

SIPRI YEARBOOK 2021

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 2021 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 2021* and provides samples of the data and analysis that it contains.

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Maps, pp. 6, 9, 10. Credit: Hugo Ahlenius, Norpil.	



1. INTRODUCTION: INTERNATIONAL STABILITY AND HUMAN SECURITY IN 2020

DAN SMITH

Following a sharp deterioration in global stability and security during the last decade, the balance sheet largely remained unchanged in 2020. In a year dominated by the Covid-19 pandemic, that conclusion might seem overly optimistic. However, it is supported by the evidence in the 52nd edition of the SIPRI Yearbook.

The broad trends indicate a mixed picture: global military spending continued to rise, but the volume of international arms transfers remained roughly stable; nuclear arms control continued to stagnate and the United States withdrew from the 1992 Treaty on Open Skies, but the Treaty on the Prohibition of Nuclear Weapons received sufficient support to enter into force in January 2021; the number of armed conflicts increased again, but the global total of fatalities in war fell significantly; and, although geopolitics remained toxic, a balance was largely maintained between potential escalation and restraint in most geopolitical hotspots. Climate change continued apace—2020 was the equal warmest year for which temperatures have been recorded going as far back as 1850—but some progress was made at the Climate Ambition Summit held in December 2020, albeit that the targets and pledges announced appear insufficient to meet the aim of restricting global warming to 2°C.

The Covid-19 pandemic

By the end of 2020, some 82 million people were recorded as having contracted Covid-19 and recorded deaths numbered approximately 1.8 million—although both

figures are probably major underestimates. While the pandemic had little direct impact on the conduct of armed conflicts in 2020, it led to increases in psychological stress and domestic violence. The pandemic also had major economic and political effects. It led to reduced economic output in all except 20 countries, reversed three decades of progress in poverty reduction, and contributed to widespread deterioration in the quality of democracy. All these effects will in turn have possible future security consequences.

The US election

The 2020 US presidential election result brought to an end a US administration that had challenged multiple features of the international system. However, there is little reason to think that global politics will swiftly become less confrontational as US competition with China and Russia will probably continue. Meanwhile, there remains considerable support within the USA for the politics and policies of the previous administration. This will cast a long shadow over international relations as other governments ponder how much they can rely on US undertakings and commitments.

International cooperation

The political disputes that festered throughout 2020 about responsibility for the origin of Covid-19 were symptoms of an ailing international body politic. Despite this, many institutions of international cooperation remained vibrant, but simply required greater care and attention. Perhaps what is most important at the start of 2021 is to strengthen and re-energize routines of international cooperation. ●



2. GLOBAL DEVELOPMENTS IN ARMED CONFLICT, PEACE PROCESSES AND PEACE OPERATIONS

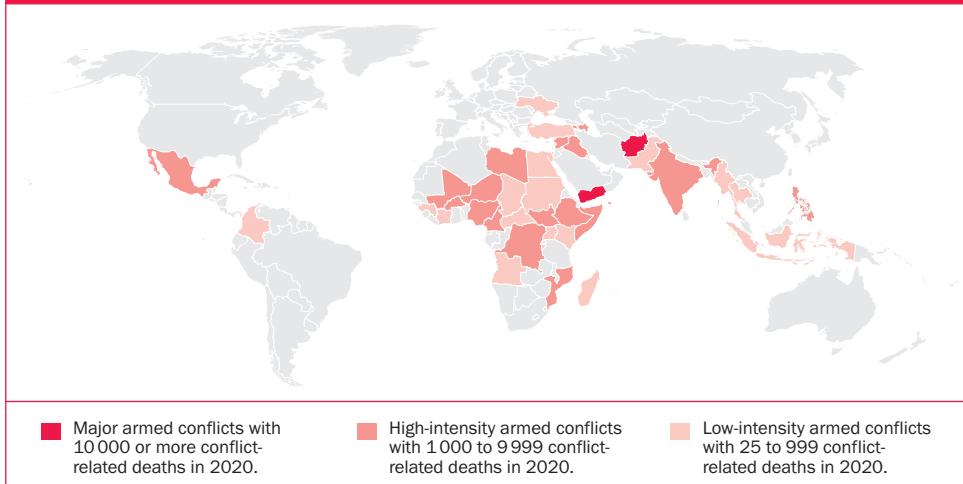
Active armed conflicts occurred in at least 39 states in 2020 (5 more than in 2019): 2 in the Americas, 7 in Asia and Oceania, 3 in Europe, 7 in the Middle East and North Africa (MENA) and 20 in sub-Saharan Africa. As in preceding years, most took place within a single country (intrastate), between government forces and one or more armed non-state group(s). Two intra-state conflicts were major armed conflicts (with more than 10 000 conflict-related deaths in the year)—Afghanistan and Yemen—and 16 were high-intensity armed conflicts (with 1 000–9 999 conflict-related deaths)—Mexico, Syria, Nigeria, the Democratic Republic of the Congo, Ethiopia, Somalia, Mali, Iraq, South Sudan, Burkina Faso, Mozambique, Cameroon, Libya, the Philippines, India and Niger. Only two armed conflicts were fought between states: the ongoing border clashes between

India and Pakistan, and the border conflict between Armenia and Azerbaijan for control of Nagorno-Karabakh, which escalated into a high-intensity conflict. Two other armed conflicts were fought between state forces and armed groups that aspired to statehood (between Israel and the Palestinians and between Turkey and the Kurds).

Consequences of armed conflict

For at least the second consecutive year the total estimated number of conflict-related fatalities decreased. The total in 2020 was approximately 120 000—a 30 per cent reduction since 2018. The decrease in 2020 was largely driven by reductions in conflict-related fatalities in Asia and Oceania, and MENA. Two regions bucked this trend: Europe, because of the armed conflict between Armenia and Azerbaijan; and sub-Saharan Africa (see Conflict-related Fatality Estimates in sub-Saharan Africa). While conflict-related fatalities have declined in recent years, other negative impacts of armed conflict (sometimes in combination

ARMED CONFLICTS IN 2020



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



CONFLICT-RELATED FATALITY ESTIMATES IN SUB-SAHARAN AFRICA

Eighteen of the 20 armed conflicts in sub-Saharan Africa had a higher number of estimated conflict-related fatalities in 2020 than in 2019—and the net increase was about 41 per cent. It was the region with the most conflict-related fatalities in 2020, overtaking the Middle East and North Africa.

with other factors) appear to have increased in severity, including population displacement, food insecurity, humanitarian needs, and violations of international humanitarian law.

Peace agreements and the impact of Covid-19

While many peace processes either stalled or suffered serious setbacks during 2020, important advances were made in the peace talks in Afghanistan. In addition, the ceasefires in Libya and Syria suggested that both of those conflicts might be moving towards some form of resolution in the near to medium term. A Russian-brokered ceasefire ended the fighting in Nagorno-Karabakh. However, in sub-Saharan Africa, the peace process in Sudan was the only one to make substantive progress in 2020.

The impact of Covid-19 on armed conflicts in 2020 was mixed: there were some temporary declines in armed violence, but the intensity of violence generally stayed at the same level and in some cases increased.

Trends in multilateral peace operations

There were 62 active multilateral peace operations in 2020; one more than the previous year. Three operations ended in 2020: the Economic Community of West African States Mission in Guinea-Bissau (ECOMIB); the African Union (AU)-United

Nations Hybrid Operation in Darfur (UNAMID); and the UN Integrated Peacebuilding Office in Guinea-Bissau (UNIOGBIS). Three operations started in 2020: the AU Military Observers Mission to the Central African Republic (CAR) (MOUACA), the European Union (EU) Common Security and Defence Policy Advisory Mission in CAR (EUAM RCA) and the AU Mission in Libya.

The number of personnel deployed in multilateral peace operations decreased by 7.7 per cent during 2020, to reach 127 124 on 31 December 2020. This was mainly driven by reductions in some large multilateral peace operations, especially the Resolute Support Mission (RSM) in Afghanistan. The UN remains the leading organization in the field, with responsibility for about one-third of all multilateral peace operations and two-thirds of all personnel.

In 2020 the AU Mission in Somalia (AMISOM) continued to be the largest multilateral peace operation, despite further force reductions. Ethiopia remained the top troop contributor, followed by Uganda and Bangladesh.

In 2020 the annual fatality rate for hostile deaths of uniformed personnel in UN peace operations was the lowest in the decade 2011–20. However, the fatality rate for deaths from all causes was higher than in previous years because of a significant increase in the number of deaths due to illness, including Covid-19.

