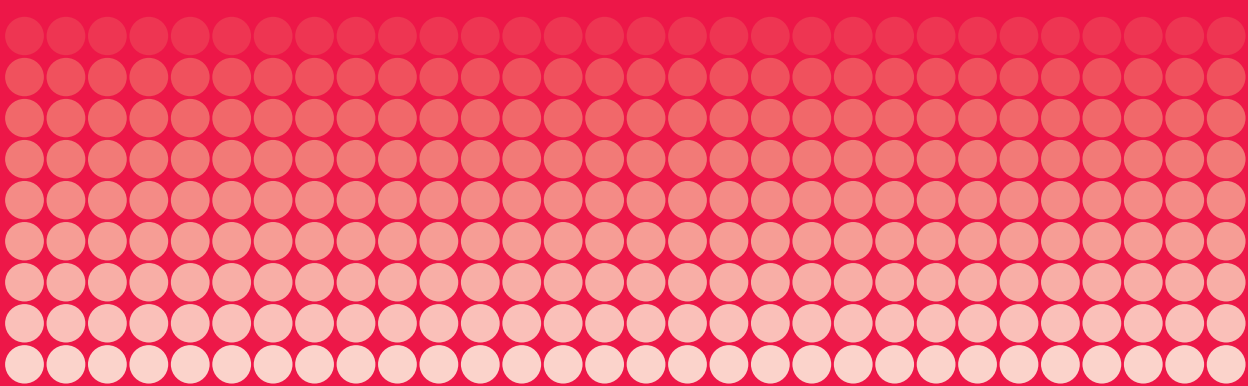


# **SIPRI YEARBOOK 2024**

**Armaments,  
Disarmament and  
International  
Security**

**Summary**



# STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE

SIPRI is an independent international institute dedicated to research into conflict, armaments, arms control and disarmament. Established in 1966, SIPRI provides data, analysis and recommendations, based on open sources, to policymakers, researchers, media and the interested public.

## THE SIPRI YEARBOOK

*SIPRI Yearbook 2024* presents a combination of original data in areas such as world military expenditure, international arms transfers, arms production, nuclear forces, armed conflicts and multilateral peace operations with state-of-the-art analysis of important aspects of arms control, peace and international security.

This booklet summarizes the contents of *SIPRI Yearbook 2024* and provides samples of the data and analysis that it contains.

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# 1. INTRODUCTION: INTERNATIONAL STABILITY AND HUMAN SECURITY IN 2023

DAN SMITH, SIPRI DIRECTOR

Global security continued to deteriorate throughout 2023, as it has for the past decade. There were major armed conflicts in Gaza, Myanmar, Sudan and Ukraine; military spending rose for the ninth successive year to its highest-ever level; ecological disruption continued and 2023 was the hottest year for at least 174 years. International stability was under pressure from intensifying confrontation between the great powers. As a result, the entire six-decade-long nuclear arms control enterprise is at risk of terminating.

## World order and disorder

The current international order was largely shaped in the late 1940s, in the aftermath of World War II, when many of today's United Nations member states were colonies of a few declining European powers. The world has changed and, while the international order has evolved in the meantime, it is characterized by considerable continuity. Contestations about the shape of the international order hinge on the relationship between the legitimacy of its rules and norms, and the distribution and exercise of power.

The international order includes principles intended to govern and limit armed conflict but the effectiveness of their implementation is being weakened by division and rivalry among leading powers, as well as by the structure and deep roots of many of today's conflicts, and the actions of key governments and their leaders.

The UN system aims to provide a framework for international order. The UN is a

norms-based organization; this makes inconsistency—as in the West's response to Israel's actions in Gaza when compared with the clear-eyed condemnation of Russia's aggression against Ukraine—a problem. The effectiveness of international institutions and of international humanitarian law relies on an adequate degree of consensus on normative issues; when that diminishes, so does the effectiveness of the institutions.

## Developing the habit of cooperation

The ramifications of the crisis of international order will not be easily or rapidly resolved. The climate crisis is a sphere in which the need for cooperative action is broadly recognized, even though the record is mixed. The broader ecological crisis offers as many opportunities for cooperation as it does for alarm at the prospects if problems are not addressed. The risk of new pandemics is another issue that urgently needs joint action, regardless of what other issues divide the main actors. Trade and freedom of navigation are further issues on which shared interests run deep. On all these questions, it could be possible to develop the habit of cooperation. By recognizing that cooperation is the key element of security, a way may be found for the international order to evolve to meet today's challenges. ●



## 2. TRENDS IN ARMED CONFLICT

Although the number of states experiencing armed conflicts fell from 55 in 2022 to 52 in 2023, the estimated number of conflict-related fatalities worldwide rose from 153 100 in 2022 to 170 700 in 2023, to reach the highest level since 2019. In 2023 there were four conflicts categorized as major armed conflicts (i.e. conflicts involving 10 000 or more conflict-related fatalities in the year), which was one more than in 2022: the civil wars in Myanmar and Sudan; and the Israel– Hamas and Russia– Ukraine wars. The number of high-intensity armed conflicts (i.e. conflicts involving 1000–9999 conflict-related fatalities) also increased, from 17 in 2022 to 20 in 2023.

### Europe

The Russia–Ukraine war ground on throughout 2023, at a high cost to both sides, but the front line in eastern and southern Ukraine remained little changed by the end of the year. Russian air attacks

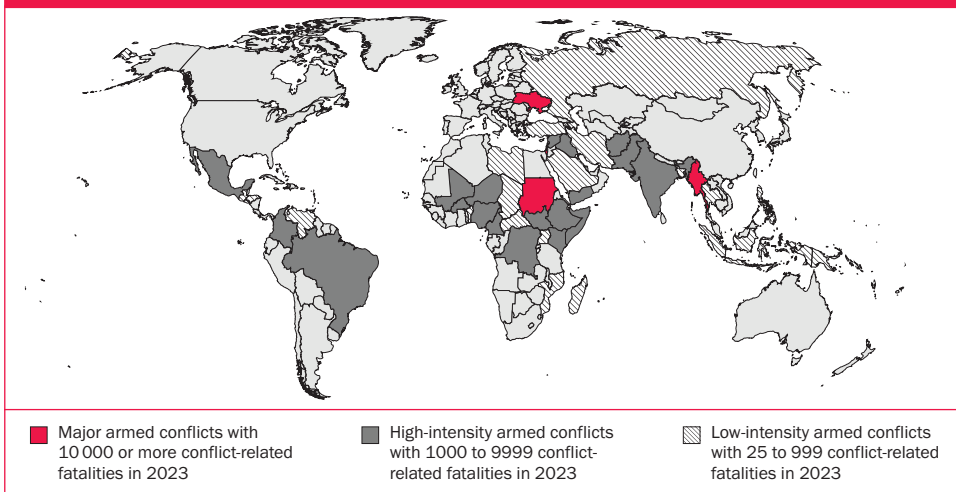
continued and Ukraine began to reply in kind, although not on the same scale. Both sides sought and received ammunition and weapons from their allies. There were no formal Russian–Ukrainian peace talks during the year and the one noteworthy diplomatic success—the 2022 Black Sea Grain Initiative—unravelling in 2023. The International Criminal Court intervened in March by issuing arrest warrants for Russian President Vladimir Putin and another Russian official for their roles in the deportation of Ukrainian children.

In contrast to the stalemate in Ukraine, in September 2023 Azerbaijan secured a decisive victory in its long-running conflict with Armenia over Nagorno-Karabakh.

### The Middle East and North Africa

There was significant instability in the Middle East and North Africa (MENA), even before Hamas’s attack on Israel on 7 October 2023. High-intensity armed conflicts continued in Iraq, Syria and Yemen throughout the year. The overall

### ARMED CONFLICTS BY NUMBER OF ESTIMATED CONFLICT-RELATED FATALITIES, 2023



Note: The boundaries used in this map do not imply any endorsement or acceptance by SIPRI.



estimate of 35 900 conflict-related fatalities in MENA for 2023 was more than twice the estimate for 2022 (16 900), but was still less than half the estimate for 2018 (75 400).

Israel responded to the events of 7 October—the killing of over 1000 civilians and more than 350 Israeli soldiers and police, and the capture of around 240 hostages—by declaring a state of war for the first time since 1973. By the end of the year more than 22 000 Palestinians had been killed in the ensuing air strikes or ground operations by Israel, and international experts warned of a growing risk of famine. In December South Africa asked the International Court of Justice to address the charge that Israel was committing genocide in Gaza.

The war increased already heightened tensions in MENA. For example, Houthi forces in Yemen, claiming support for the Palestinians, started to attack commercial shipping in the Red Sea, prompting Western powers to dispatch warships to the area to address the threat.

