Introduction

We tend to approach the issues of small arms proliferation and armed violence in terms of people and the relations between them: perpetrators and victims, buyers and sellers, groups in conflict with one another. This people-centred approach is understandable because our ultimate aims are to reduce human suffering and improve human security. But if the focus is too narrow, it can obscure the broader picture.

This year, the *Small Arms Survey 2015: Weapons and the World* aims to provide several pieces of that broader picture, examining small arms and armed violence from contrasting, but complementary angles. Its first section explores two specific aspects of an emerging issue area, namely the environment and small arms. A second section, titled 'weapons, markets, and measures', looks at small arms markets and control challenges. The final section of the 2015 *Survey* focuses on armed actors.

THE ENVIRONMENT AND SMALL ARMS

This is not the first time the Small Arms Survey has stepped back from the specifics of arms markets and armed violence to examine broader socio-economic, political, and cultural influences. The connections between small arms and the natural world, however, remain largely unexplored, even though in some cases they are lying in plain sight. Many of the world's battlefields, for example, are scarred with the physical by-products of ammunition use, in the form of lead and, in some cases, depleted uranium.

On a much broader scale, the many ways in which environmental factors can trigger, sustain, and shape armed conflicts are gaining increasing attention. Resource constraints have provoked violence throughout history. In the 21st century, overpopulation, increasing urbanization, resource depletion, and climate-linked change, including drought-induced privation, are adding fuel to the fire.

Global climate change is now seen as the most pressing of all environmental problems. The year 2014 was the warmest ever recorded (NASA, 2015), and there are concerns regarding the impact of climate change on human interactions—including on underlying causes of armed conflict, as well as on actual fighting. In tropical conflict areas, for example, fighting traditionally stops during the rainy season, only to resume when the soil hardens enough for vehicles to navigate unpaved roads. Terrain influences—even determines—battle tactics. In some parts of the world, rainy seasons are now shifting in time and intensity. As global warming alters temperature, rainfall, and sea levels, as many expect it will, it is almost certain to affect armed violence and armed conflict in ways that for now are unpredictable.

Two chapters in the *Small Arms Survey 2015* take up environmental themes. In addition to causing environmental degradation, the extraction of natural resources can transform remote outposts into urban hubs virtually overnight; it can also spur insecurity and violence as different groups compete over spoils and as local communities protest perceived wrongs (VIOLENCE AND RESOURCE EXTRACTION). At the same time, poachers' use of weapons, including

military-style firearms, has led to a marked reduction—and, in some cases, the near elimination—of protected elephant and rhino populations in Africa. While national anti-poaching forces and organized poaching groups are becoming increasingly militarized, poaching rates continue to outpace natural population replacement rates in many parts of the continent (POACHING IN AFRICA).

WEAPONS, MARKETS, AND MEASURES

The second section of the *Survey* looks at small arms markets and the various attempts under way, at the national, regional, and global levels, to strengthen small arms control and prevent legal weapons from becoming illicit. This section begins with a review of the latest steps agreed at the global level, specifically at the Fifth Biennial Meeting of States on the UN Programme of Action (UN UPDATE). It ends with an examination of possible ways forward for South-east Europe as countries there, in partnership with other governments and regional organizations, struggle with their often-excessive weapons and ammunitions stockpiles (STOCKPILE MANAGEMENT). In between, the Trade Update chapter presents some of the latest trends in international small arms transfers, with a specific focus on transfers to selected countries in the Middle East and North Africa region, before and after the 'Arab Spring'.

This last chapter underlines the magnitude of the control challenges that still lie ahead. There is little evidence that the Arab uprisings have had much impact on the policies of significant exporters of small arms to the region, notwithstanding the clear risks of diversion and misuse in the cases examined in the chapter (TRADE UPDATE). Meanwhile, the UN small arms process faces a challenge in translating diplomatic discussions of the past several years into more concrete prescriptions for action at the Second Open-ended Meeting of Governmental Experts. UN member states have known for some time that weapons marking, record-keeping, and tracing are made more difficult by certain recent developments in small arms manufacturing, technology, and design (UN UPDATE). But they have yet to decide what to do about it.