The number of operations that are not ‘multilateral peace operations’ (as defined by SIPRI) continued to increase, with three new deployments in 2020: a Russian ‘peacekeeping contingent’ in Nagorno-Karabakh; the EU Naval Force Mediterranean Operation Irini; and the European multinational Task Force Takuba in the Sahel. ●



3. ARMED CONFLICT AND PEACE PROCESSES IN THE AMERICAS

The Americas presented a complex and mixed picture for peace during 2020, with worsening conflict in certain countries, but less violence in some, partly as a result of Covid-19 pandemic-related lockdowns. In others, armed violence continued at a similar level to that in 2019. Two countries—Colombia and Mexico—had several parallel non-international armed conflicts on their territories.

The region hosted three multilateral peace operations: the United Nations Verification Mission in Colombia, the Organization of American States Mission to Support the Peace Process in Colombia, and the UN Integrated Office in Haiti.

Colombia

The 2016 peace accord between the Government of Colombia and the Revolutionary Armed Forces of Colombia—People's Army (Fuerzas Armadas Revolucionarias de Colombia—Ejército del Pueblo, FARC—EP) brought an end to a non-international armed conflict that had endured for over 50 years. However, implementation of the peace agreement continued to encounter problems in 2020. Non-international armed conflicts with other armed non-state groups and paramilitary organizations, including the National Liberation Army (Ejército de Liberación Nacional), the Popular Liberation Army (Ejército Popular de Liberación) and the Gaitanista Self-Defense Forces of Colombia (Autodefensas Gaitanistas de Colombia), continued. Some FARC—EP dissidents joined armed groups, and violence against civil society actors increased.

Mexico

In Mexico there were three non-international armed conflicts: between the Government of Mexico and the Jalisco New Generation Cartel (Cártel Jalisco Nueva Generación), between the government and the Sinaloa Cartel, and between the two cartels themselves. Homicides declined slightly in 2020 but remained at a very high level, while government efforts to counter the cartels became increasingly militarized. A new National Guard created in 2019 had around 100 000 personnel by the end of 2020, controlled by a military operational command.

Criminal violence and political unrest

Homicide rates across the region varied significantly. In 2020 several countries in the Americas, such as Jamaica, remained among those with the highest homicide rates in the world, while others, including El Salvador, Guatemala, Honduras and Venezuela, saw a significant reduction in homicides.

There was targeted political violence towards human rights activists and social movement representatives in some countries in 2020, including Brazil, Colombia, Honduras and Mexico. As a result of Covid-19-related lockdowns, 2020 did not bring a repeat of the often-violent mass demonstrations and riots that occurred throughout 2019 in Bolivia, Chile, Colombia and Ecuador, which had been driven by public frustrations with poor economic conditions, growing inequalities and political corruption. Nevertheless, popular protests broke out sporadically in response to political crises in Bolivia, Chile, Colombia, Guatemala, Nicaragua and Peru. There were allegations of harsh public-order policing responses in several cases. ●



4. ARMED CONFLICT AND PEACE PROCESSES IN ASIA AND OCEANIA

Seven countries in Asia and Oceania experienced active armed conflicts in 2020—the same number as in 2019. There were three in South Asia: Afghanistan (major internationalized civil war), India (high-intensity, interstate border and subnational armed conflicts) and Pakistan (low-intensity, interstate border and subnational armed conflicts). The other four in South East Asia—Indonesia, Myanmar, the Philippines and Thailand—were all low-intensity, subnational armed conflicts. Total conflict-related fatalities in Asia and Oceania fell by nearly 50 per cent in 2020 compared with 2019.

Three emerging trends in the region remained cause for concern in 2020: (a) the growing Chinese–United States rivalry combined with an increasingly assertive Chinese foreign policy; (b) the growing violence related to identity politics, based on ethnic or religious polarization (or both); and (c) the increase in transnational violent jihadist groups. Some of the most organized of these groups were active in South East Asia, most notably in Indonesia, Malaysia and the Philippines.

There were five multilateral peace operations active in Asia and Oceania in 2020—the same number as in 2019.

Afghanistan

The war in Afghanistan remained the deadliest armed conflict in the world, with nearly 21 000 fatalities in 2020—a 50 per cent reduction on 2019. There were grounds for optimism following a conditional peace agreement between the Taliban and the USA in February 2020 and

ARMED CONFLICT IN KASHMIR

In the territorial conflict between India and Pakistan over Kashmir the situation in 2020 largely reverted to the status quo of relatively low levels of armed violence. This consisted of regular exchanges of artillery fire and other clashes between Indian and Pakistani forces along the line of control, and militant attacks and Indian counter-insurgency operations inside Jammu and Kashmir. However, in June 2020, for the first time in over five decades, the border tensions between China and India in the disputed eastern Ladakh region of Kashmir turned deadly. A violent confrontation, which apparently did not involve the use of guns, resulted in the deaths of at least 20 Indian soldiers and an unknown number of Chinese soldiers.

the start of intra-Afghan peace talks in September 2020. By the end of the year, however, the talks had faltered, violence was continuing, and the future of the peace process remained uncertain.

Myanmar

In Myanmar an ongoing peace process made little headway during the year against a backdrop of continuing violence, especially in Rakhine state. However, Japan brokered a diplomatic breakthrough between the Arakan Army and the Myanmar military in November 2020 that included a de facto ceasefire. The agreement created a vital space for dialogue and allowed the return of several thousand displaced people. Nonetheless, at the end of 2020, the prospects for the wider peace process and the voluntary return of almost a million Rohingya people forcibly displaced in 2017 remained uncertain, despite worsening humanitarian conditions in the refugee camps in Bangladesh. ●



5. ARMED CONFLICT AND PEACE PROCESSES IN EUROPE

Two armed conflicts were active in Europe in 2020: the interstate border conflict between Armenia and Azerbaijan for control of Nagorno-Karabakh, which escalated into a high-intensity conflict during the year, and the ongoing low-intensity internationalized, subnational armed conflict in Ukraine. Elsewhere in Europe, tensions persisted in largely inactive but unresolved conflicts in the post-Soviet space, the Western Balkans and Cyprus. There were also persistent tensions between Russia and large parts of the rest of Europe, over issues as diverse as cyberattacks, Ukraine, the response to Covid-19, and the poisoning of Russian opposition leader Alexei Navalny. In addition, irregular migration and terrorism—linked to serious and complex security challenges in Europe’s southern neighbourhood and beyond—remained important security concerns in 2020.

During the year, three further levels of complexity added to these existing tensions: (a) the outbreak of the Covid-19 pandemic; (b) political protests in Belarus following a disputed presidential election in August 2020; and (c) increased tensions in the eastern Mediterranean that were centred on Greece and Turkey but also involved several other countries. On a more promising note, a modest Kosovo–Serbia détente was mediated by the United States in September 2020.

There were 18 multilateral peace operations active in Europe in 2020—the same number as in the previous year.

Armed conflict between Armenia and Azerbaijan

The six weeks of armed conflict that broke out in 2020 between Armenia and Azerbaijan was the most intense period of fighting since the 1988–94 Nagorno-Karabakh War. Azerbaijan is widely believed to have planned and initiated the offensive, having built up its military

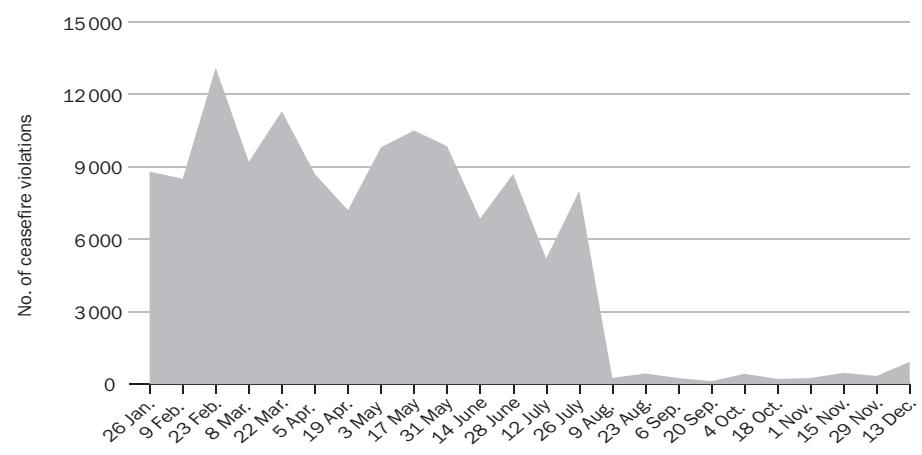
THE DISPUTED TERRITORY OF NAGORNO-KARABAKH, JULY 2020



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



CEASEFIRE VIOLATIONS IN UKRAINE, 13 JAN. TO 13 DEC. 2020



capacity over some years. Azerbaijan received military and political support from Turkey and had access to armed unmanned aerial vehicles purchased from Israel and Turkey. These factors appeared to be central to Azerbaijan's military success in regaining control of about one-third of Nagorno-Karabakh and most of the adjacent territories by the time the fighting subsided. Military and civilian fatalities caused by the fighting were estimated to total around 6700.