### **Sub-Saharan Africa**

Sub-Saharan Africa remained the region with the most armed conflicts, although many were low-intensity conflicts involving fewer than 1000 conflict-related fatalities and levels of violence fluctuated considerably. There were decreases in conflict-related fatalities in several countries experiencing high-intensity armed conflict, including the Democratic Republic of the Congo, Ethiopia, Nigeria and South Sudan. However, there were notable increases in conflict-related fatality rates elsewhere, including in Sudan (+537 per cent compared with 2022), Burkina Faso (+100 per cent) and

Somalia (+28 per cent). The fighting that erupted in Sudan on 15 April 2023 between forces led by rival military generals triggered a humanitarian crisis and resulted in all-out civil war. In the Sahel, a coup in Niger and a decision by Mali to expel United Nations peacekeepers added to regional tensions.

### **The Americas, and Asia and Oceania**

The Americas is the only region not to have had a major armed conflict in the period 2018–23. The two countries in the region with the highest number of conflict-related fatalities—Brazil and Mexico—largely faced criminal rather than political violence in 2023. Criminal gang-related violence also escalated significantly in Haiti during the year.

Despite the ongoing civil war in Myanmar, the overall conflict-related fatality rate for Asia and Oceania more than halved between 2021 and 2023. This was partly due to a continuing decline in conflict-related fatalities in Afghanistan following the return to power of the Taliban in 2021.

### **Peace processes**

Opportunities for peacemaking were limited in 2023. In Yemen, the UN began the year attempting to restart a truce between the Houthis and the Yemeni government and by the end of 2023 both sides were pledging to develop a road map for a new ceasefire. In Ethiopia, the government and the Tigray People's Liberation Front worked on implementing their November 2022 ceasefire with the support of a small African Union monitoring mission. Meanwhile, in Colombia, the government made some progress on a peace initiative with several armed groups. ●



### 3. MULTILATERAL PEACE OPERATIONS

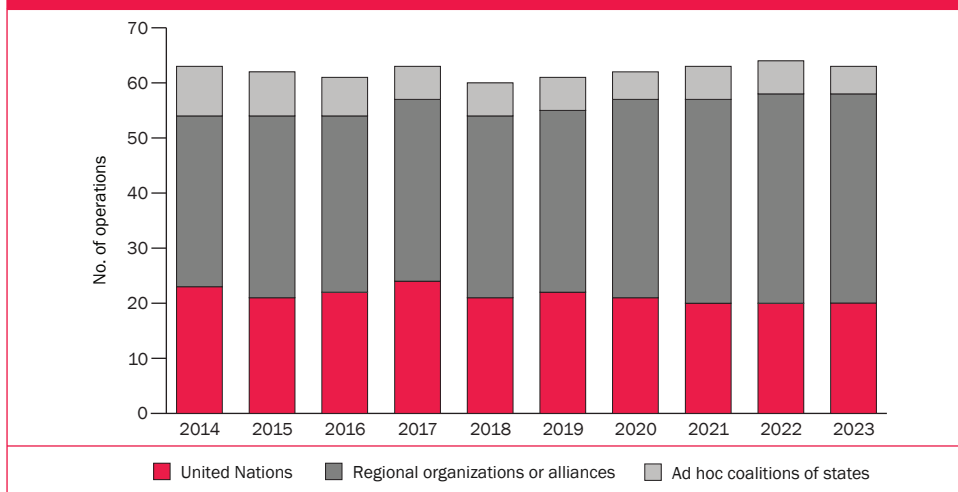
There were 63 active peace operations in 2023—one fewer than in the previous year. Three started in 2023: the European Union (EU) Mission in Armenia (EUMA); the EU Partnership Mission in the Republic of Moldova (EUPM Moldova); and the Southern African Development Community (SADC) Mission in the Democratic Republic of Congo (SAMIDRC). Four closed in 2023: the United Nations Multi-dimensional Integrated Stabilization Mission in Mali (MINUSMA); the UN Integrated Transition Assistance Mission in Sudan (UNITAMS); the East African Community Regional Force in the Democratic Republic of the Congo (EACRF-DRC); and the African Union (AU) Military Observer Mission to the Central African Republic (MOUACA).

The number of personnel deployed to multilateral peace operations globally fell by 13 per cent during the year, dropping from 114 984 in December 2022

to 100 568 in December 2023. This was the largest annual decrease and lowest number of personnel deployed in the decade 2014–23. The drop in 2023 was mostly due to reductions in sub-Saharan Africa, where most peace operation personnel are deployed.

The UN continued to be the main organization deploying multilateral peace operations, accounting for about one third of all operations and 67 per cent of all personnel deployed as of December 2023. However, most peace operations were deployed by regional organizations and alliances, which led 38 multilateral peace operations in 2023—the same number as in 2022. Ad hoc coalitions of states conducted five multilateral peace operations in 2023, which was one fewer than in 2022. In addition, in 2023 there were several other multilateral operations that aimed to contribute to security and stability but were not classified by SIPRI as multilateral peace operations.

NUMBER OF MULTILATERAL PEACE OPERATIONS, BY TYPE OF CONDUCTING ORGANIZATION, 2014–23



**NUMBER OF MULTILATERAL PEACE OPERATIONS AND PERSONNEL DEPLOYED, BY REGION AND TYPE OF ORGANIZATION, 2023**

Conducting organization	Americas	Asia and Oceania	Europe	Middle East		World
				and North Africa	Sub-Saharan Africa	
<b>Operations</b>	<b>3</b>	<b>3</b>	<b>19</b>	<b>14</b>	<b>24</b>	<b>63</b>
United Nations	2	2	2	7	7	20
Regional organization or alliance	1	0	14	6	17	38
Ad hoc coalition	0	1	3	1	0	5
<b>Personnel</b>	<b>377</b>	<b>321</b>	<b>9 215</b>	<b>14 283</b>	<b>76 372</b>	<b>100 568</b>
United Nations	357	311	1 016	12 433	53 526	67 643
Regional organization or alliance	20	..	7 059	684	22 846	30 609
Ad hoc coalition	..	10	1 140	1 166	..	2 316

.. = not applicable.

*Note:* Numbers of active operations cover the year 2023, including operations closed during the year. Personnel figures are as of 31 Dec. 2023.

During 2023, a total of 45 international personnel and 15 local staff died while serving in UN multilateral peace operations, which was 41 fewer fatalities than in 2022 and the lowest number of fatalities among UN peacekeepers in the decade 2014–23.

**The shifting peace operations landscape**

In 2023, three trends related to multilateral peace operations continued. First, broader geopolitical tensions continued to affect the political consensus on managing armed conflicts. Finding agreement on new operations or on adjustments to the mandates of existing operations proved difficult in the UN Security Council and in the AU Peace and Security Council. Second, there was growing dissatisfaction at the national level with existing peace operations, prompting discussions in host countries about their effectiveness and value. Third, the past few years have seen a shift away from UN-led operations and

an increase in the number of operations deployed by regional organizations.

These trends point to four expected future developments. First, the polarization and lack of consensus in the UN Security Council and regional forums are resulting in inaction on conflict management by the international community. Second, the increasing use of private military and security companies and ad hoc or bilateral operations in conflict management, as an alternative to multilateral peace operations, suggests that conflict management is fragmenting. Third, conflict management decision making and implementation seem to be moving towards deinstitutionalization, meaning that they increasingly take place outside institutional frameworks. Fourth, there appears to be a development towards the further militarization and securitization of efforts to restore and maintain peace. These developments have the potential to significantly reshape the multilateral peace operations landscape. ●



## 4. THEMATIC ISSUES IN ARMED CONFLICT

Armed conflicts are often complex, involving multiple armed groups and the use of proxy forces by major powers and regional players. Aspects of that complexity in 2023 included: the role of the Wagner Group and other Russian private military and security companies (PMSCs) in armed conflicts; food insecurity as both a consequence and a trigger of armed conflict; and the linkages between climate change, conflict and insecurity in Yemen.

### The Wagner Group

One of the key features of armed conflicts in recent years has been the rapid global growth of PMSCs. The fortunes of the Wagner Group, a prominent Russian PMSC with clear links to the Russian government, underwent a dramatic trajectory during 2023. Wagner's battlefield successes in Ukraine in the first few months of the year were mainly achieved at a high human cost by sending large numbers of recruited convicts to fight in intense battles at the frontline. In June 2023 the Russian government formalized the involvement of irregular and so-called voluntary units—including those linked to Wagner—in the war in Ukraine by ordering their integration under the defence ministry. The head of Wagner, Yevgeny Prigozhin, refused to comply with the order and instigated a short-lived armed rebellion in late June—the first armed uprising in Russia in three decades.