Overall, the weapons, markets, and measures section of the 2015 *Survey* highlights a patchwork of action, as well as inaction, with respect to the critical control challenges of the day—challenges that are not likely to dissipate any time soon, neither in the Middle East and North Africa, nor elsewhere.

ARMED ACTORS

Moving from the tools of armed violence to those who wield them, the last four chapters in the 2015 *Survey* highlight special challenges concerning armed actors, ranging from insurgents in northern Mali to maritime security guards operating against pirates in and around the Indian Ocean.

Two chapters document the somewhat contrasting fortunes of insurgent forces. In northern Mali, jihadists remain a pervasive threat. Their aggressive campaign for Islamic rule is hindering reconciliation between other rebels and the government, while their use of roadside bombs and suicide attacks will likely pose a threat to peacekeepers and government security forces for the foreseeable future (NORTHERN MALI). In the eastern Democratic Republic of the Congo, government military operations and two separate disarmament, demobilization, and reintegration campaigns have sapped the internal cohesion and overall strength of the insurgent group, the Forces Démocratiques de Libération du Rwanda–Forces Combattantes Abacunzi. While this is good news, the group's remaining members have dispersed into the jungle with their weapons, where they can still threaten civilians (FDLR–FOCA).

Definitions

The Small Arms Survey uses the term 'small arms and light weapons' to cover both military-style small arms and light weapons, as well as commercial firearms (handguns and long guns). Except where noted otherwise, it follows the definition used in the *Report of the UN Panel of Governmental Experts on Small Arms* (UNGA, 1997):

Small arms: revolvers and self-loading pistols, rifles and carbines, sub-machine guns, assault rifles, and light machine guns.

Light weapons: heavy machine guns, grenade launchers, portable anti-tank and anti-aircraft guns, recoilless rifles, portable anti-tank missile and rocket launchers, portable anti-aircraft missile launchers, and mortars of less than 100 mm calibre.

The term 'small arms' is used in this volume to refer to small arms, light weapons, and their ammunition (as in 'the small arms industry') unless the context indicates otherwise, whereas the terms 'light weapons' and 'ammunition' refer specifically to those items.

'Armed violence' is defined as 'the use or threatened use of weapons to inflict injury, death or psychosocial harm' (OECD, 2011, p. ii).

Private security companies appear to be fulfilling their role of security provision in and around the Indian Ocean, an area that has seen a sharp decline in the number of Somali pirate attacks in recent years, correlating with the deployment of private armed guards on board vessels transiting the area. Yet, in the absence of common rules and regulations, there are concerns over the security of the arms and ammunition that these guards store on board the 'floating armouries' that operate in these waters (FLOATING ARMOURIES).

The *Small Arms Survey 2015* concludes with a consideration of youths in Burundi. Currently, despite their aspirations to lead normal lives, many young people, already made vulnerable by years of armed conflict and poverty, have few options but to join political parties that have a history of manipulating and mobilizing their members for violence. As the chapter relates, including in the words of Burundian youths, whether the country's future is peaceful or conflict-ridden depends largely on whether young Burundians will be offered better alternatives (YOUNG PEOPLE IN BURUNDI).

CHAPTER HIGHLIGHTS

The environment and small arms

Chapter 1 (Poaching in Africa). From the Central African Republic to South Africa, Africa's elephant and rhino populations are under threat from poachers. Armed militias, rogue military officers, commercial poachers, and local hunters are some of the perpetrators involved. They use a variety of instruments and methods to kill protected wildlife, including military-style weapons and high-calibre hunting rifles. This chapter investigates both the weapons types and methods used by poachers and the responses by governments, conservancy groups, and local communities. As international demand for ivory and rhino horn remains high, poachers and anti-poaching forces have increasingly adopted military tactics and weaponry, leading to lethal encounters between poachers, wildlife rangers, and civilians.