A Russian-brokered ceasefire in November 2020 halted the fighting, and at the end of the year Russian peacekeepers were helping the two sides to maintain an uneasy truce. However, several key issues have still to be clarified, including the future status and governance of Nagorno-Karabakh, how to reconcile potentially competing claims of returning internally displaced persons, Turkey's role in the implementation of the agreement, and the future of the Minsk Process of the Organization for Security and Co-operation in Europe. A new stalemate—but on

different terms to the previous 30-year stalemate—now seems likely.

Ukraine

Ukraine has been the focus of Europe's main territorial conflict since 2014. In 2020 it was again not possible to bridge the fundamental disagreements among the parties about the nature of the conflict and their involvement in it, and the implementation of existing agreements. A new ceasefire agreement in July 2020 led to much lower levels of ceasefire violations in the latter part of the year. However, given that there have been more than 20 previous ceasefire attempts in the six years of conflict, it is difficult to predict whether or how long the ceasefire will remain in effect. There were an estimated 109 conflict-related deaths in 2020 (down from 403 in 2019 and 893 in 2018). Based on the situation in Ukraine at the end of 2020, the indications are that the conflict will probably become another of Europe's persistent unresolved conflicts. ●



6. ARMED CONFLICT AND PEACE PROCESSES IN THE MIDDLE EAST AND NORTH AFRICA

There were seven states with active armed conflicts in the Middle East and North Africa (MENA) in 2020 (the same number as in 2017–19): Egypt (low-intensity, subnational armed conflict), Iraq (internationalized civil war), Israel (low-intensity, extrastate armed conflict), Libya (internationalized civil war), Syria (internationalized civil war), Turkey (low-intensity, extrastate and subnational armed conflict) and Yemen (major internationalized civil war). All the armed conflicts had fewer fatalities than in 2019, and total conflict-related fatalities in the region have reduced by almost 70 per cent since 2017. With conflict-related fatalities in Syria dropping below 10 000 in 2020, the war in Yemen remained the region's only major armed conflict. Many of these conflicts were interconnected and involved regional and international powers, as well as numerous non-state actors.

A ceasefire in Idlib province in Syria in March 2020 and a nationwide ceasefire agreed in Libya in October 2020 suggested both of those conflicts might be open to some form of resolution soon. However, in Yemen implementation of the 2018 Stockholm Agreement remained stalled.

The Covid-19 pandemic appears to have had minimal impact on the region's armed conflicts, although it clearly added another layer of complexity to the existing humanitarian challenges. Anti-government protests occurred throughout the region, with mass protests in Algeria, Iraq and Lebanon, and sporadic protests in Egypt, Iran, Israel, Jordan, Morocco, the Palestinian territories and Tunisia. In addition, tensions between Iran and the

THE ISRAELI-PALESTINIAN CONFLICT

Casualties in the Israeli-Palestinian conflict in 2020 were at the lowest level in the past decade. A new US 'peace plan', the threatened annexation of parts of the West Bank and a series of normalization agreements between Israel and four states (Bahrain, Morocco, Sudan and the United Arab Emirates) were key developments in the year. The economic and humanitarian costs to the Palestinian people of the Israeli occupation continued to be severe, and there still appeared to be little prospect of resolving the underlying Israeli-Palestinian territorial dispute.

United States again threatened to escalate into a more serious interstate military conflict.

There were 14 multilateral peace operations in the MENA region in 2020—the same number as in 2019.

Complex and interlinked armed conflicts in Iraq, Syria and Turkey

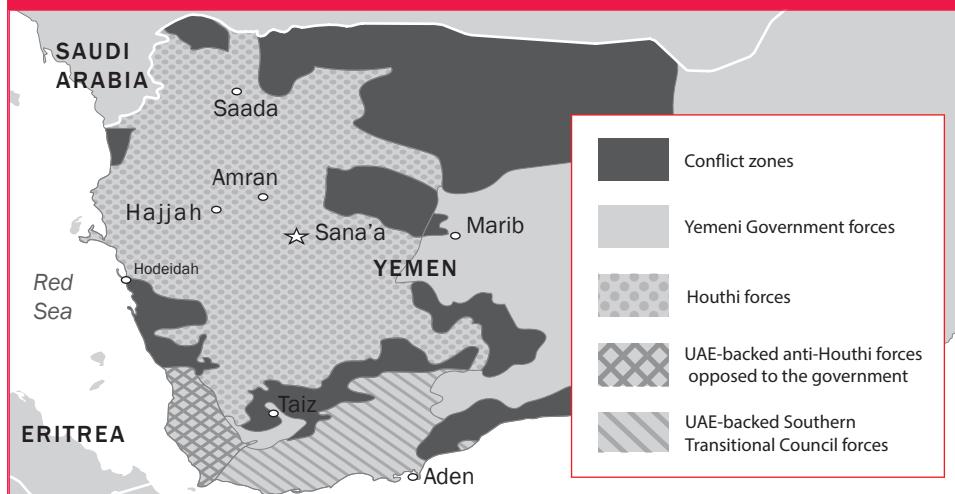
During 2020 the government of President Bashar al-Assad continued to consolidate its hold in Syria, with armed opposition focused on two areas: Idlib province in the north-west, and regions in the north-east partially controlled by Kurds. The March ceasefire in Idlib province led to a further reduction in large-scale hostilities.

In 2020 Iraq remained a fragile, largely post-conflict state with weak institutions and growing protests. Iran remained an influential presence in Iraq (as well as Syria), and Iranian-US tensions spilled over into Iraq. Turkey intensified its military operations in northern Iraq, and the protracted armed conflict in the south-east of Turkey also continued.

The Idlib ceasefire brokered by Russia and Turkey cemented their roles as key



AREAS OF CONTROL AND CONFLICT IN YEMEN, MAY 2020



UAE = United Arab Emirates.

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power brokers in Syria, while US influence continued to wane.

North Africa and the armed conflict in Libya

North Africa is undergoing a convergence of crises, with negative spillover onto the stability of neighbouring states in the eastern Mediterranean and sub-Saharan Africa. The 40-year territorial dispute over the Sahrawi Arab Democratic Republic (Western Sahara) between Morocco and the Popular Front for the Liberation of Saguia el Hamra and Río de Oro (Polisario Front) erupted again towards the end of the year, while Egypt's low-level Sinai insurgency continued in 2020 with no sign of an end or a decisive outcome.

The deepening roles of Egypt, Russia and Turkey in the civil war in Libya complicated peace efforts and increased the risk of a direct military confrontation between Turkish and Egyptian or Russian armed forces supporting opposing sides in the

armed conflict. An internationally backed ceasefire in Libya in October 2020 offered new grounds for optimism.

Yemen

Despite attempts mediated by the United Nations to end the civil war in Yemen, the armed conflict there continued throughout the year, further exacerbating one of the world's worst humanitarian crises. A UN panel of experts concluded that the pattern of armed conflicts in 2020 had predominantly shifted to economic drivers, while in October the UN warned that the country was on the brink of a catastrophic food security crisis. At the end of the year, the Houthis continued to dominate the Yemeni political, economic and military landscape, controlling one-third of the country's territory and two-thirds of the population. Agreeing a lasting political settlement remains fraught with difficulty as the Houthis are unlikely to stop fighting until they fully control Marib, Hodeidah and Taiz. ●



7. ARMED CONFLICT AND PEACE PROCESSES IN SUB-SAHARAN AFRICA

There were at least 20 states (out of a total of 49 states) with active armed conflicts in sub-Saharan Africa in 2020: Angola, Burkina Faso, Burundi, Cameroon, the Central African Republic (CAR), Chad, Côte d'Ivoire, the Democratic Republic of the Congo (DRC), Ethiopia, Guinea, Kenya, Madagascar, Mali, Mozambique, Niger, Nigeria, Somalia, South Sudan, Sudan and Uganda. Ten were low-intensity, sub-national armed conflicts, and 10 were high-intensity armed conflicts (Nigeria, the DRC, Ethiopia, Somalia, Mali, South Sudan, Burkina Faso, Mozambique, Cameroon and Niger). Except for CAR and Somalia, all the other 18 armed conflicts had higher estimated conflict-related fatalities in 2020 than in 2019. The total regional increase was about 41 per cent, giving the region the most conflict-related fatalities globally.

Almost all the armed conflicts were internationalized, including as a result of

state actors and the transnational activities of violent Islamist groups, other armed groups and criminal networks. The conflict dynamics and ethnic and religious tensions were often rooted in a combination of state weakness, corruption, ineffective delivery of basic services, competition over natural resources, inequality and a sense of marginalization. Security dilemmas in sub-Saharan Africa in 2020 were also shaped by election-related violence and the impact of the Covid-19 pandemic, as well as water insecurity and the growing impact of climate change.

