SECURITY ENVIRONMENT

SECTORAL ANALYSIS AND IMPLICATIONS FOR THE CZECH ARMED FORCES 2023

Richard Stojar et al.

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Centre for Security and Military Strategic Studies (CSMSS)

The Centre for Security and Military Strategic Studies (CBVSS) is part of the University of Defence and is defined as another workplace for education and creative activity pursuant to Act No. 111/1998 Coll., Section 22, Paragraph 1, Letter c). Its mission is in particular:

• Scientific and research activities in the areas of security studies, strategic leadership, military art, strategic management and defence planning, implemented for the needs of the strategic level of decision-making, state defence management and building the armed forces of the Czech Republic.
• Training of military and civilian experts of the Ministry of Defense and the Armed Forces in professional and career courses (General Staff Course, Senior Officers Course).
• Professional, publishing and popularization activities (including sponsorship of the Czech Military Review and Defence and Strategy magazines).

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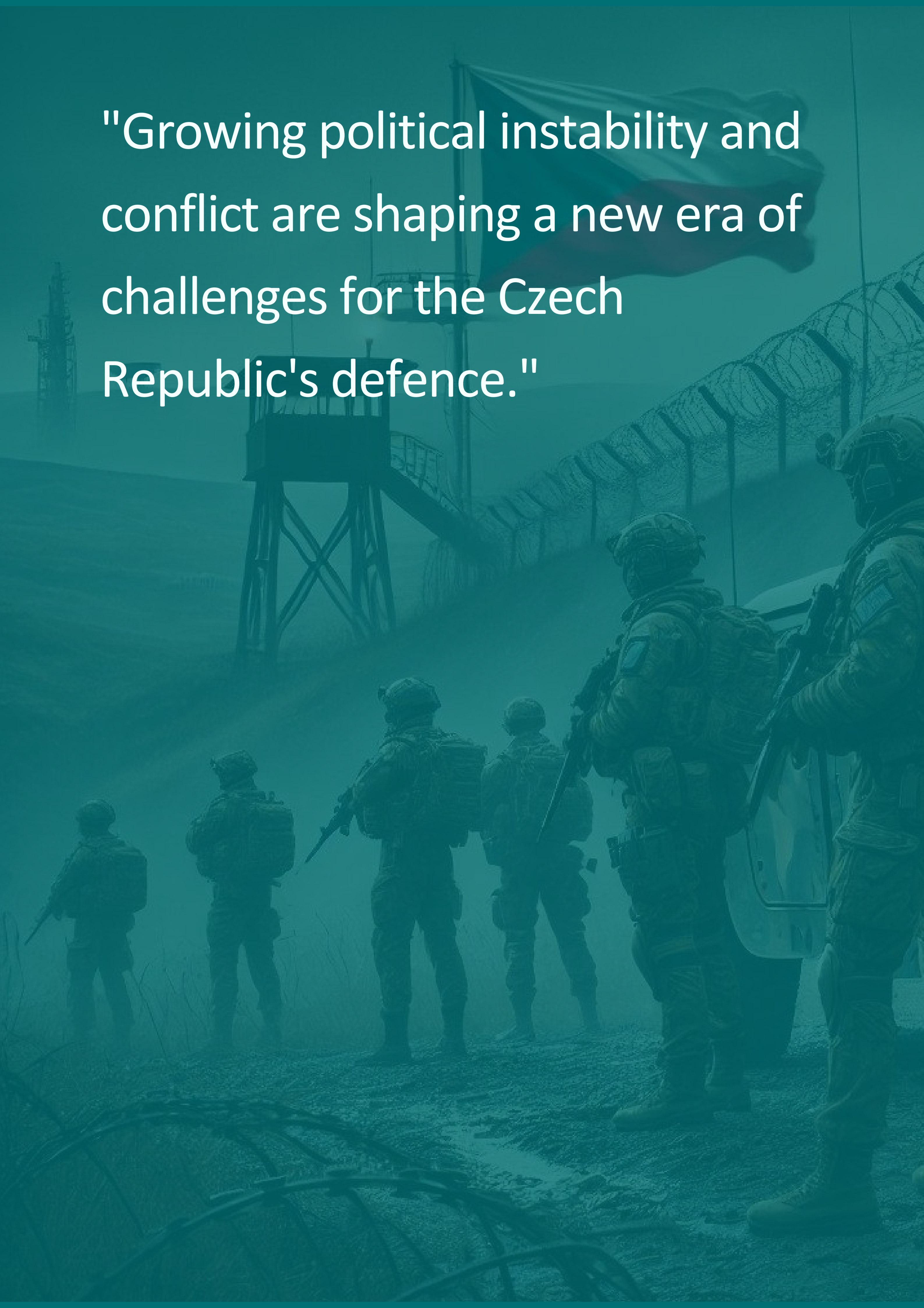
Introduction

The objective of this collective monograph is primarily to assess the development of the broader strategic security environment of the Czech Republic in 2023 based on an analysis of individual sectors. An expert publication with this focus has been produced annually over the past decade, thus facilitating some long-term monitoring and identification of the principal development trends. The ambition of the Centre for Security and Military Strategic Studies (CBVSS, Centrum bezpečnostních a vojenskostrategických studií) of the University of Defence is to provide an alternative insight and to contribute to the ongoing discussion on the consequences of security development for the formulation and implementation of an effective defence policy of the Czech Republic. The text is primarily based on materials compiled by the CBVSS and presents the results of a comparative analysis of available open source materials. In its individual chapters, it also includes an assessment of the selected state, non-state, and transnational actors. A sectoral analysis, based on the approach of the Copenhagen School, was used for this book similar to the previous publications. Thus, the political, societal, environmental, military, and economic sectors are described here. Beyond this traditional definition, the technology sector is also included in this analysis because, given the focus of the CBVSS, it appropriately complements the traditional sectors, while dynamic developments in the technology sector have a major impact on the traditional sectors examined here, and in some places this connection is more pronounced than it has been in the relatively recent past. The monograph analyses the period of the year 2023 and the authors seek to capture major events and trends with implications for the security environment in individual sectors and further to identify implications for the defence policy and armed forces. Verification of the outputs was carried out within the framework of expert meetings with the participation of members of the Ministry of Defence of the Czech Republic, Army of the Czech Republic, and representatives of the community of security experts from the Czech Republic.

Methodology

The publication is based on the results of research and analyses of the Centre for Security and Military Strategic Studies and using available analytical materials from open sources assessing developments in individual sectors concerned. The specific and distinct nature of the sectors analysed is the reason for the different approach in their treatment. Therefore, there is also a certain disproportion in the attention paid to the different sectors, and the fact that a slightly different methodological framework was used for each sector. This approach was determined primarily by the availability of usable data, which was significantly different in each of the sectors. However, each sector uses with a selected set of indicators, which, according to the authors working on individual sectors, best provides for analysing the developments, identifying the main trends, or threats and risks to the security environment of the Czech Republic, and drawing implications. The main method used for the analysis and preparation of the publication was generally the application of literature search, which focused on the collection of information and data from open sources, domestic as well as foreign. A more detailed description of the methodological approach for each sector is included in the introduction of each respective chapter. Due to the restricted availability of data and the overall relevance of individual sectors for the security environment of the Czech Republic, there is traditionally a certain difference in the scope between the individual sectors. In some cases, this difference is also due to the overlap of the examined issues between sectors. In the case of the military sector, we can also mention the parallel publication addressing developments from the perspective of the operating environment, which is also issued annually by the CBVSS. Along with the sectors concerned, the monograph addresses the implications for the Armed Forces of the Czech Republic resulting from the development of the security environment and the main trends. Due to a high degree of variation in individual sectors, the study does not contain an overall conclusion that would summarize and describe all implications of the analysis. Instead, within each sector addressed, a separate conclusion is presented for greater clarity, which summarises the implications identified therein.

"Growing political instability and conflict are shaping a new era of challenges for the Czech Republic's defence."

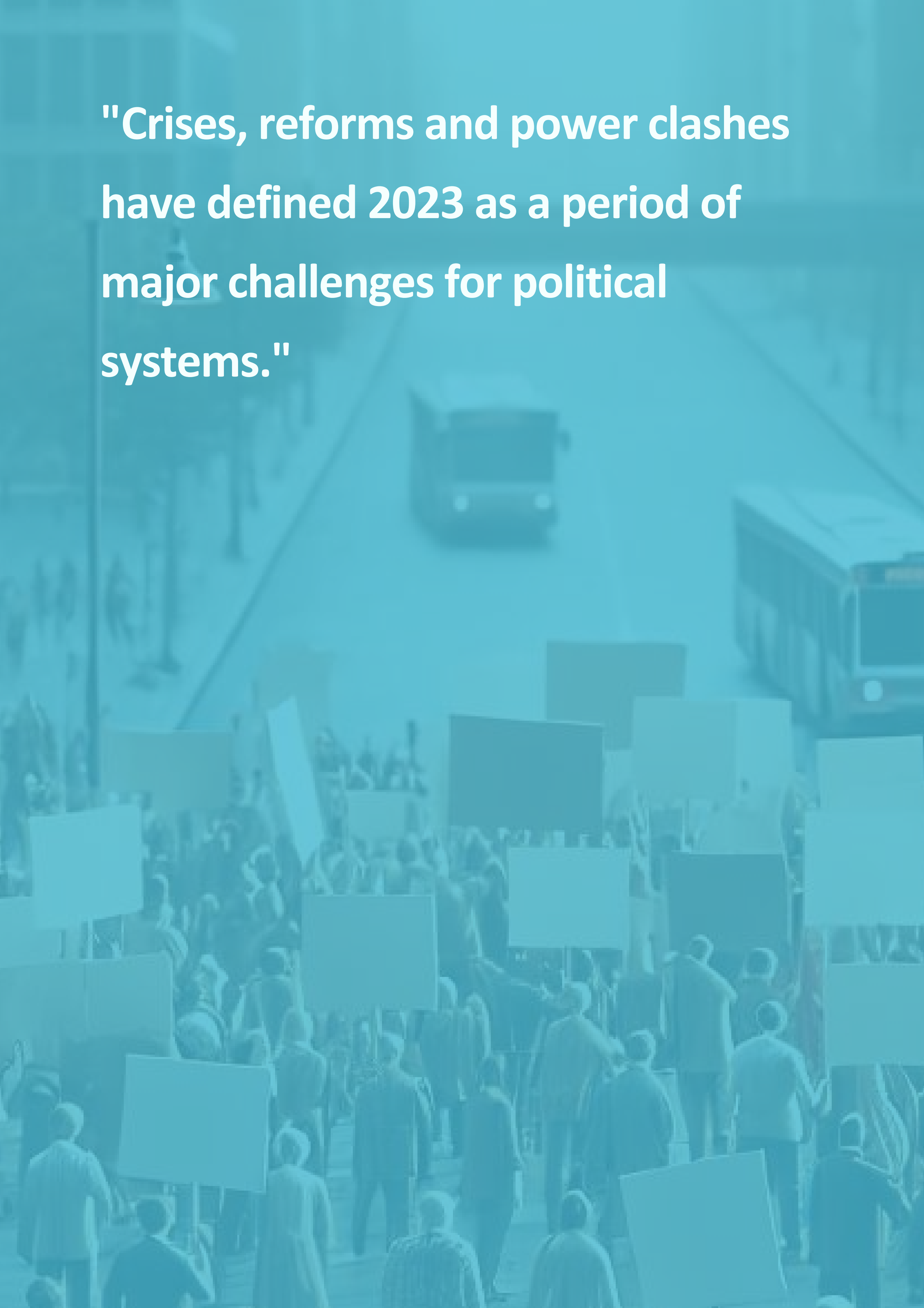


Political Sector

Dominika Kosárová

Yvona Novotná

"Crises, reforms and power clashes have defined 2023 as a period of major challenges for political systems."



First, the political sector maps the specific events that affected the development in this sector in 2023, both at national (or intra-state) and international levels (including regional issues and relations between the superpowers). Subsequently, the development is mapped through six indicators to better identify certain trends.

Developments and events in 2023

In 2023, as in the previous year, several major political events and changes occurred in the political sphere, resulting in government crises (Bulgaria, France, Italy, Democratic Republic of the Congo, Peru, Venezuela, Argentina, Myanmar), military coups (Niger, Sudan, Mali), large-scale anti-government protests (France, Iran, Israel), political tensions (Greece, Spain, Turkey, Malaysia, China and Taiwan), humanitarian crises (Syria, Yemen, Somalia, Honduras, Myanmar), and economic crises (Greece, Argentina, Venezuela, Chile, Russia, Ukraine). Most of these events took place at the national level, while the international and global levels were dominated by the wars in Ukraine and Gaza. All of these events have had an impact on the stability, security, and overall development of the international community and the international system.

National and interstate levels

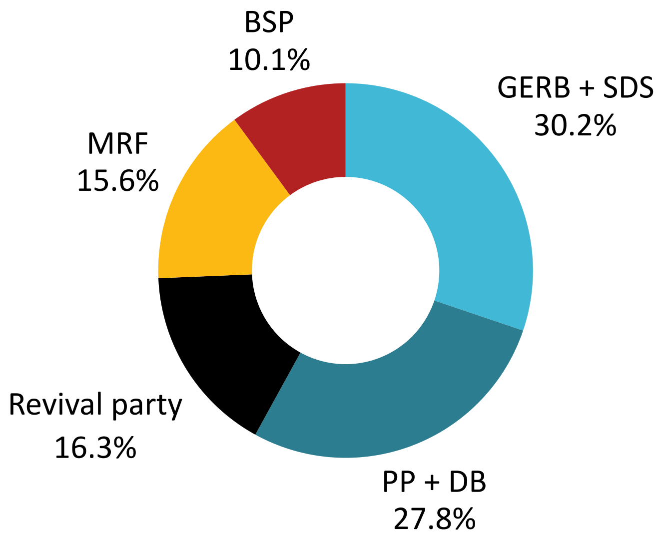
In March and April 2023, **France** saw its biggest protests and strikes to date against the government's pension reform proposed by President Emmanuel Macron. The proposed pension reform, which included an increase in the retirement age, elicited significant public opposition, resulting in significant challenges for the French government. The reform was adopted by the government of Prime Minister Elisabeth Borne without a parliamentary vote, relying on Article 49.3 of the French Constitution (Triouleyre 2023). According to the French government, the implementation of the pension reform is necessary in order to prevent the collapse of the entire pension system in France in the future. As estimated by the French Ministry of Labour, deferring the retirement age could potentially result in a reduction of public expenditure by several billion euros, corresponding to the sum required on an annual basis to meet the existing pension obligations. Among other things, the reform introduces an increase in the number of years of service required to obtain a full pension and raises the retirement age by two years to 64.[1] According to some reports, as many as 3.5 million people took part in the protests, and nearly 1,000 police officers were injured since the protests began (Le Figaro 2023). Protests and demonstrations, social unrest in France, with the main reasons including the reform of the pension system and rising consumer prices, have been going on for several years and have caused great political tension in the country. The political situation in France remains tense (Confrere 2023).

[1] In the Czech Republic, the retirement age for most people born after 1971 is 65, as in other European countries. In Italy or Norway, for example, the age limit is 67.

Bulgaria is one of the other countries that have been struggling with a government crisis for a long time. A period of political instability has been ongoing in Bulgaria since 2021. Bulgaria is one of the poorest countries in the European Union, where a political crisis linked to corruption scandals and problems within the ruling coalition has persisted for many years. In April 2023, Bulgaria held parliamentary elections, at that time the fifth in the last two years.

Parliamentary elections in Bulgaria in 2023

The elections were won by a bloc led by the centre-right Citizens for European Development of Bulgaria (GERB), party of former Prime Minister Boyko Borisov. GERB and its coalition partner, the Union of Democratic Forces (SDS), won a total of 26.6% of the vote. The reformist coalition of We Continue the Change (PP) and Democratic Bulgaria (DB), led by former Prime Minister Kiril Petkov, came second with 24.5% of the vote. The pro-Russian far-right Revival party improved compared to the last election in October 2022, winning 14.4% of the vote. The ethnic Turkish grouping called the Movement for Rights and Freedoms (DPS) was supported by 13.7% of voters and the former Communist Party, now called the Bulgarian Socialist Party (BSP), by 8.9% (The World Fact Book 2023).



However, the election results did not ensure longer-term stability, nor did they bring certainty about the future governance of the country (Nenov 2023). Prior to the April elections, Bulgaria was already ruled by transitional cabinets, as the parties represented in the national parliament were unable to form a solid government coalition. In June 2023, GERB and PP agreed on altering the position of the prime minister. The first to assume the prime minister's position was the PP leader Denkov. After nine months, Denkov was to be replaced by former EU Commissioner for Innovations Mariya Gabriel from GERB. However, cooperation between the two parties was terminated due to disagreements on several points, in particular disputes over ministerial positions, disagreements over judicial reforms, and Bulgaria's anti-corruption office. Denkov, a former prime minister and also minister of education, sought to limit Russian influence in the country during his government. His coalition of We Continue the Change (PP) and Democratic Bulgaria (DB) supported Ukraine and defended Ukrainian sovereignty.

During his short time as prime minister, the Bulgarian government sent heavy military equipment to Ukraine in June 2023, including hundreds of armoured personnel carriers. Under Denkov, energy dependence on Russia was also reduced, and more than 80 secret Russian agents posing as diplomats were deported. Borisov, on the other hand, pursued his policy in two different directions; firstly, he maintained good relations with the European Union and the North Atlantic Alliance, while on the other hand, he had good relations with Vladimir Putin.

80
of Russian secret agents impersonating posing as diplomats have been deported

He has continued to foster good collaboration with Russia in the energy domain, as evidenced by the construction of the TurkStream pipeline, which should facilitate the delivery of Russian natural gas also to Serbia and Hungary. Political tensions within the government also emerged in Greece during 2023, with discordant positions on government reforms and economic problems. The government of Prime Minister Kyriakos Mitsotakis was forced to address problems in the public sector, and in particular to face pressure on the political and economic reforms being introduced. Prime Minister Mitsotakis has been in the lead of the Greek government since 2019. It can be said that, despite the pandemic period of covid-19, he has managed to secure some economic success for the country, which has helped the Greek economy to turn around after the long debt crisis since 2009.

In June 2023, parliamentary elections were held in **Greece**, in which the right-wing New Democracy party led by Kyriakos Mitsotakis won again (České noviny 2023). The New Democracy's victory in the elections has caused divisions between the political parties and increased tensions between the government and the opposition. Other factors that have contributed to increased government tensions include economic problems, especially high inflation and unemployment, as well as migration problems, as the Greek territory remains one of the main entry points to Europe and thus to the EU.

Causes of tension in Greece in 2023

High inflation

Unemployment

Migration issues

Housing shortage

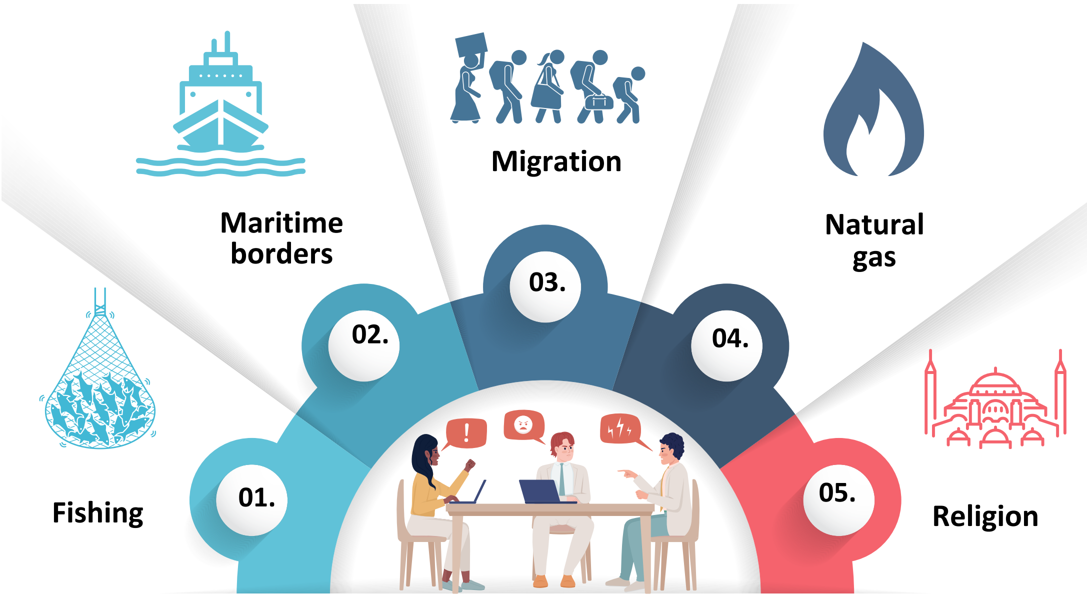
Prostests

The issues of migration and the asylum system are also among the topics increasing tensions between the government and the opposition, as the winning party is pushing for a stricter immigration policy. It has called for increased protection of Greek borders, prevention of illegal migration, greater control over the influx of migrants, and promised economic growth, wage increases, stability, and reforms in Greek health and justice systems, which according to the EU are among the slowest. In Greece in 2023, there were also protests by various groups, such as teachers and health workers, expressing their dissatisfaction with the government's reforms and cuts, and criticism of the prime minister for his harsh anti-immigration policy (Labropoulou 2023). Thus, during 2023, social tensions among population and fears about growing social problems, such as lack of housing opportunities and poverty, were also on the rise. The opposition, led by the left-wing Syriza party, has criticised the government of Prime Minister Mitsotakis for failing to address these problems.

In the case of Greece, political tensions also continue at the inter-state level, namely with **Turkey** over migration, maritime borders, and related issues concerning fishing and gas production. The two countries have long-standing disputes over the maritime boundary in the Aegean Sea, with Turkey accusing Greece of an unfair division of coastal waters in the Aegean and Greece claiming sovereign waters and exclusive economic zones actually belonging to the Turkish territory. Both countries also invoke the right to explore and extract natural gas discovered in the Aegean Sea and around Cyprus.[2]
Turkey has been carrying out exploratory drilling in areas that Greece considers to be its territory, which has subsequently led to diplomatic disputes, military rhetoric, and, as a result, increased tensions in the region. According to Ankara, Turkey's exploratory drilling off the coast of Cyprus is being carried out under permission from the authorities of the so-called Turkish Republic of Northern Cyprus. It should be noted that the Turkish Republic of Northern Cyprus is recognised only by Turkey of all countries in the world. Another point of increasing tension between the two countries is the aforementioned migration. Greece is seen as the main gateway for migrants heading to the EU and it accuses Turkey of inadequate protection and control of migrants, thus increasing illegal migration (Pamuk 2023). Turkey, on the other hand, defends itself by saying that control and protection is sufficient and appeals to Greece in terms of border control. Greek-Turkish mutual relations are also widely influenced by historical, cultural, and religious aspects. Adding to the ongoing tensions is the fact that Muslim prayers are once again being held in the former Hagia Sophia cathedral in Istanbul, resumed in 2020. Since the 1930s, Hagia Sophia served as a museum and symbol of reconciliation between Christianity and Islam. This decision of the Turkish government was strongly criticised by Greek Prime Minister Kyriakos Mitsotakis.

[2] Estimated reserves of gas in the Aphrodite deposit near the coast of Cyprus amount to about 200 billion m3 - this concerns only one deposit, according to estimates there are many more in the area.

Areas of tension between Turkey and Greece



In 2023, the governmental crisis in **Israel** also continued - between the right-wing government of Benjamin Netanyahu and the opposition. The Israeli Prime Minister has been criticised for his proposed reforms to the judiciary and other issues, which have led to major protests in the country and a subsequent political crisis (Macháček 2023). The controversial law, which limits the powers of the Supreme Court in favour of the government, was approved on 24 July 2023. The law was passed by 64 votes as opposition MPs left the Knesset in protest. According to the head of the opposition parties, Yair Lapid, the adoption of such a law has a detrimental impact on Israel's democratic character and poses a threat to the independence of the judiciary. The approval of this law sparked mass protests, especially in civil society, which have continued in Israel practically since the beginning of 2023 (Terschuren 2023). Israeli President Yitzhak Herzog proposed a compromise plan to ease on the controversial judicial reforms. Israel's government crisis and the associated reforms also provoked many international reactions, particularly concerns from both the EU and the US about the Jewish state's adherence to the rule of law and democratic values (Benari 2023). In addition to judicial reform, economic issues were also discussed, as Israel had been facing economic problems in recent years, such as rising inflation and consumer prices, which were also among the reasons for large demonstrations in Israel. In the autumn of 2023 a much more serious crisis was added, namely the military-security crisis, which will be described in the subsequent section devoted to the international level.

Political tensions and government crises were also present in many South American countries in 2023, such as Peru, Colombia, Argentina, and Venezuela. The political crisis in Peru in 2023 was the culmination of events from previous years (Suarez 2023). Political instability and government crises have been occurring in the country since 2021, when Pedro Castillo assumed office as president. The political crisis in Peru escalated after the president was removed from office in December 2022, subsequently arrested and charged with corruption and attempted coup. The Peruvian parliament voted to impeach him on the grounds that the president had tried to dissolve the parliament, rule by presidential decrees, and call early elections. The President's detention sparked widespread protests in the country, prompting the government to declare a state of emergency and restrict some of the basic rights of the population. Currently, the Peruvian presidency has been led since December 2022 by Peruvian politician and lawyer Dina Boluarte, who took the presidential oath after the failed coup attempt by now former President Pedro Castillo. During his mandate, she held the office of Vice President. Dina Boluarte has thus become the first woman in Peru's history to become President of the country. However, she faced a difficult situation right from the beginning of her mandate. Her government faced a number of protests that spread across the country, with demonstrators demanding early elections, improved living conditions, and solutions to economic and social problems. In recent years, Peru has faced significant economic problems such as high inflation, unemployment, and lack of basic services. Moreover, these economic problems have contributed to the general dissatisfaction of the population and deepened the political crisis. The political crisis in Peru also marked a deep division within the Peruvian society itself (Freeman 2023).

Problems in Peru in recent years

High inflation

Unemployment

Society division

Lack of basic needs

Protests

In 2023, another country was also going through a serious political and economic crisis, namely **Argentina**. Argentina has long been struggling with ever-increasing poverty (up to 40%), a high inflation rate, which in 2023 reached up to 130% per year, a rapid devaluation of the Argentine currency, the peso, as well as a rapid decline in the standard of living. Argentina incurred a huge national debt and had significant problems in maintaining foreign reserves, which it tried to resolve in negotiations with the International Monetary Fund to restructure its debts and maintain financial stability. The country's economic instability, rising unemployment, poor working conditions, and loss of purchasing power led to major social unrest, protests, and tensions in the country (Politi 2023).

130%
inflation in 2023

People's dissatisfaction with the country's economic situation and especially with traditional political parties such as the Peronist Union for the Homeland, the Radical Civic Union, and the right-wing bloc Together for Change influenced the 2023 presidential election, which was won by far-right economist Javier Milei, representing the political bloc La Libertad Avanza (Freedom Advances).

He built his campaign on promises to implement radical economic changes, such as replacing the Argentine currency with the US dollar, abolishing the central bank, reducing the influence of the state, introducing privatisation, and establishing market economy (Shortell 2023). According to Milei, the state should only provide security and justice. 2023 marked a year of great political and economic uncertainty, crisis, and tension for Argentina, caused by the split between traditional political systems and radical (even controversial) changes. A highly polarised political society and persistent economic problems have been a major source of tension and unrest among the population.

A highly polarised political society and persistent economic problems have been a major source of tension and unrest among the population.

In 2023, there was also a political crisis in the Southeast Asian country of Myanmar, a continuation of the serious conflict started by the military coup in 2021. This two-year period is characterised by intense fighting between the military junta and opposition armed groups. The country continues to experience considerable political instability, economic problems and major protests by the population against the military dictatorship. The crisis in Myanmar began on 1 February 2021, when the Myanmar Army overthrew the government of Prime Minister Aung San Suu Kyi's National League for Democracy party in a military coup. The November 2020 elections, in which the National League clearly won the most votes, were declared invalid by the junta. Subsequently, the junta imposed a military dictatorship in Myanmar, abolishing basic civil rights, restricting freedom of expression, and imposing martial law. The prime minister and other members of her party, including the ousted President Win Myint, were jailed and charged with crimes. The death penalty was reinstated in 2022, and since assuming control, the army has been engaged in unlawful killings, torture, and forced displacement of civilians. Since the coup, the military junta has committed war crimes and violence against civilians. Nevertheless, the people of Myanmar are organising mass protests against the regime, which are being brutally repressed.

The situation worsened further in 2023, as there was a strong crackdown on the opposition and intensified military operations against armed groups and newly formed civil resistance organisations. According to some experts, Myanmar was on the brink of a civil war. The junta uses heavy weapons and air raids against civilians.

Demonstrators in Myanmar protesting the military coup, June 2023; (The Diplomat, 2023).

Many of them have been forced to leave their homes; Myanmar is facing a huge humanitarian crisis due to major food shortags, lack of health care, etc. According to UN statistics, more than a million people have been displaced, most of them fleeing to neighbouring countries, mainly Thailand and India. Thus, over 18 million people are in need of humanitarian aid, 15 million of whom have been without food and over 2 million have left their homes. Among the most affected are the Rohingya Muslim ethnic group. In late August 2023, the UN Security Council issued a resolution condemning the ongoing violence in Myanmar (Amnesty International 2023). The resolution again calls for the immediate release of all detainees, the restoration of democratic institutions, respect for human rights, and respecting the rule of law and the democratic state.

HUMANITARIAN CRISIS IN MYANMAR

1 mil. + displaced	**18 mil.** need humanitarian help
15 mil. without food	**2 mil.** leaved homes

The international community, including the US, the EU and ASEAN, called for an immediate end to the violence and for compliance with UN-approved resolutions. In particular, the regional organisation ASEAN played an important role as a mediator to end the crisis, establish negotiations between the junta and the opposition parties, and reach a peaceful solution.

However, the junta rejected this peace effort in 2023, so the political situation in Myanmar remains very unsettled. Myanmar remains in international political isolation while facing a huge humanitarian crisis.

