and methods

### 2.1. Definitions

There is scant literature that includes information about the range of roles women have in wildlife trafficking, thus we reviewed key definitions relevant to our synthesis before embarking. We present definitions from the Johns Hopkins Gender Analysis Toolkit for Health Systems (<https://gender.jjhpiego.org/analysistoolkit>) here as both a reference for readers and level set for future research; these definitions are well established benchmarks for informing gender analysis, gender planning, gender aware interventions and thus gender mainstreaming (March et al., 2005). Sex refers to biologically defined and genetically acquired differences between males and females, according to their physiology and reproductive capabilities or potentialities. It is universal and mostly unchanging, without surgery. Gender refers to the economic, social, political, and cultural attributes and opportunities associated with being women and men. The social definitions of what it means to be a woman or a man vary among cultures and change over time. Gender is a sociocultural expression of particular characteristics and roles that are associated with certain groups of people with reference to their sex and sexuality. In this paper, we focus on women and we recognize the dominant current construction in most African nations of gender as a male/female binary. We recognize that the term gender is not synonymous with women.

### 2.2. Data collection

We collected data using a protocol created in consultation with one of the dedicated African Studies Research Librarians at Michigan State University's Main Campus Library. We searched the following databases between 2010 and 2019: AGRIS, Border and immigration Studies, Ebscohost Criminal Justice, Ebscohost Environment Completes, Ebscohost Gender Studies, Google Scholar, International Bibliography of the Social Sciences, JSTOR, PAIS Index, Project Muse, Scopus, Wildlife and Ecology Studies Worldwide and Web of Science. Five subject searches were conducted using Agriculture, Environmental Studies, Gender Studies, International Studies, and Public Policy. Because these databases use search engine optimization and Boolean protocols, we used a range of terms designed for breadth of coverage on fauna: Africa, authority, bushmeat, crime, corruption, force, gang, gender, illegal wildlife trade, illicit, illegal, intelligence, kingpin, law enforcement, mafia, men/male/masculinity, military, ivory, officer, organized crime, pangolin, poaching, police, policing, rhino, smuggling, subculture, trafficking, victimization, wildlife, and women/female/femininity. This review resulted in a sample of 41 pieces of peer reviewed literature, including three books, five policy documents and two online reports. We intentionally focused our review on Africa but recognize much of IWT flows from Africa to other geographies, such as Asia. It is challenging to uncouple Asia from a review of literature on Africa. Results should be interpreted through a lens of recognition about the strong global linkages involved with IWT.

### 2.3. Conceptual framework

A conceptual framework for roles in wildlife trafficking can help characterize the different types of experiences of women and help inform conservation crime prevention and law enforcement. In this context, wildlife trafficking refers to the illegal trade in wild flora and fauna which includes an illicit supply chain over source, transit, and destination geographies. Based on our review and synthesis of literature using LeCompte and Goetz's (1983) scan, order, review and compare technique, we identified six primary roles that an individual could assume in wildlife trafficking (Table 1). Roles help characterize divisions of labor, interests and needs. We apply these roles to women, but it is interesting to consider the extent to which these roles could be applied to any identity group (e.g., male, transgender, refugees) and modified according to their group-specific roles. These six roles are:

1. Offenders, or the individuals or groups "doing" the criminal, harmful, or deviant behavior.
2. Defenders, or the individuals or groups with formal or informal authority to guard or protect people and animals across the wildlife trafficking supply chain.
3. Influencers, or the individuals or groups linked by various mechanisms of connection to wildlife trafficking and with the capacity to stimulate and be suppress.

**Table 1**

We reviewed 41 sources for their presentation of the roles of African women in wildlife trafficking published between 2010 and 2019. Six primary and thirty-one secondary roles emerged from the literature. The presence of a role is denoted by an “X” in the table. Some sources presented more than one primary role for African women in wildlife trafficking, and some presented more than one secondary role (African Wildlife Foundation, 2017; Ayling, 2013; Cawthorn and Hoffman, 2015; Costa et al., 2017; Global Financial Integrity, 2011; Milliken and Shaw, 2012; Nightingale, 2002; Nightingale, 2006; ON the TRAIL, 2019; Ordaz-Németh et al., 2017; Ramutsindela, 2016; United Nations Environment Programme, 2015; Wittig, 2016; Wyatt, 2011).