A peace process in Sudan was the only one in sub-Saharan Africa to make substantive progress in 2020. There were 22 multilateral peace operations active in sub-Saharan Africa during the year—2 more than in 2019.

West Africa

The security situation in West Africa deteriorated rapidly in 2020, with armed transnational religious groups extending

WEST AFRICA, CENTRAL SAHEL AND LAKE CHAD



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



their grip in the region. The ongoing proliferation of community-based militias also exacerbated existing conflicts. The armed conflicts in Burkina Faso, Mali and Niger worsened, especially within the tri-border Liptako-Gourma region. The new European Task Force Takuba, led by France, added to the existing external national and multilateral counterterrorism operations in the Sahel and Lake Chad regions alongside more traditional multinational United Nations peace operations. The armed conflicts in Chad and Nigeria also worsened in the context of increasing instability in the Lake Chad region.

Central Africa

In Central Africa there was a large upsurge in violence in the east of the DRC, as external and Congolese armed groups engaged in multiple armed conflicts with the government. This was coupled with a resurgence of intercommunal violence. Much of this violence was driven by competition for resources, corruption and weak governance. The two unrelated armed conflicts in different parts of Cameroon—the anglophone separatist insurgency and the Boko Haram insurgency—also worsened in 2020.

East Africa

In East Africa the increase in estimated conflict-related fatalities from about 25 600 in 2019 to nearly 36 000 in 2020 was driven by deteriorating security situations in Ethiopia, Mozambique and South Sudan, as well as ongoing large-scale violence in Somalia. Six of the nine countries in East Africa involved in armed conflicts in 2020 are located in the Horn of Africa, a region that includes some of the most fragile states in the world. Interstate disputes over

THE TIGRAY CONFLICT

A new armed conflict broke out in the Tigray region of northern Ethiopia in November 2020 between federal government forces and the Tigray People's Liberation Front, which killed thousands and forced more than 46 000 refugees to flee into eastern Sudan. Insecurity also rose in many other areas of Ethiopia in 2020 due to simultaneous armed conflicts and high levels of interethnic violence.

resource allocation and access involving East African states continued in 2020. One of the most significant of these disputes, between Egypt, Ethiopia and Sudan over access to the eastern Nile waters, remained deadlocked in 2020.

The Islamist insurgency in Cabo Delgado province in the north of Mozambique intensified in 2020. Increased violence against civilians caused the number of internally displaced people to more than quadruple during the year to over 500 000. In Somalia the al-Shabab armed Islamist group remained a major threat despite the continued presence of a peace operation led by the African Union and targeted air strikes against the group by the United States.

In South Sudan intercommunal violence rose sharply in 2020, while delays in the implementation of the 2018 peace agreement added to the uncertain security situation.

In Sudan the progress made in the Sudanese peace process in 2019 accelerated during 2020, with further significant peace agreements reached with the main armed groups. These culminated in the Sudanese Government and representatives of several armed groups signing the Juba Peace Agreement on 3 October 2020. ●



8. MILITARY EXPENDITURE

World military expenditure is estimated to have been US\$1981 billion in 2020. Total spending was 2.6 per cent higher than in 2019 and 9.3 per cent higher than in 2011. The global military burden—world military expenditure as a share of world gross domestic product (GDP)—rose by 0.2 percentage points in 2020, to 2.4 per cent. This was the biggest increase in military burden since the global financial and economic crisis in 2009.

Military spending increased in at least four of the world's five regions: by 5.1 per cent in Africa, 4.0 per cent in Europe, 3.9 per cent in the Americas and 2.5 per cent in Asia and Oceania. For the sixth successive year SIPRI cannot provide an estimate of total spending in the Middle East.

The impact of Covid-19

While the impact of the Covid-19 pandemic on military spending will become clearer in the coming years, four general observations can already be made about its impact in 2020. First, several countries (e.g. Angola, Brazil, Chile, Kuwait, Russia and South Korea) are known to have reduced or diverted military spending to address the pandemic. Second, one country—Hungary—took the opposite course and increased its military spending in 2020 as part of a financial stimulus package in reaction to the pandemic. Arguments linking higher military spending and economic recovery are likely to be made in more countries. Third, the military burden in a majority of states increased in 2020. Fourth, most countries have used military assets, especially personnel, to support their responses to the outbreak of Covid-19.

WORLD MILITARY SPENDING, 2020

Region	Spending (US\$ b.)	Change (%)
Africa	(43.2)	5.1
North Africa	(24.7)	6.4
Sub-Saharan Africa	18.5	3.4
Americas	853	3.9
Central America and the Caribbean	8.6	-0.2
North America	801	4.3
South America	43.5	-2.1
Asia and Oceania	528	2.5
Central Asia	1.9	-8.4
East Asia	359	2.3
Oceania	30.7	5.6
South Asia	90.1	1.3
South East Asia	45.5	5.2
Europe	378	4.0
Central Europe	33.6	6.0
Eastern Europe	71.7	3.4
Western Europe	273	3.9
Middle East
World total	1 981	2.6

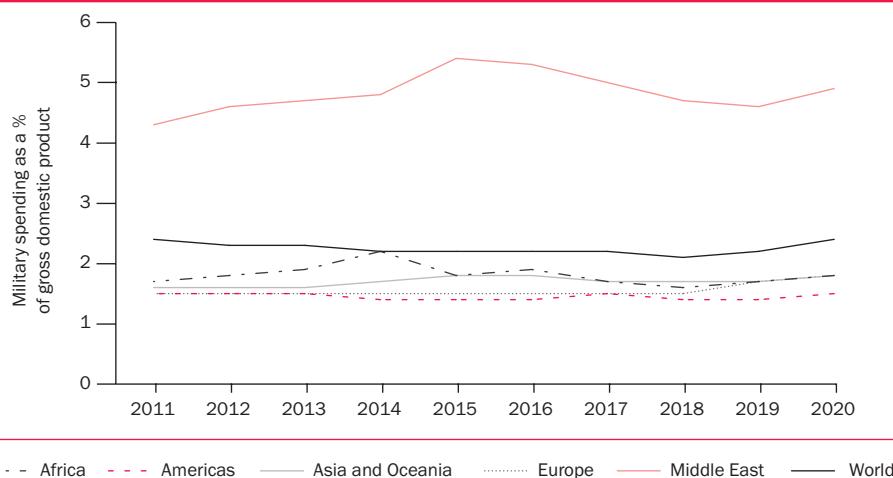
(-) = uncertain estimate; .. = data unavailable. Spending figures are in current (2019) US\$. All changes are in real terms for the period 2019–20.

The largest military spenders in 2020

The growth in total spending in 2020 was largely influenced by expenditure patterns in the United States and China. The USA increased its military spending for the third straight year to reach \$778 billion in 2020, a 4.4 per cent increase since 2019 but a 10 per cent decrease since 2011. Budget items that contributed to this recent growth include research and development, upgrading of the US nuclear arsenal and large-scale arms acquisitions. China's military expenditure is estimated at \$252 billion in 2020, representing an increase of 1.9 per cent since 2019 and 76 per cent since 2011. Chinese spending has risen for 26 consecutive years—the



MILITARY BURDEN, BY REGION, 2011–20



longest streak of uninterrupted increases by any country in the SIPRI Military Expenditure Database. Since the Chinese economy managed to rebound fairly quickly from pandemic-related restrictions, the country is likely to be one of the few that is able to fund a continued increase in military spending without an increase in its military burden.

India's spending of \$72.9 billion, an increase of 2.1 per cent in 2020, ranked it as the third highest spender in the world. Russia's total military spending was \$61.7 billion. This was 2.5 per cent higher than in 2019, but 6.6 per cent lower than the initial budget for 2020, reflecting the far-reaching economic consequences of Covid-19. The gap in spending included a shortfall of around \$1 billion probably linked to the State Armament Programme. The fifth biggest spender, the United Kingdom, raised its military expenditure by 2.9 per cent in 2020. This was the UK's second highest annual growth rate in the period 2011–20, a decade that until 2017 was characterized by military spending cuts.

Transparency in military expenditure

Tracking countries' military expenditure requires transparency. Most countries provide data on military spending in official government reports. However, information is sometimes difficult to access and the reporting in government publications varies widely. One possible factor influencing transparency is the quality of democratic institutions. In South East Asia, for example, basic indicators of national transparency—accessibility, availability, classification, comprehensiveness, disaggregation and the stage of the budgeting process at which reporting takes place—show that overall transparency in government reporting on military spending in this subregion is fairly good. Five countries (Indonesia, Malaysia, the Philippines, Thailand and Timor-Leste) are transparent, three countries (Cambodia, Myanmar and Singapore) have partial transparency, and only Brunei Darussalam, Laos and Viet Nam are judged to have limited or no transparency. ●



9. INTERNATIONAL ARMS TRANSFERS AND DEVELOPMENTS IN ARMS PRODUCTION

The volume of international transfers of major arms in the five-year period 2016–20 was at almost the same level as in 2011–15 and remained at its highest level since the end of the cold war. However, the volume of transfers in 2016–20 was still 35 per cent lower than the peak reached in 1981–85, at the height of the cold war. Overall, the Covid-19 pandemic and the resulting economic crisis appeared to have little effect on arms deliveries in 2020 or on new orders for major arms during the year.