On the other hand, on the African continent, political crises and tensions are dominated by those of military kind, i.e. military coups and armed conflicts. For example, in July 2023 there was a military coup in **Niger**, with President Mohamed Bazoum overthrown; he had been president since April 2021 and was a close ally of the West (France and the US). This military coup has had a major impact on the political stability of the country and developments in the whole region, i.e. at the regional level. After the overthrow of President Bazoum, General Abdourahamane Tchiani, leader of the National Council for the Safeguarding of the Fatherland (CNSP), seized power. The reason for the coup, according to General Tchiani, was the deteriorating security situation in the country. Niger has long faced attacks by terrorist groups affiliated with the Islamic State and Al-Qaeda operating in the Sahel region (Viner 2023). According to General Tchiani, the previous government did not adequately address these threats and did not secure the country. However, there are also motives of internal political power struggles between different factions within the military itself, the president, and military leaders. The reaction to the coup by the international community was immediate. The West, led by France, the EU, and the US, condemned the military coup and called for the immediate release of President Bazoum and the restoration of the democratic system in the country. The regional organisation ECOWAS (Economic Community of West African States) announced economic sanctions against Niger with immediate effect. All of these demands were rejected by General Tchiani, increasing tensions both within Niger itself and between Niger and neighbouring states with a high threat of regional destabilisation. After the military coup, about 1,500 French,[3] 1,100 American, and 100 German soldiers remained deployed at military bases in Niger. These Western countries use their bases in Niger to fight terrorist groups and to train regional defence forces. The ruling military junta in Niger along with a part of the population demanded the withdrawal of French troops from the country, including the suspension of cooperation on security issues.

[3] In the course of 2022 and 2023, France withdrew about 2,000 troops from Mali and Burkina Faso, of which about half were relocated to Niger.

The presence of Western troops in Niger was increasing over the past decade, as Niger had become a key partner in ensuring regional security. The military coup in Niger can be described as an event with major regional and international implications, as it represents an increase in regional tensions, has led the country into international isolation, and has caused major economic and humanitarian problems for a country that is among the poorest in the world. Even before 2023, Niger's population was already facing severe poverty, lack of health care and, in particular, food shortages, now exacerbated by the sanctions imposed by ECOWAS.

SOLDIERS IN NIGER AFTER THE COUP

1500
French

100
US

1100
German

Niger is another one of the African countries - after Mali, Guinea, and Burkina Faso - that have experienced military coups in recent years. Internal political problems and conflicts, the growing influence of foreign actors, and the possibility of military intervention are among the major factors that will affect the future development of the country and stability in the region.

International and global levels

Several events dominated the international environment in 2023. These included the ongoing conflict in Ukraine, the conflict between the Yemeni Houthi rebel group and the Yemeni government, and the conflict in Gaza.

The war in Ukraine continued throughout 2023, but according to most analysts, despite their optimistic forecasts for 2022, last year was not a turning point in this war and did not bring any peaceful solutions, security, or stability. From a military point of view, there were no significant changes. The city of Bakhmut fell at the end of May 2023 and there were no changes in the war even after the destruction of the Kakhovka Dam or Prigozhin's attempted coup. The Ukrainian counter-offensive launched on 4 June 2023 ended without much success. Western countries, mainly the UK, the US, and EU countries, kept providing extensive assistance to Ukraine, including economic, financial, and military support (weapons, Leopard 2 tanks, armoured vehicles, ammunition).

Last year was not a turning point in the war in Ukraine and did not bring any peaceful solutions, security or stability.

The US supplied Ukraine with weapons, ammunition, armoured vehicles (M2 Bradleys), anti-tank systems, and air defence systems (M1 Abrams tanks, HIMARS rocket launchers) as part of its military assistance. Thanks to Western assistance, Ukraine built an air and missile defence system capable of intercepting more than 70% of UAVs and missiles (Theil 2023). The UK and France provided Ukraine with missiles with a range of several hundred kilometres. Also, Ukraine managed to destroy one Russian submarine and three large Russian ships. The Russian side continued its attacks during 2023, with very intensive shelling of the Ukrainian cities of Kharkiv, Kherson, Odessa, destroying infrastructure and civilian buildings with several dozen civilian casualties. Due to a shortage of ammunition, military material, and funds, Ukraine announced a change in its combat strategies at the end of 2023, while Russia, on the other hand, took control of the line of trenches near Maryinka on its Donbas front. The war in Ukraine did not end in 2023, although there were several diplomatic negotiations between Ukraine and Russia (Malinowski 2023). The UN, for example, also tried to broker a ceasefire, but without actual results. Western countries continued to pursue sanctions against Russia in order to limit its strong influence in the world. The war brought along a huge humanitarian and refugee crisis, with millions of Ukrainians forced to flee their homes. The ongoing war in Ukraine is having a significant impact not only on international politics and security in Europe, but also on the global economy and world affairs.

Image used with permission of Dmytro Sheremeta / Getty Images, via Canva."

In 2023, the conflict between **Yemeni** government forces and the Houthi army continued. The Yemeni civil war, which began in September 2014, has significant regional and international implications, as it involves several regional and global actors. Saudi Arabia, United Arab Emirates, Morocco, Egypt, with the support of the North Atlantic Alliance, have sided with the Yemeni government. On the other hand, countries such as Iran, Syria and the Lebanese Hezbollah movement have joined the rebels. This conflict, which first began as an internal political power struggle, has turned into an international conflict as there is a power struggle between Saudi Arabia and Iran to gain maximum influence in the region. The conflict has caused a huge humanitarian crisis, with millions of people in Yemen suffering from famine and inhumane living conditions (UNICEF 2023). Despite the UN's best efforts, the conflict has not been ended to date and the Yemeni war has become yet another geopolitical crisis in the Middle East.

The conflict between Yemeni government forces and the Houthi army has triggered a severe humanitarian crisis, leaving millions in Yemen facing famine and dire living conditions.

Beeri, "Black Saturday"; Israel, (Wikimedia Commons, 2023).

HAMAS ATTACK ON ISRAEL 7. 10. 2023

5000 misilles

3000 members of the land invasion

1200 killed

252 hosteges taken

On 7 October 2023, Israel was attacked by the Palestinian organisation Hamas, which attacked civilian and military targets in Israeli territory. In this war (Gaza War), the State of Israel is the actor under attack, with the Palestinian movement Hamas being considered the aggressor (Eichler 2024). The movement started the war with an air strike in which it fired some 5,000 rockets into Israeli territory, while at the same time some 3,000 militants from the movement attacked Israeli civilians and Israel Defense Forces (IDF) military bases near Gaza in a ground invasion (Raine 2023). Armed Palestinians reached several kibbutzim in southern Israel, including the town of Sderot. The Palestinian armed groups called the attack on Israel "Flood", the Israeli army called its subsequent counter-offensive in Gaza "Operation Swords of Iron". The international community has labelled this conflict the Third Intifada.

The Israeli Prime Minister declared that Israel was at war, the Israeli government declared a state of emergency (Eichner 2023). Immediately afterwards, Israel carried out air strikes on the Gaza Strip in response to the Hamas attack. Hamas explained the attack on Israel as retaliation for the long-standing blockade of the Gaza Strip, for the illegal construction of Israeli settlements in the Palestinian territories, for the violence perpetrated by Israel against Palestinians, and for the repeated desecration of the Al-Aqsa Mosque on the Temple Mount in Jerusalem.[4] In the first days of the conflict, over 1,200 people were killed by Hamas, most of them civilians, and 252 were taken hostage and moved to the Gaza Strip (The Guardian 2023).

On 27 October 2023, the UN General Assembly adopted a resolution on the protection of civilians and upholding legal and humanitarian obligations. This resolution, which was issued in the context of the ongoing conflict between the Palestinian Hamas movement and the Israeli army, refers to two key UN Security Council resolutions, namely Resolution 242 of 1967 and Resolution 338 of 1973 (Novotná-Šabacká 2024).

Consequences of the Israeli offensive in Gaza in 2023

infrastructure destruction

30k Palestinians killed (40% children)

80% of Palestinians have left home

the threat of famine

the threat of lack of medical care

In particular, UNSC Resolution 242 is crucial to the current developments in the Palestinian territories and in view of the ongoing conflict between Hamas and the Israeli army, as it contains the main principles for resolving the Israeli-Palestinian conflict. Firstly, the resolution refers to the need to respect the sovereignty, territorial integrity, and political independence of every state in the region, the recognition of its borders, and the right to live in peace and security. The resolution also calls on Israel to withdraw from the occupied territories it seized in the Six-Day War in 1967.

Hamas, (BBC, 2023)

[4] The Al-Aqsa Mosque, the third holiest site in Islam after Mecca and Medina, is often a site of tension and disputes between Jews and Muslims. Every incident, various clashes and disturbances provoked in its vicinity thus have major religious and political implications, which in turn lead to escalating tensions, and moreover are perceived by Muslim leaders as an attack on the Islamic, Palestinian identity.

According to UN Secretary-General Antonio Guterres, the humanitarian situation in Gaza is absolutely catastrophic, with the threat of famine, lack of food, medicine, drinking water, health care, basic necessities of life, and the volume of humanitarian aid needed is enormous (The UN News 2023). The UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), which has been operating in the region since 1949, is the main provider. By the end of 2023, nearly 100 aid workers lost their lives during the Gaza War. The material damage in Gaza is enormous. During the Israeli offensive in Gaza, where Israel carried out air strikes on Hamas bases, almost all infrastructure was destroyed, including hospitals, schools, and other civilian buildings. Over 30,000 Palestinians were killed in Israeli attacks, about 40% of them children. More than 80% of Palestinians in the Gaza Strip had to leave their homes.

The current ongoing conflict in Gaza can be characterized as one of the most serious in the history of Israeli-Palestinian relations, or rather conflicts that have taken place between the two sides since the establishment of the State of Israel in 1948.

Many countries and international organisations, including the EU, the US, and the UN, have condemned the Hamas attack and expressed their support for the State of Israel, which has the right to defend itself. However, during the subsequent Israeli offensives on Gaza, international support for the Jewish state has declined, and the international community has repeatedly called on both sides of the conflict to end the fighting and, above all, to allow access for humanitarian aid to the civilian population of Gaza. The US supports Israel militarily and financially, while countries like Turkey and Iran support Hamas and call for a halt to military operations. Arab states as well as many countries in South America and Africa have criticised the Israeli attacks on Gaza (Al-Shamahi 2023). One of the key points of this war and associated diplomatic negotiation continues to be the detention of Israeli hostages; negotiating their release remained fruitless, resulting, among other things, in the emergence of large demonstrations and protests by the Israeli population demanding their release.

This conflict undoubtedly has major implications for the whole region and thus for the stability of the entire Middle East (Novotná-Šabacká 2024). A solution to the long-standing Israeli-Palestinian conflict is thus nowhere in sight. This war is fundamentally affecting the development of geopolitical relations in the region, where a large-scale conflict threatens to break out. Iran's influence is growing in the region, supporting Hamas in almost every aspect. The normalisation of relations between the rich Arab Gulf states and the State of Israel that was shaping in recent years has also been undermined. The current ongoing conflict in Gaza can be characterised as one of the most serious in the history of Israeli-Palestinian relations, or rather conflicts that have taken place between the two sides since the establishment of the State of Israel in 1948. This puts the peace process largely at risk and, if diplomatic negotiations do not take place soon, there is a major threat of other neighbouring actors becoming involved in the war. Examples include the involvement of the Lebanese Hezbollah movement, as a supporter of Hamas, and possible intervention by Iran. This could spread the war to the entire region, where major political and security problems have long persisted.

Children in Gaza caught in the crossfire of war (Reuters, 2023).

Evaluation of selected indicators

In order to illustrate the development in the political sector using quantitative indicators, six indicators were selected:

Table 1: Selected indicators

Indicator	Source index	Author of the index	Index scale*
Democracy	Democracy Index (DI)	Economist Intelligence Unit	1-100
Legitimacy of state power	Fragile States Index (FSI)	Fund for Peace	1-10
Provision of public goods and services	Fragile States Index (FSI)	Fund for Peace	1-10
Human rights and the rule of law	Fragile States Index (FSI)	Fund for Peace	1-10
Corruption	Corruption Perception Index (CPI)	Transparency International	1-100
Anti-state violence in the form of terrorism	Global Terrorism Index (GTI)	Institute for Economics and Peace	1-10

Green indicated improvement, red indicated worse condition.
Source: Authors

These indicators enable to better demonstrate the development within the political sector; their change may affect the stability of the state or political regime. Indicators are evaluated on the basis of existing datasets, or indices. For each indicator, the most important data for 2023 is briefly presented and then the status and change of indicators in the world, European Union, and Czech Republic are evaluated, with each value assigned a specific score. In order to assess the condition, the indicators are assigned a score from 1 to 5, where a higher value corresponds to a better condition. The change in condition is assessed on a scale from -2 to +2, where 0 indicates stagnation or a negligible change, -1 and -2 indicate a slight or significant deterioration, and +1 or +2 indicate a slight or significant improvement. This approach is primarily intended to unify the method of evaluation across indicators and thus simplify the identification of certain trends in the summary for the sector.

I1: Democracy

The Economist Intelligence Unit (EIU) described the year 2023 in terms of democracy as one of “stagnation and regression”, as the global average index dropped by 0.06 points to 5.23, reaching its lowest level ever since the index began to be published in 2006. The value of the average index has fell for all four regimes defined by the degree of fulfillment of the characteristics of democracy[5] (see Table 2).

Table 2: Numbers of countries and average index by category in 2022 and 2023

	2022		2023		Change in 2023	
	Number of countries	Average index	Number of countries	Average index	in the number of countries	of the average index
Full democracy	24	8,79	24	8,77	0	-0,02
Flawed democracy	48	6,99	50	6,92	+2	-0,07
Hybrid regime	36	5,13	34	5,01	-2	-0,12
Authoritarian regime	59	2,59	59	2,47	0	-0,12

Source: Authors according to the Economist Intelligence Unit (2023, 2024)

In terms of the number of countries, less than half saw improvement compared to the previous year (32 versus 75), while the number of countries that saw deterioration in the index increased by half (68 versus 44). Not only were there more states where the democracy index weakened than those where the situation improved, but these states also experienced a more significant change in the index (by 0.1 points on average) (see Table 3).

Table 3: Numbers of countries in terms of change in the Democracy Index in 2023

	Number of countries in 2022 (average change in index)	Number of countries in 2023 (average change in index)
Increase in index (improvement in condition)	75 (+0.15)	32 (+0.13)
Index unchanged	48	67
Decrease in index (deterioration)	44 (-0.21)	68 (-0.23)

Source: Authors according to the Economist Intelligence Unit (2023, 2024)

[5] The characteristics of democracy are formulated in the form of 60 indicators in five categories: (1) the electoral process and pluralism, (2) the functioning of the government, (3) political participation, (4) political culture, (5) civil liberties. Each category is evaluated on a 10-point scale, and the average value determines which kind of regime is in place.

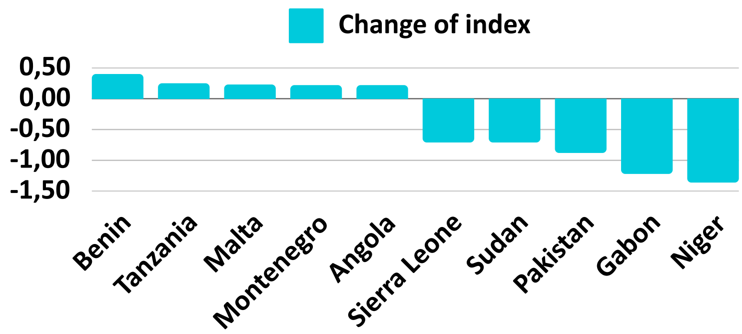
Table 4: Countries with the most significant change in the Democracy Index compared to the previous year

Stát	Change in Democracy Index compared to 2022*
Benin	+0,40
Tanzánie	+0,25
Malta	+0,23
Montenegro	+0,22
Angola	+0,22
Sierra Leone	-0,71
Sudan	-0,71
Pakistan	-0,88
Gabon	-1,22
Niger	-1,36

* Stronger colour indicates a more pronounced improvement/deterioration (by more than 1 point).
Source: Economist Intelligence Unit (2024).

Niger (-1.36) and Gabon (-1.22) recorded the most significant drop in the index, by more than 1 point. The top six countries with the largest drop in the index are the five countries in the Sahel and West Africa region (plus Pakistan).

Niger (-1.36) and Gabon (-1.22) recorded the most significant drop in the index, by more than 1 point. The top six countries with the most significant decline in the index include five countries in the Sahel and West Africa region (the sixth one being Pakistan). On the other hand, Benin is also situated in the same region and recorded the highest index increase of all countries (+0.40) (see Table 4).



From a regional perspective, the value of the index was rising only in Western Europe. However, it is also the lowest possible increase corresponding to stagnation (+0.01). Western Europe thus remained the only region where the democracy index reached pre-pandemic levels. In 2023, the average value of the Democracy Index in Western Europe even exceeded the average index in North America. Both regions remain the only ones where the average index corresponds to a democratic regime (in both cases full democracy). On the other hand, Latin America and the Caribbean as well as the Middle East and North Africa once again recorded the most significant deterioration. In terms of absolute values, the index is the lowest in the Middle East and North Africa region, where its average value corresponds to an authoritarian regime (see Table 5).

BENIN

+0,40

NIGER

-1,36

Table 5: Democracy Index in individual regions defined by the EIU

Region	Average index in 2023*	Index change in 2023**
North America	8.27	-0.10
Western Europe	8.37	+0.01
Latin America and Caribbean	5.68	-0.11
Asia, Australia and Oceania	5.41	-0.05
Eatern Europe and Central Asia [6]	5.37	-0.02
Sub-Saharan Africa	4.04	-0.10
Middle East and North Africa	3.23	-0.11
Total	5.23	-0.06

Six countries moved across categories, four towards better (Greece towards full democracies, Papua New Guinea and Paraguay towards flawed democracies, and Angola towards hybrid regimes), while two countries were downgraded (Chile towards flawed democracies and Pakistan towards authoritarian regimes). The situation in the Czech Republic remained unchanged from the previous year and the overall index remained at 7.97 (all four measured categories remained unchanged), which corresponds to the upper limit of flawed democracy. The Czech Republic ranked 26th globally and 12th in the European Union.

*The colours correspond to the different regimes: from darker orange (authoritarian regime) to darker green (full democracy).
**Stronger colour indicates more significant improvement/deterioration (more than 0.1 points).
Source: Economist Intelligence Unit (2023, 2024).

For the purposes of this study, democracy is assessed as follows:

Table 6: State of democracy in 2023

	Value	Score	Method of score allocation	
			Value	Score
Worldwide average	5.23	3	0.00-1.99 (authoritarian regime) 2.00-3.99 (authoritarian regime) 4.00-5.99 (hybrid regime) 6.0-7.99 (flawed democracy) 8.00-10.00 (full democracy)	1 2 3 4 5
EU average	7.90	4		
Condition in CR	7.97	4		

Source: Authors according to the Economist Intelligence Unit (2024)

[6] Russia and post-Soviet states.

DEMOCRACY

The global average remains at the level of a hybrid regime, while the average in the European Union as well as the Czech Republic corresponds to a flawed democracy (closer to the level of full democracy).

Table 7: Change in the state of democracy compared to the previous year

	Value	Score	Method of score allocation	
			Change in value	Score
Change in global average	-0.06	0	decrease by more than 1.00 decrease by 0.10 to 1.00 -0.09 to +0.09 increase by 0.10 to 1.00 increase by more than 1.00	-2 -1 0 +1 +2
Change in EU average	+0.01	0		
Change in CR	0	0		

Source: Authors according to the Economist Intelligence Unit (2023, 2024)

While in 2022 there was a slight improvement at all three levels (world, EU, and Czech Republic), in 2023 there was only a marginal improvement at the EU level. In the Czech Republic, the democracy index remained at the same level as in the previous year. On the other hand, there was a slight deterioration in terms of global trends. However, since the changes were at the level of hundredths, the development of democracy in 2023 can be generalised as stagnation.

I2: Legitimacy of state power

The legitimacy of state power is measured by the Fragile States Index, serving as one of its indicators. In 2023, the legitimacy of state power was strengthened in more than half of the states assessed (92 out of 179). Although more states experienced improvement in state legitimacy compared to the previous year with fewer states experiencing weakening of state legitimacy, the average values of improvement and deterioration remained at almost the same level as in 2022 (see Table 8). While no country improved by more than 0.5 points in absolute terms, two countries stand out in terms of deterioration, namely Israel (+1.5) and Senegal (+3.5) (see Table 9). African countries dominate in terms of the most significant weakening of state legitimacy in 2023, while they are also among the states with the lowest level of state legitimacy in the year under review (see Table 10).

The biggest deterioration in terms of the legitimacy of state power in 2023

ISRAEL **+1.5**

SENEGAL **+3.5**

Table 9: Countries with the most significant change in the state legitimacy indicator in 2023

Country	Change from 2022
Côte d'Ivoire	-0,5
Sri Lanka	-0,5
Brazil	-0,5
Moldavia	-0,5
Czech Republic	-0,5
Central African Republic	+0,5
Mosambique	+0,5
El Salvador	+0,5
Serbia	+0,5
Gabon	+0,5
Pakistan	+0,6
Israel	+1,5
Senegal	+3,5

Source: Authors according to The Fund for Peace (2023, 2024)
Stronger colour indicates a more pronounced improvement/deterioration (by more than 1 point).

Table 8: Numbers of countries in terms of change in the state legitimacy indicator in 2023

	Number of countries in 2022 (average change in indicator)	Number of countries in 2023 (average change in indicator)
Decrease in the indicator (= strengthening of state legitimacy)	79 (-0.26)	92 (-0.25)
Indicator unchanged	34	33
Increase in the indicator (= weakening of state legitimacy)	66 (+0.27)	54 (+0.27)

Source: Authors according to The Fund for Peace (2022, 2023, 2024)

Table 10: States with the lowest legitimacy of state power in 2023

Country	State legitimacy in 2023	Change from 2022
Syria	10	0
Haiti	10	0.1
South Sudan	9.9	0.1
Equatorial Guinea	9.8	-0.1
Yemen	9.8	0
North Korea	9.8	0
Turkmenistan	9.8	0
Eritrea	9.7	0
Somalia	9.7	0.1

Source: Authors according to The Fund for Peace (2023, 2024)

For the purposes of this study, the indicator of the legitimacy of state power is evaluated as follows:

Table 11: Legitimacy of state power in 2023

	Value	Score	Method of score allocation	
			Value	**Score**
Worldwide average	5,70	3	0,00-1.99 2.00-3.99 4.00-5.99 6.00-7.99 8.00-10.00	5 4 3 2 1
EU average	2,03	4		
Condition in CR	3,4	4		

Source: Authors according to The Fund for Peace (2023, 2024)

Table 12: Change in the legitimacy of state power compared to the previous year

	Value	Score	Method of score allocation	
			Value	**Score**
Change in global average	-0.05	0	increase by more than 1.00 increase by 0.10 to 1.00 -0.09 to +0.09 decrease by 0.10 to 1.00 decrease by more than 1.00	-2 -1 0 +1 +2
Change in EU average	-0.19	+1		
Change in CR	-0.5	+1		

Source: Authors according to The Fund for Peace (2022, 2023, 2024)

The average level of state legitimacy in the world is 5.7, while the EU average is much lower (2.3), meaning that state power has a higher level of legitimacy here compared to the global average. The Czech Republic is between these two averages. In the global ranking, the Czech Republic assumes the 45th place out of 179. In most countries of the world, the legitimacy of state power is rated worse than in the Czech Republic, while within the EU, state power is rated as less legitimate in only 5 countries compared to the Czech Republic. At all three levels, state legitimacy has been strengthened, although at the global level this change has been subtle, corresponding rather to stagnation. The Czech Republic ranks among the countries with the most significant strengthening of state legitimacy (decrease in the value of the indicator), with the highest recorded value of 0.5 points.

I3: Provision of public goods and services

The FSI assesses the ability of states to fulfill their functions to their populations, including the provision of basic goods such as water, electricity, security, etc. (The Fund for Peace 2017).

As in the previous year, a significant majority of countries improved in this respect in 2023 (see Table 13). However, while no country's improvement exceeded half a point, there are three countries at the opposite end of the scale where the situation has worsened more significantly compared to 2022 (Russia, Egypt and, most importantly, Palestine, which recorded a 3.6-point deterioration) (see Table 14). Also in the case of this indicator, the countries with the highest scores (or most critical situation) included mostly African countries (see Table 15).

Table 14: Countries with the most significant change in the indicator in 2023

Country	Change from 2022
Australia	-0,5
Bahrain	-0,5
Zambia	-0,5
Guyana	-0,5
Kyrgyzstan	+0,5
Lebanon	+0,5
Mexico	+0,5
Armenia	+0,5
Tunisia	+0,5
Russia	+1
Egypt	+1
Palestine	+3,6

* Stronger colour indicates a more pronounced improvement/deterioration (by more than 1 point).
Source: Authors according to The Fund for Peace (2023, 2024)

Table 13: Numbers of countries in terms of change in the indicator in 2023

	Number of countries in 2022 (average change in indicator)	Number of countries in 2023 (average change in indicator)
Decrease in indicator (improvement)	135 (-0.27)	124 (-0.28)
Indicator unchanged	16	6
Increase in indicator (deterioration)	28 (+0.34)	49 (+0.30)

Source: Authors according to The Fund for Peace (2023, 2024)

Table 15: Countries with the highest values of the public service indicator in 2023

Country	Indicator in 2023	Change from 2022
Central African Republic	10	0
Haiti	9.9	0.1
South Sudan	9.8	0.1
Afghanistan	9.7	-0.3
Yemen	9.7	0.1
Chad	9.6	0
Niger	9.6	0.1
Somalia	9.5	-0.3
Mosambique	9.4	-0.3
Madagascar	9.3	0

For the purposes of this study, the effectiveness of governments in providing goods and services is assessed as follows:

Table 16: State of the provision of public goods and services in 2023

	Value	Score	Method of score allocation	
			Value	Score
Change in global average	5.35	3	0,00-1.99 2.00-3.99 4.00-5.99 6.00-7.99 8.00-10.00	5 4 3 2 1
Change in EU average	2.33	4		
Change in CR	2.6	4		

Source: Authors according to The Fund for Peace (2023, 2024)

The Czech Republic is relatively close to the EU average (2.33), ranking as the 17th along with Croatia. The Czech Republic is significantly far from the much higher global average (5.35) and ranks 35th out of 179.

As in the previous year, there were improvements at all three levels in 2023. This change is most evident at the level of the Czech Republic.

Table 17: Change in the provision of public goods and services compared to the previous year

	Value	Score	Method of score allocation	
			Value	Score
Change in global average	-0.11	+1	increase by more than 1.00 increase by 0.10 to 1.00 -0.09 to +0.09 decrease by 0.10 to 1.00 decrease by more than 1.00	-2 -1 0 +1 +2
Change in EU average	-0.19	+1		
Change in CR	-0.3	+1		

Source: Authors according to The Fund for Peace (2022, 2023, 2024)

I4: Human rights and the rule of law

According to the FSI, more countries improved in the area of human rights and the rule of law than in the previous year, while fewer experienced a decline. However, as in the previous cases, the average improvement and deterioration of the indicator reached almost the same level as in 2022 (see Table 18). Tunisia (+1.5) and Israel (+1.1) recorded the most significant change, in this case deterioration (see Table 19). Both China and Russia continue to be at the top of the list in terms of non-respecting human rights (see Table 20).

Table 18: Numbers of countries in terms of change in the indicator in 2023

	Number of countries in 2022 (average change in indicator)	Number of countries in 2023 (average change in indicator)
Decrease in indicator (improvement)	65 (-0.24)	86 (-0.26)
Indicator unchanged	13	11
Increase in indicator (deterioration)	101 (+0.26)	82 (+0.25)

Source: Authors according to The Fund for Peace (2022, 2023, 2024)

The biggest deterioration in human rights in 2023

TUNISIA **+1,5**

ISRAEL **+1,1**

Table 19: Countries with the most significant change in the indicator in 2023

State	Change from 2022
Brazil	-0.5
Central African Republic	-0.4
Fiji	-0.4
Haiti	0.5
Mauritania	0.5
Palestine	0.5
El Salvador	0.5
Algeria	0.5
Zambia	0,7
Israel	1,1
Tunisia	1,5

* Stronger colour indicates a more pronounced improvement/deterioration (by more than 1 point).
Source: Authors according to The Fund for Peace (2023, 2024)

Table 20: Countries with the highest value of the indicator in 2023

Country	Indicator in 2023	Change from 2022
Iran	10	0.1
Myanmar	9.6	0.3
China	9.4	0
Libya	9.4	0.1
Russia	9.4	0.1
Yemen	9.3	-0.3
North Korea	9.3	-0.1
Sudan	9.3	0.1
Haiti	9.2	0.5
Democratic Republic of Congo	9	-0.3

Source: Authors according to The Fund for Peace (2023, 2024)

For the purposes of this study, the indicator of human rights and the rule of law is evaluated as follows:

Table 21: State of respect for human rights and the rule of law in 2023

	Value	Score	Method of score allocation	
			Value	Score
Worldwide average	5.43	3	0.00–1.99 2.00–3.99 4.00–5.99 6.00–7.99 8.00–10.00	5 4 3 2 1
EU average	1.93	5		
Condition in the CR	1.7	5		

Source: Authors according to The Fund for Peace (2023, 2024)

The Czech Republic's human rights and rule of law score is below the global average and slightly below the EU average, ranking 19th globally and 14th within the EU, tied with Croatia and Latvia.

Table 22: Change in the state of respect for human rights and the rule of law compared to the previous year

	Value	Score	Method of score allocation	
			Value	**Score**
Change in global average	-0.01	0	increase by more than 1.00 increase by 0.10 to 1.00 -0.09 to +0.09 decrease by 0.10 to 1.00 decrease by more than 1.00	-2 -1 0 +1 +2
Change in EU average	-0.05	0		
Change in CR	-0.2	+1		

Source: Authors according to The Fund for Peace (2022, 2023, 2024)

At all three levels, the value of the indicator decreased, although at the global and EU levels it was negligible, and therefore we can speak of stagnation. The most significant change (improvement) is again at the level of the Czech Republic.

I5: Corruption

The average value of the Corruption Perceptions Index (CPI) remains below 50 (from the maximum of 100), with up to two-thirds of countries (122 out of 180) below, same as in 2023. The numbers of countries that improved, deteriorated or where the situation remained the same in 2023 were fairly even (see Table 23). At the same time, the changes were slightly less pronounced than in 2022. The most significant improvement was recorded by Egypt (+5), while Afghanistan and Tajikistan (-4) suffered the biggest deterioration (see Table 24), whereas in the previous year these changes ranged from -8 to +8.