Chapter 2 (Violence and Resource Extraction). This chapter focuses on violence related to the rapid urbanization of areas surrounding resource extraction sites. Extraction—particularly of oil, gas, and minerals—tends to attract a variety of armed actors, including security forces and predatory groups. Resource extraction frontiers tend to be characterized by insufficient public service provision, including of security, which is often outsourced to non-state providers. The violence in these urbanized frontiers involves not only conflict over the resources themselves, but also unrest related to precarious socio-economic and environmental conditions, post-extraction decline, and state-induced urban clean-up.

Weapons, markets, and measures

Chapter 3 (UN Update). The Fifth Biennial Meeting of States (BMS5), the latest meeting on the UN Programme of Action (PoA), was held in June 2014. But to what end? This year's UN Update chapter recaps the key features of the meeting and assesses the BMS5 outcome document against pre-existing PoA-meeting text. The chapter also anticipates the next meeting on the PoA calendar, the Second Open-ended Meeting of Governmental Experts (MGE2), scheduled for June 2015. It reviews the control challenges posed by new developments in small arms manufacturing, technology, and design and charts possible ways forward at MGE2. MGE1 helped alert states to some of the new developments. It will be up to MGE2 to engage with the associated challenges and indicate how to respond.

Chapter 4 (Trade Update). This chapter examines small arms flows to Egypt, Libya, and Syria, both before and after the 'Arab Spring'. As a rule, significant exporters of small arms to the Middle East and North Africa have not introduced restrictive policies in response to the increased armed violence and political instability in the region since 2011. States have also authorized the export of small arms to non-state armed groups inclined to fight extremist groups in the region, despite the risk of diversion and misuse. In line with previous Trade Updates, the chapter presents updated information on the main actors of the global authorized trade, including top exporters and importers (those with annual exports and imports of at least USD 100 million) in 2012. In advance of the presentation of a revised Transparency Barometer in the 2016 *Survey*, it also assesses the extent to which regional reporting instruments have promoted transparency in small arms transfers.

Chapter 5 (Stockpile Management). While most countries in South-east Europe face the challenge of managing operational, excess, and ageing weapons and ammunition, few have the capacity to administer their stockpiles in a comprehensive manner, thus increasing the risks of diversion and accidental explosions. Since 2009, the Regional Approach to Stockpile Reduction initiative has fostered stockpile management synergies in the region. This chapter describes the rationale behind the initiative and reviews surplus stockpile, disposal, and storage data provided by participating states for the years 2009–14. The research highlights the constraints hindering regional cooperation in terms of surplus ammunition transport and demilitarization, and points to opportunities for the building of sustained capacity for stockpile management in South-east Europe.

Armed actors

Chapter 6 (Northern Mali). This chapter reviews the types and sources of arms and ammunition used by insurgents in northern Mali in 2014, comparing these findings to a similar study conducted in 2005. It shows that these arsenals are expanding in this restive region. Having overcome shortages of light weapons and ammunition, insurgents now possess larger-calibre weapons not previously documented in northern Mali. Much of the newer materiel appears to come from looted Malian stockpiles as well as from Libya and, to a lesser extent, other sources in the region.

Chapter 7 (FDLR–FOCA). The Forces Démocratiques de Libération du Rwanda–Forces Combattantes Abacunzi (FDLR–FOCA) was long considered one of the most enduring and destabilizing armed groups operating in the eastern Democratic Republic of the Congo. Yet its membership has dwindled in recent years, from an estimated 12,000 combatants in 2002 to just 1,500 in 2014. The chapter examines the origins, evolution, and small arms holdings of the group. It documents some of the 'state-like' mechanisms that FDLR–FOCA put in place to ensure group cohesion, and how these eroded over time. Importantly, the chapter analyses the factors that contributed to the group's decline, including targeted military operations and demobilization programmes implemented by regional and international actors.

Chapter 8 (Floating Armouries). Maritime private security companies that protect merchant vessels against piracy in the high-risk area in and around the Indian Ocean face legal restrictions regarding the transfer of arms and ammunition between coastal states. Their solution has been the use of 'floating armouries'—maritime vessels that store company arms and ammunition in international waters. Research presented in this chapter indicates that security and storage practices varied significantly among the approximately 30 floating armouries operating in the high-risk area in 2013, with some violating the terms of arms export licensing provisions. Key stakeholders, however, have not developed common minimum standards for the safety and security of floating armouries and show no signs of preparing to do so.