Suppliers of major arms

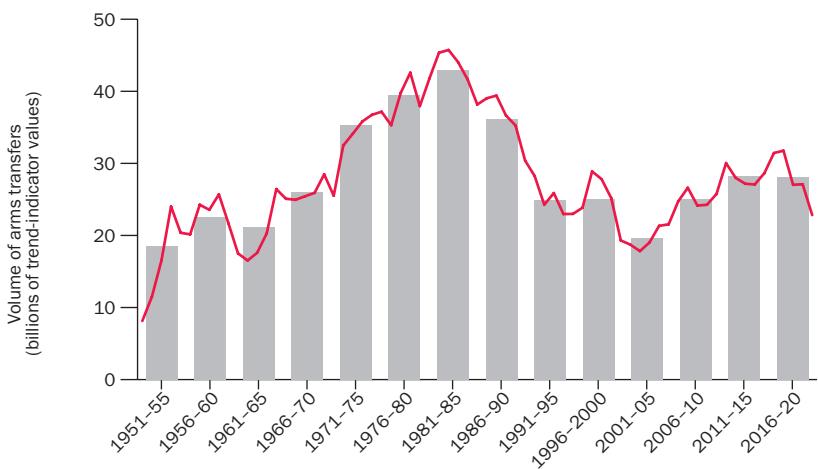
The five largest suppliers in 2016–20—the United States, Russia, France, Germany and China—accounted for 76 per cent of the total volume of exports of major arms. Since 1950, the USA and Russia (or the Soviet Union before 1992) have consistently been by far the largest suppliers. In 2016–20,

US arms exports accounted for 37 per cent of the global total and were 15 per cent higher than in 2011–15. Almost half (47 per cent) of US arms exports went to the Middle East in 2016–20. In contrast, Russia's arms exports decreased by 22 per cent and its share of the global total dropped from 26 per cent in 2011–15 to 20 per cent in 2016–20.

Arms exports by France (up by 44 per cent) and Germany (up by 21 per cent) grew between 2011–15 and 2016–20, while China's fell by 7.8 per cent.

Many of the 65 states identified by SIPRI as exporters of major arms in 2016–20 supply only small volumes of arms. The top 25 arms-supplying states accounted for 99 per cent of total global exports. States in North America (i.e. Canada and the USA) and Europe (including Russia) accounted for 86 per cent of all arms exports. The three largest suppliers outside of Europe and North America were China (5.2 per cent of total arms

THE TREND IN TRANSFERS OF MAJOR ARMS, 1950–2020



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



THE MAIN EXPORTERS AND IMPORTERS OF MAJOR ARMS, 2016–20

Exporter	Global share (%)	Importer	Global share (%)
1 USA	37	1 Saudi Arabia	11
2 Russia	20	2 India	9.5
3 France	8.2	3 Egypt	5.8
4 Germany	5.5	4 Australia	5.1
5 China	5.2	5 China	4.7
6 UK	3.3	6 Algeria	4.3
7 Spain	3.2	7 South Korea	4.3
8 Israel	3.0	8 Qatar	3.8
9 South Korea	2.7	9 UAE	3.0
10 Italy	2.2	10 Pakistan	2.7

UAE = United Arab Emirates.

exports), Israel (3.0 per cent) and South Korea (2.7 per cent).

Importers of major arms

SIPRI identified 164 states as importers of major arms in 2016–20. The five largest arms importers were Saudi Arabia, India, Egypt, Australia and China, which together accounted for 36 per cent of total arms imports. The region that received the largest volume of major arms supplies in 2016–20 was Asia and Oceania, accounting for 42 per cent of the global total, followed by the Middle East, which received 33 per cent. The flow of arms to two regions increased between 2011–15 and 2016–20: the Middle East (by 25 per cent) and Europe (by 12 per cent). Meanwhile, flows to the other three regions decreased: Africa (by 13 per cent), the Americas (by 43 per cent) and Asia and Oceania (by 8.3 per cent).

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.

IMPORTS OF MAJOR ARMS, BY REGION

Recipient region	Global share (%), 2016–20	Change (%) in volume of imports from 2011–15 to 2016–20
Africa	7.3	-13
Americas	5.4	-43
Asia and Oceania	42	-8.3
Europe	12	12
Middle East	33	25

Based on this data, SIPRI estimates that the total value of the global arms trade was at least \$118 billion in 2019*.

Arms production and military services

The arms sales of the world's 25 largest arms-producing and military services companies totalled \$361 billion in 2019*—an increase of 8.5 per cent compared with 2018. The 2019 SIPRI ranking is the first to include data for some Chinese arms companies. The top 25 arms companies in 2019 are concentrated in North America (12 companies) and Europe (8 companies) but the ranking also includes 4 Chinese companies and 1 from the United Arab Emirates. The top five companies are all based in the USA.

For the first time, SIPRI mapped the international presence of the arms industry, focusing on the 15 largest arms companies in 2019. The data set is made up of 400 foreign entities, defined as branches, subsidiaries and joint ventures registered in a country other than that in which the parent company is headquartered. Taking account of these foreign entities, the reach of the world's 15 largest arms companies extends across at least 49 different countries. ●

* The latest year for which data is available.



10. WORLD NUCLEAR FORCES

At the start of 2021, nine states—the United States, Russia, the United Kingdom, France, China, India, Pakistan, Israel and the Democratic People's Republic of Korea (DPRK, or North Korea)—possessed approximately 13 080 nuclear weapons, of which 3825 were deployed with operational forces. Approximately 2000 of these are kept in a state of high operational alert.

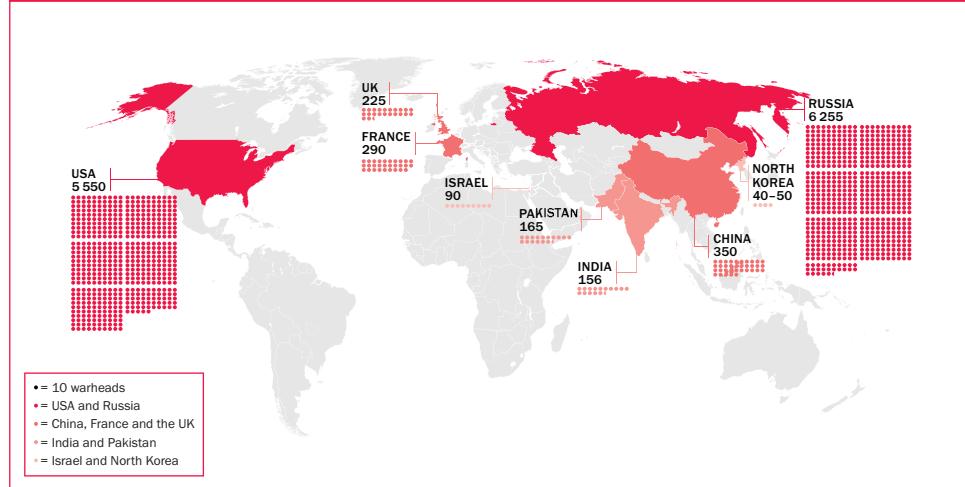
Nuclear arsenals

Overall, inventories of nuclear warheads continue to decline. This is primarily due to the USA and Russia dismantling retired warheads. Global reductions of operational warheads appear to have stalled, and their numbers may be rising again. At the same time, both the USA and Russia have extensive and expensive programmes under way to replace and modernize their nuclear warheads, missile and aircraft delivery systems, and nuclear weapon production facilities. For example, in 2020 the USA completed the deployment of new

low-yield warheads on its nuclear-powered ballistic missile submarines (SSBNs) and made progress in its plans to field a new nuclear-armed sea-launched cruise missile (SLCM). Russia added a fourth Borei-class SSBN to its fleet, and increased its numbers of Yars and Avangard intercontinental ballistic missiles, land-attack Kalibr SLCMs and Iskander short-range missiles.

The nuclear arsenals of the other nuclear-armed states are considerably smaller, but all are either developing or deploying new weapon systems or have announced their intention to do so. China is in the middle of a significant modernization and expansion of its nuclear arsenal, and India and Pakistan also appear to be increasing the size of their nuclear weapon inventories. North Korea continues to enhance its military nuclear programme as a central element of its national security strategy, although in 2020 it did not conduct any tests of nuclear weapons or long-range ballistic missile delivery systems.