Table 23: Numbers of countries in terms of change in the Corruption Perceptions Index in 2023

	Number of countries in 2022 (average change in indicator)	Number of countries in 2023 (average change in indicator)
Decrease in indicator (improvement)	49 (+1.88)	55 (+1.78)
Indicator unchanged	58	62
Increase in indicator (deterioration)	73 (-1.97)	63 (-1.57)

Source: Authors according to Transparency International (2024)

Regionally, there were only minimal changes, with Western Europe and the European Union continuing to perform best, with a significant lead (+20 points) over the second best region (Asia Pacific). Sub-Saharan Africa remains at the tail (see Table 25).

Table 25: Comparison of regions by CPI

Region	Average CPI in 2023	Change in average from 2022
Americas	43	0
Western Europe and the European Union	65	-1
Eastern Europe and Central Asia	35	0
Asia and Oceania	45	0
Sub-Saharan Africa	33	+1
Middle East and North Africa	38	0

Source: Authors according to Transparency International (2024)

Table 24: Countries with the most significant change in the CPI in 2023

Country	Change from 2022
Egypt	+5
Barbados	+4
Cape Verde	+4
Kuwait	+4
Zambia	+4
China	-3
Georgia	-3
Cuba	-3
Laos	-3
Myanmar	-3
Peru	-3
Greece	-3
Tajikistan	-4
Afghanistan	-4

Source: Authors according to Transparency International (2024)

For the purposes of this study, corruption is assessed as follows:

Table 26: Perceived corruption in 2023

	Value	Score	Method of score allocation	
			Value	Score
Worldwide average	42,97	3	0.00–19.99	1
EU average	63,59	4	20.00–39.99	2
Condition in CR	57	3	40.00–59.99	3
			60.00–79.99	4
			80.00–100	5

Source: Authors according to Transparency International (2024).

Similar to the previous year, there was a significant gap between the global and EU averages in perception of corruption (by more than 20 points) in 2023. The Czech Republic is still below the EU average, ranking 16th out of 27, although in the world it is relatively high above the global average, remaining 41st out of 180.

Table 27: Change in the perceived corruption compared to the previous year

	Value	Score	Method of score allocation	
			Change in value	Score
Change in global average	-0.01	0	decrease by more than 10.00	-2
Change in EU average	-0.04	0	decrease by 1.00 to 10.00	-1
Change in CR	+1	+1	-0.99 to +0.99	0
			increase by 1.00 to 10.00	+1
			increase by more than 10.00	+2

Source: Authors according to Transparency International (2023, 2024)

The global average recorded only a negligible deterioration in terms of perception of corruption. The European Union is in a similar position, which contrasts markedly with 2022, when the situation in the EU improved significantly (by ten points). The Czech Republic continues its improving trend, although the improvement is significantly smaller compared to the previous year (one point compared to nine). In terms of changes in the perception of corruption, 2023 can thus be considered a year of stagnation, with no significant change in the global average or the EU average.

I6: Anti-state violence in the form of terrorism

Globally, the Global Terrorism Index (GTI) shows that the impact of terrorism (in the form of attacks, deaths, injuries, or hostages) has been reduced by approximately half a point on a scale of 0 to 10, where 10 corresponds to a very high impact of terrorism. But while the number of terrorist attacks has declined globally, the number of victims has increased (which is largely attributed to the Hamas attack on Israel in October). In this context, the Institute for Economics and Peace (2024) talks about the so-called intensification of terrorism. Almost half of the countries saw a slight improvement in terms of the impact of terrorism in 2023, while 28 suffered a worsening of the situation. Although the number of countries that experienced a worsening (i.e. an increase in GTI) was slightly higher compared to the previous year, the average increase in the index was about half the level of 2022 (see Table 28).

Table 28: Numbers of countries in terms of change in the index in 2023

	Number of countries in 2022 (average change in index)	Number of countries in 2023 (average change in index)
Decrease in index (lower impact of terrorism)	78 (-0.44)	67 (-0.43)
Index unchanged	64	68
Increase in index (higher impact of terrorism)	21 (+1.12)	28 (+0.62)

Authors according to the Institute for Economics and Peace (2023, 2024)

The ten countries most affected by terrorism in 2023 were in Sub-Saharan Africa and Asia (South Asia and the Middle East) (see Table 29). For the first time, Israel occupied the second place, as a result of the Hamas attack on 7 October 2023. It recorded the most significant increase in the index in 2023 of all the countries (see Table 30). Iraq, on the other hand, dropped out of the list of the ten countries with the highest index, ranking as the 11th. 75 states experienced no terrorism impact and their index is at 0.

Table 29: Countries with the highest impact of terrorism in 2023 according to GTI

State	GTI in 2023	Change in GTI compared to 2022
Burkina Faso	8.571	+0.41
Israel	8.143	+3.743
Mali	7.998	+0.015
Pakistan	7.916	+0.306
Syria	7.89	+0.119
Afghanistan	7.825	-0.634
Somalia	7.814	-0.233
Nigeria	7.575	-0.005
Myanmar	7.536	-0.032
Niger	7.274	+0.221

Source: own elaboration according to Institute for Economics and Peace (2023, 2024)

The impact of terrorism was assessed as very low globally and within the European Union for 2023.

Women from Burkina Faso protest against the terrorist attack in Ouagadougou. (AFP/Getty Images, 2023).

Table 30: Countries with the most significant change in the index compared to the previous year

State	Change in the terrorism impact index compared to 2022
Tajikistan	-1.335
Libya	-1.196
Venezuela	-1.035
Ecuador	-0.856
Nepal	-0.831
Ukraine	1.124
Kosovo	1.188
Uganda	1.931
Angola	2.224
Israel	3.743

* Stronger colour indicates a more pronounced improvement/deterioration (by more than 1 point).
Source: Authors according to the Institute for Economics and Peace (2023, 2024).

For the purposes of this study, the impact of terrorism is assessed as follows:

Table 31: Impact of terrorism in 2022

	Value	Score	Method of score allocation	
			Value	Score
Worldwide average	1.650	5	0.000	5+ (no impact of terrorism)
EU average	0.691	5	0.001 to 2.000	5 (very low impact of terrorism)
Condition in CR	0	5+	2.001 to 4.000	4 (low impact of terrorism)
			4.001 to 6.000	3 (medium impact of terrorism)
			6.001 to 8.000	2 (high impact of terrorism)
			8.001 to 10.000	1 (very high impact of terrorism)

Source: Authors according to the Institute for Economics and Peace (2024)
[7] Except Luxembourg and Malta

The impact of terrorism was evaluated as very low globally as well as within the European Union for 2023, although the difference between the global average and the EU average was almost one point. The Czech Republic also had the lowest possible score in 2023, so according to the EIU, there was no impact of terrorism as understood by the GTI. The same score was shared by 74 other countries globally and 11 countries within the EU (excluding Luxembourg and Malta, which are not counted in the GTI).

Table 32: Change in the impact of terrorism compared to the previous year

<table>
<tr><th rowspan="2"></th><th rowspan="2">Value</th><th rowspan="2">Score</th><th colspan="2">Method of score allocation</th></tr>
<tr><th>Change in value</th><th>Score</th></tr>
<tr><td>Change in global average</td><td>-0.518</td><td>+1</td><td rowspan="3">increase by more than 1.000
increase by 0.100 to 1.000
-0.099 to +0.099
decrease by 0.100 to 1.000
decrease by more than 1.000</td><td rowspan="3">-2
-1
0
+1
+2</td></tr>
<tr><td>Change in EU average</td><td>-0.715</td><td>+1</td></tr>
<tr><td>Change in CR</td><td>0</td><td>0</td></tr>
</table>

Source: Authors according to the Institute for Economics and Peace (2023, 2024).

While in 2022 there was a very slight increase in the impact of terrorism globally as well as in the EU (on the order of hundredths), in 2023 the trend was reversed at both levels (a decrease in the index on the order of tenths). The situation in the Czech Republic did not change, as in both years the Czech Republic did not experience any impact of terrorism.

Table 33: Summary of indicators and their scores for the situation in 2023 and the change from the previous year

Indicator	Score					
	World		EU		CR	
	condition*	change**	condition	change	condition	change
Democracy	3	0	4	0	4	0
Legitimacy of state power	3	0	4	+1	4	+1
Provision of public goods and services	3	+1	4	+1	4	+1
Human rights and the rule of law	3	0	5	0	5	+1
Corruption	3	0	4	0	3	+1
Political violence in the form of terrorism	5	+1	5	+1	5+	0
Total score by level* **	20	+2	26	+3	25	+4

* The condition is rated on a scale of 1 to 5+, where a higher value corresponds to a better condition.
** The change from 2022 is assessed on a scale from -2 to +2, where positive values correspond to improvements (the higher, the more pronounced) and negative ones to deterioration (the lower, the more pronounced).
*** The total score is calculated as the sum of the individual levels (world, EU, Czech Republic). The condition can take a maximum value of 30, while the change ranges from -12 to +12. A higher value corresponds to a better condition or improvement.
Source: Authors.

In terms of the indicators assessed, only the provision of public goods and services improved significantly at all three levels (world, EU, Czech Republic) in 2023. The remaining indicators stagnated or improved only on one or two of the three levels. Overall, the situation was the most favourable in the European Union in terms of the status of the assessed indicators, closely followed by the Czech Republic. The global rating was the lowest of the three levels, although still above the mid-point of the scale (20>15). In terms of the change in indicators for 2023, there was only a slight improvement globally. The most significant improvement in indicators was recorded in the Czech Republic.

Implications for the armed forces

The ongoing war in Ukraine and the widespread destabilisation and current conflicts in the Middle East have undoubtedly had a significant impact on the Czech Armed Forces. Political tensions throughout the region, and in particular Israel's conflict with Hamas in Gaza and with Lebanon's Hezbollah, may have a number of implications for the ACR in several ways. First, the armed forces will be forced to increase their military readiness and ability to respond promptly to crisis situations in the MENA region, which includes adequate preparation and training.The Czech Republic may be forced to fulfil its international obligations, e.g. within NATO, which may lead to greater involvement in international missions and operations of NATO or the EU, including the deployment of the ACR. In terms of security threats, it is quite likely that ongoing conflicts in the region may increase the risk of terrorism and military/non-military threats, thus requiring new strategies and cooperation with other countries in the field of intelligence and security. Within the framework of cooperation with the UN or other global/regional organisations, the Czech Army may also be involved in humanitarian missions and stabilisation operations in response to crises resulting from the conflicts concerned. Political tensions also affect the Czech Republic's bilateral relations with countries in the region, which may subsequently have an impact on military cooperation and various training programmes. Political tensions not only in the Middle East require the Czech Armed Forces to be flexible and ready to respond to rapidly changing circumstances and geopolitical changes at the international level.

Political tensions not only in the Middle East require the Czech Armed Forces to be flexible and ready to respond to rapidly changing circumstances.

Indicators in the political security sector point to political stability, and their poor ratings or deterioration usually signal problems in the area of state power. At the extreme case, these problems could result in national unrest or regional instability, which may produce new challenges for the armed forces as well. This applies not only to countries belonging to the region concerned, but also to those with interests or obligations there. In this respect, the overall trend for 2023 is rather optimistic, as there was no deterioration in any of the indicators and at any of the assessed levels.

IThe situation in terms of individual indicators is also assessed rather positively. However, it is worth noting individual countries or regions where the situation is worse, although this is not reflected in the overall ranking. In this context, Israel stands out in particular, which, due to the events of autumn 2023, is ranked among the countries with the most significant deterioration in several indicators, while it is a country with which the Czech Republic has long maintained close relations. Apart from Israel, the countries that have suffered a setback include mainly those in Africa and the Middle East, but occasionally also European countries (Ukraine, Serbia, Kosovo, Greece).

The 2023 status of individual indicators is largely positive. However, some countries or regions, such as Israel, stand out due to worse conditions not captured in the overall assessment.

Military Sector

Richard Stojar

Libor Frank

"The war in Ukraine in 2023 has highlighted the crucial need to build all-military capabilities, strengthen logistics, air defence and develop the use of drones and artillery as key elements of defence policy and the future construction of the Czech Armed Forces."

Methodology and data source

The development in the analysed military sector of the security environment was assessed, inter alia, using a set of indicators that enable registering changes and trends in the long term, however, attention is also paid to the impact on the Czech Republic (geographical distance of ongoing conflicts, numbers of refugees from conflict zones, links to the armed forces of the Czech Republic and its defence industry, etc.). A separate, more detailed analysis of the military sector from the perspective of the operating environment is being prepared by another specialised study of the CBVSS. That is why certain aspects of this nature are not addressed in more detail here. Also, in view of the analyses of other sectors covered in this publication, particularly the political and technological sectors, some topics related to the military sector are only captured here from a more general perspective and to a limited extent. The analysis model used here is based on data from accessible open sources, which, however, are not always entirely accurate in this sector for specific reasons, while they are also available with a certain delay. In the preparation of this sector, similar to previous publications, the option of analysing selected actors and conflicts taking place in the past year was chosen. With regard to the implications for the Czech Republic, attention was primarily paid to three conflict-stricken regions with the greatest impact on the security environment of the Czech Republic. This includes Ukraine and the Russian Federation, Middle East, and South Caucasus. These regions are then evaluated on the basis of the monitored indicators and presented in a simplified, clear form in the table together with the threat index and their relevance in relation to the security environment of the Czech Republic.

Armed conflicts are a permanent part of world affairs and their impact is felt at the political, economic, and social levels. Today's society is characterised by a multitude of crises, conflicts, clashes, uncertainties, confusions (Smolík 2023). In general, 2023 saw a continuation of a number of existing conflicts as well as new outbreaks of violence.

Analysed conflict regions

On the other hand, some long-standing conflicts were apparently finally resolved in 2023, although this may not have led to complete de-escalation and their comprehensive resolution, see for example the Nagorno-Karabakh dispute.

On the other hand, some long-standing conflicts were apparently finally resolved in 2023.

This situation underlines the importance of monitoring and understanding the dynamics of these conflicts to ensure global security and stability. Conflicts often stem from political, ethnic, or religious disputes, and their resolution requires coordinated efforts at the international level. In the past year it was possible to observe an increase in the intensity of war activities in the European area and its vicinity. This trend can primarily be linked to the ongoing war in Ukraine. The Ukrainian conflict continues to be a major event that has influenced the military sector in a completely dominant way over the last two years and will undoubtedly continue to be a determining factor in the development of the security environment in the future (Defence Strategy of the Czech Republic 2023). From the perspective of the Czech Republic, due to its geographical proximity and many other factors, this is a conflict that logically overshadows the attention paid to other conflict regions in recent decades, or fundamentally threatens the stability achieved in the period since the collapse of the bipolar world (Security Strategy of the Czech Republic, 2023). And the war in Ukraine is also an example of how even an initially limited low-intensity regional conflict can transform into a military confrontation with global implications. Similar development could be recognised in the long-existing conflict in the Middle East, or rather the conflicting coexistence between Israel and Hamas and Hezbollah, which has also escalated into a confrontation of high intensity and massive destruction since the autumn of 2023, with other regional and external actors entering

The war in Ukraine is also an example of how even an initially limited low-intensity regional conflict can transform into a military confrontation with global implications.

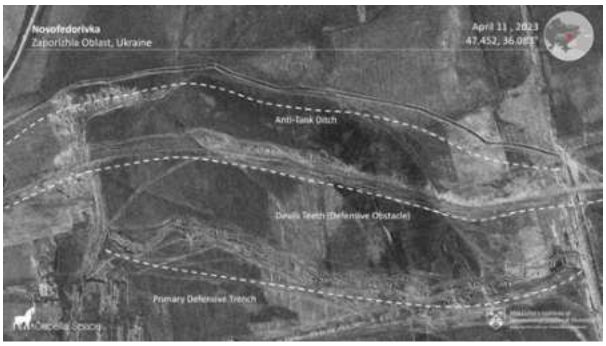
The conflict in Ukraine and its development in 2023

The year 2023 in Ukraine confirmed the previous trend that occurred soon after the Russian invasion in February 2022, i.e. the transformation into a protracted and exhausting conflict in the nature of a war of attrition. The conflict, which was initially intended by the Russian side as a quick and decisive operation of a rather non-combat type, was finally transformed into a protracted war of attrition with high human and material losses on both sides. In 2023, both sides were forced to reconsider their existing strategies and respond to the advancement of the adversary. Ukrainian forces launched a long-awaited summer counter-offensive in the middle of the year, but it did not achieve the expected results. In contrast, the Russian armed forces primarily focused on consolidating their positions in the occupied areas during this period.

In terms of maintaining the capabilities of the Ukrainian forces, the support of a broad coalition of Western countries providing weapons, financial assistance, and military training was a key factor in 2023. Western countries, especially the United States and NATO member states, continued to see the conflict as a key moment for maintaining international order and limiting the Russian power expansion.

Gradually, the Besieged City of Bakhmut Is Being Abandoned, (The Economist, 2023)

The first major military operation of 2023 was the Russian winter offensive, which focused primarily on the town of Bakhmut and nearby regions in the Donetsk region. Bakhmut, a relatively small town with limited strategic importance, became one of the most intense battlegrounds of the conflict, with the control thereof also becoming a matter of prestige for both sides. Russian troops, including the Wagner Group, conducted intensive offensive operations here and after months of heavy fighting and enormous losses on both sides, Russian forces managed to capture Bakhmut in May 2023. This Russian success, however, did not lead to major changes of strategic significance; after the exhaustion of offensive capabilities there was a significant decrease in the intensity of combat activity. After the conquest of Bakhmut, the Russian troops focused on stabilising the front line and holding the newly taken positions. While the Russian side was trying to consolidate its territorial gains, the Ukrainian army was preparing for the long-awaited summer counter-offensive. Launched in June 2023, the attack was intended to liberate parts of southern and eastern Ukraine that had been under Russian control since the beginning of the invasion. The Ukrainian side aimed to break through the Russian defensive lines in the Zaporizhzhia region and advance towards the Sea of Azov.



Surovikinova linie (George Barros/Twitter)

Another key objective was to disrupt the Russian land corridor leading from Crimea to Donbas, which would have severely disrupted Russian logistical capabilities. Ukraine’s summer counter-offensive was very ambitious in its goals and expectations.

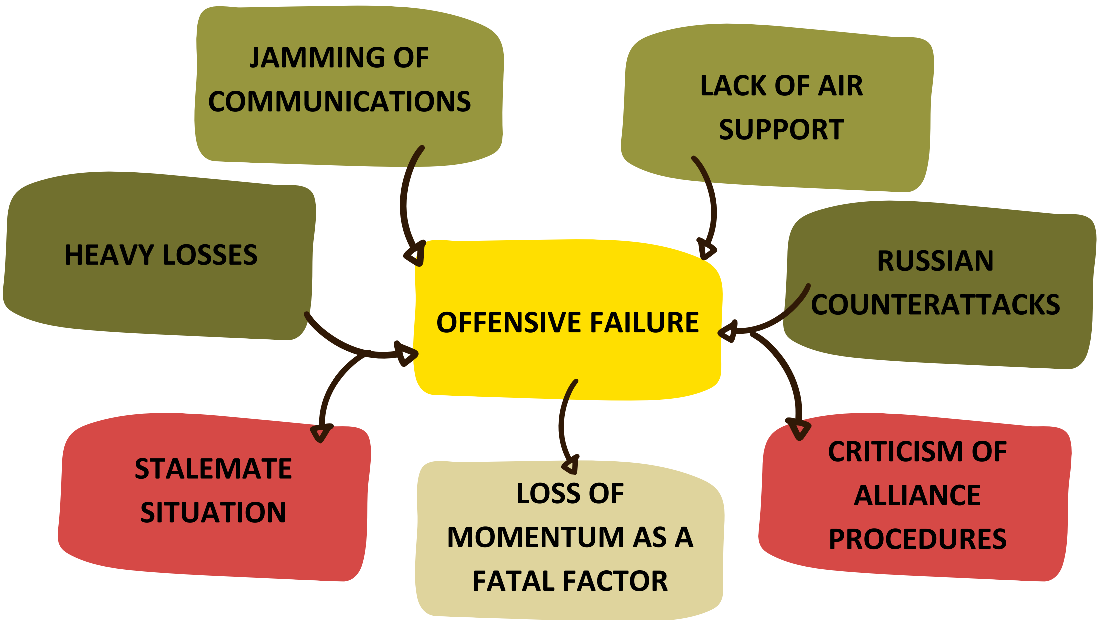
The offensive was supported by the delivery of relatively modern Western weapons, including tanks, artillery, and anti-aircraft systems, which were intended to provide Ukrainian forces with sufficient qualitative superiority over the enemy.

These included, in particular, extensive minefields, trenches, concrete pillboxes, and other obstacles as well as the provision of massive artillery fire support. The Ukrainian forces, although well equipped, soon faced huge logistical and operational problems. One of the main problems was the lack of air superiority, which would have allowed better cover for ground operations and more effective penetration of Russian defences. Despite numerous attacks and counter-attacks, Ukrainian troops failed to achieve a decisive breakthrough.

Due to the strong resistance of the enemy, the overall plan of the operation had to be fundamentally revised already in the first days of the Ukrainian offensive, i.e. the Ukrainian command was forced to abandon the maneuvre in favour of waging an attrition battle along a significant part of the extensive front line. (Petráš 2024)

"The Ukrainian command was forced to abandon the manoeuvre in favour of fighting a wearing battle along a large part of the extensive front line."

The tactics of concentrated fire and manoeuvre were almost soon abandoned. The choice of conducting the manoeuvre using small groups of infantry or light mechanised units was initially an improvisation, but gradually became characteristic of the whole period of the Ukrainian initiative (Petráš 2024).



Although the Ukrainian forces achieved some tactical successes and liberated several villages and strategic points, they were unable to penetrate deep into the Russian lines and achieve their main objectives. The Ukrainian army faced heavy casualties and had to face fierce counterattacks by Russian forces, which used their artillery superiority and rocket attacks on Ukrainian infrastructure. In addition, Russia was been successful in attacking the Ukrainians' electronic and communications systems, leading to an increased risk of precision munitions attacks and increasing equipment losses to unacceptable levels. In addition, the communications channels became the target of intense jamming, further slowing the operation, with the inability to maintain the momentum being the fatal element on which the entire counter-offensive failed. (Watling et al 2023)

In August and September 2023, it became clear that the offensive would not be able to achieve significant successes, and both sides again reached a stalemate where it was impossible to achieve rapid and decisive success at the strategic level.

UA

- **Criticism of alliance procedures**
- **Absence of air supremacy**
- **Long-term and costly support**

RF

- **Problems with human reserves**
- **Addiction to the Wagner Group**
- **Tensions and economic impact of sanctions**

From the Ukrainian side, criticism was then voiced of the chosen approach recommended by Western partners, which sought to apply Alliance procedures to the Ukrainian battlefield without ensuring the basic prerequisites for the successful implementation of this operation, in particular, the achievement of air superiority and direct air support for the ground forces. Ukraine's failure also negatively affected the attitudes of some allied actors, with the optimistic vision of a rapid Russian collapse and end to the conflict in 2023 proving unrealistic and support for the Ukrainian side of the conflict a long-term and costly affair.

On the Russian side, chronic problems associated with replenishing human reserves and maintaining the intensity of military operations were evident during 2023. Although the Russian side was able to secure a substantial reserve force without the need for unpopular mobilisation, it still faced problems with troop morale, lack of modern weaponry, and logistical problems. Russian military operations were in many ways increasingly dependent on private military companies in the most important sections of the front line, especially the so-called Wagner Group, which played a key role in the fighting for Bakhmut. The internal political situation in Russia was also tense, especially in view of the economic impact of sanctions and the growing discontent of part of the population with the ongoing war.

These factors were then reflected in the unprecedented confrontation between the Wagner Group and the Russian military command. Yevgeny Prigozhin, co-founder and owner of the Wagner Group, had long criticised many of the above shortcomings, balming mainly Defence Minister Shoigu and Chief of General Staff Gerasimov. His criticism grew stronger during the battle for Bakhmut, when he blamed the aforementioned officials for the slow progress and high losses of his group. He periodically commented on the shortage of artillery ammunition, chaos in logistics, corruption, and the inability and unwillingness of those in charge to address these shortcomings. The reaction of the political-military leadership was to try to fundamentally limit the autonomy of the Wagner Group, to subordinate it fully to the state apparatus, and to integrate it into the structure of the regular Russian forces. The dispute escalated in late June 2023, when Prigozhin published a statement effectively denying the official reasoning for launching the invasion, accusing the political-military leadership of corruption, incompetence, and indifference to the needs of the fighting soldiers as well as the interests of the Russian state. On 23 and 24 June, the Wagners then launched an unprecedented operation that could have disrupted the Russian hinterland and led to chaos within the Russian Federation. The Wagner Group units first took control of the headquarters in Rostov-on-Don, the main logistical centre of Russian forces operating in Ukraine, where they also met with a positive response among the civilian population. They subsequently launched a march on Moscow, meeting no significant resistance, although there were a few limited clashes with Russian armed forces or security forces. The possibility of a direct military confrontation and the critical situation for the ruling Russian regime was only resolved by negotiations mediated by Belarusian President Lukashenko. After weighing their options, the Wagners accepted the offer of amnesty and the option of going to Belarus or joining the regular Russian forces. However, after a short time, the top leadership of the Wagner Group, including Prigozhin, died in a plane crash, very likely initiated by Russian intelligence.


Yevgeny Prigozhin, head of the Wagner Group. (Deník N, 2023).

The Wagner Group itself was then brought fully under state control, reorganised, and partially earmarked for traditional operations on the African continent in support of Russian partners there. In the course of the conflict so far, this was the most significant manifestation of the internal weakness of the Russian regime as it was clearly taken by surprise by the turn of events and thus to some extent discredited among part of Russian society.

Some of the failures of the Russian security system were also highlighted by the incursions of Russian exiled pro-Ukrainian and anti-regime formations into the Belgorod region of the Russian Federation, but these were very limited in nature and, despite their media coverage, did not pose a threat comparable to that of the Wagners.

The Wagner rebellion probably opened a window of opportunity for Ukraine, which, however, remained untapped even in the light of the dynamic development. In 2023, while the Ukrainian side did not achieve significant success on the battlefield, it did inflict significant losses on the adversary and allowed it to make only limited tactical territorial gains. The ongoing air campaign against the military infrastructure on the Crimean peninsula and the Russian Black Sea Fleet stationed there was successful.

Despite the devastating conflict on its territory, Ukraine managed to develop innovative technological systems, in this context in particular the production and deployment of water drones, which contributed to the withdrawal and paralysis of the Russian adversary's fleet and enabled the creation of a safe corridor for cargo vessels exporting grain, corn, and other export commodities from its Black Sea ports.

Ukraine's successes in the field of drones and Western weapons have not fundamentally affected the course of the front or the development of the conflict.

However, these successes, illustrating the increase in Ukrainian capabilities in the field of its own unmanned assets and the effective use of the supplied Western weapons systems, have not had, and are unlikely to have in the future, a major impact on the course of the front line or the overall development of the conflict. A similar increase in capability was illustrated in 2023 by numerous air strikes against strategic targets and oil infrastructure, often deep within the Russian Federation's own territory. By September and October 2023, the conflict reached a stage of certain stagnation. Both sides were exhausted after long months of fighting and were unable to gain or maintain the momentum and undertake major offensive operations. Russian forces concentrated on consolidating their positions and Ukrainian troops tried to regroup and prepare for the next phase of fighting. Fighting continued on several fronts, especially in the Donetsk and Luhansk regions, but without significant changes on the front line. While the Ukrainian army acquired some advanced modern Western weapon systems, their quantity and deployment were not sufficient to achieve significant success in the territory occupied so far.

On the other hand, Russian forces partially adapted to fighting against the advanced Western technology and also achieved new capabilities in jamming guidance systems and GPS, partially reducing the effectiveness of deploying HIMARS-type weapons systems.

HIMARS in action during the conflict in Ukraine, (Newsweek, 2023).

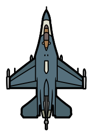
From a technological point of view, the trend of increasing effectiveness of unmanned aerial vehicles, especially first-person-view (FPV) kamikaze drones, was confirmed on the Ukrainian battlefield in 2023. These became a weapons system that fundamentally influenced the nature of combat operations of both opposing sides. The number of UAVs deployed on exposed sections of the front line was enormous and often resulted in mutual signal interference from their operators. The great advantage of these assets is their availability and very low cost compared to traditional military equipment.

Western support for Ukraine 2023

Advanced Weapons Supplies

Ammunition Transfer

Personnel training



F-16

TRAINING PROGRAMMES FOR UKRAINE

2022	1st half of 2023
10 000 soldiers	**20 000** soldiers

At the international level, the West, particularly the United States and the European Union, remained heavily engaged in their military and financial support for Ukraine. Western countries provided increasingly advanced weapons and technology, which was intended to strengthen both the defensive and offensive capabilities of the Ukrainian army.

. A significant part of the European stocks of ammunition, military equipment, and other military material was delivered to Ukraine. At the same time, however, the limits of the European arms industry became apparent in 2023, in particular due to insufficient production capacity and disrupted supply chains. The absence of a sustainable system of management of arms expenditure and procurement in European countries also had a negative impact (Výroční zpráva VZ 2023).

). In addition to the supply of military equipment, extensive support for the training activities of Ukrainian military personnel can be mentioned in 2023. Among other things, the long-awaited training of pilots and technical personnel for the planned delivery of F-16 aircraft was completed. The number of programmes for training Ukrainian soldiers also increased significantly, especially in the first half of 2023, in connection with the upcoming Ukrainian offensive.

The ability to train military personnel in a safe environment, away from the range of ballistic missiles, was crucial to strengthening the combat readiness of the Ukraine's armed forces. A number of NATO and EU countries provided training programmes. The British training programme, for example, included a three-week course on basic infantry combat, first aid, cyber security, and counter-IED tactics. The training programmes are normally designed for up to 10,000 Ukrainian soldiers and are repeated every four months. While the first 10,000 Ukrainian soldiers received this training in 2022, 20,000 more were trained in the first half of 2023 (Centrum doktrín, Velitelství výcviku-Vojenská akademie Vyškov 2024). Training programmes for Ukrainian military forces were implemented or supported by a number of European countries and the European Union, including the EU Military Assistance Mission (EUMAM).