Source	Wildlife Trafficking Role																																			
	Offender						Defender					Influencer				Observer		Person Harmed			Benefactor															
Primary Role	Consumer	Corruptor	Enabler	Poacher	Seller	Transitor	Community Guardian	Criminal Justice Professional	Customs Official	Non-Governmental Org.	Police/Rangers/Private Security	Spokesperson	Mother/ Aunt/ Grandmother	Religious/ Cultural Leader	Sibling	Teacher/ Educator	Wife/ Romantic Partner	Scientist/ Researcher/ Academic	Media/ Journalist	Donors (Foundations/ Private)	Immediate Family Member	Orphan	Refugee	Un(der)employed	Widow	Cultural Expression	Employment	Empowerment/Equality	Health	Income	Prestige	Recreation				
Secondary Role																																				
ADB, 2016																				X																
Anneck and Masubelele, 2016												X																								
AWF, 2017				X	X	X													X																	
Ayling, 2013		X				X																														
Bauer et al., 2019																		X																		
Bolton, 2015																						X														
Buij et al., 2016						X	X									X																				
Coad et al., 2010	X		X																															X		
Cooney et al., 2017							X																	X										X		
Costa et al., 2017							X																													
Cawthorn and Hoffman, 2015	X																X																	X		
Duffy et al., 2019												X																								
Epanda et al., 2019							X																											X		
GFI, 2011				X	X																															
Gore and Kahler, 2012																							X													
Howson, 2012						X																														
Hübshle and Shearing, 2018						X				X																										
Hübschle, 2014		X	X	X	X	X							X	X	X	X	X																X	X		
Kar and Spanjers, 2014				X																																
Kahler and Gore, 2012							X																													
Khumalo and Yung, 2015													X			X																				
Lindsay, 2019						X				X																										
Lowassa et al., 2017																X																				
Massé et al., 2016																					X															
Massé et al., 2018																						X		X												
Mbete et al., 2011																		X										X	X			X				
McElwee, 2012	X					X	X																					X	X	X	X					
Milliken and Shaw, 2012		X	X			X																														
ON the TRAIL, 2019				X	X	X																														
Ordaz-Nemeth, 2017	X																																			
Price, 2017													X			X																				
Ramutsindela, 2016		X				X																														
Sandbrook et al., 2019																		X																		
Strobel, 2019						X	X			X																										
Sundström et al., 2019													X			X																				
UNEP, 2015				X	X																															
UNODC, 2016																																				
Vandome and Vines, 2018																																		X		
Wittig, 2016		X				X																														
Wyatt, 2011						X																														
Wyatt, 2013																									X											

• ADB (African Development Bank); AWF (African Wildlife Foundation); GFI (Global Financial Integrity); UNEP (United Nations Environment Programme); UNODC (United Nations Office for Drugs and Crime)

**Table 2**

A conceptual framework for exploring primary and secondary roles in wildlife trafficking. These roles represent different duties, functions, and positions and may be realized full or part time, officially or unofficially, and seen or unseen. There are six primary and 31 secondary roles. This conceptual framework, based on literature published between 2010 and 2019, can be applied to African women or other identity groups, depending on the needs of conservation practitioners or researchers.

Primary Role	Secondary Role
Offender	Corruptor
	Enabler
	Poacher
	Seller
	Transitor
Defender	Community guardian
	Criminal justice professional
	Customs official
	Military personnel
	Non-governmental organization staff
	Police/ranger/private security
Influencer	Mother/parent/aunt/grandmother
	Religious/spiritual/cultural leader
	Sibling
	Teacher/educator
	Wife/romantic partner
Observer	Scientist/researcher/academic
	Media/journalist
Person(s) harmed	Donors/foundations
	Immediate family member
	Orphan
	Refugee
	Unemployed
Beneficiary (through the benefit of)	Widow
	Cultural Expression
	Employment
	Empowerment/equality
	Health
	Income
	Prestige
Recreation	

4. Observers, or the individuals or groups that are eyewitnesses to the activities of, and actors involved in, wildlife trafficking, either intentionally or unintentionally.
5. Person(s) harmed, or the human individuals or groups victimized and/or made vulnerable by wildlife trafficking.
6. Beneficiary or individuals or groups that derive indirect or direct benefits from wildlife trafficking.