GLOBAL NUCLEAR WEAPON INVENTORIES, JANUARY 2021



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



GLOBAL STOCKS OF FISSILE MATERIALS, 2020

The raw material for nuclear weapons is fissile material, either highly enriched uranium (HEU) or separated plutonium. China, France, Russia, the UK and the USA have produced both HEU and plutonium for use in their nuclear weapons; India and Israel have produced mainly plutonium; and Pakistan has produced mainly HEU but is increasing its ability to produce 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, 2020

Highly enriched uranium	~1 330 tonnes
Separated plutonium	
Military stocks	~220 tonnes
Civilian stocks	~320 tonnes

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. The USA had previously disclosed important information about its stockpile and nuclear capabilities, but in 2020—as in 2019—the administration of President Donald J. Trump declined to disclose the size of the US stockpile. The UK and France have also declared some information. Russia refuses to publicly disclose the detailed breakdown of its forces counted under the 2010 Russian–US Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START), even though it shares the information with the USA. China now publicly displays its nuclear

WORLD NUCLEAR FORCES, JANUARY 2021

Country	Deployed warheads	Other warheads	Total inventory
USA	1 800	3 750	5 550
Russia	1 625	4 630	6 255
UK	120	105	225
France	280	10	290
China	—	350	350
India	—	156	156
Pakistan	—	165	165
Israel	—	90	90
North Korea	—	[40–50]	[40–50]
Total*	3 825	9 255	13 080

— = nil or negligible value; [] = uncertain figure not included in the total.

* Totals are rounded to the nearest 5 warheads.

Notes: ‘Other warheads’ includes operational warheads held in storage and retired warheads awaiting dismantlement.

The figures for Russia and the USA do not necessarily correspond to those in their 2010 Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START) declarations because of the treaty’s counting rules.

All estimates are approximate. SIPRI revises its world nuclear forces data each year based on new information and updates to earlier assessments.

forces more frequently than in the past but releases little information about force numbers or future development plans. The governments of India and Pakistan make statements about some of their missile tests but provide no information about the status or size of their arsenals. North Korea has acknowledged conducting nuclear weapon and missile tests but provides no information about the size of its nuclear arsenal. Israel has a long-standing policy of not commenting on its nuclear arsenal. ●



11. NUCLEAR DISARMAMENT, ARMS CONTROL AND NON-PROLIFERATION

Treaty on the Prohibition of Nuclear Weapons enters into force

Although, on balance, 2020 was a difficult year for nuclear arms control and non-proliferation efforts, it witnessed a crucial milestone in the development of international norms on nuclear disarmament: on 24 October 2020 Honduras became the 50th state to ratify or accede to the 2017 Treaty on the Prohibition of Nuclear Weapons (TPNW), triggering its entry into force 90 days later. The TPNW is the first treaty to establish a comprehensive ban on nuclear weapons, including their development, deployment, possession, use and threat of use. This prohibition, however, has brought to the fore the tension between nuclear disarmament and nuclear deterrence: while civil society and many non-nuclear weapon states welcomed the entry into force of the treaty, the nuclear weapon states (China, France, Russia, the United Kingdom and the United States) and their allies viewed it as undermining the existing nuclear order based on the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (Non-Proliferation Treaty, NPT).

The Covid-19 pandemic led to the postponement of the 10th review conference of the NPT. It would have marked the 50th anniversary of the NPT's entry into force, in 1970, and a quarter of a century since the treaty was indefinitely extended, in 1995. Many welcomed the postponement as the conference appeared set to fail in the political context that prevailed in 2020—a context shaped mainly by the long-standing failure to make progress on nuclear disarmament.

Russian-US nuclear arms control

In keeping with over a decade of diplomatic deadlock in bilateral nuclear arms control between Russia and the USA, little progress was made in their negotiations in 2020. In addition to the deterioration in general Russian-Western political and security relations, contemporary developments in military technology have also complicated strategic dynamics and contributed to this deadlock. Despite their efforts to address relevant issues in the Strategic Security Dialogue framework, by the end of 2020 Russia and the USA had still not agreed to extend their last-remaining bilateral nuclear arms control treaty, the 2010 Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START), which was due to expire on 5 February 2021. The fate of New START remained in the balance due to the different approaches and goals of the two sides: Russia focused on preserving the treaty, while the USA sought to convince China—with no success—to join the agreement and to make it more comprehensive in terms of the weapons covered and the verification measures imposed.

Iran and the Joint Comprehensive Plan of Action

The future of the 2015 Joint Comprehensive Plan of Action (JCPOA) also remained uncertain in 2020. The JCPOA is an agreement between Iran and six other participating states, as well as the European Union, designed to build international confidence about the exclusively peaceful nature of the Iranian nuclear programme in return for the lifting of sanctions. Iran remained a participant in the JCPOA in 2020, although it was no longer observing key provisions of the agreement. Iran had begun to exceed



**AGGREGATE NUMBERS OF RUSSIAN AND US STRATEGIC OFFENSIVE ARMS
UNDER NEW START, AS OF 5 FEB. 2011, 1 MAR. 2020 AND 1 SEP. 2020**

Category of data	Treaty limits	Russia			United States		
		Feb.	Mar.	Sep.	Feb.	Mar.	Sep.
		2011	2020	2020	2011	2020	2020
Deployed ICBMs, SLBMs and heavy bombers	700		521	485	510	882	655
Warheads on deployed ICBMs, SLBMs and heavy bombers ^a	1 550		1 537	1 326	1 447	1 800	1 373 ^b
Deployed and non-deployed launchers of ICBMs, SLBMs and heavy bombers	800		865	754	764	1 124	800
							800

ICBM = intercontinental ballistic missile; SLBM = submarine-launched ballistic missile.

Note: The treaty entered into force on 5 Feb. 2011. The treaty limits had to be reached by 5 Feb. 2018.

^a Each heavy bomber is counted as carrying only 1 warhead.

^b The first public release of aggregate US data stated 1373. Subsequent data releases stated 1372.

JCPOA limits on its nuclear activities in 2019 in response to the US ‘maximum pressure’ policy—which, following the US withdrawal from the JCPOA in 2018, included ever-harsher sanctions on Iran. Iran continued to maintain that it would return to full compliance as soon as the other participants did the same. The prospects for reviving this ailing nuclear agreement in 2021 were improved by the election of a new US president in late 2020. However, the window for Iran and the USA to agree on the terms for returning to their respective JCPOA commitments remained narrow.

North Korea

Since the breakdown of the short-lived nuclear diplomacy between the USA and the Democratic People’s Republic of Korea (DPRK, or North Korea) in 2018–19 a stalemate has ensued, and this continued throughout 2020. In January North Korea announced that it would no longer observe its unilateral moratoriums on nuclear test explosions and test flights of long-range ballistic missiles that it had declared in 2018. While it conducted no such tests

during the year, it continued development of its shorter-range ballistic missiles.

Controversies related to the Comprehensive Nuclear-Test-Ban Treaty

The difficult political context for nuclear arms control was also apparent in relation to the 1996 Comprehensive Nuclear-Test-Ban Treaty (CTBT)—the international treaty that would ban all nuclear test explosions in all environments when it enters into force. In 2020 US officials reportedly discussed the option of conducting a so-called demonstration nuclear explosion, which would have been the first US nuclear explosive test since 1992. By the end of the year, given the adverse political reactions, the political changes in the USA after the elections in November, and various technical difficulties, such a test seemed unlikely. Meanwhile, as in previous years, the USA questioned whether China and Russia were adhering to their unilateral testing moratoriums. Both denied the US assertions, which have not been substantiated by publicly available evidence. ●



12. CHEMICAL AND BIOLOGICAL SECURITY THREATS

The unfolding Covid-19 pandemic

In 2020 the Covid-19 pandemic changed the world in a way that very few had anticipated. By the end of 2020, over 82 million cases of Covid-19 and over 1.8 million deaths had been recorded worldwide, although the actual numbers were probably considerably higher because of undiagnosed cases and generally poor Covid-19-related data. The pandemic's global socio-economic impacts were at levels unprecedented since World War II.

According to the state of knowledge at the end of 2020 about Covid-19 and its origin, it was generally thought to be a natural disease outbreak, first detected in Wuhan, China, on the last day of 2019, although very little was known about how, where and when it started circulating. While a 'natural spillover' theory dominated, a more marginal theory held that the virus could have originated from a research-related incident. Identifying the source of the disease should have been a routine scientific matter; instead it became highly politicized. China in particular made significant attempts to control the pandemic origins narrative. In May 2020 the World Health Organization (WHO) was tasked with trying to establish the origin of the virus, with a WHO-led international mission to be deployed to China in early 2021.