At the same time, however, there was an observed growing fatigue on the part of the West with the prolonged conflict, especially given the high financial costs and the potential risk of escalation into a wider conflict with Russia. Despite these concerns, support for Ukraine remained strong during 2023, which was essential for the continuation of Ukrainian resistance. On the other hand, Russia's capabilities, sustainability, and initiative, despite significant material, human and economic losses, were also aided in 2023 by cooperation with external partners. In the military sphere mainly with Iran and the DPRK, in the economic sphere with the PRC. Overall, however, even in 2023, cooperation with the PRC was crucial for the Russian Federation, which allowed for the long-term maintenance of the capabilities of the Russian armed forces and thus their initiative on the Ukrainian battlefield. Russian-Chinese cooperation is trending towards more strengthening, while at the same time the Russian side's dependence on its Chinese partner is increasing in the absence of alternatives. However, the PRC is setting limits on this unequal partnership and would be willing to weaken or completely sever it if it is too costly or risky for the Chinese side (SFA 2023).

From a geopolitical perspective, the conflict in Ukraine in 2023 had a major impact on the security situation in Europe and the wider region. NATO member states, especially Central and Eastern European countries such as Poland, the Czech Republic, and Slovakia, perceived the Russian aggression as a direct threat and stepped up their defence capabilities. NATO strengthened its presence in Eastern Europe and continued to modernise its armed forces to counter possible further Russian expansion. The conflict also led to a strengthening of transatlantic ties between the United States and Europe, with the US playing a key role here, as it did in 2022. From a global perspective, the Ukrainian-Russian conflict was largely influenced or overshadowed by events in the Gaza Strip at the end of the year.

Israel and Gaza

Prior to the 7 October 2023 attack, the region was relatively calm, but there had long been strong tensions and sporadic clashes between Israeli forces and militant groups. However, Israeli security operations focused rather on actions in the occupied West Bank in the previous period. Here, too, this increased intensity was reflected in an annual increase in casualties, particularly on the Palestinian side, and a growing potential for conflict. This also necessitated a greater presence of Israeli forces there, which was achieved at the expense of covering the border with the Gaza Strip.

On the morning of 7 October 2023, Hamas launched an unprecedentedly large-scale attack on Israel from the Gaza Strip. The operation involved coordinated rocket strikes on Israeli civilian and military targets and infiltration of militants across the border into southern Israel. Hamas fired a large number of rockets into Israeli territory, with the aim of overwhelming Israel's air defences and causing chaos and panic. This strike, however, did not constitute the main phase of the attack, which consisted in a ground operation that broke through the Israeli security barrier in several places.

Given Hamas's limited capabilities, the individual attacks were largely the work of improvisation and the use of unconventional methods. In some cases they were effective, e.g. the use of paragliders and commercial unmanned aerial vehicles, in others they were completely eliminated, e.g. an attempt to penetrate via the sea route. Hamas also achieved the disabling of the monitoring system on the Gaza-Israel border in the first phase through the extensive use of drones.

Massacre during the Israeli-Gaza conflict, documented in the Nova film.:(AP News, 2023).

With partial success, it also hit Israeli troops with these assets and was able to disable otherwise very robust equipment of the Merkava tank type in a manner similar to that seen in the Ukrainian-Russian conflict. The military and security forces of Israel were completely surprised by the intensity and scale of the attack, it is possible to speak of a strategic shock. It was a significant failure of the Israeli intelligence and a misassessment of the information available to the Israeli side.

The Hamas attack was apparently primarily aimed at disrupting the process of normalisation of relations between Israel and key Arab states, as well as demonstrating Hamas' military strength, disrupting Israeli security, and drawing the attention of the international community to the Palestinian issue.

From this perspective, it was effectively an asymmetric operation of a terrorist nature, but given Israel's all-round military superiority, it was effectively a suicidal action. Calculating with a subsequent harsh Israeli retaliation that would have the most destructive effects on the Gaza Strip and its population was probably present in the planning process and was also one of the motives for the Hamas attack of 7 October 2023. And it was probably the reason for the deliberate brutal violence of the attackers against Israeli civilians and the capture of more than two hundred hostages.

After the initial shock, Israeli forces were quickly able to eliminate most of the Hamas attackers and take control of the affected territory. In the next phase, the main objective was the complete elimination of Hamas and liquidation of any sources of security threats in the Gaza Strip. From a military point of view, this did not appear to be a difficult task for one of the most advanced armies in the world, but the question of rescuing the kidnapped hostages appeared to be problematic. The Israeli operation was also supported by an effective information campaign, which both mobilised and united the attacked society and provided arguments and support for further action with external partners. The Gaza Strip is a geographically non-complex, geometrically regular region where and while the high degree of urbanisation allowed for temporary resistance of the Hamas fighters, for Israeli forces, it was supposed to be a several-week operation at most. Israeli forces gradually occupied the Gaza Strip from the north to the town of Rafah on the border with Egypt. However, the declared goal of the total destruction of Hamas structures was not achieved in 2023, as Hamas groups repeatedly attacked from places that had already been cleared by the Israeli army, using a sophisticated system of underground corridors and tunnels (Čejka 2024). Hamas also used civilian infrastructure for its operations, giving the Israeli side arguments for the widespread use of destructive military force. The urbanised nature of the Gaza Strip, the very high population density, and the massive projection of IDF military power without taking these factors into account led to an unprecedentedly high number of Palestinian civilian casualties. The level of destruction of the entire area was extremely high. The inconsistent differentiation between military and civilian targets and the dehumanisation of the adversary, or the population in the Gaza Strip, was subsequently reflected in the highly critical stance of key Israeli allies on the adequacy of the Israeli response and the conduct of the retaliatory operation.

A map of the Gaza Strip, an important region in the Israeli-Palestinian conflict, (Encyclopaedia Britannica, 2023)

In Gaza, the Israeli army implemented its Dahiya military doctrine, used in asymmetric conflicts with non-state armed actors such as Hamas or Lebanese Hezbollah.

In this process, civilian targets that are or have the potential to be used by the adversary are often comprehensively destroyed without regard to significant civilian casualties (Čejka 2024).

This factor has led to a significant loss of empathy for the Israeli side and a shift of much of the global solidarity to the Palestinian side, which was probably one of the main motives behind Hamas's initial attack. Secondarily, this development has also had a secondary impact on the attitude of the Global South toward the Ukrainian-Russian conflict, which has become largely overshadowed by the events in the Middle East.

The conflict, however, did not remain confined to southern Israel and the Gaza Strip; from the beginning, the security situation on the Israeli-Lebanese border deteriorated and the possibility of a confrontation between Israeli forces and Hezbollah grew. There were other incidents in the wider region, particularly in the volatile regions of Syria and Iraq. Another regional anti-Israeli actor was the radical formation of the Yemeni Houthis, until then primarily waging their own isolated war in the south of the Arab peninsula. In response to Israeli operations in Gaza, the Houthis demonstratively fired several Iran-supplied ballistic missiles at Israel and launched attacks on vessels off the Yemeni coast in the Red Sea, one of the busiest shipping lanes, often using unmanned aerial vehicles of Iranian or commercial origin. Although this meant no significant escalation of the conflict and regional destabilisation, these attacks also illustrate the trend towards a new wave of proliferation and the associated greater availability of advanced weapons systems or dual-use technologies and their subsequent use by state and non-state actors, who thus gain qualitatively higher capabilities and the ability to engage targets at great distances from their own territory or to threaten communication routes of global significance.

Other causes of tension in the region

The Israeli-Lebanese border

Incidents in Syria and Iraq

Proliferation of modern weapons

Ballistic missiles and Red Sea attacks

Yemeni Houthi activity

Myanmar

One conflict that stands out from the global spotlight compared to other intense interstate conflicts is the Myanmar/Burma civil war, with the growing potential to destabilise the wider Asia-Pacific region. Since the military coup in 2021, the country has been in chaos and the military junta's rule has faced growing armed resistance from various ethnic groups and prodemocratic forces. One of the main features of this conflict is the considerable diversity of the main actors, which include the government forces or military junta, democratic armed opposition, and a number of ethnic formations with different goals, strength, and foreign support (Nožina 2024).

The conflict itself has a long-lasting character and history, but it gained in intensity after the military coup, and despite the technical superiority of the Myanmar army, there was a surge in opposition formations and a significant loss of government-controlled territory took place between 2021 and 2023 (IISS 2023). The opposition forces were able to achieve a number of successes, despite their disunity and often very disparate objectives. That disunity is largely due to Myanmar's significant ethnic diversity and the absence of a single political nation. Ethnic opposition formations are by their nature primarily effective only in their own ethnic space and in some cases are funded by activities close to organised crime.

Ethnic rebel group Ta'ang National Liberation Arm, (Janes, 2023)

By 2023, the Myanmar junta and its forces no longer controlled most of the state's territory and population, but still fully controlled the central part of the state and the main urban centres. However, the rebel formations were able to carry out a successful offensive in October 2023 and gain control of a large area in the north of the so-called Shan State. The erosion of government power thus continued, while greater effectiveness of opposition forces was prevented by poor coordination of fighting efforts and often divergent interests and goals. Similar to other insurgent conflicts, Myanmar's army and security forces have a significant superiority in heavy weapons and air dominance, but this may be more difficult to exploit in the difficult mountainous and forested terrain. Last year, however, the rebel formations started to compensate this material superiority of the government forces by a more significant deployment of unmanned assets, especially improvised commercial drones, which effectively hit a number of important targets. Myanmar may thus be an example of the proliferation and successful use of this element in insurgent conflicts. But the conflict in Myanmar is also taking on a non-domestic dimension. Given the interests and activities of external actors, there are concerns that it could escalate into a regional proxy war between the United States and its allies on one side and the PRC and the Russian Federation on the other. In this conflict, the US supports the opposition National Unity Government (NUG), while the PRC and the Russian Federation have long supported the military junta. The PRC is particularly active here, having invested in Myanmar for a long time, thus having a significant stake in the outcome of the conflict. The U.S. has so far avoided directly arming opposition forces, but has provided non-lethal support to the anti-regime NUG throughout 2023. By actively working against local PRC interests, it could thus escalate and expand the ongoing conflict (Lintner 2024). Due to its increasing intensity and the large number of directly involved combatants, the war in Myanmar is seen as one of the most complex and risky contemporary conflicts (ACLED 2024).

Myanmar was one of the Czech Republic's foreign policy priorities in the past, primarily with regard to promoting the human rights and democratisation agenda. From the current perspective of the Czech Republic, despite its complexity and intensity, this internal conflict is geographically very distant, its direct impact on the Czech Republic is minimal, but there are trends of effective use of commercial products by insurgent formations, which could be confronted by the units of the ACR in prospective expeditionary operations and counter-insurgency operations.

The war in Myanmar is rated as one of the most complicated and risky contemporary conflicts.

The South Caucasus region

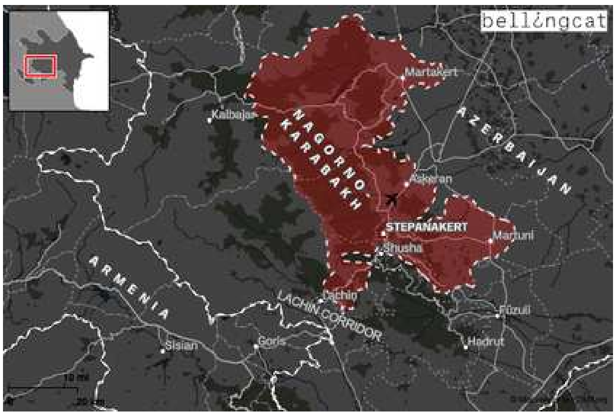
30

years of conflict over Nagorno-Karabakh

A significant change occurred in 2023 in the relationship between Armenia and Azerbaijan, as the more than three-decade-long conflict over the disputed Nagorno-Karabakh region, or the Armenian-dominated separatist entity called the Republic of Artsakh, was effectively resolved. The state of the 2020 ceasefire was sporadically disrupted by armed incidents over the past few years, and in December 2022 the Azerbaijani side launched a de facto blockade of the isolated enclave, despite its commitments under the 2020 agreement.

The blockade of the Lachin Corridor, Nagorno-Karabakh's only link to Armenia proper after 2020, created severe pressure on the local Armenian population in the first half of 2023. Due to its massive involvement in the Ukrainian conflict, the guarantor of the ceasefire agreement, the Russian Federation, was unable to dissuade the Azerbaijani side from its activities, demonstrating the continued erosion of Russian influence in the South Caucasus region. The EU also had an ambition to actively participate in regional stability, but its planned observer mission in the area was quite marginal and did not influence regional developments in any way.

The combination of military and non-military tools from the Azerbaijani side and Armenia's isolation or lack of support from Armenia's ally, the Russian Federation, made the situation in Nagorno-Karabakh untenable in the course of 2023. The status quo, which was to be guaranteed until 2025, was subsequently violated by Azerbaijan owing to the favourable situation and in September 2023 its forces took full control of Nagorno-Karabakh, regardless of the Russian contingent stationed along its borders. . The Azerbaijani operation met with almost no major armed resistance, as the balance of forces and the results of the 2020 conflict made any effective defence of the enclave from the Armenian side virtually impossible.



Map of the Nagorno-Karabakh conflict, September 2023, (Bellingcat, 2023).

The operation was officially described as an anti-terrorist action against illegal armed groups and the lines on which the weak formations of the Armenian militia could put up resistance were broken in a number of places in the first hours, using artillery, salvo rocket launchers, and unmanned aerial vehicles. In addition to their quantitative superiority, the Azerbaijani forces again exercised their technological superiority, including the deployment of modern weapons systems of Israeli provenance.

Thus, for the first time in its history as a sovereign state, Azerbaijan has fully restored its territorial integrity over Nagorno-Karabakh, apparently putting a definitive end to this multi-year dispute. There has been a significant change in the ethnic composition of the disputed territory, with virtually the entire Armenian population there responding to the Azerbaijani action by leaving for the Republic of Armenia. However, the exodus has not reached a dramatic scale comparable to refugee waves from other conflicts, given the limited population.

These developments have led Armenia to fundamentally rethink the Armenian-Russian partnership in the security sphere. The unequivocal dependence on the Russian Federation for security issues was assessed as a strategic mistake, although in the previous period any other options were unrealistic. Armenia has thus started to establish cooperation with Western actors in the military sphere on a limited scale and has gradually moved away from its dependence on Russian arms and the Collective Security Treaty Organisation (CSTO) structures. The full normalisation of relations between Armenia and Azerbaijan in 2023 did not take place, no peace agreement was concluded, and there were other demands from the Azerbaijani side that conditioned the overall resolution of the mutually conflicting relations.

The full normalisation of relations between Armenia and Azerbaijan in 2023 did not take place, no peace agreement was concluded.

Table 1: Summary of indicators and their scores for the situation in 2023

Indicator	Relevance from the point of view of the security environment of the Czech Republic	Ukraine	Middle East	South Caucasus
Geopolitical significance	0.15	8	8	5
Factors of conflict (ethnic, religious tensions, etc.)	0.12	7	8	6
Humanitarian crisis	0.10	9	7	4
Total threat index		7.9	7.6	5.1

The table provides a comparative analysis of three regions (Ukraine, Middle East, South Caucasus) from the perspective of the security environment of the Czech Republic, focusing on three main indicators: geopolitical significance, conflict factors, and humanitarian crisis. Each indicator is assigned a weight (depending on its importance) and regions are ranked according to their risk levels. Based on these values, an overall threat index is calculated for each region.
Explanation of the index: The index ranges from 0 to 10, where 0 is the minimum threat and 10 is the maximum threat. Higher indices indicate a higher level of military and non-military threats resulting from the conflict area for the security environment of the Czech Republic.

Implications for the armed forces

Fundamental implications for the defence policy of the Czech Republic and for the development of the ACR in 2023 arise from the conflict in Ukraine. The war in Ukraine, as a conflict between two militarily advanced actors in the European space, determines and defines the requirements for the future capabilities and construction of the armed forces of European countries and it has a global impact in terms of development trends. The fundamental implication remains the emphasis on developing combined military capabilities and fulfilling the Czech Republic's previously accepted commitments. In view of the growing Russian threat to the eastern flank of the Alliance, there is a growing need to build a credible deterrent, at least in the form of robust and deployable Alliance forces dedicated to the defence of this area. Mobility and sustainability of the Alliance forces is one of the main conditions in the light of the experience of the ongoing war in Ukraine, whereas the development of the armed forces should be primarily geared towards achieving adequate capabilities in this area. Related to the above is the importance of the Czech Republic in providing support to allied forces within the Host Nation Support. Given the geographic location of the Czech Republic, it can be assumed that its territory would be important for the transport of Alliance units to the threatened area. This support would place heavy demands on the existing transport infrastructure and other necessary provision. Here, it can be pointed out that the logistic support of the ACR still has significant limits and was not among the main priorities in the past. Focus on logistics in capability development should thus eliminate the shortcomings present so far.
Contemporary conflicts also point to the need to ensure the defence of airspace, in the case of the Czech Republic, both for the aforementioned protection of units in transit and for the protection of its own military and civilian infrastructure. The long-term air campaign of Russian forces against targets deep inside Ukrainian territory as well as Ukrainian strikes on strategic infrastructure on the territory of the Russian Federation point to the growing potential of the air force and the importance of air defence.

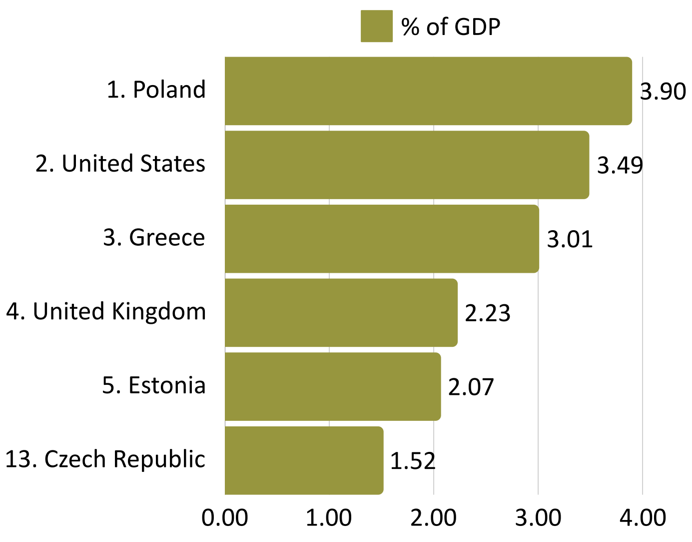
Implications for Czech Armed Forces

Existing systems are in many ways ineffective at intercepting UAVs; due to their low cost and mass production, the risk of overwhelming and exhausting the air defence force with a multitude of UAVs attacking in parallel becomes higher. The Ukrainian battlefield in 2023 became a space dominated in many ways by UAVs, which were able to paralyse offensive operations of both actors, noticeably disrupt troop movements within their range, and monitor the area as well as transmit detailed real-time information to higher or lower levels of command, from the strategic to the tactical level. However, the number of actors who possess not only unmanned aerial vehicles but also ballistic missiles, owing to proliferation, is growing. Here, again, given the considerable financial burden, the importance of strengthening cooperation with neighbouring states in missile defence programmes can be highlighted.

Given the growing importance of UAVs, the Ukrainian command established a separate component of the armed forces, the Unmanned Aerial Force. To some extent, however, the quantitative increase and actual use of UAVs on both sides was a constant process of improvisation and adaptation to new conditions and responding to the activities of the adversary. However, such a process is driven by the realities and necessities of war; in peacetime conditions, a similar process for standard armed forces is always less flexible. Nevertheless, the question of the actual use of unmanned aerial vehicles and defence against them should be one of the priorities in the building and developing the Czech armed forces. It is very likely that the ACR units would be involved not only in a high-intensity conflict with the enemy forces deployed, but also in prospective expeditionary operations in conflict regions. Relatively low cost, wide availability, and effectiveness already made UAVs one of the very effective weapons in insurgent conflicts by 2023. So far, the implementation of UAVs in the Czech armed forces has been limited and the long lead times for their acquisition have lagged behind the dynamic development. It is desirable to gain and study the experience, especially from the Ukrainian conflict, and subsequently strengthen the capabilities in the use of UAVs at the tactical and operational levels, as well as the ability to actively and passively defend against the assets of potential adversaries.

The year 2023 in the conflict in Ukraine also once again highlighted the importance of artillery, which played the role of the most lethal weapon system. The intensity of the deployment also highlighted the limited production of large-calibre artillery munitions, both due to limited production capacity and a worldwide shortage of raw materials for explosives production. Efforts to achieve long-term security of our own needs and adequate capacities for possible significant increase in production should be a common goal of the armed forces and the defence industry in the Czech Republic.
The deterioration of the global security environment and the ongoing intense conflicts provide a significant incentive for political and public will to allocate state resources to the defence sector, yet the Czech Republic remains in the group of Alliance states with lower spending. Although there are statements about a possible significant increase in resources for the needs of national defence, it can be rather assumed that such a scenario will not occur and it will be necessary to strive for the greatest possible efficiency of the existing investments.

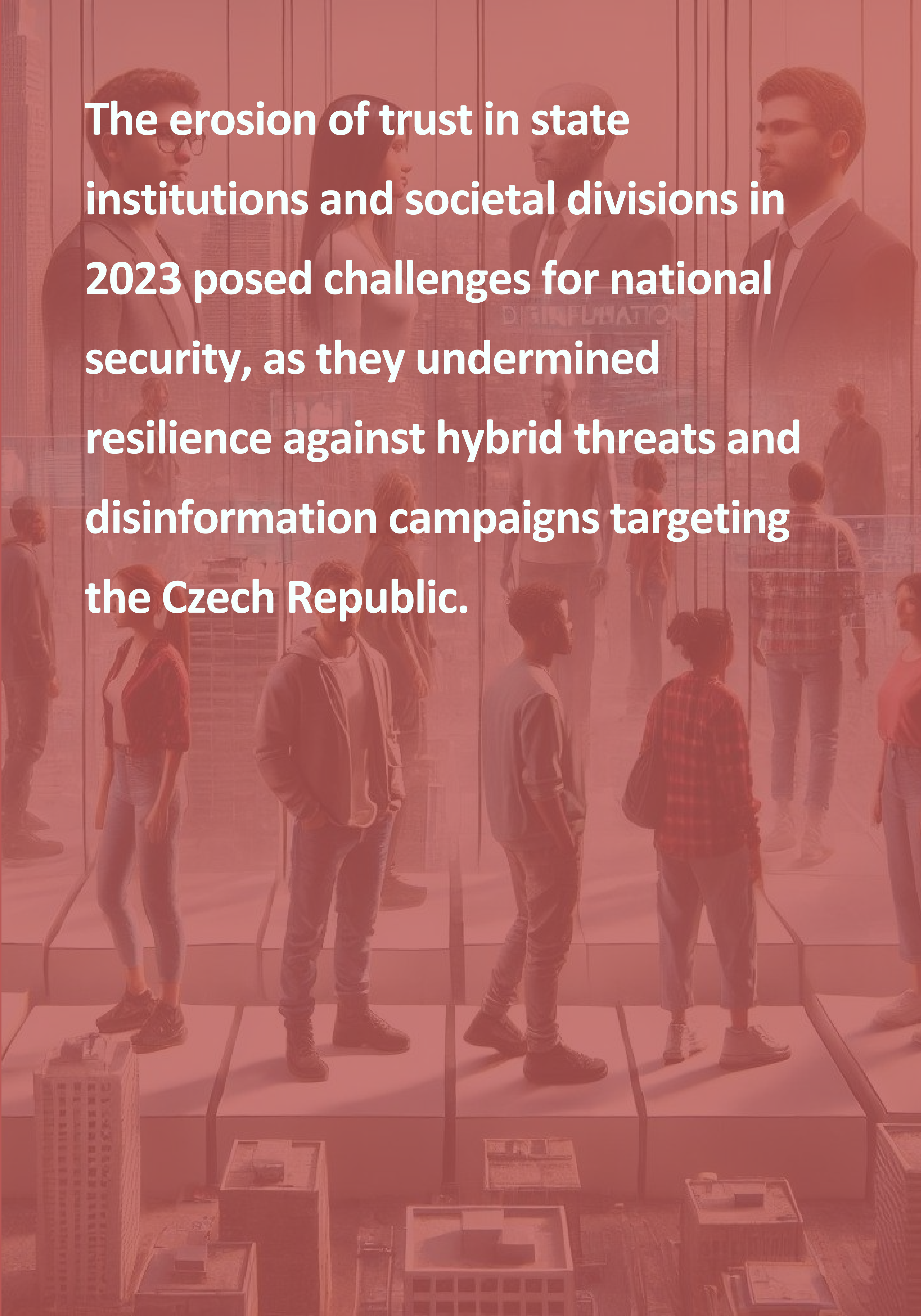
Ranking and volume of Czech defence spending in 2023



Czech Republic's Share of NATO defense spending in 2023

Societal Sector

Miroslava Pačková
Adam Potočňák

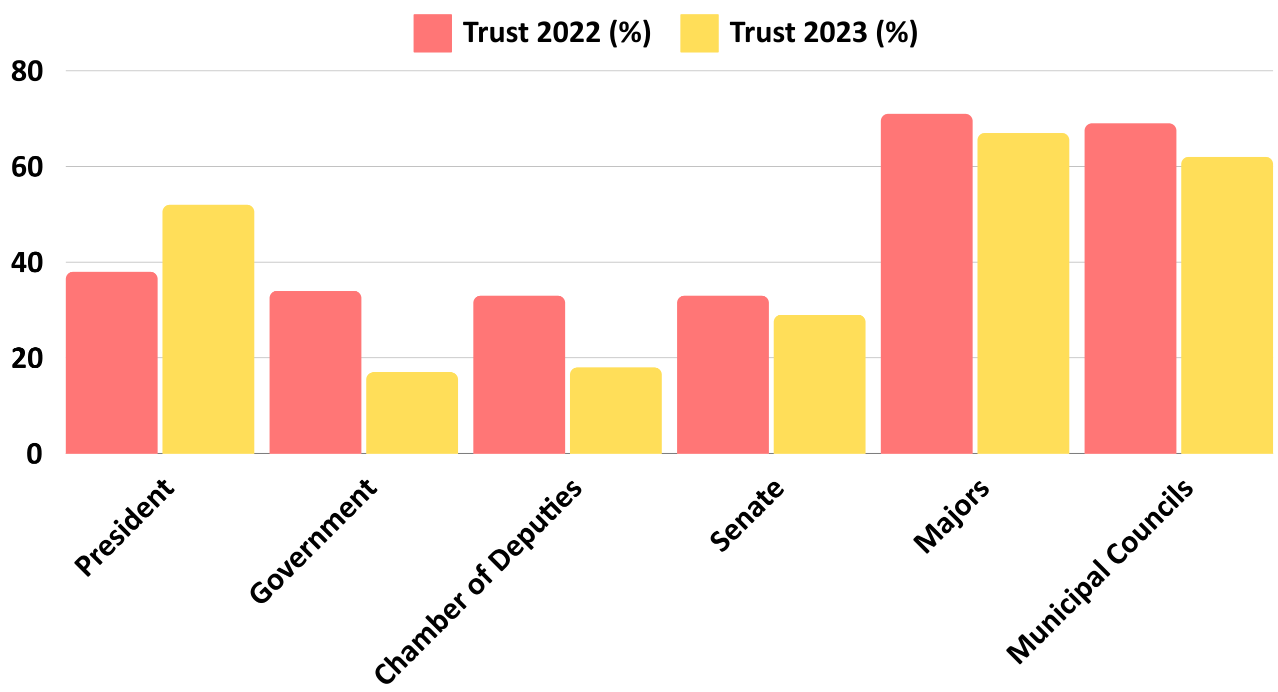


The erosion of trust in state institutions and societal divisions in 2023 posed challenges for national security, as they undermined resilience against hybrid threats and disinformation campaigns targeting the Czech Republic.

Czech society in 2023: tensions, mistrust, division, and disinformation

The year 2023 was marked by a further deepening of the persistent distrust of a significant part of the citizens of the Czech Republic in the state, its institutions, and their fellow citizens. Despite the strong satisfaction with their personal life, which reached 82% in 2023, one of the highest levels since the 1990s (STEM 2023), more than 50% of the Czech population describe the developments in the country over the last few years negatively (STEM 2024). The level of pessimism thus corresponds to the values from the economic crisis of 2009-2012, which makes the difference between personal satisfaction and dissatisfaction with public affairs among the Czech population currently at a record high. Compared to 2022, 2023 saw significant changes in trust in constitutional institutions - while trust in the (newly elected) president was the only one to have increased significantly (specifically from 38% to 52%), trust in the government fell from already low 34% to just 17%. Confidence in the Chamber of Deputies of the Parliament of the Czech Republic recorded a similar decline from 33% to 18%, while in the case of the Senate of the Parliament of the Czech Republic the year-on-year decline was slightly lower - from 33% to 29%. Mayors (from 71% to 67%) and municipal councils (from 69% to 62%) of individual towns and villages also experienced a relatively smaller decline in trust.

Czech citizens' trust in constitutional institutions

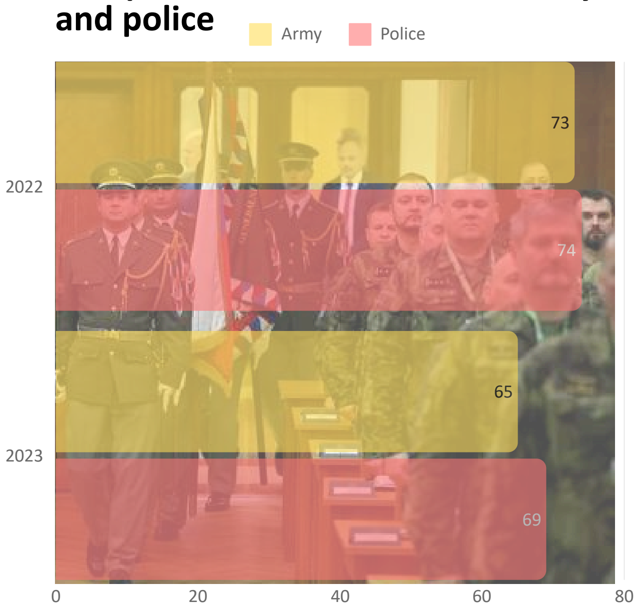


Although the Army of the Czech Republic has long enjoyed the highest level of credibility among state institutions, the trust it enjoyed declined for the fourth year in a row. Thus, in 2023, it oscillated at 62-65%, the lowest since 2008, although confidence among the 18-29 age group was well above the national average - at 79%. The general decline in trust in the army is related to the variability of political preferences of a part of society, where the opening scissors of (dis)trust in specific political parties cause in turn shifts in perception and trust in the army. While in 2020, voters across the political spectrum trusted it, nowadays, there are differences of tens of percent between the supporters of the strongest parties, which creates an additional problem and obstacle to the effective operation of the armed forces in the event of a potential crisis.