In reality, these roles need not be mutually exclusive of each other, however they are important to conceptually distinguish them from each other because they may exert and experience differential influence on the wildlife trafficking supply chain. Further, each role provides a conceptual entry and exit point into the wildlife trafficking workforce and can influence the “performance” of the supply chain. Within each of the six primary roles, we identified between three and six secondary roles as a way to provide more nuanced understanding of the under-recognized cadres of individuals involved in the workforce; in reality, these secondary roles may co-exist with each other as well as primary roles (Table 2).

### 3. Results

#### 3.1. Gaps in the literature

Among the sources reviewed, offender was by far the most commonly presented role for women in wildlife trafficking, and within the primary role of offending, the secondary role of transitor was most common (Table 3). The average number of secondary roles identified in each source ( $n = 41$ ) was 2.2, and 7 secondary roles had no coverage in any of the sources: customs officials and nongovernmental organizations (as defenders), religious/cultural/spiritual leaders and teachers (as influencers), unemployed individuals (as persons harmed) and culture and recreation (as beneficiary). The majority of sources discussed only one or two secondary roles for women in wildlife trafficking (Table 4); the lack of variation may suggest a lack of awareness about variations in the types of roles women may play in the workforce. Among the 23 sources that discussed more than one secondary role for women in wildlife trafficking, three sources considered these roles within more than two primary roles.

**Table 3**

A status snapshot of how African women's roles in wildlife trafficking have been presented in the literature published between 2010 and 2019 (n = 41). The literature most frequently portrayed women as offenders. Additional detail about the presentation of women's roles in wildlife trafficking is gleaned by reviewing the most commonly mentioned secondary role within each of the six primary roles.

Primary role of women	Number of articles citing role	Most mentioned secondary role of women	Number of articles citing role
Offender	35 (85%)	Transitor	11 (27%)
Beneficiary	16 (39%)	Income	7 (17%)
Defender	14 (34%)	Community guardian	8 (20%)
Observer	12 (29%)	Wife	7 (17%)
Persons harmed	7 (17%)	Widow	3 (7%)
Influencer	6 (15%)	Scientist	4 (10%)

### 3.2. Defining primary roles for women in wildlife trafficking

The literature offered an underdeveloped characterization of the primary and secondary roles African women can assume across the wildlife trafficking supply chain. Roles are not mutually exclusive.

#### 3.2.1. Women as offenders

The literature demonstrates there are diverse ways women may be involved as offenders of IWT such as being consumers, enablers, poachers, smugglers/transitors and sellers. Certainly, women are sometimes presented as culpable individuals engaging in wrongdoing and rule transgression. There is not an extensive foundation of literature reporting on women's involvement in the source, transit, and destination geographies of the wildlife trafficking supply chain, however gendered differences seem to exist. For example, cross-border posts and wildlife trafficking network nodes involving international trade are typically dominated by men, perhaps due to the potential for physical danger and the common practice of using bribes and/or aggression with border officials (Hübshle, 2014; Epana et al., 2019). Most government customs, police, and forest rangers are men and the illegal traders who interact with them at border crossings are also usually men. Male-male interactions may be borne out of cultural stereotypes that men relate better to each other in criminal contexts because crime, and policing, are perceived as male dominated and led. Howson investigated gendered patterns of corruption and access to multiple types of illicit networks among female cross-border traders near the Senegambia border (Howson, 2012). Despite a discourse of generosity and solidarity, access to corrupt networks was mediated by class and gender, furthering social differentiation, especially insofar as it depended on geographic and socio-economic affinity with customs officers, state representatives and well-connected transporters (Howson, 2012). The study observed that while successful smuggling depended on contesting legal and social boundaries, the most successful traders (and transporters) strove to fulfil idealized gender stereotypes and roles as closely as possible. The study revealed that moral regulation of illicit networks can constrain women in key ways, but constraints were most likely to emerge more from the social importance of women's reputation among men than from women's own moral values (Howson, 2012).