On 24 June Wagner troops and tanks advanced into Russia from the battlefield in Ukraine: one column headed towards the city of Rostov-on-Don and another column headed towards Moscow. The rebellion was quickly aborted after an

agreement was reached for Prigozhin and his personnel to relocate to neighbouring Belarus. Within two months, however, Prigozhin was dead—killed by an explosion on his private jet aircraft. The Russian state subsequently moved to take more overt control of Wagner's paramilitary activities.

In a bid to curtail Wagner's growing global influence, in 2023 the European Union, the United Kingdom and the United States strengthened their unilateral coercive sanctions targeting the group's key personnel and linked entities.

### Food insecurity

The link between food systems, violent conflict and peace is a critical global concern. Three conflicts in particular affected global levels of food security in 2023: the Russia–Ukraine war, the civil war in Sudan and the Israel– Hamas war.

Warfare in Ukraine continued to devastate agricultural production and impacted global food supplies. But despite Russia withdrawing from the 2022 Black Sea Grain Initiative in July 2023, alternative logistical networks and shipping corridors enabled Ukrainian exports of agricultural products to reach near pre-invasion levels by the end of 2023.

Sudan experienced a sharp rise in food insecurity in 2023, driven by armed conflict, economic decline and food price inflation, while also suffering a significant decrease in aid. Moreover, refugees from the civil war affected food security in other countries, such as South Sudan.

The Israel– Hamas war, meanwhile, caused widespread damage to food systems in the Occupied Palestinian Territories, with famine threatening to engulf Gaza.





## THE WAGNER GROUP IN AFRICA

In early 2023 the Wagner Group was reportedly fielding several thousands of personnel in Africa. In exchange for providing military assistance to regimes battling rebel groups and insurgents in the Central African Republic and Mali, as well as to warlords or militias involved in civil wars in Libya and Sudan, Wagner secured access to high-value natural resources in those countries. By the end of the year, however, Wagner's brand in Africa had started to wane amid the creation of a new 'Africa Corps' as a vehicle for Russian engagement with Africa, and the ascendance of other private military and security companies tasked with absorbing and carrying on some of Wagner's operations on the continent.

While food insecurity increased globally in 2023, the number of people facing food insecurity in Latin America decreased—even though the situation in some countries in the region, such as Haiti, worsened during the year. The overall improvement in food security in the region can be credited to positive labour market development and effective social protection policies. However, growing levels of violence in Latin America threaten the durability of this achievement. Strengthening food systems—and making them more equitable and sustainable, including by reducing environmental degradation and taking action on climate change—is paramount to breaking the detrimental link between food insecurity and conflict.

### Climate and security in Yemen

The ongoing climate crisis has consequences for peace and security, especially in conflict-affected and fragile countries, such as Yemen. The civil war in Yemen has

heightened the socio-economic vulnerability of the country's population, while climate change has aggravated the risk of droughts and floods disrupting critical agricultural production. Food insecurity worsened in 2023, with an estimated 17 million people, or over 53 per cent of the population, suffering acute food insecurity during the year. The socio-economic challenges exacerbated by climate change and armed conflict have undermined food and livelihood security and have disproportionately affected women in Yemen.

The prolonged armed conflict continued to be a major driver of displacement in Yemen in 2023, while extreme weather events intensified the vulnerability of the displaced populations. Climate change has worsened the risk of conflicts over vital land and water resources: in 2023, conflict parties continued to attack water infrastructure and sought to control local populations in contested territories by seizing control of farmland, fishing sites and pasture. Many of the ongoing intercommunal disputes involving tribal militias were over land and water resources, including highly profitable groundwater-fed irrigation projects.

Humanitarian and peacebuilding efforts can contribute towards building climate resilience if they are carefully designed and executed with solutions that account for future climate impacts and the population's vulnerability to climate change. In Yemen, however, this will first require a ceasefire and political stabilization. ●



## 5. MILITARY EXPENDITURE AND DEVELOPMENTS IN ARMS PRODUCTION

Estimated global military expenditure rose for the ninth consecutive year in 2023, to surpass \$2.4 trillion, driven by the Russia–Ukraine war and wider geopolitical tensions. Despite the consequent growth in demand for weapons and continued efforts to meet that demand, arms companies have found it difficult to boost production.

The 6.8 per cent increase in total military spending in 2023 was the largest rise since 2009 and pushed estimated world spending to the highest level recorded by SIPRI. As a result, the global military burden—world military expenditure as a share of world gross domestic product (GDP)—rose to 2.3 per cent. Governments allocated an average of 6.9 per cent of their budgets to the military or \$306 per person. Estimated military spending increased across all five geographical regions for the first time since 2009. Spending by countries in Africa rose the most (by 22 per cent in 2023), while the smallest increase was in the Americas (2.2 per cent).

The United States remained by far the largest military spender in the world. The USA's expenditure of \$916 billion was more than the combined spending of the 9 other countries among the top 10 spenders, and 3.1 times as large as that of the second biggest spender, China. The trend for increased military spending by European states in response to Russia's full-scale invasion of Ukraine gained traction in 2023: 39 of the 43 countries in Europe increased military spending. The 16 per cent surge in total European spending was driven by a 51 per cent rise in Ukrainian spending and a 24 per cent rise in Russian spending, as well as by 10 of the 28 European members of the

### WORLD MILITARY SPENDING, 2023

Region	Spending (US\$ b.)	Change (%) 2022–23
<i>Africa</i>	51.6	22
North Africa	28.5	38
Sub-Saharan Africa	23.1	8.9
<i>Americas</i>	1 009	2.2
Central America and the Caribbean	14.7	-0.4
North America	943	2.4
South America	50.7	-0.3
<i>Asia and Oceania</i>	595	4.4
Central Asia	1.8	-5.3
East Asia	411	6.2
Oceania	35.5	-0.9
South Asia	98.2	2.2
South East Asia	47.8	-1.6
<i>Europe</i>	588	16
Central and Western Europe	407	10
Eastern Europe	181	31
<i>Middle East</i>	(200)	9.0
<b>World total</b>	<b>2 443</b>	<b>6.8</b>

( ) = uncertain estimate.

*Note:* Spending figures are in US dollars, at current prices and exchange rates. Changes are in real terms, based on constant (2022) US dollars.

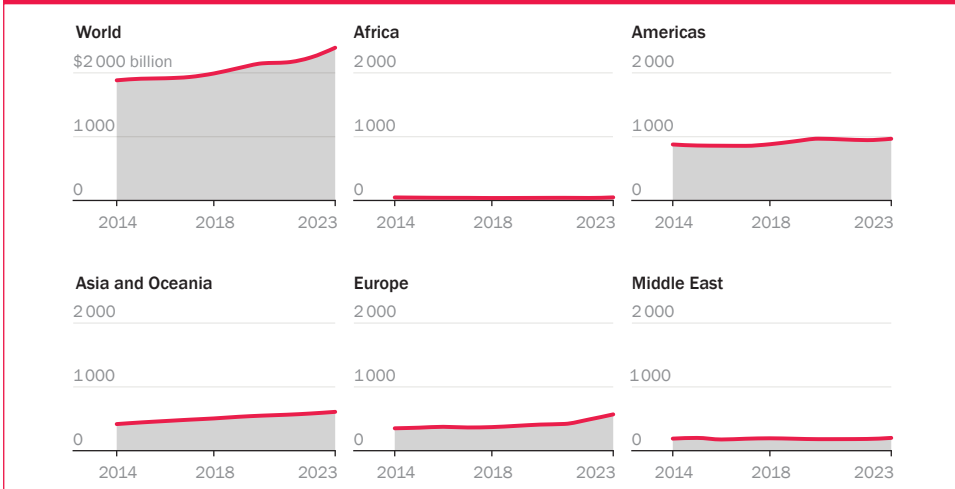
North Atlantic Treaty Organization (NATO) reaching or surpassing the 2 per cent of GDP spending target in 2023—the highest number since the target was set in 2014.

In Asia and Oceania estimated military expenditure rose for the 34th consecutive year. Half of the regional total consisted of spending by China, which rose by 6.0 per cent to reach \$296 billion in 2023. China's spending influenced spending decisions in neighbouring countries and the broader region: in Japan, for example, spending rose by 11 per cent, the largest year-on-year spending increase since 1972.

Estimated military spending in the Middle East grew by 9.0 per cent in 2023,



## MILITARY EXPENDITURE BY REGION, 2014–23



Note: Figures are in constant (2022) US\$ billion.

with increases in all three of the biggest spenders in the region: Saudi Arabia, Israel and Türkiye. The Israel–Hamas war was the main driver for the 24 per cent increase in Israel’s military expenditure.