The decline in trust in the army reflects shifting political preferences, with varying party loyalties influencing public perception of the military.

It is also necessary to mention a fertile ground for the creation and spread of other conspiracies and hybrid campaigns of (potential) enemies of the Czech Republic. Trust in the Police of the Czech Republic, on the other hand, is stable, although it has fallen slightly to 70% since 2020. This trend is not affected by political preferences as strongly as in the case of the military (STEM 2024a; STEM 2024b). In 2023, the Czech public's trust in the courts remained stable, although there was a slight decline compared to previous years.

Comparision of trust in Czech army and police



The highest judicial institutions, such as the Constitutional Court, are trusted by around 62% of people, a slight decrease compared to previous years. The Supreme Court is trusted by around 65% of the public and the Supreme Administrative Court is similarly trusted by 61% of the public (Daněk 2023).

Although the Army of the Czech Republic has long enjoyed the highest level of credibility among state institutions, the trust it enjoyed declined for the fourth year in a row. Thus, in 2023, it oscillated at 62-65%, the lowest since 2008, although confidence among the 18-29 age group was well above the national average - at 79%. The general decline in trust in the army is related to the variability of political preferences of a part of society, where the opening scissors of (dis)trust in specific political parties cause in turn shifts in perception and trust in the army. While in 2020, voters across the political spectrum trusted it, nowadays, there are differences of tens of percent between the supporters of the strongest parties, which creates an additional problem and obstacle to the effective operation of the armed forces in the event of a potential crisis. Weakened social cohesion and trust in state institutions also directly threaten the level of trust of the Czech population toward international organisations such as the EU or NATO and they also have implications for the level of trust and liking toward specific countries for their political representatives and their policies. In general, the persistent problem of declining trust and social cohesion is directly linked not only to the relatively weak resilience of democratic institutions (so-called institutional resilience) or insufficient strategic communication, but also to the ineffectiveness of combating the flood of domestic and foreign disinformation (Prague Security Studies Institute 2023, European Commission 2023).

Even in 2023, the Czech Republic faced coordinated and targeted hybrid and disinformation attacks, the intention of which was to further erode social cohesion and mutual trust in the citizen-state-community triangle.

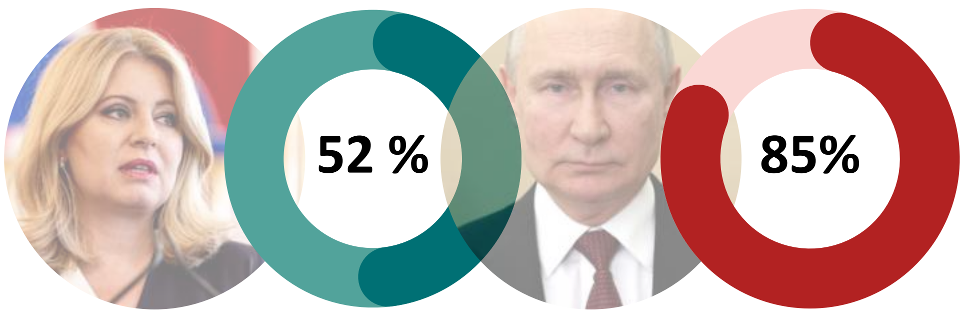
The vast majority of these campaigns originated from or spread deceptive narratives in favour of the Russian Federation or the People's Republic of China, especially through digital platforms, social networks, and synthetic media, enhanced by the further development and spread of artificial intelligence tools (so-called deepfakes). The situation is all the worse because, according to the BIS Annual Report for 2023, the Czech Republic is already facing a shortage of qualified professionals (among a number of other sectors) in the area of public administration, which not only negatively impacts the state's ability to respond effectively to crises and security threats, but also undermines the protection of society against malign influences from abroad (BIS 2024).

The Czech Republic lacks qualified public administration professionals, weakening its crisis response, security, and defense against foreign malign influences.

According to the Public Opinion Research Centre (CVVM 2023), Slovakia traditionally gained the most sympathy among Czechs in terms of relation to other countries and their political representatives, followed by Austria and Poland. The trinity of Ukraine, China, and Russia occupied the opposite end of the rankings. Trust and sympathy toward specific leaders then, unsurprisingly, followed the trend of sympathy toward individual countries - the highest share of trust was enjoyed by the Slovak President Zuzana Čaputová (52% trust), the lowest by the Russian President Vladimir Putin with as much as 82% distrust (CVVM 2023).

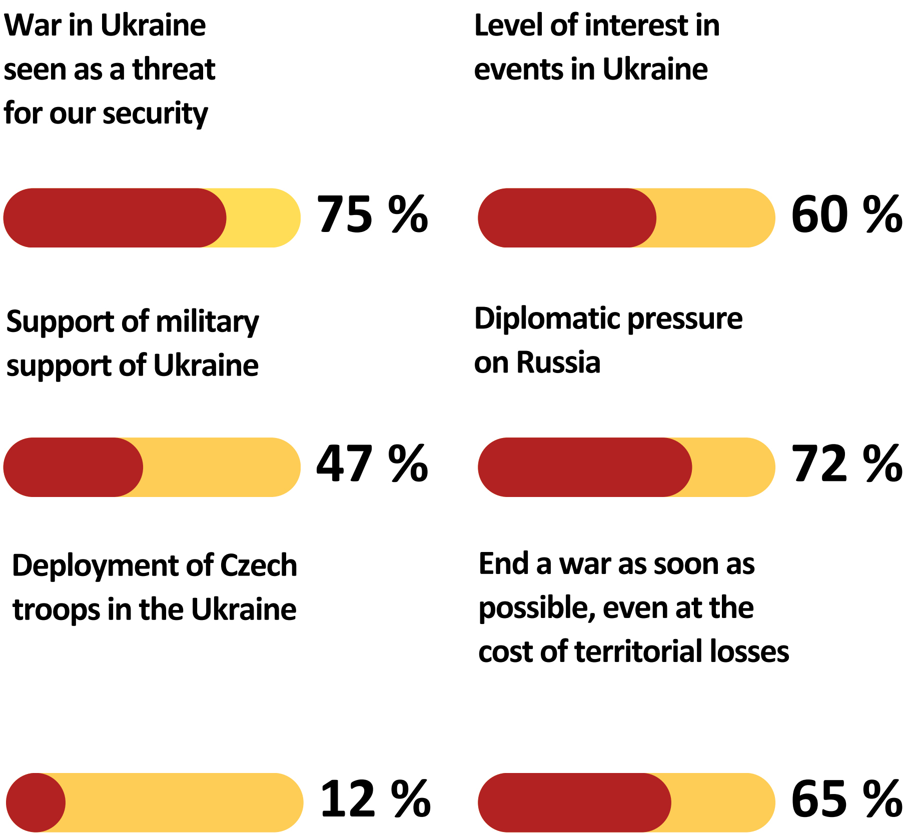
Zuzana Čaputová
Highest share of trust

Vladimir Putin
Lowest share of trust



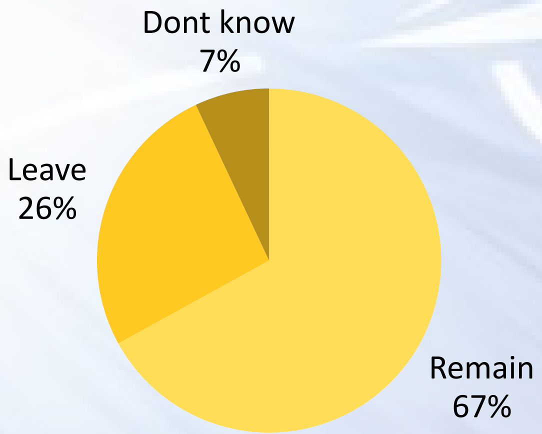
Specifically in relation to war-affected Ukraine, the vast majority of the Czech population considered the conflict to be a threat to both European security (75%) and the security of the Czech Republic itself (70%). On the other hand, the level of interest in events in Ukraine in the summer of 2023 decreased by 18 percentage points compared to the summer of 2022, from 78% to 60%. Similarly, support for the current Czech government's policy toward Ukraine also declined - 43% of respondents agree with it, while 54% object. The majority of the population (72%) supports diplomatic pressure on Russia, 47% of respondents support military support, and only 12% of the population would support the hypothetical deployment of ACR troops to Ukraine (Červenka 2023). In terms of the future development of the war, the majority of Czechs (65%) want it to end as soon as possible, even at the cost of territorial losses for the invaded Ukraine.

"Czech Population Opinions on the War in Ukraine"



In terms of international organisations which the Czech Republic is a member of, NATO continues to enjoy the highest sense of necessity, with 72% of the population giving a positive assessment of its existence. However, this is a significant decrease from 79% in 2022, where the perception of the Alliance as unnecessary increased (from 15% in 2022 to 21% in 2023), while the remaining 7% of respondents did not answer the question (Čadová 2023, 10). Compared to 2022, the proportion of citizens satisfied with the Czech Republic's membership in NATO also dropped from 73% to 67%. 26% of respondents opposed the membership, 7% did not answer the question. According to the available analyses, the level of satisfaction with the existence of the Alliance and the Czech Republic's membership in it is significantly correlated with the level of education, political self-identification on the right-left scale, and the age of the respondents. Voters of the current government parties tend to be more satisfied (voters of the Communist Party of Czechoslovakia (KSČM) or Freedom and Direct Democracy (SPD) tend to be less satisfied) as well as those who are rather satisfied with the current economic and political situation (Čadová 2023).

Czech population on NATO membership opinions in 2023



In addition to support for the Czech Republic's membership in NATO itself, an important indicator of Czech society's relationship to the Alliance is also how the Czech population would vote in a hypothetical national referendum on remaining in the North Atlantic Treaty Organization. Thanks to long-term data from NATO and the Slovak NGO GLOBSEC, both of these indicators can be well compared across the Alliance.

As noted in the last year's version of this study, there was an increase in the overall support for NATO membership among all CEE countries in 2022 compared to 2021, from 63% to 72% (in the case of the Czech Republic from 72% to 87%), which could be assessed as a move to category 5, i.e. very high support.

Table 1: Support for NATO membership in the countries of Central and Eastern Europe in 2022

Indicator	Value	Score	Method of score allocation	
			Value	Score
Total average index of Central and Eastern European countries	72 %	4	81% - 100% = 5 (very high support) 61% - 80% = 4 (high support) 41% - 60% = 3 (medium support) 21% - 40% = 2 (low support) 0.001% - 20% = 1 (very low support)	
Index of CR	87 %	5		

Source: Authors according to Globsec 2022. Individual NATO support values are converted to scores from 1 (very low support) to 5 (very high support). The change in values in individual years on a scale from 1 to 5 (with a higher value corresponding to a higher level of support for NATO membership) has a score from –2 (significant deterioration) to +2 (significant improvement).

9%
increase of support to NATO membership in 2023

Compared to last year, the CEE countries' overall support for NATO membership increased by a further 9% percentage points to 81% in 2023. The Czech Republic, although maintaining its highest score (5, equivalent to a very high support of 87%) compared to the average of other countries in the region, recorded a slight decrease (by 2 percentage points), which can be described as a slight deterioration (grade -1).

Table 2. Change in support for NATO membership in the countries of Central and Eastern Europe in 2023

Indicator	Value	Score	Method of score allocation	
			Change in value	Score
Change in the total average index of Central and Eastern European countries	+ 9 (81%)	+1	decrease by more than 21% decrease by 2% to 20% decrease by 1% to improvement by 1%; status quo increase by 2% to 20% increase by more than 21%	-2 (significant deterioration) -1 (mild deterioration) 0 (stagnation status quo) +1 (slight improvement) +2 (significant improvement)
Index of CR	**-2 (85%)**	**-1**		

Source: Authors according to Globsec 2023. Individual NATO support values are converted to scores from 1 (very low support) to 5 (very high support). The change in values in individual years on a scale from 1 to 5 (with a higher value corresponding to a higher level of support for NATO membership) has a score from –2 (significant deterioration) to +2 (significant improvement).

For all NATO member states, there was an 8% increase in the total value to 70% in 2022 compared to 2021, and in the case of the Czech Republic there was a 4% increase to 66%. Thus, in both cases the score was marked as +1, a slight improvement (final score of 4, same as in 2021). In 2023, overall support across member states slightly deteriorated (marked as -1), while the Czech Republic's index is evaluated as slightly improved (+1) as support increased by 5% (from 66% to 71%).

In 2023, the Czechs' trust in the European Union dropped slightly and currently stands at between 44% and 46%, with up to 50% expressing distrust. The rate of decline is thus comparable to 2022, mainly due to persistent dissatisfaction with the economic situation, fears of inflation, and the threat of an energy crisis. However, the image of the EU is changing in Czech society - people increasingly associate freedom of movement, travelling, and peace with the EU, while negative connotations such as bureaucracy and inefficiency are gradually weakening (Čadová 2023; ČT24 2023; CVVM 2023). The UN has also seen a slight year-on-year decline in trust, currently trusted by just over half of the Czech population (52%), while more than a third (37%) express distrust (Čadová 2023, CVVM 2023).

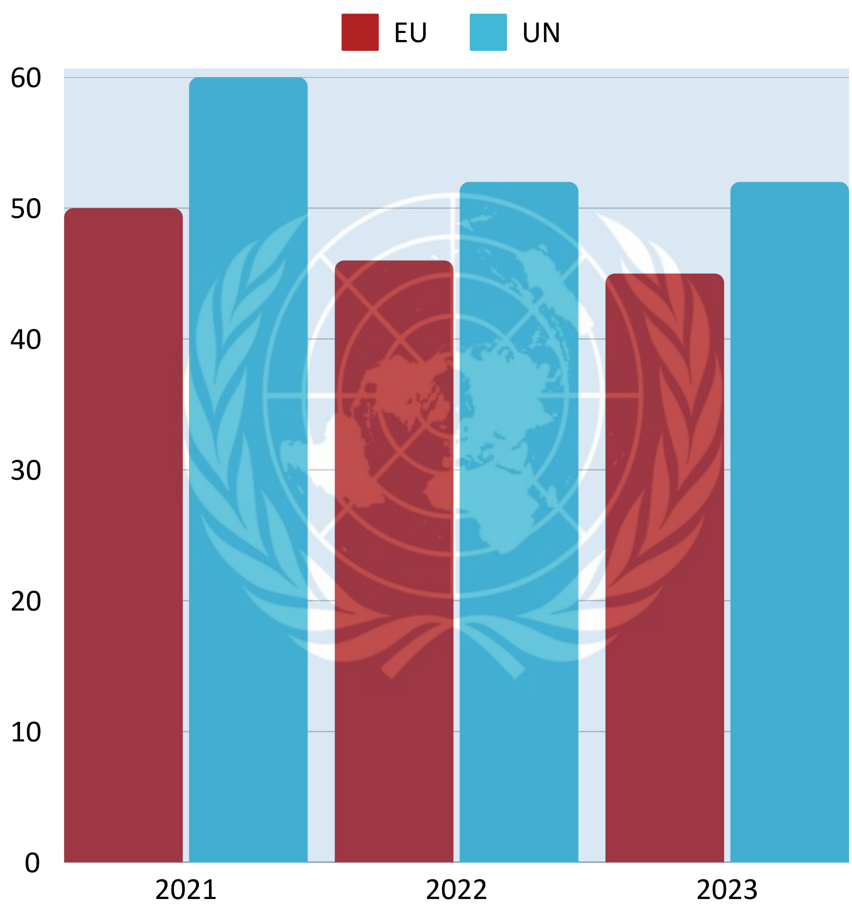
50%

of Czechs expressed distrust into EU in 2023

37%

of Czechs expressed distrust into UN in 2023

Trust in the EU and the UN



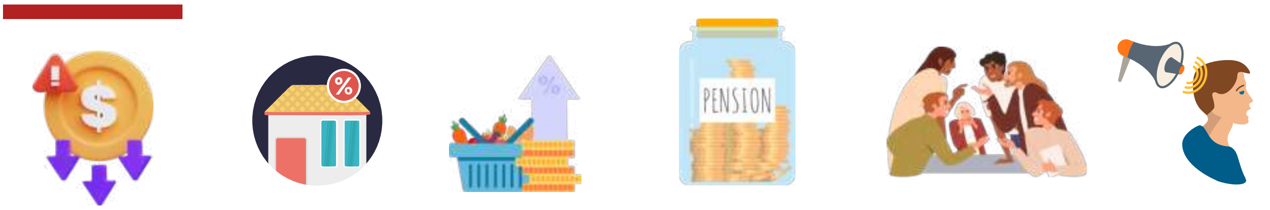
Long-term demographic trends and migration

In 2023, the population of the Czech Republic again increased year-on-year, from approximately 10.83 million to 10.90 million. As in previous years, the increase was due exclusively to the positive balance of foreign migration, when a total of 141.3 thousand people moved to the Czech Republic. Compared to 2022, this is about 60% less, which is related to a significant decrease in the number of refugees coming from Ukraine. The total population growth in 2023 will thus reach 95 thousand people, while the natural change will result in the loss of 21.6 thousand inhabitants of the Czech Republic (CZSO 2024a). The number of deaths also decreased by 6%, by 7.4 thousand to 112.8 thousand (CZSO 2024a).

From the point of view of social security, however, the constant decline in the number of births and the parallel decline in the total fertility rate is a very negative trend. In the first case, there has been a year-on-year decline of about 10% (i.e. about 10.2 thousand children), thus, the year of birth 2023, with a total number of 91.1 thousand children born, is the weakest in population terms out of the last 22 years. Unsurprisingly , the total fertility rate also decreased, to an average of 1.45 children per mother, following the downward trend seen in 2022 and 2021 (CZSO 2024b). A continuation of the trend will result in a decline in the number of births over the next two to three years to a level of approximately 80,000, i.e. the lowest level in the past 30 years (ČT24 2024). In terms of reasons, the declining birth rate is closely related to other serious problems in the Czech society nowadays - economic insecurity, unavailability of housing, and rising costs of living. In the long term, this trend will have devastating effects on the financing of public services (especially the pension system), weaken the overall economic strength of the state, deepen social fragmentation, and increase vulnerability to hybrid threats (ČT 24 2024, Prokop 2024).

The year of birth 2023, with a total number of 91.1 thousand children born, is the weakest in population terms out of the last 22 year.

Reasons of the declining birth



Economic insecurity | Unavailability of housing | Rising costs of living | Strain on public services (e.g., pension system) | Social fragmentation | Vulnerability to hybrid threats

Long-term demographic trends and migration

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Table 3. Meeting recruitment targets in 2021 and 2022

Recruitment target in 2021	1150 (100%)
Admitted	1228 (100+% met)
Of which women	426 (34.6%)
The share of women in the ACR as of 31. December 2021	13.6%
Recruitment target in 2022	1800 (100%)
Admitted	1667 (92%)
Of which women	233 (13.9%)
The share of women in the ACR as of 31. December 2022	14%

Long-term negative demographic trends are already fundamentally complicating the fulfilment of the recruitment goals of the ACR. After the fall in meeting the recruitment goals in 2019 (only 86%), the trend reversed in 2020 and 2021 and the recruitment goals were met slightly above 100%, also due to the effects of the COVID-19 pandemic (Armed Forces of the Czech Republic 2021, Ministry of Defence of the Czech Republic 2021). However, 2022 recorded a decline (down to 92%) in meeting the recruitment goals again, as the wave of interest in joining the armed forces and active reserves just after the beginning of the war in Ukraine was not long and numerous enough to compensate for the later decline in interest later on (Gruntová 2022, Bachorík 2023). The year 2023 then saw a de facto return to the pre-covid level, when the recruitment target for the replenishment of professional soldier staffing was attained at 85%, and in the case of the replenishment of the Active Reserves of the ACR only at 62% (MoD 2023).

That is why the army is always looking for new and innovative ways to bring the military closer to the wider public, attract new applicants and comfortably guide them through the initial phase of the recruitment process. In autumn 2023, for example, a virtual recruitment centre of the Ministry of Defence was launched, allowing to join the army electronically.

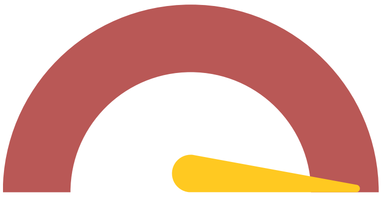
Table 4. Meeting recruitment targets in 2023

Recruitment target in 2022	2200 (100 %)
Admitted	1870 (84.9%)
Of which women	367
The share of women in the ACR as of 31. December 2023	14.3%

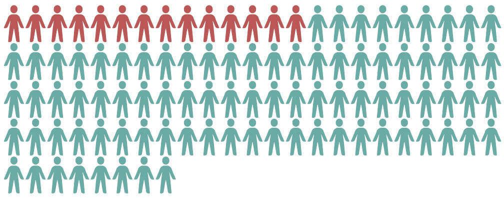
Source: Authors according to the MoD CR 2023 and MoD CR 2024.

A quantitative gender analysis of the Ministry of Defence as of 1 January 2024 shows that women make up 21.15% of the ministry's workforce, of whom 14.33% are professional soldiers. The share of women in civil and state service positions is higher at 43.51% and 47.43%, respectively. The proportion of women in the military has been increasing over the long term, reaching 14.3% in 2024. Despite this, the representation of women in leadership positions is low, for illustration, women make up only 5.3% of command positions.

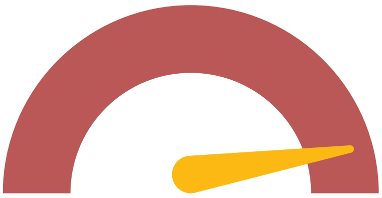
Recruitment target 2021



The share of women in the ACR (average 2021-2023)

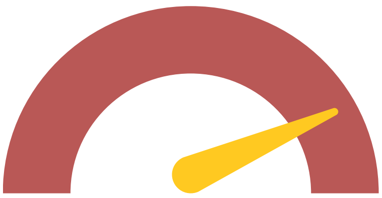


Recruitment target 2022



The share of women in the civil and state service positions

Recruitment target 2023



The share of women in leadership positions

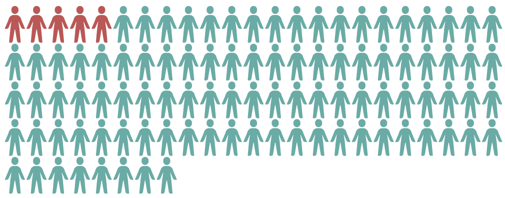


Table 5. Meeting recruitment targets between 2016 and 2023

Year	Meeting recruitment targets of the ACR	Score	Methodology
2016	100+ %	1	1 (100+ % - 95%) -1 (94–80%) -2 (79–60%) -3 (59–40%) -4 (39–20%) -5 (19-0%)
2017	100+ %	1	
2018	98.9%	1	
2019	86%	-1	
2020	100+ %	1	
2021	100+ %	1	
2022	92%	-1	
2023	84.9%	-1	

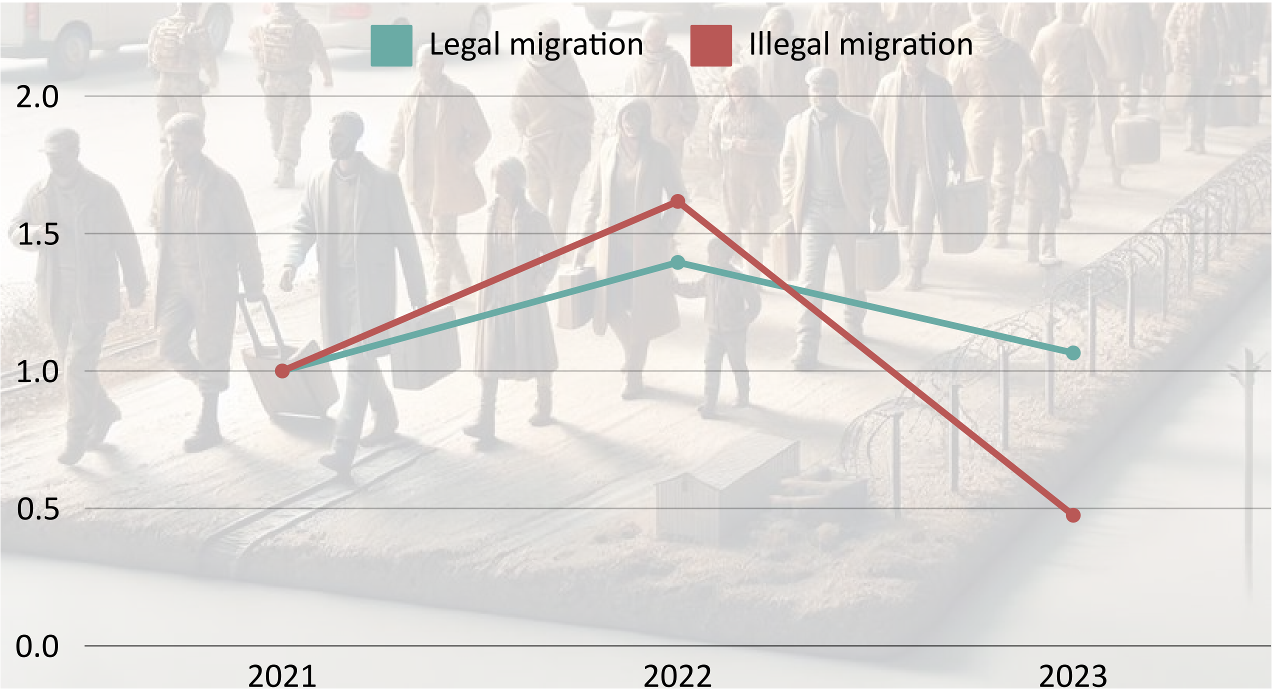
Source: Authors according to the MoD CR 2023 and MoD CR 2024.

Migration to the Czech Republic has undergone significant changes in the last three years. Legal migration showed a steady growth, especially between 2021 and 2022, when there was a 39.5% increase in the number of foreigners residing in the Czech Republic, with the main cause being the influx of refugees from Ukraine. This trend continued in 2023, when the total number of foreigners reached 1,065,740, a further increase of 15.5%. By contrast, illegal migration, which rose dramatically by 161.7% in 2022, plummeted by 52.5% in 2023. Transit illegal migration, which recorded a high increase in 2022, also decreased significantly in 2023 (by 78%), reflecting not only better border control but also changes in migration flows (Police of the Czech Republic 2023, Ministry of the Interior CR 2021-2023). According to the BIS Annual Report for 2023, the state security forces did not observe a significant increase in crime or an increase in the activities of organised criminal groups with the arrival of a large number of refugees from Ukraine. The BIS considers the managed migration wave and the subsequent integration of Ukrainians to be an extraordinary success of the Czech state and society.

Table 6. Migration to the Czech Republic

Category	2021 (pers.)	2022 (pers.)	2023 (pers.)	% change (2021-2022)	% change (2022-2023)
Migration to the Czech Republic (legal)	660,849	922,516	1,065,740	+39.5%	+15.5%
Illegal migration (total)	11170	29,235	13,898	+161.7%	-52.5%
Illegal migration in transit	1,330	21,285	4,742	+1,500%	-78%

Source: Authors according to the MoI CR 2023 Police of the CR CR 2024



Source: Authors according to the MoI CR 2023 Police of the CR 2024

According to STEM (2023), the conflict has also changed the Czechs' views of ordinary Ukrainians, who are now perceived as more acceptable neighbours than Russians. In 2023, only 36% of Czechs could imagine a Russian as a neighbour, compared to 50% in 2016. The acceptability of Russians is now somewhat closer to the level of the 1990s, when only about one-fifth of people would accept them as neighbours.

The majority of the Czech public (79%) already has some experience with Ukrainian refugees, which also means that around half of the Czech population still supports Ukraine, while negative perceptions of Russia as the main culprit of the war remains with stably low overall trust in Moscow (STEM 2023). On the contrary, significantly negative attitudes toward the Roma persist - in November 2023 only 24 % of Czechs could imagine accepting them as neighbours, a level similar to that of foreigners from the Arab world.

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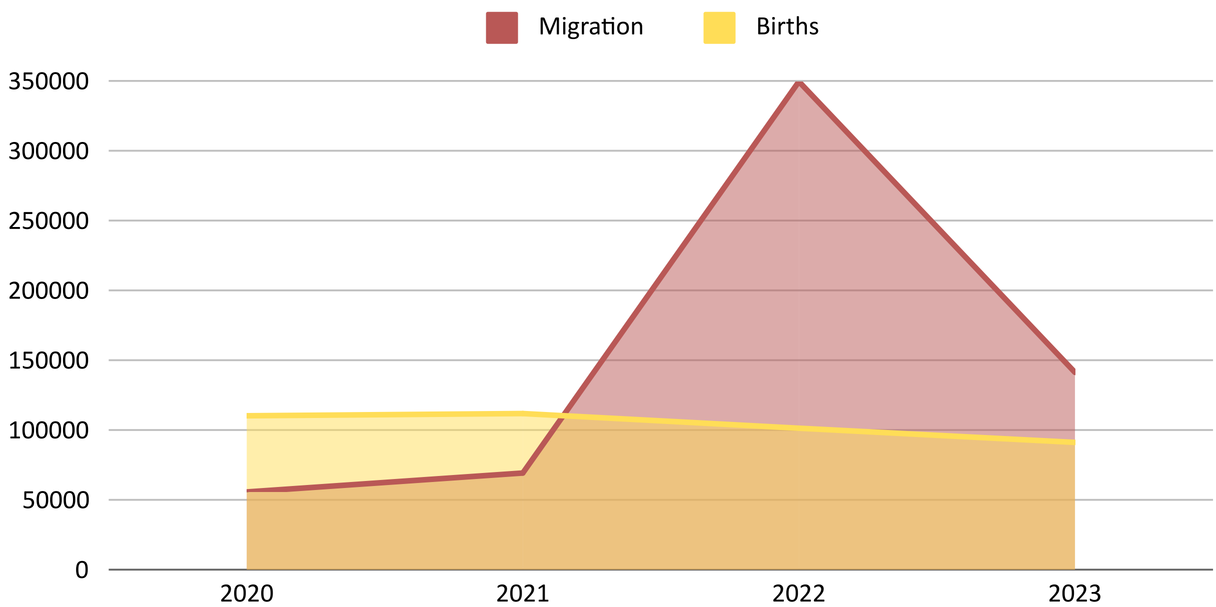


Source: Authors according to the MoI CR 2023, Police of the CR 2024 and CZSO

Implications for the armed forces

The analysis of the current state of Czech society and the broader security environment shows the necessity for the ACR to simultaneously address a number of threats, problems and challenges, closely intertwined with more complex social and demographic changes.