Women can exhibit *enabling* roles in support of wildlife trafficking activities. One study comparing the attitudes of men and women about poaching revealed that although women were more concerned about environmental degradation than men, women were disproportionately affected by anti-poaching laws and held greater motivations to violate rules (Sundström et al., 2019). Women were found to be less likely to condemn commercial poaching and were somewhat less willing to express anti-poaching-related attitudes than men (Sundström et al., 2019). (This point should not be over-generalized, however, because women can also be strong allies in defending against wildlife trafficking). In rare instances, women have been found playing key administrative roles in a major wildlife trafficking syndicates such as the *Groenewald case* of 2011–2013 which led to the arrest of two women, Sarette Groenewald and Mariza Toet, along with their husbands and other members of a poaching syndicate (Hübshle, 2014). In that case, the women were providing administrative support roles to their husband's illegal business. In some instances, women breach rule of use. Although there was no direct correlation between income from increased illegal wildlife hunting and wealth, hunting oftakes were spent by men on personal items such as tobacco and alcohol whereas women spent oftakes on food for the household, in turn providing an impetus for more illegal hunting (Coad et al., 2010).

*Poaching*, or illegal hunting, is often stereotyped as being a male-dominated activity, but the literature does acknowledge instances where women play functional roles, including vehicle drivers, helicopter pilots, safari tour operators, veterinarians, trap setters and rangers. In instances where wildlife trafficking overlaps with organized crime, women can also be involved with money laundering, customs and border patrol and corrupt law enforcement organizations (Hübshle, 2014). This point is noteworthy for gender mainstreaming because we know anti-poaching laws disproportionately affect women and this becomes a motivation for women to breach anti-poaching rules and make them less inclined to condemn commercial poaching (Sundström et al., 2019).

Although *sale and use* of illegal wildlife products may occur in distant geographies than poaching activities, women's involvement can be characterized. Cases documented high profile examples of women being caught with illegal wildlife goods in large cities, including an individual arrested for making tiger balm to later sell and a woman arrested with two tons of wildlife skins and bones in a warehouse (McElwee, 2012). Women may buy different wildlife products, for example ornamental animal products or jewelry (e.g., pearl necklaces, tortoise shell combs, coral bracelets), versus traditional

**Table 4**

The majority of literature published on the roles of African women in wildlife trafficking between 2010 and 2019 focused on a single secondary function. This represents a lack of variation within the literature, as we identified at least 31 different secondary roles that could be assumed.

Number of secondary roles discussed in a single article	Number of articles with discussing the role(s)
1 secondary role discussed	18 (44%)
2 secondary roles discussed	11 (27%)
3 secondary roles discussed	8 (20%)
4 secondary roles discussed	2 (5%)
7 secondary roles discussed	1 (3%)
11 secondary roles discussed	1 (3%)

medicines to treat male sexual dysfunction and lack of virility (McElwee, 2012). There is a dearth of literature on the role of African women in the sale and use of wildlife products. Some media reports from the African Wildlife Foundation noted that women are involved in the use and sale of wild bushmeat and wildlife products in local markets (Wairima, 2016; Belo-Osagie, 2017).

*Transit* points link the spaces where wildlife are illegally poached and consumed. Women may serve as intermediaries in moving illegally hunted wildlife away from remote rural areas and into larger cities; Mbete et al. (2011) estimated that women comprised more than half of all traffickers moving endangered species such as great apes from protected areas to cities for bushmeat consumption in Congo Brazzaville. Live animals can also be transited by women, sometimes in partnership with their husbands (e.g., live chimpanzees from Cameroon to Egypt to United Arab Emirates) (Cooney et al., 2017). Hübschle (2014) suggested that many women enter the “workforce” of organized crime through a relationship with a man who is actively involved such as a father, husband, brother, partner or a friend. Women in the mafia appear to step up and take a more active role once that male relationship is on the run, imprisoned or dies (Hübschle, 2014). On the role of African women and transnational organized crime, Hübschle observed a lacuna in the literature on the role of African women in transnational organized crime but that a notable exception is their prominent role in human trafficking networks.