Chapter 9 (Young People in Burundi). Young people's experiences and means of coping with armed violence are important for both security and development in post-conflict contexts—factors that are often overlooked by policymakers. This chapter focuses on Burundi, a country where civil war ended more than a decade ago but where insecurity persists. Based on original narrative data collected between 2012 and 2014, the chapter shows how a history of violent conflict affects the lives of young people and their families, and how the conditions of poverty, unemployment, and lack of access to basic social services prompt many young people to adopt high-risk coping strategies, including ones that lead to violence. It points to the need for increased consideration of young people's capacities for resilience.

CONCLUSION

In an earlier era, the biological sciences placed an organism and its environment in separate domains of study. Subsequent research has shown that they cannot be separated so easily. Our understanding of complex human behaviours, such as armed violence, is moving in the same direction. Increasingly, all aspects of human life—including armed violence—appear entwined with broader environmental factors.

This edition of the *Small Arms Survey* contributes to the emerging research agenda on the environment and small arms in the specific, but related areas of wildlife poaching and resource extraction. It also broadens and deepens our understanding of the tools of violence and those who wield them, including for purposes of environmental predation. The poaching of elephants in West and Central Africa, for example, has significantly cut numbers, with some herds now close to extinction. The causes of this debacle include weak governance, ongoing armed conflicts, substantial firearms proliferation, and the presence of criminal groups.

The same afflictions are threatening the security of people and countries in other parts of the world. Some of the news, including the persistence of small arms transfers to a volatile Middle East, is dire. But there are also sources of hope: modest, but significant steps forward in the fight against small arms proliferation and misuse. While the broader small arms picture is complex and often troubling, the 2015 *Survey* details many practical means of grappling with today's current challenges—at the level of the individual, her community, and the planet as a whole.

—Emile LeBrun and Glenn McDonald

BIBLIOGRAPHY

NASA (National Aeronautics and Space Administration). 2015. 'NASA, NOAA Find 2014 Warmest Year in Modern Record.' Press release. 16 January. <http://www.nasa.gov/press/2015/january/nasa-determines-2014-warmest-year-in-modern-record>

OECD (Organisation for Economic Co-operation and Development). 2011. 'Breaking Cycles of Violence: Key Issues in Armed Violence Reduction.' Paris: OECD. <http://www.oecd.org/governance/governance-peace/conflictandfragility/docs/48913388.pdf>

UNGA (United Nations General Assembly). 1997. *Report of the Panel of Governmental Experts on Small Arms.* A/52/298 of 27 August (annexe).

Kenya Wildlife Service officials display elephant tusks seized from poachers, Nairobi, January 2013.
© Noor Khamis/Reuters

1 In the Line of Fire

ELEPHANT AND RHINO POACHING IN AFRICA

INTRODUCTION

In June 2014, armed poachers entered the Ol Jogi sanctuary in Kenya and killed four rhinos in one evening. The Kenya Wildlife Service (KWS) described the attack as the worst perpetrated against rhinos since the 1988 killing of five rhinos in Meru National Park (Jorgic, 2014). A month prior to the rhino attack at Ol Jogi, KWS rangers found themselves caught between two gangs of armed poachers. When the shootout ended, 25-year-old KWS ranger Paul Harrison Lelesepei was dead from gunshot wounds (Heath, 2014). The two recent incidents underscore the danger armed poachers pose to wildlife and rangers alike, not only in Kenya, but across African range states where poachers target elephants and rhinos for their ivory and horn, fuelling a thriving international illicit trade.

In Africa, elephant populations on the whole are in decline and the illicit killing of rhinos has escalated sharply over recent years. The actors involved in poaching these animals include armed militias, rogue military officers, commercial poachers, and bush meat and subsistence hunters. Poachers are making widespread use of military-style weapons and high-calibre hunting rifles in their pursuit of elephants and rhinos, complicating the efforts of wildlife rangers to stop them.