### The SIPRI Top 100

The arms revenues of the 100 largest arms-producing and military services companies—the SIPRI Top 100—fell by 3.5 per cent in 2022 (the most recent year for which data is available), to reach \$597 billion. This fall was mainly the result of overall decreases in the arms revenues of companies in the USA and Russia, but the USA continued to dominate the ranking with 42 companies with combined arms revenues of \$302 billion. Due to a lack of available data, only two Russian companies were included in the Top 100 for 2022, with combined arms revenues of \$20.8 billion, which was 12 per cent lower than in 2021. This decrease may have been due to delayed payments for arms deliveries and companies focusing on refurbishment instead of new production.

### The impact of the Russia–Ukraine war on arms production

Despite Western sanctions and trade restrictions, Russia has still been able to import components (e.g. microchips) to increase its arms production in response to increased demand. For components that Russia could not source indirectly from the West, it relied on Chinese alternatives. To meet its war requirements, Ukraine entered into international collaborations with European and US companies.

The overall imbalance between the increase in demand for weapons and falling arms revenue of the Top 100 highlights the lengthy time lag between the initial demand for weapons and the subsequent scaling up of production and delivery by arms companies. Whereas European and US companies have struggled to translate higher demand into revenue, many companies in Asia and the Middle East—such as those in South Korea and Türkiye—seemed to overcome these challenges. ●



## 6. INTERNATIONAL ARMS TRANSFERS

The volume of international transfers of major arms in the five-year period 2019–23 was 3.3 per cent lower than in 2014–18 but 3.2 per cent higher than in 2009–13. The volumes of arms transfers in these periods were among the highest since the end of the cold war, but were still around 35 per cent lower than the peak periods for arms transfers during the cold war.

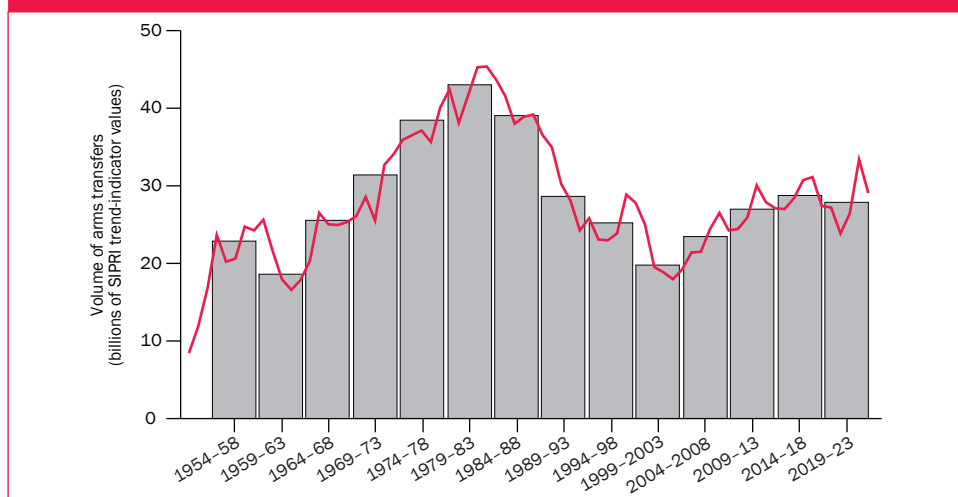
States' arms acquisitions, often from foreign suppliers, are largely driven by armed conflict and political tensions. With these drivers increasing in most regions— notably in Europe—continued or higher demand for major arms will likely be fulfilled in the coming years mainly by international transfers. Long-range land-attack weapons, including advanced combat aircraft and missiles, as well as much simpler and cheaper armed uncrewed aircraft and missiles, continue to account for a significant share of total transfers of major arms.

### Suppliers of major arms

SIPRI has identified 66 states as exporters of major arms in 2019–23, but most are minor exporters. The 25 largest suppliers accounted for 98 per cent of the total volume of exports, and the top 5—the United States, France, Russia, China and Germany—accounted for 75 per cent. In recent years the USA's share of global exports has increased while Russia's share has decreased. In 2019–23 the USA's arms exports were 17 per cent higher than in 2014–18 and its share of the global total increased from 34 to 42 per cent. In contrast, Russia's arms exports decreased by 53 per cent and its share of the global total dropped from 21 to 11 per cent. Exports by France rose by 47 per cent between 2014–18 and 2019–23, resulting in France becoming the second largest exporter of major arms in 2019–23.

Known plans for future deliveries of major arms strongly indicate that the USA will remain unchallenged as the largest

THE TREND IN TRANSFERS OF MAJOR ARMS, 1954–2023



Note: The bar graph shows the average annual volume of arms transfers for 5-year periods and the line graph shows the annual totals.



**THE MAIN EXPORTERS AND IMPORTERS OF MAJOR ARMS, 2019–23**

Exporter	Global share (%)	Importer	Global share (%)
1 USA	42	1 India	9.8
2 France	11	2 Saudi Arabia	8.4
3 Russia	11	3 Qatar	7.6
4 China	5.8	4 Ukraine	4.9
5 Germany	5.6	5 Pakistan	4.3
6 Italy	4.3	6 Japan	4.1
7 UK	3.7	7 Egypt	4.0
8 Spain	2.7	8 Australia	3.7
9 Israel	2.4	9 South Korea	3.1
10 South Korea	2.0	10 China	2.9

arms exporter in the coming years and that France will consolidate its position in second place. They also indicate that Russia's arms exports may well reduce even further, while those of some of the other current top 10 exporters are likely to remain steady or increase.

**Recipients of major arms**

SIPRI has identified 170 states as importers of major arms in 2019–23. The five largest arms importers were India, Saudi Arabia, Qatar, Ukraine and Pakistan, which together accounted for 35 per cent of total arms imports. The region that received the largest volumes of major arms in 2019–23 was Asia and Oceania, accounting for 37 per cent of the total, followed by the Middle East (30 per cent), Europe (21 per cent), the Americas (5.7 per cent) and Africa (4.3 per cent). Between 2014–18 and 2019–23, the flow of arms to Europe increased by 94 per cent, while flows to all other geographical regions decreased: Africa (–52 per cent), Asia and Oceania (–12 per cent), the Middle East (–12 per cent) and the Americas (–7.2 per cent).

**IMPORTS OF MAJOR ARMS, BY REGION**

Recipient region	Global share (%), 2019–23	Change (%) in volume of imports from 2014–18 to 2019–23
Africa	4.3	–52
Americas	5.7	–7.2
Asia and Oceania	37	–12
Europe	21	94
Middle East	30	–12

Many of the 170 importers are directly involved in armed conflict or in tensions with other states in which the imported major arms play an important role. Moreover, many of the exporters are direct stakeholders or participants in at least some of these conflicts and tensions, which partly explains why they are willing to supply arms, even when the supply seems to contradict their stated arms export policies. It is also noteworthy that, for most suppliers, arms exports are only a small part of the financial value of their total exports.

**The financial value of states' arms exports**

While SIPRI data on arms transfers does not represent their financial value, many arms-exporting states do publish figures on the financial value of their arms exports. Based on this data, SIPRI estimates that the total value of the global arms trade was at least \$138 billion in 2022 (the latest year for which data is available), compared with \$127 billion (in constant 2022 US dollars) in 2021. This is less than 0.5 per cent of the total value of global international trade in 2022. ●



## 7. WORLD NUCLEAR FORCES

At the start of 2024, nine states—the United States, Russia, the United Kingdom, France, China, India, Pakistan, the Democratic People’s Republic of Korea (North Korea) and Israel—together possessed approximately 12 121 nuclear weapons, of which 9585 were considered to be potentially operationally available. An estimated 3904 of these warheads were deployed with operational forces, including about 2100 that were kept in a state of high operational alert—about 100 more than the previous year.