### 3.2.2. Women as defenders

Women’s role in defending wildlife from illicit trade range from serving as formal law enforcement authorities, informal or community guardians, customs and criminal justice professionals, military personnel and nongovernmental conservation organization employees. Here, defenders are responsible for safeguarding, advocating for the rule of law and supporting compliance with rules and norms. *Community guardians* are individuals who do not have official jurisdiction or authority to defend the rule of law yet support compliance in a local context. In many ways, local guardian groups provide an informal push against wildlife trafficking, particularly at the source and origin geographies. Some guardian units illustrate unconventional antipoaching initiatives, such as the well known Black Mambas, an all-female anti-poaching unit in South Africa. Comprised of young rural women and the brainchild of the chief warden of Balule Nature Reserve, the initiative was born out of the need to engage impoverished communities in and around the reserve. The primary function of the Black Mambas is therefore visible policing, as well as outreach and awareness-raising in their communities (Hübschle, 2018). They have successfully identified and demolished several poachers’ camps and kitchens for preparing bush meat, and reduced snaring and poisoning activities substantially. The initiative has been criticized by some for exposing unarmed women to dangerous animals and poachers and for using them to undermine the role of women in rural communities (Hübschle, 2018). For some, the Black Mamba challenge popular gender stereotypes rooted in African culture about what women should do or not do professionally.

Strobel (2019) observed that women’s inclusion can be considered a key ingredient in propelling organizational change in *law enforcement* and that this approach fosters an alternate cultural ethos that better responds to institutional and community needs. In particular, inclusion of women was correlated with three main positive outcomes: communication toward de-escalation in police-civilian interactions, less civilian complaints, and better use of force decision-making (Strobel, 2019). The International Anti-Poaching Foundation established another community-driven conservation policing model called ‘Akashinga’ (Shona for the ‘brave ones’) in Zimbabwe, similar to the South African Black Mambas. The women-only team with jurisdictional authority over rule of law protection, receives identical law-enforcement training as male rangers and is made up of unemployed single mothers, abandoned wives, former sex workers, survivors of sexual and physical abuse, wives of imprisoned poachers, widows and orphans (Hübschle, 2018; Lindsay, 2019). The idea of employing traumatized women as defenders seems to resonate with some because of a perception that women are more adept than men in violent situations and less susceptible to bribery (Lindsay, 2019). We could not identify literature that discussed the role of women in the criminal justice system (e.g., attorneys, magistrates, law clerks, justices, penal system officers), as nongovernmental organization personnel or military officers.

### 3.2.3. Women as influencers

Women can be mothers, religious authorities, siblings, teachers, wives and girlfriends (and more!). All of these roles may create entry point to influence wildlife trafficking supply networks, either in a positive or negative manner. Influencers may exert social and other forms of pressure on individuals involved in wildlife trafficking supply chains because of poverty, food

insecurity, lack of alternative livelihoods and cultural and colonial legacies (McElwee, 2012; Price, 2017). Although some traditional community structures exclude women from decision-making, women can be powerful and influential in some African rural contexts. Due to rigidly-defined gender roles and responsibilities, some women rarely engage in certain *livelihood* activities like home construction, field clearing, and livestock herding because they are believed to be ‘men’s work’ (Khumalo and Yung, 2015). Food provision and basic livelihood strategies, for example, are often managed by rural women. Women have a variety of *responsibilities*, including fetching water, collecting firewood, making fires, washing dishes and clothes, cooking food, caring for children and sweeping the courtyard around their houses. Food scarcity, especially animal protein to balance family nutrition or the financial need for same, have in most cases become a powerful motivation for subsistence poaching by women and may drive their husbands or boyfriends to illegal hunting (Hübschle, 2018). Lowassa et al. (2012) found that women can influence men to hunt for bushmeat through both verbal and non-verbal communication. Women may sing praise songs, reward hunters with gifts or food, or may be particularly interested in pursuing a romantic relationship with a hunter. In some instances, where men choose not to hunt, his *wife/wives* may cheat on him, he may be labelled a subjected to insulting mockery; women may sing songs of ridicule about the non-hunter to emphasize “weakness” (Lowassa et al., 2012). Women and children are also victims of the “war on poaching”; their vulnerability increases dramatically with the death of a husband, father, nephew or uncle, women (Massé et al., 2018). Women may therefore influence male’s reduced engagement in wildlife trafficking.