The key to success will be adaptation to the new conditions and adequate response to several crucial practical impacts that have affected and will continue to affect not only the strategic direction and operating capabilities, but also the overall role of the ACR in Czech society. Unfortunately, the declining trust in the ACR continues to weaken the moral support of society for possible military operations, especially beyond the borders of the Czech Republic, while from the political point of view, it may complicate the adoption of key decisions or the implementation of security and defence measures. Society-wide support is absolutely crucial for any armed forces, therefore the ACR must continue to deepen its strategic communication with the public and better explain its role not only as a defence force but also as a key partner in resolving crises, including non-military ones, all the more so in an environment prone to succumbing to a growing number of hybrid threats and disinformation campaigns that quite deliberately aim precisely at destabilising the fragile social cohesion and trust of citizens in the political system, political elites, or public authorities.

The ACR must therefore continue to further strengthen its cyber defence capabilities and actively contribute to society-wide resilience to threats amplified by social networks or advanced technologies such as deepfakes created with the help of tools of artificial intelligence. In addition to technical measures, it is necessary to engage in broader education and informing the public about security, especially military, threats to the Czech Republic, and the irreplaceable role of our allies in NATO and the EU. Although support for both groupings in Czech society remains relatively high, the number of their opponents or uncompromising critics has been slowly growing in recent years. It is therefore in the best interest of the ACR to proactively contribute to the formation of a positive perception of the Czech Republic's allies and partners as a collective guarantee of Czech defence, security, prosperity, and ultimately sovereignty and freedom.
The activities of the ACR in cooperation with other components of the Integrated Rescue System (IRS) within the framework of crisis management, civil protection and response to natural disasters, industrial accidents, and other types of non-intentional threats are also an opportunity to strengthen the positive image of the ACR among the public. In such cases, the ACR has always been able to assume the role of a stable and operational force and, thanks to its deployment, to attract new candidates for service in uniform.

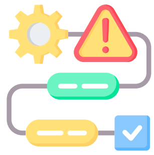
Implications for the armed forces

Public trust

Defence against hybrid threats

Demographic challenges

Public education



Crisis management

The long-term negative trends in demographic development, which represent a huge challenge for society as a whole, provide every reason to continue to use all forms of active, albeit indirect, recruitment. With a declining birth rate and increasing competition in the labour market, the army is already facing an alarming shortage of qualified applicants for service and the prospects for the future do not offer any positive signs of positive change. It will be crucial for the ACR not only to further intensify its recruitment activities, but also to find a healthy balance between adapting to the expectations of the youngest generation and maintaining the necessary level of standards of performance and profile (physical, mental, moral, educational, etc.) set not only for professional soldiers, but also for members of the active reserves. It is their low number and relatively weak interest in this form of service that threatens the ability of the ACR to respond flexibly to domestic security threats, just as the lack of professionals threatens the effectiveness of its deployment in the Czech Republic or abroad. Therefore, it is necessary to continue to reassess the approach of the ACR to the promotion of active reserves and to offer flexible service options to all those who are looking for a way to contribute to the defence of the Czech Republic but cannot commit to full professional service. Part of the boosting of recruitment efforts must include the necessary use of digital technologies and virtual possibilities, along with efforts to reach and facilitate the path to the army for specific segments of the population, such as women, or well-integrated and loyal immigrants (Slovaks, Ukrainians, etc.), whose representation in the army is already growing, but still does not reach the level that would correspond to the current possibilities and needs.

Economic Sector

Antonín Novotný

On the European continent, the war in Ukraine has been going on since February 2022, accompanied not only by human suffering, but also by economic problems, especially linked to the extreme rise in energy prices. In 2023, the effects of COVID-19 were also still present. Nevertheless, the world economy performed better in 2023 than initially expected and continued to grow at a moderate pace. Growth was driven mainly by economic growth in emerging market economies and the United States, while most other advanced economies were more affected by tight financing conditions and considerable geopolitical uncertainty. Global inflation fell markedly as energy commodity prices fell, while underlying price pressures remained elevated. (ECB. April, 2024. Rok ve zkratce.)

Methodology and data sources

For this year, the development in the economic sector of the security environment will also be partially assessed using a set of indicators that will enable better recording of year-on-year changes and, in the longer term, identifying trends in the development of some of the phenomena. In addition to indicators for assessing the economy's ability to generate wealth (GDP) and price and financial stability, some development trends in selected areas are also monitored annually. The use of external sources of state financing (debt ratio), the skills of the workforce, and the level of employment are monitored. These factors have a major impact on the ability of the economy to generate resources for the state to provide defence.

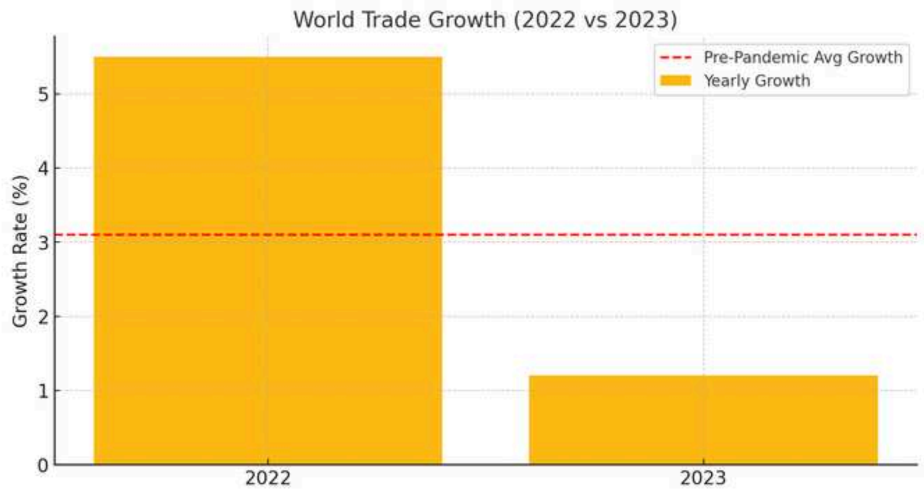
3.5%

global economic growth

Global economic growth was moderate due to tighter monetary policy and high uncertainty, yet the world economy continued to grow at a moderate pace in 2023, with the growth rate remaining at 3.5%, more or less unchanged from 2022. Although growth was lacklustre in historical comparison, it was higher than expected at the start of the year.

Despite continued monetary tightening, it was supported by strong labour markets and robust demand for services. Growth in the world economy was driven primarily by economic activity in emerging market economies and the United States, while demand in most other advanced economies was much more significantly dampened by tight financing conditions and the longer-term impact of geopolitical factors on energy prices. (ECB. April, 2024. Rok ve zkratce.)

World trade was weak in 2023 as import growth slowed to 1.2%, a significantly lower rate compared to the previous year's growth of 5.5% and the pre-pandemic average of 3.1%. This slowdown reflected three main trends. First, there was a shift in global demand from goods back to services as a result of the complete lifting of pandemic-related restrictions. Furthermore, the share of consumption in domestic demand increased, which is generally less trade-intensive than investment. Last but not least, the contribution to world economic activity in 2023 from emerging market economies, where trade responds to changes in economic activity with less intensity, increased. (ECB. April, 2024. Rok ve zkratce.)



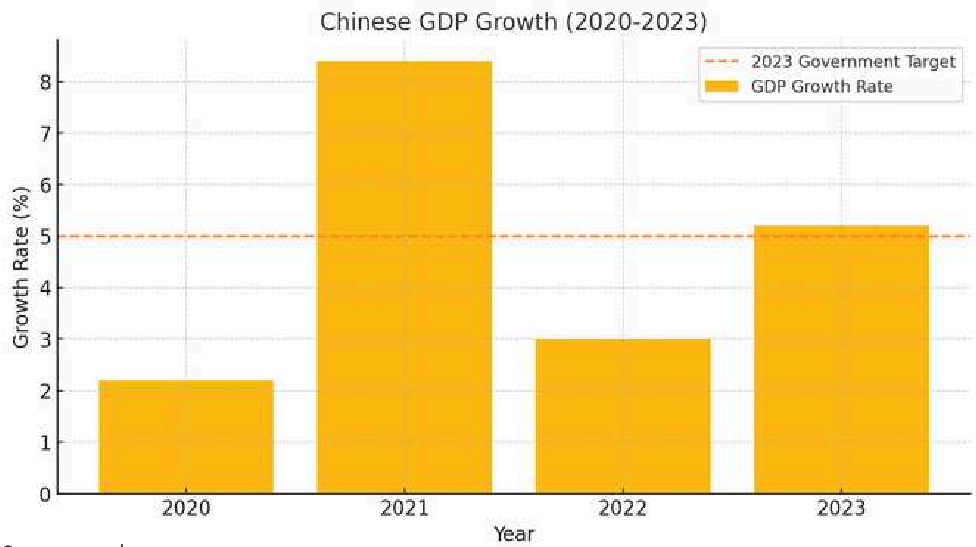
Source: authors

Inflation declined, but underlying price pressures remained elevated. Annual headline inflation as measured by the consumer price index declined from its previous high levels in all OECD member countries except Turkey during 2023, due to lower energy prices. It fell to 3.9% in December and was 5.3% for the full year 2023, down from 7.3% in 2022. (ECB. April, 2024. Rok ve zkratce.)

Energy commodity prices declined during 2023 due to lower demand. Oil prices fell by 4% as weak oil demand in developed economies outweighed the rise in demand following the easing of closures in China. Low oil demand also more than offset both the impact of OPEC+ production cuts as and risks to supply from geopolitical factors, including sanctions on Russia and the Middle East conflict. As a result of lower industrial demand, reduced household gas consumption and mild weather during the winter months, European gas consumption remained below historical levels. A stable supply of liquefied natural gas (LNG) also allowed European countries to start the heating season with full gas storage. (ECB. April, 2024. Rok ve zkratce.)

People’s Republic of China

The PRC is the world's second largest economy after the United States and it was also the country with the largest population. However, India became the most populous country in the world in 2023, overtaking it in the number of inhabitants. After the unstable GDP growth during the pandemic period (2020 growth of 2.2%, 2021 +8.4%, and 2022 +3.0%), the Chinese economy stabilised again, showing annual growth of 5.2% in 2023. (Business news. Čínská ekonomika v roce 2023 překonala vládní cíl.)



Source: authors

China is currently facing several economic problems, the most important of which include the real estate crisis, low domestic demand, and high local government debt. The driving force of the Chinese economy is still strong industrial production, which is significantly reflected in exports due to relatively weak domestic demand. The market is currently growing mainly in volume, but more slowly in total value due to high competition and the resulting price reductions. (Kurzy.cz. Čína, počet obyvatel, HDP, inflace, nezaměstnanost, export, import a obchodní bilance, dluh.)

China's economic problems

Real estate crisis

Low domestic demand

Local government debt

Even during this period, the West's heavy dependence on China for shipping persisted. More than 80 percent of international trade moves around the world by sea. The vast majority of goods from China goes to Europe and America. In addition, China is also gaining increasing influence in European ports. In 2022, Chinese companies owned or operated terminals in 96 ports in 53 countries, and this trend is continuing. (Peak.cz. Nebezpečná závislost Západu na Číně.)
Container shipping is very busy globally and it is getting more expensive. Along with this, the price of imported goods is rising. The impact of shipping prices on the European as well as the American economies was demonstrated during the covid pandemic. The port closures and the consequent surge in demand for goods led to price shocks and shortages of some key products, such as chips, which have had a major impact on car production in previous years.
Although shipping prices have returned to pre-pandemic levels, stability did not last long as the Yemeni rebel attacks on merchant ships transiting the Red Sea intensified. The consequence is that container ships' passage through the Red Sea is down 90 percent year-on-year and ships opt for the longer and thus more expensive route around the Cape of Good Hope.
The sea route between China and Europe is considered to be the world's busiest maritime communication. It is estimated that nearly 30 per cent of all world trade moves this way. European ports in which Chinese state-owned companies have acquired their stakes (Piraeus in Greece, Hamburg in Germany, Rotterdam in the Netherlands, and Antwerp in Belgium) account for more than ten percent of the total container shipping capacity in Europe. (Peak.cz. Nebezpečná závislost Západu na Číně.

Czech Republic

The economic situation in the Czech Republic in 2023 reflected the major shocks the country had been going through in previous years. From the pandemic to the energy crisis.

The Czech Republic is the only EU country that has still not managed to cope with the negative effects of these crises and where economic performance has still not reached the level before the end of 2019.

Russia's aggressive war against Ukraine has prevented a post-pandemic recovery in the Czech Republic and further disrupted the catch-up of average incomes of OECD countries observed in the previous two decades. The sharp rise in energy and commodity prices and the interruption of gas and oil imports from Russia have triggered a cost of living crisis with the risk of wider energy shortages.

10.7%

average annual inflation in CR

Lower global growth, constraints in global supply chains, and increased uncertainty have dampened activity. Inflation has risen to a high level, where it has stabilised. (March, 2023. OECD Economic Surveys: Czech Republic.) The average annual inflation rate in the Czech Republic in 2023 was 10.7%. (CZSO 2024. Průměrná roční míra inflace v ČR v roce 2023.)

The domestic economy continued its unfavourable development in 2023. High prices continued to adversely affect the financial situation of households and businesses and high interest rates, which central banks around the world were using to bring inflation close to their inflation targets, also had a negative impact on consumption and investment. Governments also continued to support the economy through various ordinary and extraordinary measures, but this had a negative impact on public finances. After two slight quarter-on-quarter increases, the Czech economy recorded a relatively sharp decrease and also deepened its year-on-year decline.

The reasons remain the same and are related to high inflation. Businesses faced high input and energy prices, weaker demand as well as labour shortages. Households were cutting back on consumption of goods and services as a result of high energy and food prices and falling real incomes. Foreign trade had a positive effect on domestic production in this period, although deteriorating performance was also evident there. Government consumption had also had a positive effect on GDP, however, reflecting the increased spending in order to support the slowing economy. The situation on the Czech labour market has been unfavourable for businesses for a long time. There is a persistent excess of demand over supply and a generally low unemployment rate. With low unemployment, businesses faced labour shortages in most sectors of the economy.

In 2023, the Czech economy experienced the negative effects of the energy crisis and high inflation, leading to a decline in GDP. For the full year 2023, the Czech GDP decreased by 0.4%. The decline would be mainly driven by lower inventory formation and a fall in household consumption. (Statistika a my. Analýza vývoje ČR v roce 2023.)

The state budget for 2023 ended with a deficit of CZK 288.5 billion, less than the approved budget of CZK 295 billion. (MPO. Analýza vývoje ekonomiky ČR.)

288.5 bn

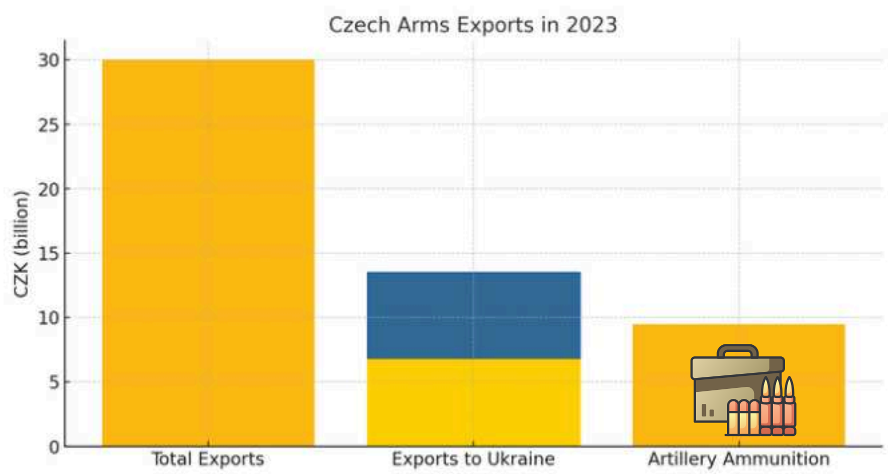
deficit of CZK

For most of 2023, the central bank kept rates unchanged, and only at the very end of the year it made a cut by 25 basis points. Given that the CNB has postponed the start of the interest rate cut cycle by roughly one quarter, the pace of cuts could be relatively large. (Deloitte ČR. Výhledy české ekonomiky pro rok 2024.)

In 2023, the Czech economy was the 12th strongest in the EU. This means a drop by 3 places compared to 2022, caused by the extreme increase in inflation and still low added value of production. The Czech Republic is the best performer in terms of comprehensive economy and GDP investment. Both of these achievements, however, bring along a few “buts”. The gradual increase in robotisation and the still relatively low public debt can be seen as positive. Although boasting a relatively diverse industry with a highly complex coverage, the country is hampered by low added value and the second highest inflation. This was been reflected in food prices, which cost almost half as much in 2023 as in 2015. (Index prosperity a finančního zdraví. Stav ekonomiky.)

The year 2023, still overshadowed by the ongoing Russian invasion of Ukraine, contributed to a growth in sales for arms producers around the world. In the case of Czech companies, sales doubled on average, in some cases they were even sixfold.

According to the Defence and Security Industry Association, Czech arms exports doubled to CZK 30 billion in 2023, with 45 percent of exports going to Ukraine. The main export item was artillery ammunition, 70 percent of the total package exported to Ukraine. (Seznam zprávy. Českým zbrojařům se daří.)



Source: authors

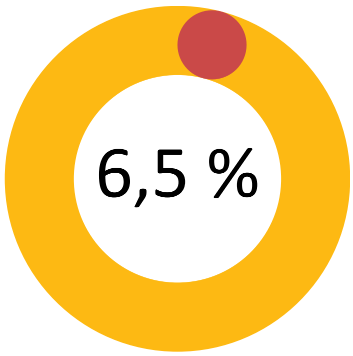
European Union

Economic growth in the eurozone weakened in 2023. The industry was hit particularly hard by tighter financing conditions, high input costs, and weak global demand, while the services sector was initially still supported by the lingering effects of the post-pandemic reopening of the economy. While the ECB's stricter interest rates had a significant impact on economic activity, the labour market remained relatively resilient. The eurozone governments continued to wind down support measures taken in response to the pandemic, energy price shocks, and inflation shocks, partially reversing previous fiscal easing. Headline inflation in the eurozone was falling sharply, helped by the energy component of inflation falling into negative territory as the sharp rise in energy prices from 2022 faded. As the impact of previous shocks was receding and the effect of tighter monetary policy was growing, core inflation also began to ease, supporting the overall disinflation process. However, domestic price pressures became the most important inflationary factors, replacing external pressures, as the labour market supported strong nominal wage developments with workers seeking to offset the earlier inflation-induced losses in purchasing power. (ECB. April, 2024. Rok ve zkratce.)

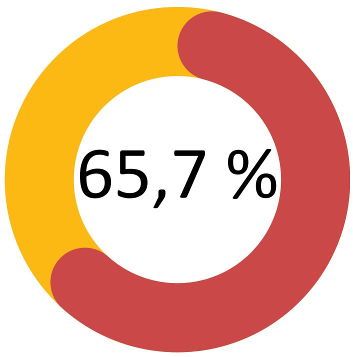
The eurozone labour market remained broadly resilient in 2023, although developments in the labour market and indicators from end-year surveys pointed to a cooling down. The unemployment rate averaged 6.5% in 2023. The labour force participation rate for the 15-74 age group rose to 65.7% in the fourth quarter of 2023, up 1.1 percentage points from the pre-pandemic level.

Headline inflation in the eurozone, as measured by the Harmonised Index of Consumer Prices (HICP), was 2.9% in December 2023, 6.3 percentage points lower than in December 2022.

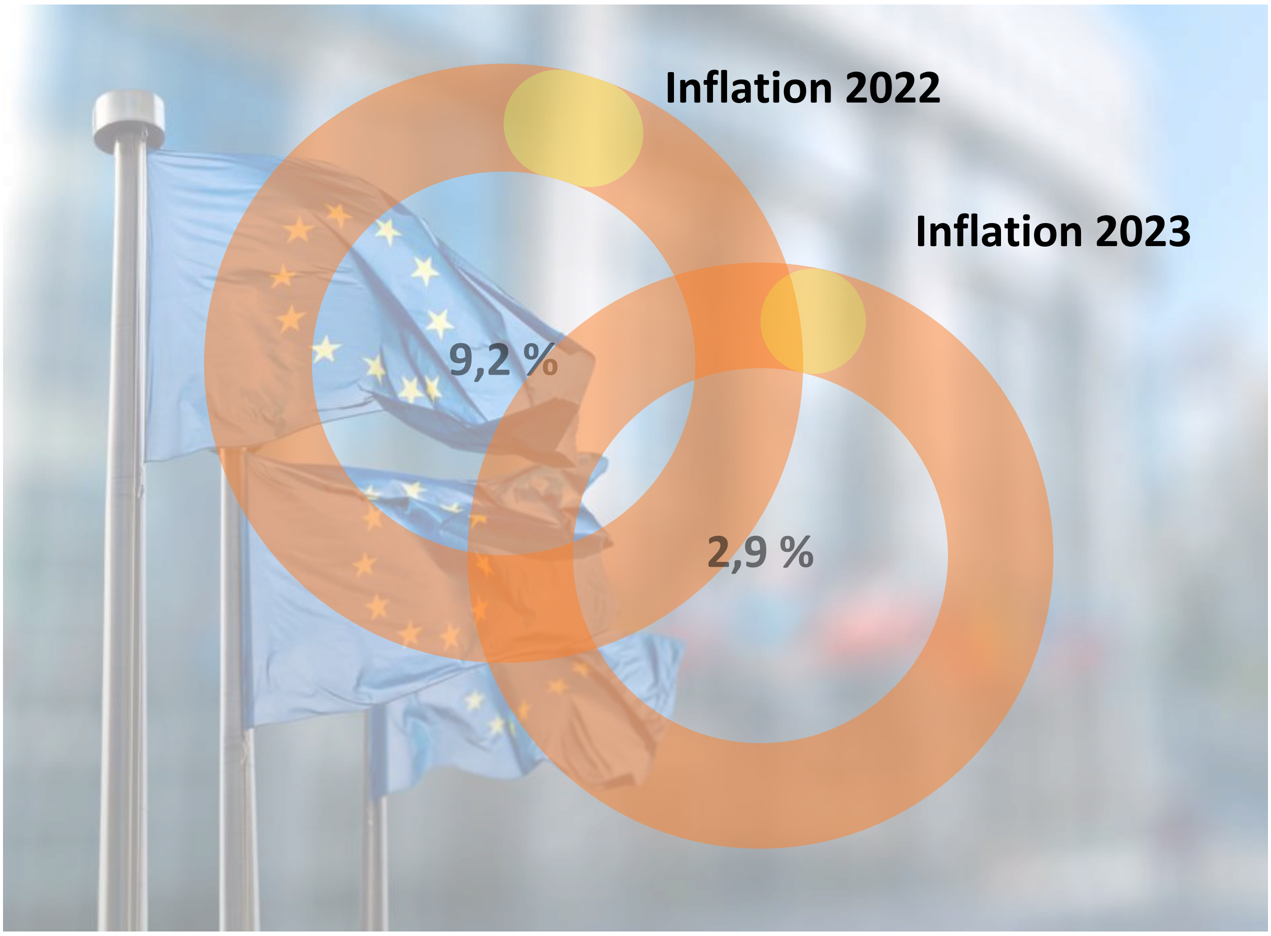
Unemployment rate in eurozone



The labour force participatioin rate

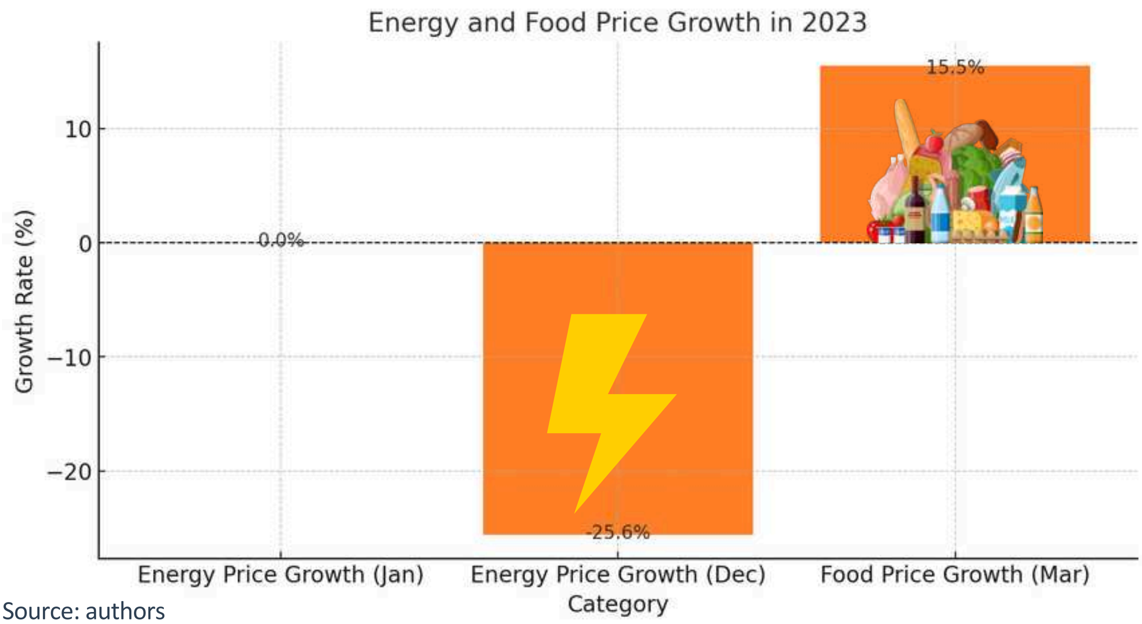


It fell steadily throughout the year, with the process of disinflation also manifesting itself in core inflation as the year progressed.



Increase of the prices of goods slowed faster than those of services, as upward pressure on prices was considerably reduced by easing supply bottlenecks and falling input costs. Service price inflation was increasing until the middle of the year, driven by still strong post-pandemic demand, rising labour costs, and temporary factors related to fiscal measures. Along with the reduction in inflation in the energy and food components, the differences in inflation rates across eurozone also dropped significantly.

Energy prices accounted for more than half of the decline in headline inflation from December 2022 to December 2023. In January 2023, energy price growth was still high, but by the end of the year it fell by 25.6 percentage points to negative values. This development reflected the unwinding of the strong increase in wholesale energy prices that had occurred in 2022. However, energy price growth remained somewhat volatile as wholesale energy markets were sensitive to events such as the conflict in the Middle East. By contrast, food price growth peaked at 15.5% in March 2023.



Source: authors

Afterwards, it was declining strongly for the rest of the year, although it was still above 6% at the end of the year, due to the lingering impact of previous cost shocks induced by energy and other inputs and higher pressures from unit profits and labour costs. (CNB. January, 2023. Globální ekonomický výhled 2023.)

The European Union's weakness remains in its dependence on foreign powers, not only in the area of security, but also in the area of raw materials. For three decades, the political and economic model has relied on companies prioritising shareholder returns over national security. What Europe needs now is a new kind of political risk insurance that mitigates not the consequences of specific disruptions (war, nationalisation) but rather takes into account potential threats to the supply chain and the risk of leaks of data and sensitive technologies. This was the case during the Cold War. It is necessary to adapt to this situation and learn it again. Ensuring national security has two more elements: public trust and social cohesion. These are threatened by external intruders, for example, Russia specialises in polarising opinions, or they may erode due to economic, cultural, and other issues.

Europe need to take into account potential threats to the supply chain and the risk of leaks of data and sensitive technologies.

For years, Europeans have put other interests above national security, especially cheap Russian gas or cheap manufacturing in China. They were skimping on defence. It may be changing, but a large part of the American electorate is fed up with European freeloaders. (Deník.cz. Edward Lukas. Zapomenutá lekce z dob studené války: Za svobodu se musí platit.)

In spring 2023, the European Commission prepared the REPowerEU plan. It contains steps to end dependence on Russian gas supplies by 2027 at the latest. Shortly thereafter, coastal countries began announcing plans to set up new port terminals to pump liquefied natural gas (LNG) from cargo ships. The first ones already started to get anchored in 2023. The main gas flows to the EU countries are thus reversing, as Russia has decided to choose whom it will supply gas to and whom not. It has gradually reduced supplies to the EU so much that most of the gas no longer flows from east to west, but in the opposite direction. (Ekonom. Toky plynu v EU se otáčejí. Jak se s tím vyrovná Česko?) The long-distance pipeline system that used to supply European countries with Russian gas for decades is now left unused, with record volumes of liquefied natural gas heading to EU countries in 2023. The countries of Central Europe, including the Czech Republic, have also become its customers.

Implications for the armed forces

The main risks associated with the growth outlook for the world economy at the end of 2023 included a further escalation of geopolitical tensions, a more pronounced slowdown in the Chinese economy, and more sustained inflationary pressures, which would require tighter monetary policy than expected. The materialisation of these risks would reduce global economic activity. Moreover, global commodity markets remain highly sensitive to the supply-side risks, which could support inflation and dampen global growth in 2024. (ECB. April, 2024. Rok ve zkratce.)

As far as the European or even the Czech arms industry is concerned, the biggest problem is that it has completely lost its capabilities at least in part of the range of its former production. Re-acquiring the capability to develop weapons systems is very challenging and increases with the complexity of the product. Building the development of a weapons system, creating the necessary know-how and technical tradition is a matter of decades.

The loss of continuity in technical development that results from a policy of low military spending is perhaps the most painful - and the hardest to amend.
In this area, the European Commission is setting up the Defence Fund to raise the technological level of the defence industry in Europe. Furthermore, a new regulation, the European Defence Industry Reinforcement Through Common Procurement Act, known as EDIRPA, was adopted in 2023 to encourage member states to jointly procure the necessary equipment. Cooperation can positively influence the cost and efficiency of replacing obsolete and adding modern defence equipment across the Union. Member states need this in view of the ongoing Russian aggression in Ukraine and the outflow in supplies to support the war-affected country. (Euroactiv.cz. 13.9.2023. EU pošle další peníze na obranu.)