This chapter draws on interviews with leading wildlife conservation experts and open-source material to examine the challenges facing and strategies adopted by anti-poaching forces and wildlife management agencies in African range states with elephant and rhino populations. Based on original field research conducted in Kenya, the chapter also offers insight provided by rangers, conservationists, and others affected by poaching in the country. The main findings are that:

- Poachers use multiple means to kill elephants and rhinos, including firearms and non-firearm methods.
- As demand for ivory and rhino horn remains high, some poachers and anti-poaching forces are becoming increasingly militarized, using military-style weapons and adopting more aggressive tactics.
- Firearms and ammunition found at poaching sites are not systematically identified, recorded, or traced despite the potential use of such techniques in identifying the sources and trafficking routes of poacher weapons.
- Armed groups have been responsible for major cases of large-scale elephant poaching, yet poaching allegations have also been levelled against some government military forces.
- Small groups of poachers also target elephant herds and rhinos, killing significant numbers of animals over time, particularly in rangeland where elephant and rhino populations are dense.
- Without a substantial reduction in the demand for ivory and rhino horn, efforts to deter poachers through armed interventions may disrupt poaching, but not stop it.

The chapter begins with an overview of poaching in Africa, covering trends and drivers in elephant and rhino poaching. It then discusses armed groups involved in poaching, highlighting the cases of groups operating primarily in Central African states. Next, it provides insight into the different types of weapons used in poaching, including military-style weapons, hunting rifles, and craft firearms, as well as traditional weapons and methods, such as spears, arrows,

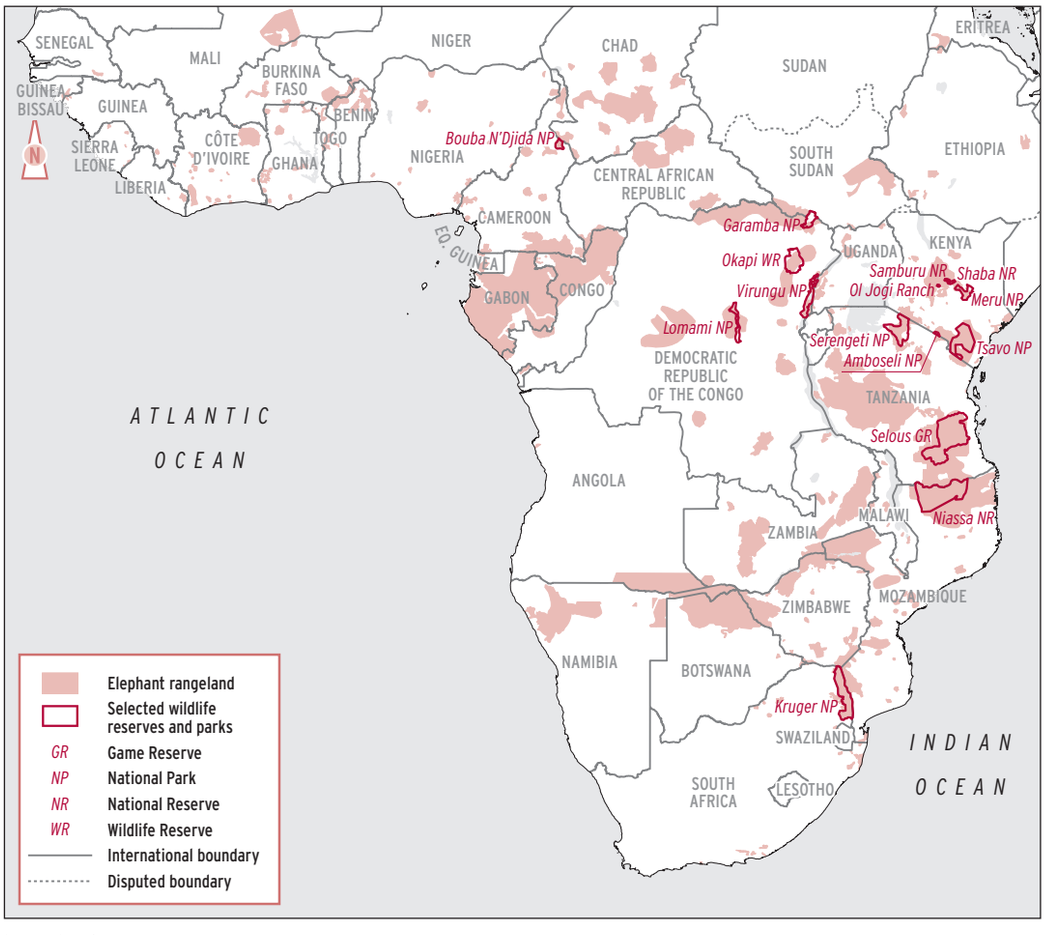
and poison. The final section reviews national responses to poaching and the roles of law enforcement, the military, and local communities.