#### 3.2.4. Women as observers

Women may observe wildlife trafficking intentionally or unintentionally as part of their professional responsibilities, particularly individuals who are scientists, members of the media, nongovernmental organization personnel or donors. In this regard, they may be considered eyewitnesses asked to collect, identify, or interpret information that is used for investigations, enforcement (Wells, 2018) or public awareness. Eyewitnesses can inform policy and program agendas and provide evidence in multiple formats that carries a lot of weight in decision making; they can also make mistakes and carry with them their own set of expectations, values and cultural norms (Loftus and Palmer, 1996). One study used bibliometric analysis to show that Black, African, and female-identifying researchers are underrepresented among *authors* of published studies on lions (*Panthera leo*) in Africa, potentially leading to biased representation in institutions dealing with lion research and conservation and reinforce disenfranchisement with one of the most emblematic species in Africa (Bauer et al., 2019). Several *media stories* by conservation organizations, such as African Wildlife Foundation, highlight on the exploits and participation of women in combatting wildlife trafficking in Africa. Most of these stories were written by women (Bongoma, 2015; Mishina, 2015; Wairima, 2016; Wilber, 2017; Belo-Osagie, 2017).

#### 3.2.5. Women as persons harmed

It is likely incorrect to wholly assume that entire communities are complicit in or benefit from poaching. In fact, some community members reported that they feared ‘the outsiders,’ while others were threatened to collaborate or told to turn a blind eye. In some studies, focus groups revealed that mothers and wives in particular were deeply concerned about poaching, fearing for their children’s or husbands’ lives, and the potential loss of a breadwinner should they get killed or arrested. Far from being supportive of poaching, the women who chose to participate in the research said that it had affected the social fabric of village life, mostly to the detriment of women and children (Hübschle, 2018). Massé et al. (2018) observed how militarized conservation (i.e., use of military tactics in conservation) in Mozambique has led to the death of many poachers leaving many women widowed and as emergency head of household taking care of their fatherless children (Massé and Lunstrom, 2016; Massé et al., 2018). Two studies noted human right abuses and deaths occasioned by militarized conservation but did not explicitly refer to their impact on women (Annecke and Masubelele, 2016; Duffey et al., 2019). Efforts to protect wildlife populations that are vulnerable to poaching and trafficking can create new vulnerable populations beyond individuals directly suspected of poaching, particularly families, women and children (Massé et al., 2018).

In the face of human-wildlife conflict, women may exhibit vulnerabilities in relation to poverty and marital statuses which make them more susceptible to wildlife trafficking impacts, less able to recover from losses or to access compensation. This may actually deepen the vulnerability of women whose economic status is already marginal (Khumalo and Yung, 2015). Wildlife trafficking can also inflict harms through the disruption of ecosystems and the loss of wildlife and ecosystem services.

#### 3.2.6. Women as beneficiaries

Some studies discuss how women may benefit economically from wildlife trafficking, especially in the area of provision of food for the family and income for other family needs when they or their husbands engage in hunting or other aspects of the IWT (McElwee, 2012; Hübschle, 2014). In this regard, wildlife trafficking may be viewed through an economic lens whereby crime enables resource transfers that overcomes welfare loss or the substitution of leisure for production; to ignore benefits from wildlife trafficking is to ignore the problem away (McChesney, 1993). Hübschle noted that women who operate as queenpins in some organized criminal network can benefit financially from huge incomes and achieve empowerment relative to their male counterparts as in the *Groenewald case* (Hübschle, 2014). Wildlife killed because of human-wildlife conflicts are sometimes trafficked and women may derive benefits from reduced conflicts. Importantly, any benefits from reduced conflict are likely to be differentially distributed between men and women. (Kahler and Gore, 2012).

#### 4. Discussion

Wildlife trafficking is an industry some estimate to be worth \$5–23 billion USD (e.g., [t Sas-Rolfes et al., 2019](#)). The crime occurs in over 120 countries around the world, and involves multiple taxa of species, including mammals, corals, reptiles, bony fishes and birds. Across source, transit and destination geographies of wildlife trafficking networks, wildlife trafficking harms people, wildlife and ecosystems. Wildlife trafficking is considered to be a transnational crime worthy of international attention and interdisciplinary scientific inquiry. Agenda 2063 prioritized efforts to combat wildlife trafficking in Goal 7, Priority Area 1—meaning that continent-wide strategies need to be considered in order to realize goals. The roles of women in wildlife trafficking in Africa remain mostly unknown and under addressed by science and policy, inhibiting Goal achievement. Women comprise approximately half of the earth's population and thus have the potential to be at least half of the problem causing, and solutions for resolving, wildlife trafficking. We reviewed the existing literature on the primary and secondary roles for African women in wildlife trafficking to help fill key gaps in knowledge that can contribute to gender mainstreaming efforts. In reviewing the literature, we produced a conceptual framework to guide interpretation of information and also suggest avenues for future research with relevance to policy.