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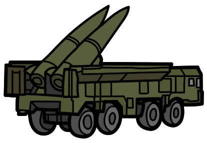
However, in order to secure the future of industry in Europe in 20 to 30 years, education should be radically changed. To construct is to think, to develop creativity based on knowledge of mathematics and laws of physics, which means to increase the difficulty, exactly the opposite of the trend that prevails today. We need to review and prefer technical and science education, allowing for their synergy and combination. For the needs of the defence industry, it is even more difficult because it is subject to different, stricter criteria. While in civilian production, regularly qualified staff and random checks are usually sufficient, in this case, there must be 100%, absolute quality as well as reliance on the staff and their work. Automation can help save some money and there is also quite a lot of room in the defence industry for AI and its technologies, but not in manufacturing. The performance of the European and also the Czech arms industry is not only determined by production capacity or the ability to procure increased quantities of necessary materials.

Implications for the armed forces

Defence industry education



Arms industry efficiency

Sustainable military spending

European defence cooperation

An important point is the functioning of the banking sector, which allows businesses to conduct standard business using common financial operations such as payments or credit. Unfortunately, internal rules of individual banks make this otherwise quite common practice impossible. The so-called ESG taxonomy, which classifies the defence industry as a socially unsustainable industry, is to blame. While the situation in Ukraine has forced the European Commission to start rethinking this policy, the current reality is still based on individual skills, company size, and corporate pressure on the respective banking houses. CZ Defence. (Petr Sklenář. Význam zbrojního průmyslu bude dále narůstat.)

Since the beginning of the conflict in Ukraine, the Czech Republic has issued licences for arms exports worth almost CZK 90 billion. There is a high demand from Ukraine, not only for ammunition and armoured vehicles, but also for more complex systems such as UAVs and intelligence assets.

This places the Czech Republic among the top ten suppliers of military support to Ukraine, not only per capita, but also in absolute terms. Although it cannot compare with the US or the UK, it is an important partner for Ukraine, as it can supply large numbers of armoured vehicles, artillery, and ammunition. This is a logical consequence of the fact that the Czech defence industry has been maintaining and expanding production and service capacities for a long time, which are so necessary in a war situation. This is what makes our country different from many others that have gradually reduced their This places the Czech Republic among the top ten suppliers of military support to Ukraine, not only per capita, but also in absolute terms. Although it cannot compare with the US or the UK, it is an important partner for Ukraine, as it can supply large numbers of armoured vehicles, artillery, and ammunition.

This is a logical consequence of the fact that the Czech defence industry has been maintaining and expanding production and service capacities for a long time, which are so necessary in a war situation. This is what makes our country different from many others that have gradually reduced their capabilities to the point that they eventually lost them altogether. Their restoration is possible, but extremely time-consuming, both technically and financially. (Seznam zprávy. Českým zbrojařům se daří.).

The Czech Republic has - in proportion to its size, its population, its economic strength - a rather powerful arms industry. The future development of the Czech arms industry should be approached very pragmatically, with an emphasis on efficiency and sustainability. It would certainly be wrong to build, in a complicated and costly way, something that may not be needed in a few years. Rather than establishing new companies, it is more logical to use traditional Czech companies within the defence industry.

In shaping the arms production for the future, the path of extensive development of the armed forces and the arms industry should be avoided. The negative experience of the Cold War is enough to warn that military spending - including investment in the arms industry - should be kept at a reasonable level so as not to overly burden individual national economies. The idea is to develop the capabilities of the European arms industry not extensively, but above all with an emphasis on maximum efficiency, and especially to make the best use of its existing capabilities.

Even China is avoiding the path of extensive development of its arms industry capabilities, despite the fact that this world power is now openly competing for hegemony with the USA. Nevertheless, China is increasing the capabilities of its arms industry (including the quantity of production) in a gradual and well-thought-out manner.

China’s expansion through acquiring European ports may be motivated by other reasons besides the business side of things. Through joint-stock companies under its control, China has a stake in 14 of the 29 European ports that provide logistical support to NATO forces or are located near military bases. This situation significantly increases the risk of espionage (Peak.cz. Nebezpečná závislost Západu na Číně.)

Environmental Sector

Jaroslav Galba

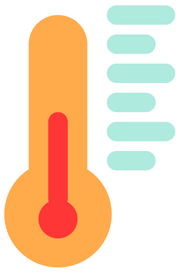
The issue of environmental security has enjoyed a steadily growing interest from experts as well as state and non-state actors with the resources and capacity to influence events. Since the 1990s, Weaver's term "securitization" of the environment has become established (Oels 2012, 191). Hauger (2024, 51-52) sees various environmental phenomena such as drought, extreme weather events, and sea level rise as causal initial inputs that subsequently form the shape of the entire geopolitical system through negative impacts on individual and national security. Many global actors therefore actively participated in efforts to mitigate these climate threats in recent decades, and this also continued in 2023 in both practical and academic terms. Given the potential impact on the armed forces or security in general, the term "climatisation of security" was sometimes used in recent years, with proponents seeing active counter-climatic measures not just as a necessity but as an opportunity for transformation and greater effectiveness of the armed forces (Thomas 2023, 224). Monitoring environmental dynamics and related political-economic phenomena is thus without question highly relevant to any current and future armed forces.

The first part of this chapter focuses on the monitoring of key environmental indicators that approximate the condition of the climate in 2023, selected based on an analysis of literature, in particular the drivers tracked by the Intergovernmental Panel on Climate Change (IPCC 2023). The following part then highlights the security issues related to these changes and the implications that climate change and related phenomena pose for the armed forces.

Indicators

Global average temperature

In 2023, the planet's temperature averaged 1.45±0.12°C higher, compared to the average for 1850-1900, making last year the warmest twelve months in the entire history of measurements.



This is the culmination of the trend of continuous global warming, as overall the period between 2015 and 2023 has been the warmest compared to every other period compared. Last year's record temperatures correlate with the onset of the El Niño event, which can be observed from around September 2023, replacing the previous La Niña event, which had more of a cooling effect.

Another significant phenomenon was the North Atlantic Oscillation, which contributed to a heat wave in June-July and caused significant melting of the ice sheet off southern Greenland (WMO 2024). Unusually warm weather last year was experienced by residents of Canada, the southern United States, central Asia, western Europe, and northern Africa together with the Arabian Peninsula (WMO 2024, 4).

Similarly, 2023 also represented the shared warmest year for the Czech Republic itself, according to Klementinum data since the beginning of measurements in the 18th century (ČTK 2024). The average annual temperature in the Czech Republic was also exceptionally high, reaching 9.7°C. Above-normal temperatures in the Czech Republic were particularly high in September (+3.5°C) and then, in descending order, in January, October, and December.

9.7°C

the average temperature in the CR in 2023

April was an outlier and was colder (- 2.1 °C) than the long-term average (CHMI 2024). According to the IPCC scientists, current global warming will continue until at least 2040 in virtually all modelled futures, especially given the increasing accumulation of emissions (IPCC 2023, 12).

Table 1. Global average temperature anomalies compared to 1850-1900 (pre-industrial era) and the development of average annual temperature in the Czech Republic

Indicator/year	2019	2020	2021	2022	2023
Global average temperature deviation (°C)	1.33 ± 0.03	1.36 ± 0.03	1.20 ± 0.03	1.25 ± 0.03	1.54 ± 0.04
Average annual temperature in the Czech Republic (°C)	9.5	9.1	8	9.2	9.7

(Source: Rohde 2024, CHMI 2024b)[8]

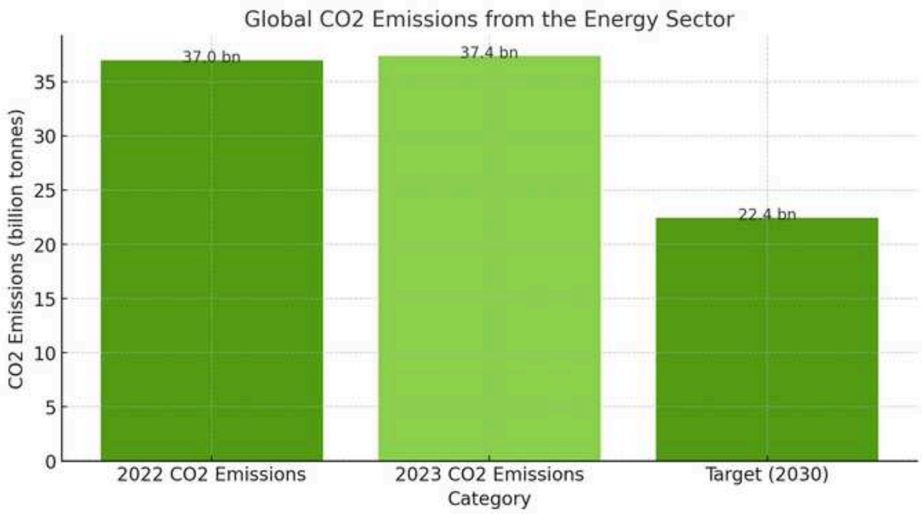
CO2 in the atmosphere

Emissions of carbon dioxide and other greenhouse gases are considered one of the most reliable indicators of environmental development, as they are directly linked to climate change and humanity's efforts to mitigate its impacts.

Compared to 2022, global CO2 emissions from the energy sector increased by 1.1% last year, which means an extra 410 million tonnes of carbon dioxide emitted for a total of 37.4 billion tonnes (IEAa 2024).

[8] The final annual report of the IPCC and WMO compiles data from multiple sources but does not provide exact data for earlier periods. Thus, the presented output from Berkeley represents one of the inputs and therefore its values may differ slightly from the average.

In order to avoid exceeding the global average temperature by more than 1.5°C, countries must reduce their greenhouse gas production by at least 40% below 1990 levels by 2030. The IPCC's 2023 report on the state of the climate therefore shows that current targets and policies will fall far short of achieving this goal (IPCC 2023, 10).



Source: authors

As the Environment Report 2023 has not yet been issued, it is necessary to limit ourselves to stating that while domestic GHG emissions have been steadily declining over the long term, there has been a 2.1% increase in CO2 production between 2016 and 2021 (Ministry of the Environment 2023, 151).

Ultimately, a major factor is how the CO2 emissions produced are concentrated in the atmosphere, where they amplify the greenhouse effect that leads to the warming of the planet. Here, as in recent years, there has been a further increase in the amount of particles.

Table 2. Concentration of CO2 in the atmosphere in parts per million

Indicator/year	2019	2020	2021	2022	2023
CO2 concentration in December of the calendar year	412.74	414.96	417.41	419.66	421.86

(Source: Lindsey 2024)

Situation in the oceans

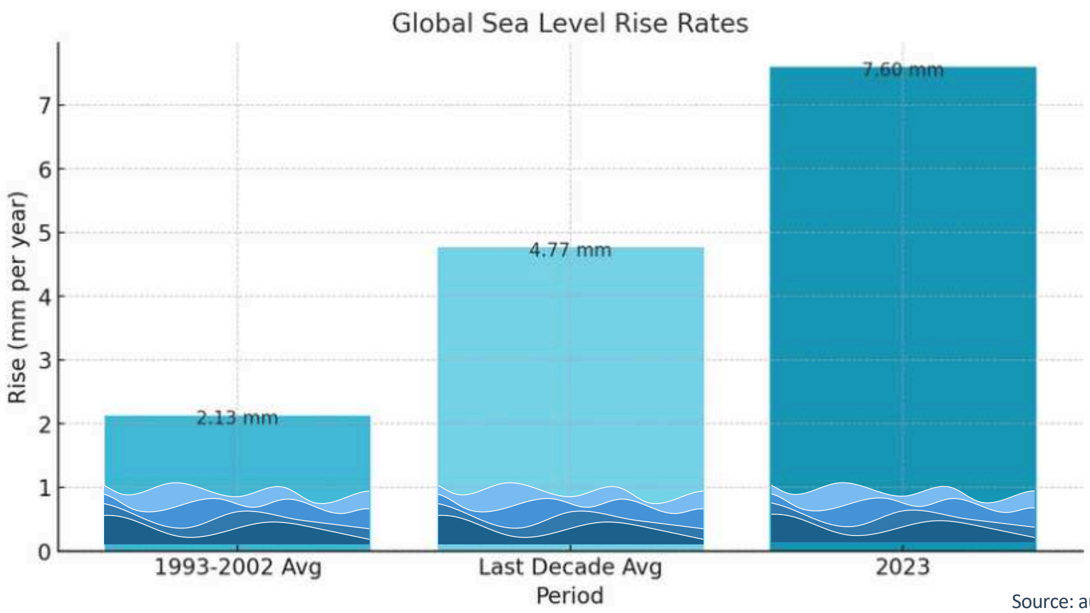
Up to 91% of the total warming of the climate system originates from ocean warming (IPCC 2023, 46). Its temperature increased by 13 ± 9 ZJ[9] last year, an all-time record, further confirming the gradually accelerating rate of warming. This is not a geographically uniform phenomenon.

[9] Unit equivalent to 10^{21} joules

Temperatures rose most markedly in the Southern Ocean, while other parts of the planet experienced partial cooling - this was particularly true in the North Atlantic (WMO 2024, 3-6). As with the rise in global temperature, the warming of the ocean can be attributed, among other things, to the onset of the El Niño event (Copernicus 2024).

Another critical driver of climate change is the rising of sea levels. This has potentially devastating implications, as more than 900 million people live in low-lying coastal areas. Since the start of measurement of the sea level rise using satellite technology, the ever-increasing rate is clearly visible. While between 1993 and 2002 the global rise was 2.13 mm per year, in the last decade it averaged 4.77 mm per twelve months (WMO 2024, 6). Compared to these figures, the 7.6 mm increase in 2023 represents a fairly significant jump.

In addition, it is currently predicted that by mid-century the ocean level could be 20 centimetres higher than today. It makes no sense to consider sea level rise in isolation, as it is (among other things) linked to the condition of the world's glaciers, the melting of which is another important indicator of climate change.



Source: authors

Deforestation

Forest loss not only affects the local ecosystem and biodiversity, but also represents a setback in efforts to reduce the concentration of greenhouse gases in the atmosphere - one hectare of forest can contain up to 50 tonnes of carbon, thus, forests could theoretically contribute up to 30% in the overall reduction of global emissions (UNDP 2023).

By 2023, the Earth lost an additional 28 million hectares of trees,[10] with much greater impact on the ecosystem than in previous years. However, the 2016 high has still not been surpassed. Although deforestation is primarily an anthropogenic activity,[11] in Russia and South Asia, in particular, nearly two-thirds of the trees were lost since the beginning of the 21st century due to natural fires (World Resources Institute 2024).

Table 3. Trend in the planet's tree cover disappearance in millions of hectares

Indicator/year	2019	2020	2021	2022	2023
Loss of cover	24.1	25.73	25.21	22.74	28.17

(Source: World Resources Institute 2024)

Environmental risks and threats

Over the past year, 93.1 million people across the planet were affected by natural disasters.[12] 26.4 million of them had to leave their homes because of this, which is six million more than the observed number of people displaced due to armed conflicts (IDMC 2024, 13). Most of the displaced were from South-East Asia, primarily threatened by floods and storms (19.3 million displaced in total - ibid.).

The most devastating natural event of the past year, however, was a series of earthquakes of 7.5-7.8 on the Richter scale that struck Syria and southeastern Turkey from 6 February 2023. More than 55,000 people lost their lives in the region with another 4.7 million displaced due to the earthquake. The event also destroyed over 37,000 buildings and damaged 200,000 more. Another critical hazard was the flooding in the Horn of Africa, which hit the region after years of ongoing drought and caused displacement of nearly 3 million people (IDMC 2024). The trend of large-scale forest fires also continued in 2023. These destroyed 12 million hectares of forest globally, a record loss since 2001 - 24% more forest area was burned last year compared to 2016, which was the worst year so far (MacCarthy et al. 2024). Canada was particularly hard hit, losing 7.76 million hectares of forest to wildfires alone, an unprecedented number for the country (Richter 2024).

[10] The review deliberately does not use the word forest, as the term "tree cover" also includes plantation trees and some other vegetation.
[11] It is therefore a frequent subject of political or even armed competition, cf. e.g. what is happening around the Amazon rainforest.
[12] Depending on the chosen methodology, some sources report even more.

Table 4. Development of climate events and their impact on human health and property

Parameter/year	Average 2003-2022	2022	2023
Reported disasters	369	387	399
Number of deaths due to disasters	64,148	30,704	86,473
Number of people affected by disasters (in millions)	175.5	185	93.1
Economic losses due to disasters (in billions of USD)	196.3	223.8	202.7

(Source: CRED 2023, CRED 2024)

The data above, retrieved from the EM-DAT database, shows 2023 as above-normal critical in many key indicators compared to the observed average, with the exception of the number of people affected by extraordinary natural events

Last year's temperature record was also marked by a series of exceptionally warm days (50 in the Czech Republic), which resulted in 47,690 deaths in European countries alone. While this is lower than the mortality rate in 2022, when 60,000 Europeans succumbed to heat waves, it is still the second highest number for the last decade. Moreover, experts believe that in recent years there has been some social adaptation of the population to these fluctuations and that if similarly intense heat waves had struck at the beginning of the millennium, the loss of life would have been much higher (Gallo et al. 2024).

47690

deaths in European countries caused by warm in 2023

In the Czech Republic, a major challenge in 2023 was the severe drought, in July spread almost completely over 98% of the country (Bečková 2023). Then, at the turn of the year, the country faced floods caused by early snowmelt combined with heavy rainfall. These were described by the ČHMÚ as exceptional in the context of the last few years, not because of the magnitude of the flows, but because of the size of the affected area, when 257 measuring stations registered some degree of flood activity (ČHMÚ 2024c). In terms of precipitation, 2023 was a standard year with an average annual total of 728 mm, still, with some months highly above-normal (e.g. in November it rained 200% of normal - ČHMÚ 2024d).

According to the IPCC report (2023, 15), every region on the planet can expect an increase in natural disasters and risks in the short term, including associated diseases, floods, high temperature-related deaths, loss of biodiversity, and, in some areas, reduced food production. The degree of impact on individual actors and countries depends on the vulnerability of their systems and their preparedness to face climate change. Similar to last year, the World Risk Index ranked the Czech Republic 178th out of 193 countries monitored in terms of vulnerability to natural disasters. According to the metric, the risk of such events for the Czech Republic remains very low (Frege et al. 2023, 57).

World Risk Index ranked the Czech Republic 178th out of 193 countries monitored in terms of vulnerability to natural disasters. Such events for the Czech Republic remains very low.

Food security

A critical global threat within the environmental sector is posed by hunger. Last year's development basically followed the trend of the last five years, and once again there was an increase in absolute numbers in the number of people suffering from malnutrition in the world. his is in direct contrast to the situation prior to the COVID-19 pandemic, when this number was significantly reduced over the long term.

The Democratic Republic of the Congo, Nigeria, and Sudan were the most affected by severe food insecurity in 2023. In percentage terms, the Gaza Strip stands out, where the annual food security report identifies the entire population there as vulnerable and in IPC phase 3 (crisis) or worse. This is with the prospect that if the humanitarian crisis continues, up to half the population could be suffering from famine (IPC 5) and dying from food shortages by 2024 (FAO et al. 2024, 11).

Table 5. Trend in the number of people suffering from malnutrition

Year	2019	2020	2021	2022	2023
Number of people suffering from malnutrition (in millions)	581.3	669.3	708.7	723.8	733.4
Proportion of the total population of the Earth (percentage)	7.5	8.5	9.0	9.1	9.1

(Source: FAO et al. 2024)

Global food security continued to be disrupted by the ongoing Russian invasion of Ukraine, which significantly affected the ability of this major agrarian country to produce and export grains and other agricultural commodities such as sunflower oil. In July 2023, the Russian Federation withdrew from the so-called Black Sea Grain Initiative, which was supposed to protect food exports from Black Sea ports after the agreement in 2022. According to Kyiv, Russian forces destroyed 300,000 tons of Ukrainian grain in only four months before October last year (Reuters 2023). Even so, the Wheat Subindex remained well below the levels of the first year of the open, high-intensity conventional war over the past year. While it climbed to 261 index points shortly after Russia’s withdrawal from the grain initiative, at one point in 2022 it was as high as 400 points (European Council 2024). Food prices in the EU, for example, fell by 13% year-on-year. However, this is not a global trend. By contrast, consumers in some vulnerable countries such as Liberia and Zimbabwe had to spend more than half as much on food security as in 2022 (Emediegwu 2024).

According to Kyiv, Russian forces destroyed 300,000 tons of Ukrainian grain in only four months before October last year.

Political reaction and mitigation

The World Economic Forum’s 2023 Global Risks Report identified natural disasters and extreme weather, along with failure to mitigate the impacts of climate change, among the biggest risks to humanity in the short term. However, looking at the challenges over a ten-year time horizon, environmental risks had already occupied the first four places of the assumed ranking (WOF 2024). The outlook for the global economy thus remained similar to that of 2022, with the focus on adverse changes in the environment.

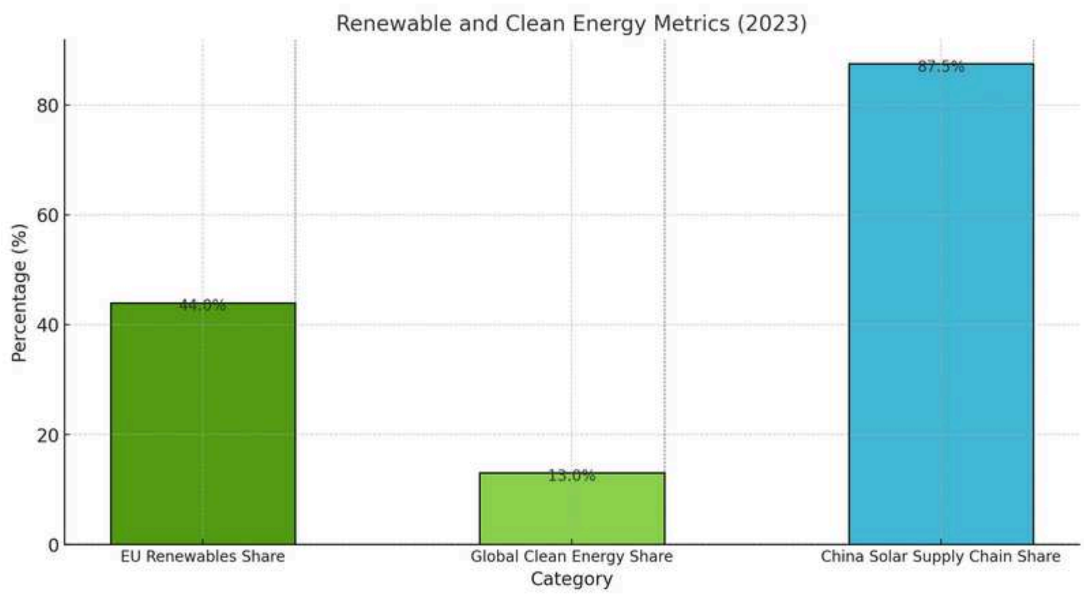
Triumvirate Environmental, "COP28 Conclusions: We All Must Work Together, 2023

The most important environment-related political event was the UN Climate Change Conference (COP28), which took place in Dubai in November/December 2023. The conference was preceded by the release of a Technical Dialogue of the First Global Stocktake, which concluded that the Paris Agreement targets would not be achievable if current trends continued, consistent with the ICPP findings above.

of the First Global Stocktake, which concluded that the Paris Agreement targets would not be achievable if current trends continued, consistent with the ICPP findings above. At the conference itself, representatives of nearly 200 countries explicitly called for a shift away from fossil fuels for the first time and expressed their commitment to accelerate climate goals, including tripling renewable energy production by 2030 (United Nations 2023). These commitments were criticised by Russia, which considers the required technological transformation to meet the new goals to be very costly and ultimately uncertain (The Moscow Times 2023). According to Townend (2023), the push for clean energy also poses a dilemma for many developing countries that will not be able to achieve such a transition without sufficient international assistance. Another outcome of the conference was the establishment of a USD 700 million joint fund to provide financial support to developing countries suffering from the effects of climate change. However, compared to the amount of damage these countries face (estimated at between USD 100 to 580 billion annually), the resources allocated can be described as grossly inadequate (Becker 2023).

The European Union continued to invest under the umbrella of the Green Deal, which is expected to reach EUR 1 trillion by the end of the decade. Although the vast majority of European respondents still agreed with the intention to reduce greenhouse gas emissions to a minimum (88% - European Commission 2023) and the target set by the European Climate Regulation 2018/1999 remains valid, very few of the environmental measures of the Commission were unilaterally supported. Last year, Conservative MPs succeeded, inter alia, in blocking a regulation halving the permitted standards for pesticides in agriculture by 2030. The issue of Europe's strategic autonomy and how it can be reconciled with the decarbonisation of industry was also widely discussed (Guillot and Cater 2023).

Globally, clean energy production grew by almost 50% last year and was responsible for around 13% of global energy production (Viisainen and Evans 2024). The European Union surpassed its all-time high, with renewables accounting for 44% of the total mix. In particular, the increase in wind and solar energy production became a key factor. Wind has even overtaken gas in Europe for the first time in history (Brown and Jones 2024, 6). China is also an important player in this field, as it is responsible for about a quarter of the greenhouse gases released into the atmosphere. Although it remains one of the fossil fuel powers, it managed to achieve the level of clean energy production needed to sustain the hoped-for "1.5°C scenario" in 2023, and is also a hegemon in solar energy, maintaining a share of between 80-95% of these supply chains (Myllyvirta et al. 2023). However, given the current scale of Chinese emissions, the eventual achievement of true carbon neutrality will be extremely challenging (Myllyvirta et al. 2023, 121).



Source: authors

Development in the Czech Republic

The Czech Republic remains, together with Germany and Poland, among the largest producers of electricity from coal, with a share of the energy mix well above the EU average (Brown and Jones 2024, 6). In the Czech Republic, the steps taken in the fight against climate change in 2023 include the adoption of the updated Concept of Protection against the Consequences of Drought in the Territory of the Czech Republic for the period 2023-2027, under which the state spent CZK 26.8 billion to combat this risk (ASZ 2024).The legislative process for the designation of the protected landscape area Soutok along the Morava and Dyje rivers, which went through the comment procedure last year, also continued. For the second year, the Czech Republic is one of the founders of the Climate for Peace initiative, which aims to coordinate a range of projects and approaches to climate security at the international and local level. Specifically, the Czech Republic is a supporting nation for the sustainable early warning system project (Climate Diplomacy).

Another potentially significant development may be seen in the so-called climate action, which the authors first discussed in the 2022 Security Environment Analysis. It was the first of its kind in the Czech Republic to sue the government and selected ministries directly for their insufficient approach to limiting emissions and fighting climate change. While the Municipal Court in Prague found in a 2022 decision that the government had not done enough to meet its obligations, the Supreme Administrative Court verdict in February 2023 overturned that decision and remanded it to the first instance court for a new hearing.

In its new decision of October last year, the Court rejected the claim, stating, inter alia, that "...Article 2(1)(a) of the Paris Agreement, which governs the Parties' overall temperature targets, does not impose an obligation to reduce emissions by 81%, or 84%, or 89.76% by 2030. The EU regulatory framework for climate does contain an obligation to achieve climate neutrality by 2050, but this obligation is not quantified for the Czech Republic and is therefore not enforceable in court without more detailed legislation" (Municipal Court in Prague 2023). The Court thus practically concluded, in view of the opinion of the Supreme Administrative Court, that the Paris Agreement does not directly oblige the Czech Republic to reduce emissions to the mandatory limit and that any failure to comply with the obligations arising from it cannot be challenged through the current norms of national law. The lawsuit fits into the context of similar initiatives that can currently be traced elsewhere in Europe. One similar case (Verein KlimaSeniorinnen Schweiz v. Switzerland) has also been decided by the European Court of Human Rights and its conclusion is likely to have jurisprudential implications for the decision-making practice of courts across the EU. However, this decision falls within the timeframe for the 2024 analysis and thus will not be discussed here.

Environment and conflicts

Despite the fact that adverse environmental events and impacts can act as a significant factor in the dynamics of armed conflict, it is difficult to identify large-scale armed conflict on a purely environmental basis. According to the World Water portal, 55 conflicts were triggered due to water, or the lack of it, in 2023. However, it should be clarified that the database-recorded conflicts are often very low-level incidents (Pacific Institute undated). Looking at the total number of incidents related to water resources, it is nevertheless an 89% increase from 2021 (Water Diplomat 2024).

According to the World Water portal, 55 conflicts were triggered due to water, or the lack of it, in 2023.

The notion of the first "climate" or "water" war has been long attached to the nexus of armed clashes in Sudan, where the situation escalated with power struggles last year. While 11 million Sudanese did not have sufficient access to water in November 2022, this number rose to 15 million after another outbreak of fighting in the spring of 2023 (ACAPS 2023). Although Sudan is regularly ranked among the countries most affected by climate change (which is causing water and land scarcity), there are also views that see these phenomena as correlation rather than causation and consider unsustainable economic models and political or tribal rivalries as the cause of the conflict. Similarly, Kim and Garcia (2023, 19) also address the issue of environmental conflicts in the overall Middle Eastern space, seeing water and food scarcity more in the context of an unstable political situation than climate change, based on an analysis of a number of studies.

However, it is also necessary to consider situations where environmental factors are not at the origin of the conflict but contribute to its escalation or influence its course. The results of Ide's (2023, 77) research show that the impacts of climate-related disasters can increase the intensity of armed conflict (in 29% of cases studied), but also reduce it (33%) or have no significant effect on it (38%). Thus, it cannot be claimed with 100% confidence that a climatic disaster is an escalating phenomenon in itself, while the opposite is not necessarily positive either. This may be the case, for example, when the parties are so affected by the aftermath of a disaster that competition loses priority. At the same time, however, the experts interviewed by Mach et al. (2019, 194) expect a 13% increase in the risk of conflict occurrence in the event of a global temperature rise of 2 degrees Celsius in the coming decades.

It cannot be claimed with 100% confidence that a climatic disaster is an escalating phenomenon in itself, while the opposite is not necessarily positive either.