The Covid-19 pandemic, and its public and socio-economic impacts, also threw into sharp relief a problem faced by all governments: how to successfully predict and prepare for biosecurity-related threats to citizens and to national and international security. The biological threat spectrum is

USE OF NOVICHOK AGENTS

There were further developments in 2020 related to toxic chemicals from the novichok group of nerve agents. These included the entry into force of the technical changes to Schedule 1 of chemicals in the 1993 Chemical Weapons Convention and a new instance of alleged use in the poisoning of Russian opposition leader Alexei Navalny. The Organisation for the Prohibition of Chemical Weapons confirmed that a cholinesterase inhibitor from the novichok group was used to poison Navalny, although it was a type not listed in the schedule.

complex and evolving, and includes natural disease outbreaks, the unintended consequences of laboratory accidents, the intentional use of disease as a weapon and, as demonstrated during the pandemic, now arguably also biological information warfare.

Biological arms control

The pandemic also significantly impacted the functioning of key biological disarmament and non-proliferation activities in 2020. Intersessional meetings of experts and the meeting of states parties under the 1972 Biological and Toxin Weapons Convention (BWC) were postponed until 2021. Nonetheless, some notable BWC-related activities and developments still took place during 2020. These included the 45th anniversary of the BWC's entry into force, a United Nations Security Council open debate on pandemics and security in July 2020, and a new controversial UN General Assembly draft resolution on the UN Secretary-General's Mechanism (UNSGM) for investigating allegations of use of chemical and biological weapons.



Investigating allegations of chemical weapon use

The introduction of the UNSGM resolution by Russia was consistent with other efforts by a handful of actors, including misinformation and disinformation campaigns, to undermine and contest the authority and work of investigation teams within the Organisation for the Prohibition of Chemical Weapons (OPCW) and the UN. The Syrian chemical weapons investigations that continued in 2020, as well as other experiences, point to investigations becoming more contentious, complex and important. Divisions were also evident in the UN Security Council meetings on Syria and chemical weapons in 2020.

Chemical arms control and disarmament

The pandemic caused the postponement of routine and other inspections by the OPCW Technical Secretariat throughout 2020. The 25th Session of the Conference of States Parties (CSP) to the 1993 Chemical Weapons Convention (CWC) did go ahead in an adapted format, with a second part scheduled for 2021. Political divisions were again evident at the CSP and in OPCW Executive Council meetings, especially over the draft programme and budget and in relation to efforts to address the threat from chemicals that act on the central nervous system.

As of 30 November 2020, 98.3 per cent of declared Category 1 chemical weapons (i.e. those based on chemicals in Schedule 1 of the CWC) had been destroyed under international verification. The United States remains the only declared possessor state party with chemical weapons yet to be destroyed but is expected to complete its remaining destruction activities within the current timelines. ●

THE COVID-19 PANDEMIC IN 2020, SELECTED EVENTS

- | | |
|-----------|---|
| 3 Jan. | China reports over 40 cases to the World Health Organization (WHO) of a viral pneumonia of unknown cause, first identified in Wuhan, China, in Dec. 2019. |
| 9 Jan. | The cause of the disease outbreak in Wuhan is identified as a novel coronavirus. The first death is reported two days later. |
| 23 Jan. | Wuhan is quarantined. |
| 30 Jan. | The WHO declares coronavirus a Public Health Emergency of International Concern. |
| 11 Feb. | The WHO names the novel coronavirus strain ‘Covid-19’. |
| 16 Feb. | A WHO–China Joint Mission is initiated to assess the seriousness of the new disease. |
| 7–8 Mar. | Confirmed Covid-19 cases surpass 100 000 globally; Italy becomes the first country to place its citizens in a lockdown. |
| 11 Mar. | The WHO declares Covid-19 a pandemic. |
| 4 Apr. | Confirmed cases of Covid-19 pass 1 million worldwide. |
| 18–19 May | The WHO is tasked with trying to establish the origin of the virus. |
| 30 June | Confirmed cases of Covid-19 pass 10 million worldwide; the global death toll exceeds 500 000. |
| 11 Aug. | Russia announces that it has approved the world’s first Covid-19 vaccine. |
| 30 Sep. | The worldwide death toll from Covid-19 exceeds 1 million. |
| 5 Nov. | The terms of reference for the WHO Global Study of the Origins of SARS-CoV-2 are published. |
| 8 Nov. | Confirmed cases of Covid-19 pass 50 million worldwide. |
| 31 Dec. | Confirmed cases of Covid-19 pass 82 million worldwide, with an estimated 1.8 million recorded deaths. |



13. CONVENTIONAL ARMS CONTROL AND REGULATION OF NEW WEAPON TECHNOLOGIES

Conventional arms control by states usually falls within one of two broad approaches: limiting or prohibiting weapons considered to be inhumane or indiscriminate; or regulating and managing the procurement, production, transfer and trade of weapons, with a view to preventing their destabilizing accumulation, diversion or misuse. The first category includes the 1981 Certain Conventional Weapons (CCW) Convention, the 1997 Anti-Personnel Mine (APM) Convention and the 2008 Convention on Cluster Munitions (CCM). The second category includes the 2013 Arms Trade Treaty.

Some types of weapon may not be covered by a specific treaty. In such a case, states may consider a new treaty or—as with lethal autonomous weapon systems (LAWS)—extension of the coverage of an existing regime. In cases where this approach has failed, states may consider alternative, less formal approaches—as in the case of explosive weapons in populated areas (EWIPA). In more complex cases, such as the regulation of cyberspace or activity in space, the most appropriate approach may be the subject of intense debate.

As a complement to controlling arms, international security can be improved by states acting to build mutual confidence. This can be through relatively simple multilateral mechanisms for sharing information on arms procurement or military expenditure. However, the existing instruments are in urgent need of revitalization as participation is low and the data provided is limited in utility.

Anti-personnel mines and cluster munitions

While new uses of APMs by states are now extremely rare, use by non-state armed groups in conflicts, and especially of victim-activated improvised explosive devices (IEDs), is a growing problem. APMs were used by such groups in at least six states between mid 2019 and October 2020: Afghanistan, Colombia, India, Libya, Myanmar and Pakistan. Since the APM Convention entered into force, 31 states parties have completed clearance of all APMs from their territory, with Chile and the United Kingdom doing so in 2020.

The most recent use of cluster munitions occurred in October 2020 during the armed conflict in Nagorno-Karabakh between Armenia and Azerbaijan (both non-parties to the CCM). There was also continued use of cluster munitions in Syria in 2019–20.

Explosive weapons in populated areas

International concern is growing over the use of EWIPA. Little progress has been made on this issue within the framework of the CCW Convention in recent years due to the lack of consensus and a handful of states obstructing advances in the convention's agenda in this area. In 2020 the difficulties in these negotiations were aggravated by the inability to meet face-to-face because of the Covid-19 pandemic—which had an impact in all the conventional arms control discussions during the year. The lack of progress on EWIPA within the CCW regime has led some states to explore a separate process. Led by Ireland, this process aims to develop a political declaration to address the humanitarian harm arising from the use of EWIPA. Discussion was slowed by the Covid-19 pandemic, but



THE 1992 TREATY ON OPEN SKIES

In May 2020 the USA announced that it would formally withdraw from the 1992 Treaty on Open Skies, citing the failure of Russia to adhere to the agreement. The treaty established a regime of unarmed aerial observation flights over the territories of the 34 participating states on a reciprocal basis. Over 1500 surveillance flights have been conducted since the treaty entered into force in 2002. Despite international calls for the USA to reconsider its plan to withdraw, including from allies, the withdrawal came into effect on 22 November 2020. Although most of the remaining parties to the treaty seemed determined to continue implementing it, at the end of 2020 the longer-term future of the treaty remained uncertain.

further consultations are expected to result in the adoption of a declaration in 2021.

Lethal autonomous weapon systems

Efforts to regulate LAWS within the framework of the CCW Convention started in 2014, and have since 2017 been led by an open-ended group of governmental experts (GGE). In 2020 these discussions largely centred on identifying key areas of convergence in order to inform the sixth review conference of the CCW Convention, scheduled to take place in 2021. However, as well as being affected by pandemic-related restrictions, discussions were hampered by persistent fundamental disagreements over the outcome and mandate of the GGE, notably between Western delegations, the Non-Aligned Movement and Russia. This raised serious questions as to what the GGE will be capable of achieving beyond the 11 guiding principles adopted in 2019.

Governance of cyberspace

In the context of ongoing geopolitical tensions around the security of information and communications technology (ICT), dialogue on the governance of ICT and cyber norms has taken place at multiple levels. The main state-driven efforts continued in 2020 within two parallel United Nations processes: an Open-ended Working Group and a GGE. However, despite changes to the digital landscape caused by the Covid-19 pandemic that have increased the need for action, the differing interests of states and normative preferences have hindered these international efforts to control the malicious use of ICT. In the absence of consensus, a legally binding agreement seems unlikely in the near future.