### Nuclear arsenals

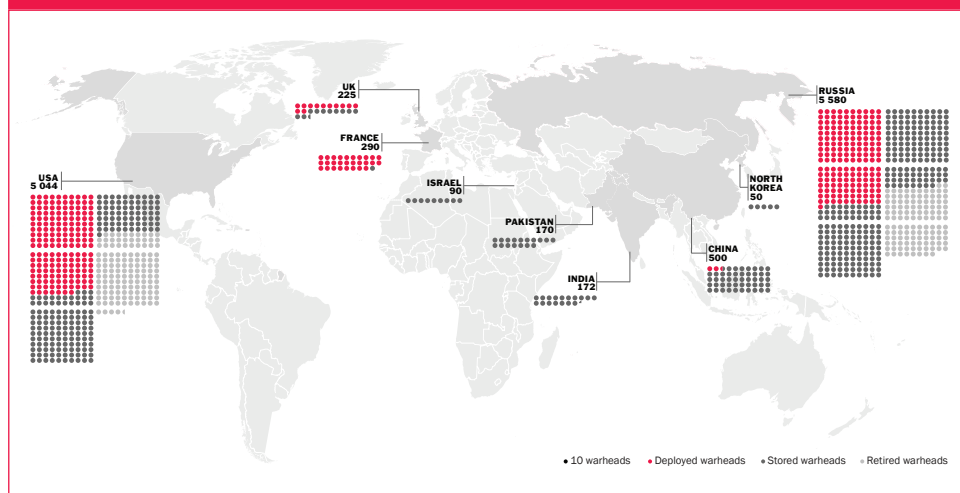
Overall, the number of nuclear warheads in the world continues to decline. However, this is only due to the USA and Russia dismantling retired warheads. Global reductions of operational warheads appear to have stalled, and their numbers are rising again. The USA and Russia, which together possess almost 90 per cent of all nuclear weapons, have extensive

programmes under way to replace and modernize their nuclear warheads, their missile, aircraft and submarine delivery systems, and their nuclear weapon production facilities. Notably, in 2023 Russia claimed that it had deployed nuclear weapons on Belarusian territory.

China is in the middle of a significant modernization and expansion of its nuclear arsenal and may have deployed a small number of its warheads in 2023. Its nuclear stockpile is expected to continue growing over the coming decade and some projections suggest that it could potentially deploy at least as many intercontinental ballistic missiles as either Russia or the USA in that period. Even so, China’s overall warhead stockpile is expected to remain smaller than that of either of those states.

All the other nuclear-armed states are either developing or deploying new weapon systems or have announced their intention to do so. India and Pakistan also appear to be increasing the size of their nuclear arsenals, and the UK plans to increase its stockpile. North Korea’s military nuclear

### GLOBAL NUCLEAR WEAPON INVENTORIES, JANUARY 2024



Note: The boundaries used in this map do not imply any endorsement or acceptance by SIPRI.



## GLOBAL STOCKS OF FISSILE MATERIALS, 2023

The raw material for nuclear weapons is fissile material, either highly enriched uranium (HEU) or separated plutonium. China, France, Pakistan, Russia, the UK and the USA have produced both HEU and plutonium for use in their nuclear weapons; and India and Israel have produced mainly plutonium. North Korea has produced plutonium for use in nuclear weapons but is believed to be producing HEU for nuclear weapons as well. All states with a civilian nuclear industry are capable of producing fissile materials.

The International Panel on Fissile Materials compiles information on global stocks of fissile materials.

### Global stocks (tonnes), 2023

<i>Highly enriched uranium</i>	1 245
In or available for weapons	1 100
Not directly available for weapons	
Unsafeguarded	135
Safeguarded/monitored	10
<i>Separated plutonium</i>	555
In or available for weapons	140
Not directly available for weapons	
Unsafeguarded	260
Safeguarded/monitored	155

*Note:* Figures are rounded and may not add up to the given totals.

programme remains central to its national security strategy and it may have assembled up to 50 nuclear weapons and could produce more. Israel continues to maintain its long-standing policy of nuclear ambiguity, leaving significant uncertainty about the number and characteristics of its nuclear weapons.

### Low levels of transparency

The availability of reliable information on the status of the nuclear arsenals and capabilities of the nuclear-armed states varies considerably. In some cases,

## WORLD NUCLEAR FORCES, JANUARY 2024

Country	Military stockpile <sup>a</sup>		Total inventory <sup>c</sup>
	Deployed <sup>b</sup>	Total	
USA	1 770	3 708	5 044
Russia	1 710	4 380	5 580
UK	120	225	225
France	280	290	290
China	24	500	500
India	–	172	172
Pakistan	–	170	170
North Korea	–	50	50
Israel	–	90	90
<b>Total</b>	<b>3 904</b>	<b>9 585</b>	<b>12 121</b>

– = nil or a negligible value.

*Notes:* All estimates are approximate. SIPRI revises its world nuclear forces data each year based on new information and updates to earlier assessments. Countries are ordered by date of first known nuclear test; however, there is no conclusive open-source evidence that Israel has tested its nuclear weapons.

<sup>a</sup> ‘Military stockpile’ refers to all deployed warheads as well as warheads in central storage that could potentially be deployed after some preparation.

<sup>b</sup> ‘Deployed warheads’ are those placed on missiles or located on bases with operational forces. The deployed figures for Russia and the USA do not necessarily correspond to those in their most recent declarations under the 2010 Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START) because of the treaty’s counting rules. Russia and the USA no longer publish aggregate numbers for strategic nuclear forces limited by the treaty.

<sup>c</sup> ‘Total inventory’ includes stockpiled warheads as well as retired warheads awaiting dismantlement.

estimates can be based on the amount of fissile material—plutonium and highly enriched uranium—that a country is believed to have produced and on observations of missile forces. ●



## 8. NUCLEAR DISARMAMENT, ARMS CONTROL AND NON-PROLIFERATION

The dynamics surrounding nuclear disarmament, arms control and non-proliferation are becoming more complex. There are currently few indicators that key stakeholders can agree to disentangle nuclear issues from the broader geopolitical context and stem the rising tide of nuclear risks.

The war in Ukraine continued to have a negative impact on bilateral and multi-lateral engagement on nuclear arms control in 2023. Although Russia reiterated the importance of arms control agreements and commitments during the year, it stepped back from existing ones, citing the strategic context—in particular the United States' military support to Ukraine. While modest positive steps were made elsewhere, including in discussions between China and the USA, overall the war diminished opportunities to break the long-standing deadlock in nuclear arms control and reverse the worrisome trend of nuclear-armed states developing and deploying new weapon systems.

### Attacks on Ukrainian nuclear sites

Russia's continued targeting of critical infrastructure in Ukraine added to the nuclear safety, security and safeguards challenges in 2023. Frequent disturbances to the Ukrainian electricity grid caused by such attacks placed strain on Ukrainian nuclear power plants, while the destruction of the Kakhovka Dam in June threatened the supply of cooling water to Zaporizhzhia Nuclear Power Plant (ZNPP) and required a stopgap solution. The International Atomic Energy Agency (IAEA) maintained

a consistent presence in Ukraine throughout 2023. Building on its 'seven indispensable pillars of nuclear safety and security', the IAEA also formulated and began to apply 'five concrete principles' aimed specifically at protecting the ZNPP.

### Worsening Russian–US strategic relations

Bilateral arms control between Russia and the USA took a significant turn for the worse in February 2023, when Russia suspended its membership of the 2010 Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START). This followed the USA's conclusion in January that it could no longer certify Russia's compliance with certain terms of the treaty, due mainly to Russia's refusal to allow the resumption of on-site inspections of its nuclear weapon-related sites. Efforts to restart diplomacy—including on a post-New START arms control framework—stalled, with Russia reluctant to 'compartmentalize' nuclear discussions from wider issues. In November Russia withdrew its ratification of the Comprehensive Nuclear-Test-Ban Treaty (CTBT), citing 'an imbalance' with the USA, which has failed to ratify the treaty since it opened for signature in 1996. However, Russia confirmed that it would remain a signatory and would continue to participate in the work of the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO).

### Iran and the JCPOA

Developments in Ukraine and elsewhere also cast a shadow over long-standing efforts to revive the Joint Comprehensive Plan of Action (JCPOA) on the Iranian nuclear programme. Iran's transfers of uncrewed aerial vehicles (UAVs) to Russia





## CHINA–UNITED STATES STRATEGIC ENGAGEMENT

In the absence of arms control progress between Russia and the United States (possessors of the largest nuclear weapon stockpiles), China showed little interest in bilateral or trilateral arms control. However, the June 2023 visit to Beijing by the US secretary of state, Antony Blinken, appeared to open space for dialogue on a range of issues, with the hope on the US side that this would subsequently include arms control. Later in the year the two sides did agree to resume military-to-military communication and to strengthen dialogue and cooperation in several key security areas, including arms control and non-proliferation.

continued to sour relations with the West. This led France, Germany and the United Kingdom to extend sanctions on Iran's arms exports as part of their national policies, even after the expiry of the United Nations arms embargo on the country in October 2023. An informal bilateral agreement between Iran and the USA in June 2023 initially seemed to de-escalate tensions and reduce the risk of conflict. It contributed to greater cooperation by Iran with the IAEA and to the USA unfreezing Iranian assets. However, the start of the Israel– Hamas war in October upended the agreement, with proxy attacks by Iran-backed groups on US forces in Iraq and Syria apparently ending Iranian–US diplomatic efforts. The war also undermined attempts to engage Israel in the Conference on the Establishment of a Middle East Zone Free of Nuclear Weapons and Other Weapons of Mass Destruction, which continues to be difficult given Israel's long-standing policy of nuclear ambiguity.