Our synthesis of extant literature indicated significant gaps in conservation knowledge about the roles of women in wildlife trafficking. The conceptual themes that guided our analysis identified many grey areas. Almost 40% of the literature reviewed explored or characterized women in offender-type roles; other roles such as beneficiaries, observers and influencers were minimally explored. Thinking about women as offenders is clearly important for policy and programmatic interventions, however other roles are also relevant for realizing sustainable development goals and conservation objectives. All roles are relevant aspects for mainstreaming efforts. It is clearly evident the roles of women cannot be homogenized according to source, trafficking, and destination geography, nor should they be defined only in the dichotomous terms of offender and defender. The conceptual framework presented herein can be used to further explore and communicate gaps in such a manner so as to be maximally useful for decision makers that must prioritize gaps. Without mainstreaming these nuanced details about the roles of African women in wildlife trafficking, gender concerns may become the sole responsibility of specialist teams that may be unsustainably staffed or resourced—and thus marginalized ([March et al., 2005](#)).

Why else should the role of African women in wildlife trafficking be considered in conservation? First, because of representation across primary and secondary roles. Although women are employed in conservation and criminology sectors as well as involved with wildlife trafficking in the field, women's roles are not well represented in scientific inquiry; the literature suggests the topic is also not well represented on the ground (e.g., in conservation monitoring and evaluating, conservation policies and programs, prioritized funding). We do not know how women are recruited and retained into the wildlife trafficking workforce, for *any* of the primary or secondary roles defined herein. We lack insight about how to best mentor women through defender-oriented programs or reduce bias in entry tests. Gender-role expectations, divisions of labor, and the perception of offending and defending-oriented professions as being traditionally masculine occupations influences occupational socialization as well as organizational subcultures. As more women enter into nontraditional occupations and all roles in wildlife trafficking, it is important to acknowledge and potentially avoid expectations, particularly those reflecting the stereotypical feminine characteristics of being weak, passive, and nurturing. This may dilute efforts to mainstream gender into efforts to combat wildlife trafficking. Conservation can be made more accountable and transparent—to communities or donors, with more explicit recognition of these role of women. Conservation policies could amplify women's roles in programmatic interventions for combatting wildlife trafficking and IWT, enhancing transparency and accountability as well as integrating gender into all aspects of conservation priorities and procedures.

Women in nontraditional occupational roles personify the “outsider-within” perspective that can inform more creative and innovative solutions to reduce wildlife trafficking risks across all geographies ([Scarborough and Collins, 2002](#)). This relates to the concept of segregation, or the unequal distribution of men and women in the occupational structure, and is related to representation. Criminologists sometimes call this phenomenon occupational segregation by sex, and focus on vertical segregation (i.e., clustering of men at the top of hierarchies and women at the bottom), as well as horizontal segregation (the fact that at the same occupational level men and women have different job tasks) ([Moyer, 1992](#)). We know that degrees of sex segregation vary inversely with the level of aggregation of data ([Moyer, 1992](#)), and yet based on our review, the literature appears devoid of this important consideration for *any* role of women in wildlife trafficking—this has implications for programs on the ground. The neglect of women by criminologists has been well documented (e.g., [Sandbrook et al., 2019](#)) and some suggest it reflects the hierarchical structure of the society and in the discipline that places men in positions of power and dimensions, placing the importance of women as being less powerful. The neglect of women in conservation biology is under documented (see [Ogra, 2008](#); [Gore and Kahler, 2012](#)) and so conservation programs and policies may be missing critical voices that are accountable for reducing problems and promoting solutions.