Developments in space security

Despite the growing risk of a conflict in outer space, international discussions on both security and safety aspects of space activities remain blocked. Destabilizing issues that arose in 2020 included controversial rendezvous and proximity operations and alleged anti-satellite tests by Russia, as well as the adoption of unilateral space policies by the United States. However, in December 2020 the UN General Assembly adopted a promising new initiative proposed by the UK on norms for responsible behaviour in space. It is hoped that this will lead to a return to multilateral regulatory approaches for space security. ●



14. DUAL-USE AND ARMS TRADE CONTROLS

Global, multilateral and regional efforts continued in 2020 to strengthen controls on the trade in conventional arms and in dual-use items connected with conventional, biological, chemical and nuclear weapons and their delivery systems. Membership of the different international and multilateral instruments that seek to establish and promote agreed standards for the trade in arms and dual-use items remained stable. However, there were growing signs that the strength of these instruments is being increasingly tested by stretched national resources and broader geopolitical tensions. This could be seen in the decrease in reporting to the 2013 Arms Trade Treaty (ATT); the various reported violations of United Nations arms embargoes; and unilateral efforts by the United States to impose a UN arms embargo on Iran beyond 2020.

The Arms Trade Treaty

The Sixth Conference of States Parties to the ATT was conducted in August 2020 through written procedure with no in-person meeting. In addition to Covid-19-related disruption, some problems that the ATT was already experiencing persisted, particularly shortfalls in compliance with mandatory reporting and a decline in the number of publicly available reports. The two main developments were the establishment of the Diversion Information Exchange Forum and the accession of China to the ATT.

Multilateral arms embargoes

During 2020, 13 UN embargoes, 21 European Union (EU) embargoes and 1 League of Arab States embargo were in force. No

MULTILATERAL ARMS EMBARGOES IN FORCE, 2020

United Nations (13 embargoes)

- Afghanistan (NGF, Taliban) • Central African Republic (Partial; NGF) • Democratic Republic of the Congo (Partial; 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 • Sudan (Darfur) (Partial) • Yemen (NGF)

European Union (21 embargoes)

- Implementations of UN embargoes (10):
- Afghanistan (NGF, Taliban) • Central African Republic (Partial; NGF) • Democratic Republic of the Congo (Partial; 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

Arab League (1 embargo)

- Syria

ISIL = Islamic State in Iraq and the Levant;

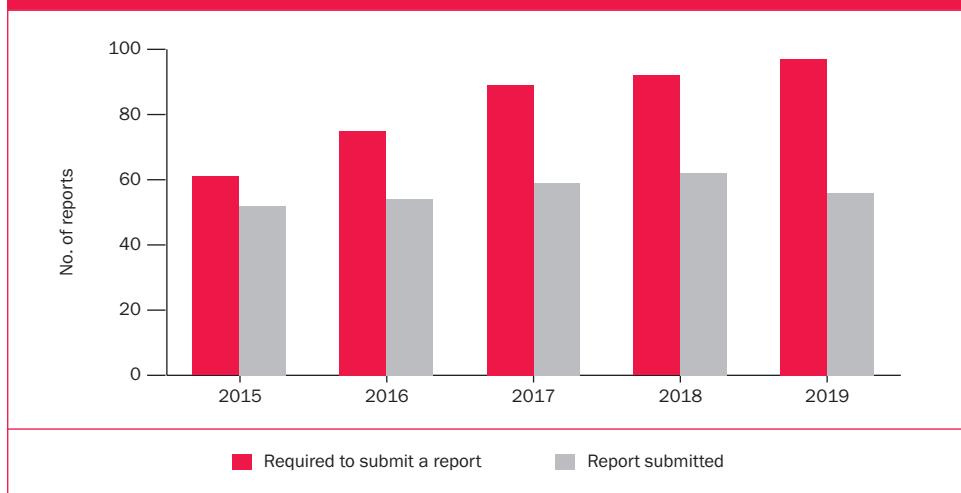
NGF = non-governmental forces; Partial =

Embargo allows transfers of arms to the government of the target state provided that certain conditions have been met.

new multilateral arms embargo was imposed and the UN embargo on the supply of major arms to Iran and exports of any arms from Iran expired, although other aspects of the embargo remained in place. Ten of the EU arms embargoes matched the coverage of those imposed by the UN; three were broader in terms of duration, geographical scope or the types of weapon covered; and eight had no UN counterpart.



NUMBER OF ARMS TRADE TREATY STATES PARTIES SUBMITTING ANNUAL REPORTS, 2015–19



The single Arab League arms embargo, on Syria, had no UN counterpart. 2020 was a testing year for multilateral arms embargoes: the USA sought to unilaterally extend the UN arms embargo on Iran beyond October 2020; as in previous years, investigations by the UN revealed numerous reported cases of violations, most notably with regard to the UN arms embargo on Libya; and the armed conflict between Armenia and Azerbaijan raised questions about the implementation and enforcement of the Organization for Security and Co-operation in Europe's voluntary arms embargo on Nagorno-Karabakh.

Export control regimes

None 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—was able to hold an annual

plenary due to Covid-19 pandemic restrictions. Several regimes put in place measures or expedited processes to improve resilience in addressing the types of challenge raised by Covid-19. None of the four regimes admitted any new participating states (or partners) during 2020.

EU controls

To implement the four export control regimes in its common 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 degree, military items. In 2020 the EU reached a provisional agreement on the final text of a new version of the EU Dual-use Regulation, concluding a review and recast process that started in 2011. It also improved the level of transparency and accessibility of the EU Annual Report on arms exports. ●



ANNEXES

Arms control and disarmament agreements in force, 1 January 2021

- 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, PNENT)
- 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 (entered into force 22 Jan. 2021)

Agreements not yet in force,

1 January 2021

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

Security cooperation bodies

Developments in 2020 included North Macedonia becoming a member of the North Atlantic Treaty Organization, the Comoros becoming a member of the International Atomic Energy Agency and the United Kingdom withdrawing from the European Union (EU). During a transition period until 31 Dec. 2020, the UK remained part of the EU's single market but no longer participated in its political institutions. ●

CHRONOLOGY 2020, SELECTED EVENTS

- | | |
|----------|---|
| 3 Jan. | An air strike by the United States kills Major General Qasem Soleimani, commander of Iran's Quds Force. |
| 29 Feb. | The USA and the Taliban sign a conditional peace agreement. |
| 23 Mar. | The United Nations Secretary-General calls for an immediate global ceasefire to address the challenge of the Covid-19 pandemic. |
| 23 Apr. | Two former senior Syrian Army officers go on trial in Germany for alleged war crimes. |
| 25 May | The killing of George Floyd by a police officer in Minneapolis, USA, sparks national and international protests. |
| 15 June | A border clash between China and India causes the first fatalities along the Line of Actual Control in 45 years. |
| 22 July | A ceasefire is agreed between government forces and pro-Russian separatists in eastern Ukraine. |
| 18 Aug. | A military coup in Mali forces President Ibrahim Boubacar Keïta to resign. |
| 12 Sep. | The Afghan Government and the Taliban begin intra-Afghan peace talks. |
| 3 Oct. | The transitional government of Sudan and various Sudanese armed opposition groups sign the Juba Peace Agreement. |
| 3–7 Nov. | Joe Biden is elected as the 46th President of the USA. |
| 24 Dec. | The European Union and the United Kingdom agree a comprehensive free trade agreement. |



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 (with the exception of Chinese companies).

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 at the SIPRI website. ●



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This booklet summarizes the 52nd edition of the SIPRI Yearbook, which covers developments during 2020, including

- *Armed conflict and conflict management*, with an overview of armed conflicts and peace processes across the Americas, Asia and Oceania, Europe, the Middle East and North Africa, and sub-Saharan Africa, as well as a focus on global and regional trends in peace operations and the United Nations appeal for a global ceasefire to address the Covid-19 pandemic
- *Military expenditure, international arms transfers and developments in arms production*
- *World nuclear forces*, with an overview of each of the nine nuclear-armed states and their nuclear modernization programmes
- *Nuclear arms control*, featuring developments in Russian–United States strategic dialogue, Iran’s nuclear deal and the multilateral nuclear arms control and disarmament treaties, including the entry into force of the Treaty on the Prohibition of Nuclear Weapons
- *Chemical and biological security threats*, including the impact of the unfolding Covid-19 pandemic, the investigation of allegations of chemical weapon use in Syria and developments in the international legal instruments against chemical and biological warfare
- *Conventional arms control*, with a focus on global instruments, including efforts to regulate lethal autonomous weapon systems, state behaviour in cyberspace and space, and developments in the Open Skies Treaty
- *Dual-use and arms trade controls*, including developments in the Arms Trade Treaty, multilateral arms embargoes and export control regimes, and review processes in the legal framework of the European Union for such controls

as well as annexes listing arms control and disarmament agreements, international security cooperation bodies, and key events in 2020.