OVERVIEW OF POACHING IN AFRICA

Poaching is the illegal killing of wildlife in contravention of national or international law. Since 2010, the illegal killing of elephants in Africa has outpaced natural population replacement rates (Wittemyer et al., 2014); meanwhile, conservationists estimate that rates of rhino poaching could surpass birth rates by 2018 (Save the Rhino, n.d.). The 1970s and 1980s witnessed earlier escalations in the illegal killing of elephants and rhinos (Blanc et al., 2007; Okello et al., 2008; UNEP et al., 2013).

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was adopted in 1973 and entered into force for states parties in 1975 (CITES, 1973). CITES regulates the international trade in wildlife

Map 1.1 **Elephant rangeland in Africa**



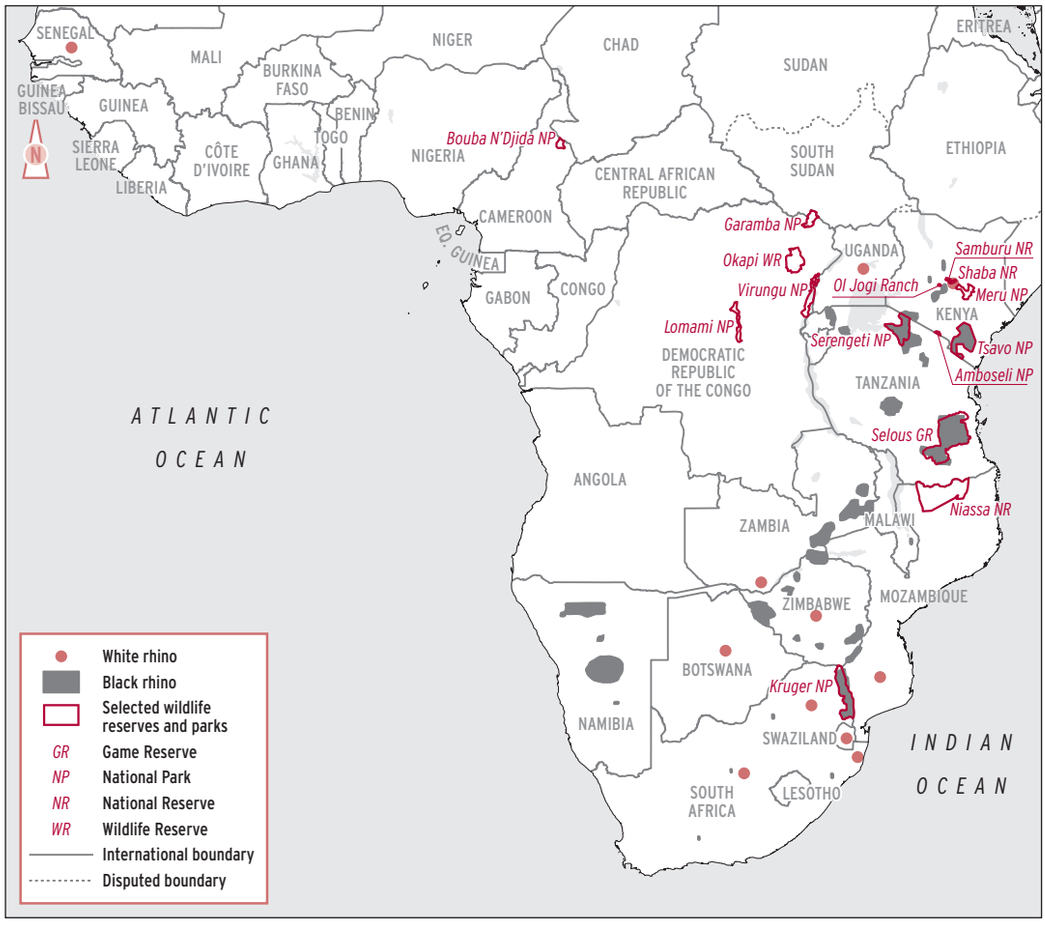
Source: IUCN (n.d.)