## The NPT review cycle

The abbreviated review cycle of the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT) commenced with a session in July 2023 of a working group on strengthening the review process, and the first session, in August, of the preparatory committee for the 2026 Review Conference. The working group failed to reach consensus, with suggestions to enhance transparency and accountability on nuclear disarmament dividing the non-nuclear weapon states and the five NPT-recognized nuclear weapon states—China, France, Russia, the UK and the USA. Meanwhile, discussions at the preparatory committee carried over many of the debates from the previous Review Conference, including the lack of progress on nuclear disarmament and the Russia–Ukraine war. Obstructive procedural manoeuvring in the conference room by a few states added another layer of uncertainty to an already fraught review cycle.

## The Treaty on the Prohibition of Nuclear Weapons

The second Meeting of States Parties to the 2017 Treaty on the Prohibition of Nuclear Weapons (TPNW) adopted two outcome documents—a package of practical decisions and a political declaration that highlighted the rise in nuclear risks and condemned nuclear-sharing arrangements. The meeting also established a new inter-sessional consultative process on security concerns of states under the TPNW, seeking to 'challenge the security paradigm based on nuclear deterrence'. Despite these positive developments, none of the nuclear-armed states has yet sought to engage in the TPNW process. ●



## 9. CHEMICAL, BIOLOGICAL AND HEALTH SECURITY THREATS

In 2023, proceedings in the main international forums on the prevention of chemical and biological warfare were characterized by obstruction and disinformation by a small number of states. This contrasted with some positive achievements in the field of health security.

### Chemical arms control

Investigations by the Organisation for the Prohibition of Chemical Weapons (OPCW) into alleged use of chemical weapons in Syria continued in 2023 amid ongoing efforts by a handful of actors to hinder and contest the authority and work of the investigation teams. None of the 20 outstanding issues related to Syria's declarations to the OPCW that were unresolved at the end of 2022 could be clarified in 2023. There were also further allegations of illegal chemical activities, including the use by Russia of riot control agents as a method of warfare. These allegations and the divisions over the investigation into chemical weapon use in Syria are likely to continue to have an impact on and complicate the work of the OPCW. At the fifth Review Conference of the 1993 Chemical Weapons Convention the states parties could not reach consensus on a substantive final document, but they made progress in several areas, including adjustments to industry verification, geographical representation, and efforts to prevent and counter chemical terrorism.

In a historic step, the United States, the only declared possessor state party with declared chemical weapons still to be destroyed, completed its remaining destruction activities in July 2023. On another positive note, the OPCW's new

Centre for Chemistry and Technology was formally inaugurated in May 2023. Despite the prevailing political polarization, the OPCW's ongoing activities on verification and on international cooperation and assistance will continue.

### Biological arms control

Russia's allegations of other states' non-compliance with the ban on biological weapons and its misuse of disarmament instruments for its own disinformation purposes continued in all relevant forums in 2023. Russia's conduct risks significantly eroding the international architecture against the proliferation and use of biological weapons and diverting attention from the work of strengthening the 1972 Biological and Toxin Weapons Convention (BWC). Nonetheless, several proposals on compliance and verification, some old and some new, were discussed in 2023. The newly established working group on strengthening the BWC met three times during the year, although no collective conclusions or concrete recommendations were forthcoming.

### Health security

A combination of national and collaborative efforts meant that 2023 was a record year for infectious disease elimination. The two public health emergencies of international concern active at the start of the year—Covid-19 and mpox—were both declared to have ended. The origins of the Covid-19 pandemic remained unresolved, but negotiations on a new international treaty to strengthen pandemic prevention, preparedness and response continued. ●



## 10. CONVENTIONAL ARMS CONTROL AND THE REGULATION OF INHUMANE WEAPONS

The main multilateral treaty for regulating inhumane weapons is the 1981 Certain Conventional Weapons (CCW) Convention, alongside separate conventions on anti-personnel mines (APMs) and cluster munitions. A small number of states that have chosen to retain, develop or use weapons seen as inhumane by others have repeatedly stalled progress on strengthening the CCW regime. Other categories of conventional weapon that raise humanitarian concerns are dealt with by other legal and political processes. For example, the use of explosive weapons in populated areas (EWIPA) is addressed by a political declaration adopted in 2022. Notably, in 2023 a new Global Framework for Through-life Conventional Ammunition Management was established, which closed a regulatory gap in this domain.

### The wars in Gaza and Ukraine

The need to protect civilians from EWIPA and other inhumane weapons was underscored in 2023 by the wars in Gaza and Ukraine. Clear and concerning misuse of explosive weapons and other violations of international humanitarian law can be identified in the conduct of both wars. The extensive use of cluster munitions in Ukraine by both Russian and Ukrainian forces, as well as new transfers of these weapons to Ukraine by the United States, overshadowed the completion of the destruction in 2023 of all stockpiled cluster munitions by states parties to the 2008 Convention on Cluster Munitions. Most of the documented use of APMs in Ukraine has been attributed to Russian forces, although allegations of limited use

### THE END OF THE CFE TREATY

Europe's regional conventional arms control regime was effectively ended in 2023 with Russia's withdrawal from the 1990 Treaty on Conventional Armed Forces in Europe (CFE Treaty). By the end of 2023, 19 of the 29 remaining states parties had notified their intention to suspend operation of the treaty.

by Ukraine were under investigation in 2023.

Hamas's attack on Israel on 7 October 2023 broke numerous laws of war, while much of Israel's subsequent bombing and shelling of Gaza appeared to be indiscriminate or disproportionate. Senior United Nations officials had already concluded by the end of the year that war crimes had been committed by both sides, while a group of UN experts warned of the risk of genocide in Gaza.

### Refocusing attention on arms control

The protection of civilians demands not only compliance with fundamental principles of targeting, but also the application of limits on the types of weapon and ammunition that may be employed in armed conflict. Yet conventionally armed missiles and uncrewed aerial vehicles (UAVs) are largely unregulated and the prospects for future arms control agreements remain bleak.

New efforts are needed to preserve multilateral conventional arms control achievements and spread norms that reduce the human cost of weapons. This will require states to move away from overly securitized and militarized approaches to peace, and towards arms control treaties framed around core principles of trust, solidarity and universality. ●



## 11. INTERNATIONAL GOVERNANCE OF ARTIFICIAL INTELLIGENCE, CYBERSPACE AND OUTER SPACE

Emerging and disruptive technologies such as artificial intelligence (AI), synthetic biology and quantum technologies are having a profound impact on security. Efforts to establish international principles of responsible use of these technologies are gathering pace, especially in three priority technology areas: AI, cyberspace and outer space.

### Artificial intelligence

It was an important year for the governance of AI at the international level in at least three respects. First, the group of governmental experts on autonomous weapon systems (AWS) under the 1981 Certain Conventional Weapons Convention (CCW) adopted language that could form the basis of a two-tiered regulation on AWS. The CCW also adopted a mandate that could mark a potential end point for the discussion on AWS in the context of the CCW. At the same time, states approved a new discussion track under the auspices of the United Nations General Assembly that could serve as a basis for a future ad hoc process to complement or replace the CCW process.

Second, states formally acknowledged the need to widen the conversation about AI risks beyond AWS, to cover other ways through which advances in AI may present challenges for international peace and security. This shift was reflected by the first-ever meeting of the UN Security Council on AI in July 2023 and the creation of two new discussion forums: the international summit on Responsible AI in the Military Domain (REAIM) and the AI Safety Summit.

### THREE KEY INTERNATIONAL MEETINGS ON AI IN 2023

*REAIM 2023*: World Forum, The Hague, 15–16 February 2023, with a focus on military artificial intelligence (AI).

*United Nations Security Council debate on AI*: New York, 18 July 2023, the first-ever formal meeting on AI in the Security Council, which highlighted the duality of risk and reward inherent in the technology.

*AI Safety Summit*: Bletchley Park, United Kingdom, 1–2 November 2023, with a focus on the safe and responsible development of frontier AI around the world.

Third, the conversations concomitantly reached deeper technical and higher political levels. At REAIM, for example, states extensively discussed the problems of transparency, interpretability and bias associated with the use of AI applications based on machine learning, while the AI Safety Summit led to extensive discussion and commitment to the testing and evaluation of advanced AI systems. At the same time, these discussions mobilized decision makers at much higher political levels than ever before. The UN secretary-general and several heads of state engaged personally on the issue. It was also notable that AI was a key point in the bilateral meeting between the presidents of China and the United States in November 2023.