A second reason the role of African women in wildlife trafficking can be more overtly explored in conservation is tokenism. African women may clearly carry out many different roles in wildlife trafficking. In many of these roles, however, women may be a minority or a majority of the actors. More research is needed to better understand these dynamics because tokens are individuals who constitute a numerical minority (outsiders) and are pressured to conform to the stereotypical images of social groups within organizations. Women can be minoritized individuals in conservation, particularly in defender-type roles for wildlife trafficking. Men may also be tokens in conservation, perhaps in observer roles, although more research is needed here. Three consequences of tokenism are visibility, contrast, and assimilation; we lack insight about these consequences for conservation. Women can serve as “symbols” of their minoritized category, especially when they fumble and

succeed; conversely, tokenism status can work well for men's success in that it gives them more opportunities for promotion. Certain elements of token's roles include role entrapment, stereotyping, isolation and performance pressures, which are known to affect the amount of stress, frustration, and dissatisfaction that are frequently experienced by, for example, women in law enforcement.

Role style is an interesting concept related to division of labor, particularly in the criminological literature. Wexler (1985) identified female defenders using four different role styles in their occupation: neutral, impersonal, semi-masculine, feminine, and mixed. Morash et al. (2006) identified four challenges specific to individuals, such as women, whose role style can influence their perception as outsiders: language harassment, racial/ethnic harassment, stigmatization because of appearance and experience of bias, an investment of energy to contend with it. Overcoming challenges of tokenism in combating wildlife trafficking via gender integration and mainstreaming will require evidence upon which to anchor and goalposts upon which to target; without attending to the roles of women in wildlife trafficking, particularly in the defender-oriented roles, such evidence will not exist. If we do not understand why women are engaging in different wildlife trafficking-related roles then the conservation community will be less effective in their efforts to address it.

New evidence about the roles of African women in wildlife trafficking can enable new analysis that informs conservation policy, practice, and mainstreaming within organizations. Analysis could include comparisons of men and women in order to reveal where there are gaps and inequalities that are likely to affect women's participation rates in conservation interventions, leadership or access to conservation programs that subject men and women to differential risks and vulnerabilities associated with wildlife trafficking. Analysis can also provide conservationists with a deeper understanding about why gaps and disparities exist and how they affect men and women's aspirations and opportunities—inside and outside Africa. For example, constraints analysis could help examine how differences limit or facilitate desired changes in wildlife trafficking knowledge, practices, and access to resources that can then be addressed by interventionists. Or, gap analysis could be used to assist with identifying conservation or sustainable development targets based on policy and strategy documents and help answer such questions as - what are the existing goals for women in wildlife trafficking both within and outside Africa? These targets may be general or specific, quantitative or qualitative and simple or complex (Baltzer et al., 2001). New knowledge could help enable the design of more effective and sustainable intervention strategies as well as understand the differential impacts of wildlife trafficking – and of the interventions designed to tackle it – on women and men. Integrating gender concerns into wildlife trafficking intervention protocols could further help reduce women's marginalization and thereby help avoid alienating women who might be more likely to engage in and support of efforts to combat wildlife trafficking (March et al., 2005).

## 5. Conclusion

At the 2015 celebration of the World Wildlife Day, former United Nations Secretary General, Ban Ki-moon stated: “*Illegal wildlife trade undermines the rule of law and threatens national security; it degrades ecosystems and is a major obstacle to the efforts of rural communities and indigenous peoples striving to sustainably manage their natural resources. Combatting this crime is not only essential for conservation efforts and sustainable development, it will contribute to achieving peace and security in troubled regions where conflicts are fueled by these illegal activities*” (Bolton, 2015). Ultimately, the global illegal wildlife trade will only likely be solved by a variety of methods: a combination of regulations, enforcement, market solutions, or demand reduction campaigns. In each possible solution lies a need to understand the gendered dimensions of the problem such as including the effect of hunting bans on women's efforts to protect their fields, the lax enforcement of trade laws and domination by men in the bribery and fraud that characterizes much international trade, and the reasons why men and women consume various wildlife products in different ways. Additional research exploring women's roles in other geographies such as Latin America or Asia is needed; considering transgender, cisgender and intersex perspectives on wildlife trafficking roles, and conservation in general, would also be highly relevant to mainstreaming efforts as well as sustainable combating wildlife trafficking interventions. In all cases, a gendered analysis of the problem is likely to lead to better, more sustainable solutions in the long run (McElwee, 2012). The conceptual framework and synthesis of literature herein helps advance this objective.

## Declaration of competing interest

We declare no conflict of interest.

## Acknowledgements

This work was supported by the Michigan State University Alliance for African Partnership and Department of Fisheries and Wildlife.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.gecco.2020.e01166>.

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