species that it classifies as threatened or endangered. In 1989, a CITES vote listed elephants on Appendix I—a classification given to the most endangered species—in essence prohibiting all trade, with a few exceptions, including scientific research. In 1990, the trade ban came into force in CITES countries and territories. In 1997, the elephant populations of Botswana, Namibia, and Zimbabwe were relisted to Appendix II, which comprises 'species that are not necessarily threatened with extinction but that may become so unless trade is closely controlled' (CITES, 1973). White and black rhinos are on CITES Appendix I, with the exception of southern white populations in South Africa and Swaziland, which are listed on Appendix II for acceptable trade in live animals and hunting trophies.

Sport hunting of elephants is permitted under a quota in a number of countries, subject to domestic legislation; CITES also allows the export of hunting trophies (such as ivory) collected by hunters as long as it is for non-commercial use (FWS, 2013). Wildlife services are also allowed to carry out the controlled killing of animals that pose a danger to the public.

Poaching of various types takes place across African range states (see Maps 1.1–1.2). In Central Africa, where some elephant populations have decreased significantly, poachers include armed militias, rogue law enforcement officers,

Map 1.2 **Rhino rangeland in Africa**



Sources: San Diego Zoo and International Rhino Foundation (n.d.); Rookmaaker and Antoine (2013)

commercial poachers, and subsistence hunters. The potential threat that armed groups pose to governments and wildlife alike has prompted the UN Security Council to identify poaching in Central Africa as a regional security threat requiring urgent action (UNSC, 2014a; 2014c).

As discussed in this chapter, the problem of poaching extends well beyond Central Africa. The CITES Secretariat has recommended that a number of African states parties to the Convention, including Angola, Cameroon, the Democratic Republic of the Congo (DRC), Gabon, Kenya, Mozambique, Nigeria, Tanzania, and Uganda, develop national action plans to combat ivory poaching and trafficking, and monitor progress in their implementation (CITES Secretariat, 2014b).

Poaching trends

The latest population estimates of elephants in Africa range from 419,000 to 650,000 (UNEP et al., 2013, p. 22). Established under CITES and operational since 2002, a monitoring system known by its acronym, MIKE—Monitoring the Illegal Killing of Elephants—is used to estimate poaching rates. MIKE determines the cause of an elephant's death, making distinctions between illegally killed elephants, non-intentional elephant deaths (such as death due to natural causes), and intentional but legal killings, such as those resulting from sport hunting or the control of problem animals. Elephant kills can involve an array of weapons, including firearms, spears, machetes, and poisons, and can result from commercial poaching, bush meat hunting, or human–elephant conflict. Data collected from kill site investigations is used to establish the proportion of illegally killed elephants (PIKE). PIKE is the total number of illegally killed elephants discovered, divided by the total number of carcasses encountered per year for each site investigated (UNEP et al., 2013).

In 2011, PIKE rates were at their highest levels following a steady upward trend that began in 2006 (see Figure 1.1). Data shows a slight decline in overall PIKE rates after 2011; yet, despite this decline, aggregate levels are probably unsustainable. PIKE rates from 2013 show that the illegal killing of elephants across Africa accounted for almost two-thirds of all discovered elephant carcasses that year (CITES Secretariat, 2014a).

Figure 1.1 **PIKE trends in Africa, 2002-13**

Notes: The graph is based on 12,073 carcasses, with confidence intervals at 95 per cent. PIKE rates that exceed 0.5–the level at which half of the dead elephants found are deemed to have been illegally killed (marked by a red line)–are likely to be unsustainable.

Source: CITES Secretariat (2014a, p. 18)