### Cyberspace and the malicious use of ICT

Information and communications technology (ICT) continued to play a role in the foreign policy and military activities of states and other actors in 2023. Cyber capabilities were often used in combination with other tools, mechanisms and activities. Cyber operations were used in the wars in Ukraine and Gaza in 2023, with activity centring on distributed denial of



services (DDoS) attacks and website defacements, along with dis- and misinformation campaigns and influence operations. Russia's targeting of Ukraine's allies was another feature of cyber operations in 2023.

The prevailing geopolitical climate continued to limit the effectiveness of multilateralism to develop additional norms or instruments for cyber governance, but there was progress within certain frameworks in 2023. Negotiations on a future UN cybercrime treaty continued despite concerns about its potential to negatively impact human rights; the 2014 African Union Convention on Cyber Security and Personal Data Protection (Malabo Convention) entered into force; European Union institutions drafted a Cyber Resilience Act; the International Criminal Court announced its intention to consider evidence on cyber misconduct; and there were multiple governmental and non-governmental initiatives focusing on specific cyber threats. This patchwork approach to cyber governance is the most likely way of achieving progress, but incorporating accountability and transparency mechanisms will be important.

### **Space security**

Several multilateral initiatives for space security governance were also pursued at UN forums in 2023. The UN Disarmament Commission on transparency and confidence-building measures (TCBMs) for outer space adopted a consensus-based report with practical recommendations for implementing TCBMs. This demonstrated that agreement could be reached on smaller issues, despite the decades-long stalemate in multilateral space security discussions. However, at

### **CYBER ESPIONAGE**

Outside of armed conflict there was a shift towards greater use of cyber capabilities for longer-term intelligence gathering and away from large-scale or one-off operations. Some middle-power states, including Iran and North Korea, increased the sophistication of their cyber-espionage techniques and operations in 2023. Cybercrime and the use of surveillance software continued to affect individuals and organizations worldwide.

the UN open-ended working group (OEWG) on reducing space threats, which convened its final session in 2023, states were unable to reach consensus on a report. Nonetheless, these OEWG sessions highlighted key issues for upcoming discussions, including ensuring the protection of civilians; preventing debris-creating anti-satellite weapons tests; regulating non-kinetic attacks on space systems; adopting measures for information sharing; and clarifying the role of commercial entities in conflicts involving space systems. In November 2023 a UN group of governmental experts was convened to discuss further practical measures to prevent an arms race in outer space, while the General Assembly proposed two new OEWGs.

With the adoption of multiple UN processes there is a risk of further polarization and overlap of substance in discussions about space security governance. Moreover, states do not share the same resources or capacity to engage in all these upcoming multilateral processes. States will therefore need to participate in good faith and try to ensure complementarity and coordination in order to prevent further exacerbating some of the harmful dynamics currently affecting space security governance. ●



## 12. DUAL-USE AND ARMS TRADE CONTROLS

Global, multilateral and regional efforts continued in 2023 to strengthen controls on the trade in military and dual-use items relevant for conventional arms and chemical, biological and nuclear weapons and their delivery systems. However, the Russia–Ukraine war continued to affect multilateral cooperation in the field of export controls. States in the West expanded the set of sanctions measures and associated arms embargoes on Belarus and Russia, and intensified efforts to coordinate and strengthen the enforcement of the arms embargoes, including through the European Union–United States Trade and Technology Council and the establishment of the ‘Export Enforcement Five’ partnership in June.

Trade controls can also be used to achieve a wider set of foreign policy and security objectives. In 2023 the Netherlands and Japan adopted national controls on transfers of semiconductors after close coordination with the USA, while the European Commission published a draft European Economic Security Strategy that included a strong emphasis on adopting new and more harmonized controls on transfers of emerging technologies.

### The Arms Trade Treaty

The ninth Conference of States Parties to the 2013 Arms Trade Treaty (ATT) in August 2023 focused on the role of industry in a responsible international arms trade. States parties discussed the revision of the format and scope of ATT meetings and effective treaty implementation. The treaty continued to experience financial challenges and a decline in reporting. There were no new states parties in 2023.

## UN AND EU ARMS EMBARGOES IN FORCE, 2023

### *United Nations (14 embargoes)*

• Afghanistan (NGF, Taliban) • Central African Republic (partial; NGF) • Democratic Republic of the Congo (NGF) • Haiti (NGF) • Iran (partial) • Iraq (NGF) • ISIL (Da’esh), al-Qaeda and associated individuals and entities • Korea, North • Lebanon (NGF) • Libya (partial; NGF) • Somalia (partial; NGF) • South Sudan (partial; NGF) • Sudan (Darfur) (partial) • Yemen (NGF)

### *European Union (22 embargoes)*

Implementations of UN embargoes (11):  
• Afghanistan (NGF, Taliban) • Central African Republic (partial; NGF) • Democratic Republic of the Congo (partial; NGF) • Haiti (NGF) • Iraq (NGF) • ISIL (Da’esh), al-Qaeda and associated individuals and entities • Korea, North • Lebanon (NGF) • Libya (partial; NGF) • Somalia (partial; NGF) • Yemen (NGF)

EU arms embargoes with broader coverage than their UN counterparts (3):

• Iran • South Sudan • Sudan

Embargoes with no UN counterpart (8):

• Belarus • China • Egypt • Myanmar • Russia • Syria • Venezuela • Zimbabwe

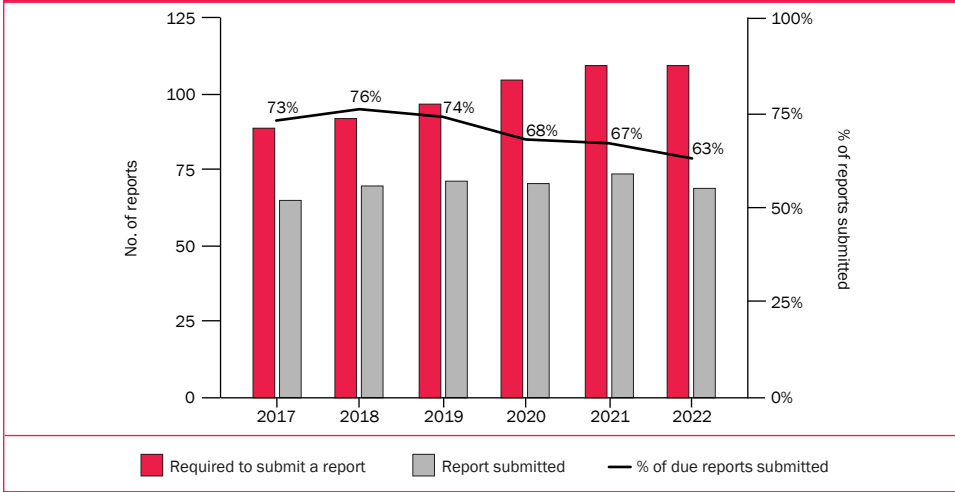
ISIL = Islamic State in Iraq and the Levant; NGF = non-governmental forces; partial = embargo allows transfers of arms to the government of the target state provided that certain conditions have been met.

### Multilateral arms embargoes

During 2023, 14 United Nations arms embargoes and 22 European Union (EU) arms embargoes were in force. No new multilateral arms embargoes were imposed in 2023, although the UN embargo on Somalia was repurposed as an arms embargo that applies exclusively to the al-Shabab armed group. Disagreements remained—mainly between China and Russia (along with several African states)



**NUMBER OF ARMS TRADE TREATY STATES PARTIES SUBMITTING ANNUAL REPORTS, 2017-22**



on one side, and the other permanent UN Security Council members on the other—over the general use of sanctions and the particular controls on arms procurement by government forces in the Central African Republic, South Sudan and Sudan. The efficacy of UN arms embargoes remained under strain in 2023, amid widespread allegations that Russia procured weapons from North Korea and the continued ineffectiveness of the embargo on Libya.

**Export control regimes**

The repercussions of the Russia-Ukraine war continued to have a significant impact on the work of the four multilateral export control regimes—the Australia Group (on chemical and biological weapons), the Missile Technology Control Regime, the Nuclear Suppliers Group and the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-use Goods and Technologies. The latter three regimes, which include Russia as a participating state, continued to experience

difficulties in achieving consensus on key decisions, but were still able to make incremental updates to the control lists and move technical discussions forward.

**EU controls**

To implement the four multilateral export control regimes in its single market, the EU has established a common legal basis for controls on the export, brokering, transit and trans-shipment of dual-use items, software and technology, as well as, to a certain extent, military items. The adoption of measures to implement the 2021 version of the EU dual-use regulation, such as the development of guidelines on the implementation of controls on cyber-surveillance items and reporting obligations, was still under way in 2023. The European External Action Service and EU member states continued work on the review of the EU common position on arms exports, which is due to be completed in 2024. ●



### Arms control and disarmament agreements in force, 1 January 2024

- 1925 Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare (1925 Geneva Protocol)
- 1948 Convention on the Prevention and Punishment of the Crime of Genocide (Genocide Convention)
- 1949 Geneva Convention (IV) Relative to the Protection of Civilian Persons in Time of War; and 1977 Protocols I and II Relating to the Protection of Victims of International and Non-International Armed Conflicts
- 1959 Antarctic Treaty
- 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (Partial Test-Ban Treaty, PTBT)
- 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (Outer Space Treaty)
- 1967 Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (Treaty of Tlatelolco)
- 1968 Treaty on the Non-Proliferation of Nuclear Weapons (Non-Proliferation Treaty, NPT)
- 1971 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil thereof (Seabed Treaty)
- 1972 Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (Biological and Toxin Weapons Convention, BWC)
- 1974 Treaty on the Limitation of Underground Nuclear Weapon Tests (Threshold Test-Ban Treaty, TTBT)
- 1976 Treaty on Underground Nuclear Explosions for Peaceful Purposes (Peaceful Nuclear Explosions Treaty, PNET)
- 1977 Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (Enmod Convention)
- 1980 Convention on the Physical Protection of Nuclear Material and Nuclear Facilities
- 1981 Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons which may be Deemed to be Excessively Injurious or to have Indiscriminate Effects (CCW Convention, or 'Inhumane Weapons' Convention)
- 1985 South Pacific Nuclear Free Zone Treaty (Treaty of Rarotonga)
- 1990 Treaty on Conventional Armed Forces in Europe (CFE Treaty)
- 1992 Treaty on Open Skies
- 1993 Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (Chemical Weapons Convention, CWC)
- 1995 Treaty on the Southeast Asia Nuclear Weapon-Free Zone (Treaty of Bangkok)
- 1996 African Nuclear-Weapon-Free Zone Treaty (Treaty of Pelindaba)
- 1996 Agreement on Sub-Regional Arms Control (Florence Agreement)
- 1997 Inter-American Convention Against the Illicit Manufacturing of and Trafficking in Firearms, Ammunition, Explosives, and Other Related Materials (CIFTA)
- 1997 Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction (APM Convention)
- 1999 Inter-American Convention on Transparency in Conventional Weapons Acquisitions
- 2001 Protocol on the Control of Firearms, Ammunition and other related Materials in the Southern African Development Community (SADC) Region





- 2004 Nairobi Protocol for the Prevention, Control and Reduction of Small Arms and Light Weapons in the Great Lakes Region and the Horn of Africa
- 2006 ECOWAS Convention on Small Arms and Light Weapons, their Ammunition and Other Related Materials
- 2006 Treaty on a Nuclear-Weapon-Free Zone in Central Asia (Treaty of Semipalatinsk)
- 2008 Convention on Cluster Munitions
- 2010 Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START)
- 2010 Central African Convention for the Control of Small Arms and Light Weapons, Their Ammunition and All Parts and Components That Can Be Used for Their Manufacture, Repair and Assembly (Kinshasa Convention)
- 2011 Vienna Document 2011 on Confidence- and Security-Building Measures
- 2013 Arms Trade Treaty (ATT)
- 2017 Treaty on the Prohibition of Nuclear Weapons (TPNW)

**Agreements not yet in force,  
1 January 2024**

- 1996 Comprehensive Nuclear-Test-Ban Treaty (CTBT)
- 1999 Agreement on Adaptation of the CFE Treaty

**Security cooperation bodies**

Developments in 2023 included the following: Gabon was suspended from the African Union (AU) and Niger from the AU and the Economic Community of West African States, following military coups in both countries; Syria was readmitted to the League of Arab States following its suspension in 2011; and Finland joined the North Atlantic Treaty Organization. ●

**CHRONOLOGY 2023, SELECTED  
EVENTS**

- 8 Jan. China loosens travel restrictions and reopens its borders after nearly three years of Covid-related isolation.
- 21 Feb. Russia suspends its participation in New START.
- 17 Mar. The International Criminal Court issues an arrest warrant for Russian President Vladimir Putin.
- 15 Apr. Fighting erupts in Sudan between forces led by rival military generals.
- 29 May Dozens of the North Atlantic Treaty Organization's Kosovo Force peacekeepers and more than 50 Serbs are injured in clashes in northern Kosovo.
- 24 June Wagner Group leader Yevgeny Prigozhin spearheads an insurrection in Russia, advancing to within 200 kilometres of Moscow.
- 7 July The USA begins transferring an unspecified quantity of its stockpiled cluster munitions to Ukraine.
- 24 Aug. At a meeting of the BRICS group of emerging economies, held in South Africa, six new countries are invited to join.
- 19–20 Sep. Azerbaijan agrees a ceasefire with Karabakh separatists after a 24-hour military offensive against ethnic Armenian forces in Nagorno-Karabakh.
- 7 Oct. Hamas launches a major air and ground attack on Israel from Gaza.
- 30 Nov.–13 Dec. COP28 launches a Loss and Damage Fund with \$400 million to support vulnerable states.
- 20 Dec. The Gaza Health Ministry says the death toll has reached nearly 20 000 in the Israel–Hamas war.



## SIPRI DATABASES

### **SIPRI Military Expenditure Database**

Gives the annual military spending of countries since 1949, allowing comparison of countries' military spending in local currency at current prices; in US dollars at current prices; in US dollars at constant prices and exchange rates; and as a share of gross domestic product.

### **SIPRI Arms Industry Database**

Contains annual data on total revenue and revenue from arms sales and military services since 2002 for the 100 companies with the highest arms sales in the world. Data for Chinese companies is included for the years from 2015 onwards.

### **SIPRI Arms Transfers Database**

Shows all international transfers of major conventional arms since 1950. It is the most comprehensive publicly available source of information on international arms transfers.

### **SIPRI Arms Embargoes Database**

Gives information on all arms embargoes that have been implemented by an international organization, such as the European Union or the United Nations, or by a group of nations. All embargoes that are in force, or have been in force since 1998, are included.

### **SIPRI National Reports Database**

Provides links to all publicly accessible national reports on arms exports and is constantly updated to include links to newly published national reports on arms exports.

### **SIPRI Multilateral Peace Operations Database**

Offers information on all UN and non-UN peace operations conducted since 2000, including location, dates of deployment and operation, mandate, participating countries, number of personnel, budgets and fatalities.

The SIPRI databases can be accessed from the SIPRI website. ●



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# SIPRI YEARBOOK 2024

## Armaments, Disarmament and International Security

The SIPRI Yearbook is an authoritative and independent source of data and analysis on armaments, disarmament and international security. It provides an overview of developments in military expenditure, arms production and the arms trade, weapons and technology, and armed conflict and conflict management, along with efforts to control conventional, nuclear, chemical and biological weapons.

This booklet summarizes the 55th edition of the SIPRI Yearbook, which covers developments during 2023, including

- *Armed conflict and conflict management*, including an overview of global and regional developments in armed conflicts, peace processes and peace operations, along with thematic sections on the role of Russian private military and security companies, food insecurity, and climate-related peace and security risks in Yemen
- *Military expenditure, international arms transfers and developments in arms production*, including the consequences of the Russia–Ukraine war and ongoing geopolitical tensions
- *World nuclear forces*, with an overview of each of the nine nuclear-armed states and their nuclear modernization programmes
- *Nuclear arms control*, covering the dialogues involving China, Russia and the United States and within multilateral treaties, as well as the response to Iran’s nuclear programme and attacks on Ukrainian nuclear power plants
- *Chemical, biological and health security threats*, including the investigations of allegations of chemical and biological weapon use and developments in the international legal instruments against chemical and biological warfare
- *Conventional arms control and regulation of inhumane weapons*, with a focus on the use of explosive weapons in the Russia–Ukraine and Israel–Hamas wars, as well as the consequences of missile proliferation and the collapse of the Treaty on Conventional Armed Forces in Europe
- *International governance of artificial intelligence, cyberspace and space security*, with a focus on autonomous weapon systems
- *Dual-use and arms trade controls*, including developments in the Arms Trade Treaty, multilateral arms embargoes and export control regimes, and the legal framework of the European Union for such controls

It also contains updated annexes listing arms control and disarmament agreements, international security cooperation bodies, and key events in 2023.