The Deputy Representative of the UN Representative for Political Affairs and Peacebuilding identified climate change as a "threat multiplier" already in 2019 (UN 2019) and this was particularly evident over the past year in regions suffering from a range of other issues affecting the quality of life and security there. The new Security Strategy of the Czech Republic, issued in 2023, has a similar understanding of climate change, describing its impacts as "a catalyst for the emergence of a wide range of anthropogenic and natural threats" (Czech Republic 2023, 11). Often mentioned in this perspective is the situation in Central Africa, with ongoing disputes between cattle herders and farmers over access to a dwindling land and water resources. For example, in Nigeria (which is considered one of the ten most climate-vulnerable countries in the world), this conflict can also be identified as current in 2023. It is the rivalry in access to resources or dramatic reductions in living standards due to disasters that can act as an element that intensifies tensions between various segments of the population.

Impacts of military operations

175 mil. tonnes

of CO2 in the first two years of U-R war

The destructive impact of armed conflict on the environment is not a new thing. However, since WWII it is difficult to find a conflict with such marked consequences as the Russian aggression against Ukraine. And this also applies to the environmental sector. De Klerk et al. claim that the first two years of the war produced 175 million tonnes of CO_2 (de Klerk et al. 2024). Although the analysis includes indirect emissions (such as those caused by airlines forced to take longer routes away from the theatre of war), the impact of war is undoubtedly a significant impediment to meeting the climate targets set by the Paris Agreement or COP28. The most significant polluter in the conflict is the consumption of fossil fuels during transport or manoeuvres - in total, estimated 44.6 million tonnes of carbon dioxide have been emitted into the air in this way (de Klerk 2024, 6-7), which, in addition to the importance of mobility in modern conflicts, also illustrates the high energy intensity of contemporary or morally obsolete military assets.

The significant single event of the war from the environmental point of view was the breach of the dam and destruction of the Kakhovka reservoir in southern Ukraine on 6 June 2023. The subsequent uncontrolled flow of the Dnipro river flooded 83,000 hectares of surrounding land and destabilised the local landscape. A more immediate threat was the emptying of one of the largest water reservoirs in Europe, which put 700,000 people at risk (UN 2023a).

Zaporizhzhia Nuclear Power Plant., (Wikipedia, 2023).

In addition to the direct operational implications for the then ongoing Ukrainian counter-offensive, the dam breach is particularly significant with respect to the long-term risks related to the fertility of the affected land, biodiversity, and possible contamination of land and water due to the nearby Zaporizhzhia nuclear power plant (UKCEH and HRW 2023, 86-94).

It is thus undeniable that Ukraine's environment will remain marked by the conflict in the long term, even after the fighting itself ends. This is also due in particular to the extraordinary intensity of fire on the battlefield (estimated at 17.9 million artillery shells by February 2024) which has damaged 1,195,000 hectares of land, including forests and farmland (de Klerk et al. 2024). In addition to recovery and reconstruction work, landmining is another critical threat to peace. Even with the use of robotic means and AI assistance, it is estimated that the removal of landmines will ultimately cost USD 37 billion and take decades to complete (UN 2023b).

Categorisation and development of greenhouse gas emissions in wartime Ukraine

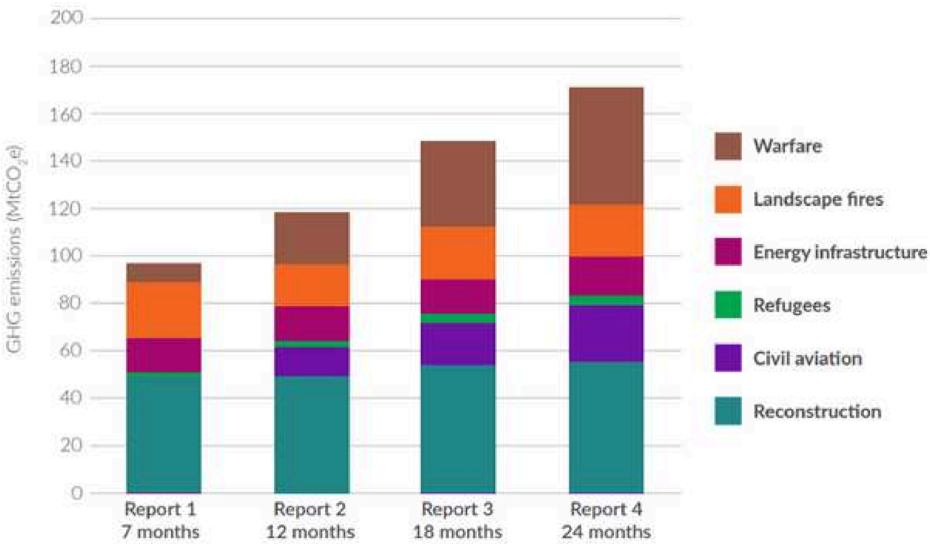


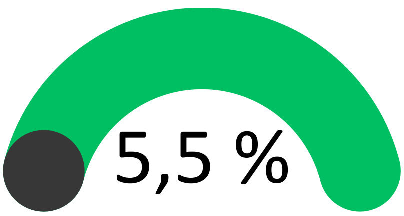
Figure 1. Growth of war emissions

(Source: de Klerk et al. 2024)

The military clash between Israel and Hamas in 2023 also caused extraordinary damage. Although the Gaza Strip had long faced a number of environmental problems prior to the start of conventional fighting in October 2023, the escalation of the conflict caused a sharp deterioration in the situation. The issue of food and drinking water scarcity has already been outlined above, but it is also necessary to mention the negative impacts of the fighting on the ecosystem itself. Gaza's waste management system collapsed almost immediately from October, which took a significant toll on the environment in a cramped area that produces around 1,100 tonnes of waste per day. Combined with unburied human remains, fugitive dust, fumes from destroyed equipment and fuel, the air contamination there carries a serious risk of spreading respiratory and cardiovascular diseases, which children are particularly susceptible to (United Nations Environment Programme 2024, 37). The destruction of Gaza is accompanied by another finding of a UN report that recorded the tonnage of destroyed buildings in the area at 39.2 million tons of rubble. This is thirteen times more debris than found in all other monitored conflicts combined since 2008 (ibid., 24). The operating procedures and means deployed in the fighting in Palestine can thus be described as extremely destructive from an environmental perspective.

Armed forces in the environmental context

The armed forces interact with the climate in several different ways, which indicates their variable position within the environmental sector. They can be the agent of environmental damage, as illustrated above, but also an actor engaging in the political debate on climate change as well as an actor whose actions and capabilities constrain or influence efforts to mitigate climate change (Clarke 2023). Volger adds a fourth level when, in light of the melting of the Arctic and its (potential) militarisation, he identifies armed forces as a geopolitical tool in the current Anthropocene epoch (Volger 2024).



Military sector global greenhouse gas production

The carbon footprint of the armed forces is therefore a widely discussed issue. The exact value of the climate impact of military sector operations cannot be stated, but the most frequent estimate is around 5.5% of total global greenhouse gas production (Parkinson and Cottrell 2022, 9). Problematic in trying to quantify this is the lack of transparency in data provided by some of the actors - only 10 alliance states published reports on armed forces in relation to climate in 2023 (Hartwig 2024) - and further also the question of what to actually measure as emissions in the military.

Indeed, the data published by individual countries under the UNFCCC only include the consumption of fossil fuels by the armed forces. According to the Military Emissions website, which addresses the issue, the actual numbers can be up to 10 times higher (Military Emissions 2024).

Research on the UK defence sector, for example, has identified the relevant actors there (both the armed forces and their industrial suppliers) as responsible for 1.4% of the UK's CO_2 emissions (Parkinson 2020). Based on defence spending, one estimate calculated that NATO countries alone produced around 233 million tonnes of greenhouse gases in 2023. That would be more than the whole volume released by certain countries alone (Transform Defence 2024).

The Alliance has long taken a proactive approach to climate change. It has already adopted an action plan on climate change in recent years and has taken environmental issues into account in its new strategic concept. In 2023, the EU followed up on the conclusions of the Madrid and Brussels summits, where the intention to become a leading actor in the fight against climate change was emphasised. The Vilnius summit confirmed the establishment of the Alliance's Climate Change and Security Centre of Excellence, which was subsequently launched in May 2024. At the same time, the Alliance also published a methodology for its member states on how to report their greenhouse gas production (NATO 2024).

Singing ceremony, (de Klerk et al., 2024))

This rhetoric at the alliance level was accompanied by a trend towards the adoption of environmental strategies by organisations or armed forces directly, which was particularly visible in the last few years. In the United States, the first branch was the U.S. Army, which adopted its "Climate Strategy" back in 2022 and defined a set of 11 ambitious goals, including the goal of having its entire non-tactical fleet electric by 2027 or reducing all emissions from its own buildings to half of the 2005 levels by 2032 (U.S. Army 2022, 6).

That same year, the United States followed the lead of, for example, France's defence department by issuing its "Climate & Defence Strategy". This year, the German Bundeswehr also joined the major players with its "Strategy on Defence and Climate Change". Ongoing efforts indicate that countries are treating climate change and the environmental environment as a relevant and critical phenomenon for the current and future operations of their armed forces.

In terms of the domestic environment, the Czech Republic updated some of the key documents that also touch on environmental issues in recent months. In addition to the already cited security strategy, climate change is also mentioned in the Defence Strategy of the Czech Republic 2023 and in the Czech Armed Forces Development Concept 2023 (CAFDC 2023). The first of these documents essentially replicates the security strategy, seeing the impacts of climate change as a factor affecting the security environment with the potential to undermine the infrastructure and defence capability of the state. At the same time, it also mentions the planned reflection on these impacts on the armed forces and their operating procedures "where practical" (Ministry of Defence 2023, 6, 7). CAFDC 2023 then again identifies climate change as a "threat multiplier", while it also mentions the "global retreat from fossil fuels" and environment-related requirements for personnel training, force sustainability, and infrastructure (Ministry of Defence 2024, 10). Thus, although the newly adopted strategic documents reflect changes in the environmental sector, it can still be said that these are not given any special attention in the documents mentioned.

The Ministry of Defence's climate ambitions likely fall short of those of countries like the U.S., and leadership in armed forces decarbonisation is not a primary goal.

A follow-up step, which should have been completed last year, is the development of a more focused strategy mapping the Ministry of Defence's ability to contribute to "improving the climate and protecting the environment", which is one of the tasks the Czech Republic has committed to within NATO (Kaliba 2023). However, even given the budgetary settings, it is probably not possible to assume that the ambitions of the Ministry of Defence in the fight against climate change are close to those of, for example, the U.S., and that the country is striving to be a leader in the field of decarbonisation of the armed forces. Also, according to Hanáková et al., the The ACR has not been as active in the case of studies and outputs related to environmental issues in recent years as in the past and its efforts are even described as stagnant compared to the alliance production (Hanáková et al. 2022).

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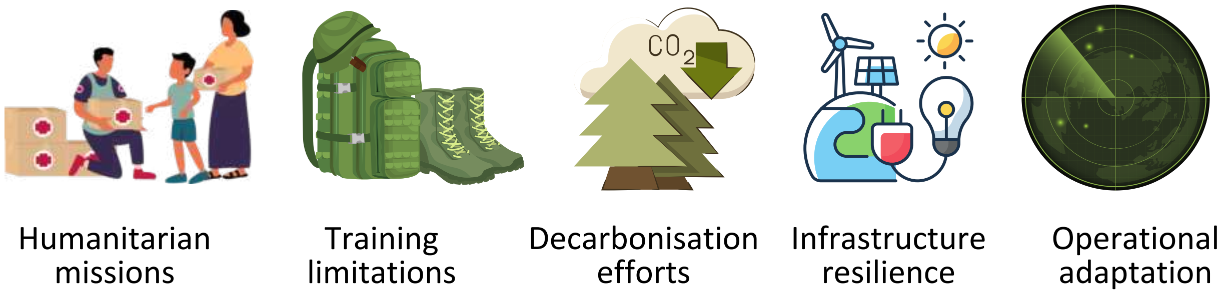
Implications for the armed forces

Climate change is or will be able to affect armed forces around the world at the strategic, operational, and tactical levels. In the following pages, therefore, the authors discuss selected key implications of the environmental sector for the armed forces. For better clarity, the different aspects are discussed according to the DOTMLPF framework:

Implication to armed forces



Doctrine and Organisation

According to Carniel et al., climate change "will require the more extensive deployment of armed forces and a wider adoption of dual-use and autonomous platforms such as unmanned underwater vehicles" (Carniel et al. 2023). Actors should therefore take climate into account in their doctrines in light of the rapidly changing environment. The intention to use armed forces in the future will probably not only be linked to the ability to deter or counter an adversary, but also to the need to respond to natural disasters and other challenges. In principle, environmental factors have the potential to influence (1) the conditions that forces will face in conducting operations, (2) the areas and regions where forces will conduct operations, and (3) the types of operations that will be conducted.

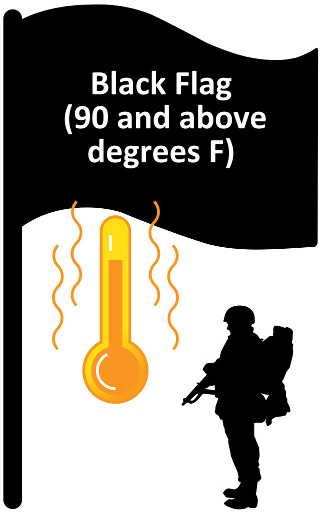
In terms of deployment, the dynamics in this regard can be illustrated especially by the possible increase in the number of areas of interest where countries may wish to operate. In particular, warming in the Arctic (which is occurring three times faster than the global average) results in the melting of ice and the creation of seasonal shipping lanes that attract interest of various actors. NATO may thus prospectively wish to ensure freedom of navigation in this environment, which may point to a lack of capability among some member states to supply these tasks (Carniel et al. 2023). The growth of megalopolises and the increasing pressure to provide resources and services to populations in vulnerable areas also increases the likelihood of deployments to humanitarian missions in such exposed regions and areas. Climate change may therefore result in an increase in first aid rescue tasks and assistance activities carried out by the armed forces in the aftermath of natural disasters.

To illustrate this, Clarke (2023) shows a steadily increasing linear trend of the Australian military deployments in disasters between 1997 and 2021. In the Czech Republic, this was been represented in the past, for example, by the deployment of the army during the floods or tornado in South Moravia in 2021 and the fire in the Bohemian Switzerland National Park two years ago. Thus, changes in operating concepts and doctrines can be expected as well as impacts on the composition of task groups and the organisational form of the armed forces as such.

Training

Climate change has resulted in an increasing number of cancelled or postponed exercises due to unsuitable conditions (Department of Defense 2019, 10). Rising global temperatures, desertification of the landscape or excessive humidity in the coming years and decades will lead to a further increase in the number of days when physical training will simply not be possible due to increased health risks (black flag day). Under the current methodology used by the United States, for example, when deploying to Iraq in the near future, training could not take place on approximately 160 days per year. As a result, this will lead to lower readiness and operability of members of the armed forces (Carniel et al. 2023). Not only is mission training at risk, but also routine operations at exposed bases in the US Southwest or in Italy and Spain (NATO 2023).

Rising temperatures and humidity will increase "black flag days," limiting physical training due to health risks.



One of the mitigation measures is to intensify the use of modern technologies and simulation tools. These can reduce, for example, the need for manned air exercises by up to 90%, which, in turn, will also reduce emissions (ART 2024, 4).

In terms of the deployment of forces on the battlefield and the conduct of operations, new climatic conditions may then disrupt established standards and drills. or example, the ground in southern Ukraine has not frozen for three years, which, contrary to expectations, slowed the tempo of operations there and reduced the mobility of forces and assets as soldiers had to tackle muddy terrain instead of solid, frozen ground (Stoetman 2023, 34).

For example, the ground in southern Ukraine has not frozen for three years, which, contrary to expectations, slowed the tempo of operations there and reduced the mobility of forces and assets as soldiers had to tackle muddy terrain instead of solid, frozen ground (Stoetman 2023, 34). Furthermore, the environment also plays a key role from a tactical perspective - landscape features and vegetation provide camouflage, while atmospheric phenomena limit the possible detection of aircraft moving in them. Deforestation can make coverage in certain areas significantly more difficult, while consistently warmer weather threatens to reduce the effectiveness of current sensors or air defence systems (Gilli et al. 2024), which will require changes in the planning and procedures of the armed forces. Pilots will be challenged by increased air turbulence and more rapid weather changes (NATO 2023). Climate change is therefore likely to have a direct impact on the training content and composition of force protection units.

Material

Since the acquisition of weapons systems in today’s environment is a matter of years or even decades, it is essential to take climate variables into account in these processes, too, especially in terms of the ability of equipment and weapons to operate under adverse conditions and in different environments. This is particularly crucial in the case of foreign missions, but as climate change progresses, this factor will also become increasingly relevant to the defence of one’s own territory. Changes in atmospheric density and heavy rain disrupt maritime radars and directly affect situational awareness. Rising ocean temperatures are in turn affecting sonar performance. Increasing sea acidity implies more frequent maintenance cycles for ships and leads to overheating of engines and higher incidence of engine failures (Carniel et al. 2023).

Interesting in this context is the analysis of Gilli et al. (2024), which looks at the impacts of ocean warming on submarine capabilities. According to the study, at least in some parts of the oceans, detection capabilities will deteriorate, making monitoring these zones more expensive and challenging. This, of course, does not pose a direct challenge to the ACR, but aptly illustrates the challenges the armed forces are facing, as the impact of climate change may result in some types of military equipment having dynamically changing combat value. Thus, it is more than appropriate to take these factors into account during the acquisition processes, especially in the context of the ongoing rebuilding of the army.

British Army Approach to Battlefield Electrification, (British Army, 2023).

Climate change also has an impact on troop supply and the sustainability of combat operations. The Czech Republic is dependent on imports of key components and raw materials (Ministry of Industry and Trade 2017).

Moreover, in today’s globalised world, even in advanced industrialised countries, the production of advanced weapons systems is tied to complex supply chains that may be significantly affected by climate change. A report on global supply chains analysing data from eight thousand global companies warned that between 2020 and 2025, costs for these companies would increase by USD 120 billion just because of damage to supply chains from natural events or related legislative measures (CDP 2021, 10). The Czech Republic and the ACR should therefore perceive climate change from this perspective as well and take care to ensure sufficient amounts of the necessary material before an outbreak of crisis.

Another level is the carbon footprint of military vehicles themselves and the related efforts to replace the propulsion of military vehicles with non-fossil based ones. In many allied countries (such as France, Italy, and Spain), processes and acquisitions to this end are already underway (ART 2024). The British Army has launched the “Battlefield Electrification” project to provide a framework for the potential future equipping of army vehicles with hybrid powertrains (House of Commons 2023). These efforts are not without risk; the cyber vulnerability of electric charging stations, which have already been compromised, for example, in the war in Ukraine (Csenkey and Rapin 2024), is a topic of concern. In terms of decarbonisation, the biggest challenge is naturally posed by the operations and combat assets themselves, where the implementation of renewable energy sources appears to be the most challenging so far.

However, their use can significantly reduce dependence on fossil fuel convoys. If a division of the British Army is theoretically expected to consume up to 800,000 litres of petrol per day of high-intensity warfare, a higher rate of implementation of “green technologies” may provide a way to relieve pressure on supply routes and logistical efforts (ART 2024). For several years, the Swedish Air Force has been experimenting with biofuel for the JAS 39 Gripen aircraft, which should continue to perform unchanged compared to conventional fuels under these conditions. At the same time, however, it is necessary to reflect on the challenges that the decarbonisation of the armed forces brings in today’s conditions. In addition to the resource and technological complexity (the questions of where to store energy and how to protect the infrastructure need to be satisfactorily resolved), such a transformation of the military will lead to the need to adapt operational planning and mission command itself, as the transition to alternative energy sources will very likely affect the mobility and operational range of military assets (Frerks et al. 2024, 285).

Command and Control, Personnel

As with training, environmental events and climate change have a particularly negative impact on the armed forces personnel. Particulate dust from poor air quality (especially PM2.5) adversely affects mortality and leads to the development of chronic inflammation among professional soldiers (Robinson et al. 2023).

At the same time, the climatisation of security also entails requirements for environmental experts who will work in close contact or directly within the armed forces (Estève 2022), in terms of prediction and impact analysis as well as the possibility of decarbonising the military. It should be added that this development cannot yet be described as general. Stoetman et al. (2023, 52), for example, state that while all of the trinity of China, Russia, and the United States perceive climate change as a threat to national security, only the last-named actor has so far actively moved to “becoming green” and reducing the carbon footprint of its own armed forces. From the operational point of view, it may also be reasonable to consider recruiting or securing closer cooperation with experts in the field of engineering or humanitarian assistance, especially for activities in densely built-up areas or megacities, and the increase in MACA (Military Assistance to Civil Authorities) and HADR (Humanitarian Assistance and Disaster Relief) missions (Cox 2020). As not all member states have significant experience in this type of operations, expanding cooperation and gaining knowledge in this area offers an opportunity to develop the capabilities of personnel (Stoetman et al. 2023, 55). The topic of the military community as a (potential) active actor in the fight against climate change, with its resources and know-how able to contribute to joint efforts, has also been mentioned.

The RAND institute advises British forces to become a leader in protecting the country's climate and to make environmental considerations a key part of strategic, operational, and tactical planning for the creation of key documents (Cox et al. 2020, 32). This requires not only a directive from above, but also education, understanding, and a commitment from the officer corps to accept environmental issues as relevant and to perform their work in the context of climate change. Some experts consider climate literacy to be a necessary requirement for the armed forces to adapt to the changing environment as a whole - including in relation to modern technologies.

Infrastructure

Climate change also poses a risk to the operation of military bases and infrastructure. Rising temperatures can make it difficult to operate the facility and impair the comfort of personnel deployed, while natural disasters in a given location can cause damage to physical equipment. The potential risks are illustrated by a report on climate change prepared by the US Department of Defense back in 2019. It assessed the vulnerability of 79 selected military installations for mission implementation. It recorded 139 vulnerabilities to various natural hazards such as floods, droughts, and wildfires. In the medium term, the number of vulnerabilities at these sites could rise to 158 (Department of Defense 2019). As a result, the impact of the changing climate on military installations cannot be separated from the impact on military personnel and material described elsewhere in this text. For example, temperatures approaching 40 degrees Celsius result in thinner air, which reduces the lifting capacity of helicopters and thus limits their ability to operate (especially) from coastal bases where this phenomenon is more common (Carniel et al. 2023).

Climate change has direct strategic implications, particularly in relation to nuclear weapons bases or nuclear infrastructure in general. At the very least in the UK, they are at risk from rising sea levels or flooding and mitigating the current situation in the form of protective measures or relocation of these assets will incur significant resource costs (Dorfman 2021).

Thus, in relation to the military background, developments in the environmental sector pose the risk of the need for further investments putting pressure on the defence budget.

The impact of climate on non-military infrastructure cannot be ignored either. Transportation structures, energy facilities, and health care may be at risk, which ultimately has the potential to limit the capabilities of the armed forces or create new crisis situations requiring military assistance. For example, for more than 200,000 monitored hospitals worldwide, 41% of them increased their risk of exposure to natural hazards between 1990 and 2020 (XDI 2023). Thus, it seems rational to institutionalise climate change as one of the controlled parameters in the audits of key facilities and to take preventive action in case of a detected increase in risk.

Military installations and non-tactical equipment are then a clear candidate for priority decarbonisation, as they account for the majority of emissions produced by the armed forces (ART 2024) and the changes might not have such a drastic effect compared to the impact on forces and assets actively engaged in operations. As with technology, therefore, many countries are already actively pursuing efforts in this area and have set targets for emission reductions, as illustrated above. However, it is reasonable to observe what starting point the actors in question will choose for comparing their decarbonisation efforts.

Technological Sector

Miroslava Pačková

Vladimír Bízik

This text covers the main areas of technological development with regard to defence technologies in 2023. The first part presents indicators that evaluate the Czech Republic's readiness for new technologies. The second part contains case studies of individual aspects of technological development that are relevant to the defence and security of the Czech Republic.

Methods of data collection and evaluation

This study draws on the methodology and data of the Technology and Innovation Report (UNCTAD 2023), published by the United Nations Conference on Trade and Development (UNCTAD). A key tool is the Readiness for Frontier Technologies Index, which assesses countries' readiness to use new technologies through several key indicators.[13]

The aim of this analysis was to build on a previous study (Stojar et al. 2023), which compared the index data for the Czech Republic. However, as the 2023 report was not yet published at the time of this analysis, a methodology based on publicly available data (mainly World Bank, WIPO, Scopus, International Telecommunication Union) and alternative sources was used.

With regard to the level of science and research focusing on frontier technologies, data was obtained from the Scopus database, which allows for a detailed analysis of scientific production in various technological fields.

Key terms such as "artificial intelligence", "biotechnology", "nanotechnology", and other areas of advanced technology were used to search for relevant data. The analysis tracked the number of publications focused on specific technologies for the period 2021-2023, which allowed to track the dynamics of research in these fields. For the analysis of patents, data from the World Intellectual Property Organization (WIPO) was used, specifically from the Patentscope database, which provides access to international patent applications. Patents related to advanced technologies have been searched through the associated International Patent Classification (IPC) codes, covering areas such as biotechnology, nanotechnology, artificial intelligence, and others. The data was searched according to patents filed by Czech entities for the year 2023, with emphasis on key technologies listed in the technology index and with the help of code identification by artificial intelligence. For the science and research category, a formula taken from the UNCTAD analysis was used for the resulting figure, which at least provides a framework for calculating the resulting value.

[13] This report focuses on the following technologies: Internet of Things (IoT), Solar Energy, Blockchain, Nanotechnology, Big Data, 5G, Biofuels, Electric Vehicles, Genome Editing, Robotics, Unmanned Aerial Vehicles, 3D Printing, Wind Energy, Biofuels and Biomass, Green Hydrogen, Photovoltaics

Table 1: Categories and indicatiors of frontier technologies for analysis

Category	Name of the indicator	2023 data	Source
Use of ICT	Internet users (% of population)	YES	ITU
Use of ICT	Average download speed (Mbps)	YES	CTO
Skills	Expected number of years of schooling	NO	-
Skills	Employment in highly qualified jobs (% of the working population)	YES	CZSO
Science and research	Number of scientific publications in frontier technologies	YES	SCOPUS
Science and research	Number of patents filed in frontier technologies	YES	WIPO
Industrial activity	Exports of hi-tech products (% of total trade)	NO	-
Industrial activity	Exports of digital services (% of total services trade)	NO	-
Access to finance	Share of domestic loans in the private sector (% of GDP)	YES	World Bank

As some data for 2023 was not available at the time of analysis, additional data from alternative sources was used, particularly for ICT and education related indicators. The data was drawn mainly from the available statistics from Czech institutions (Czech Statistical Office, Czech Telecommunications Office). In the case of the % of skilled workers, we based our analysis on publicly available searches of the Czech Statistical Office data on employment in the Czech Republic. Skilled workers were those included in the categories of specialists (CZ-ISCO 2), technicians and professional workers (CZ-ISCO 3), and supervisors and managers (CZ-ISCO 1).

For some categories, alternative data could not be found and therefore cannot be provided for 2023 (industrial activity, skills).

In the second part of the analysis, which focuses on specific key technologies and their relationship to the military and the armed forces of the Czech Republic, a descriptive-analytical approach and the expert view of the authors is used with the use of expert literature.

State of readiness in 2021-2022

High

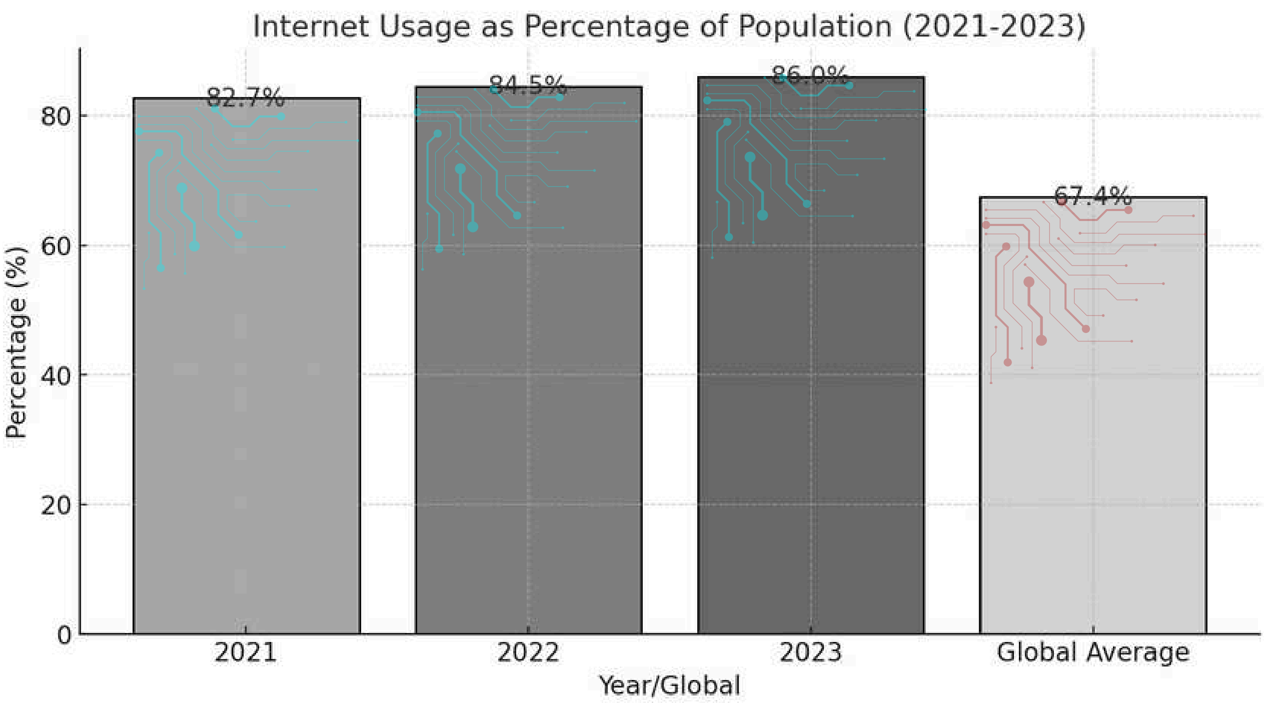
readiness of Czech Republic for new technologies in 2023

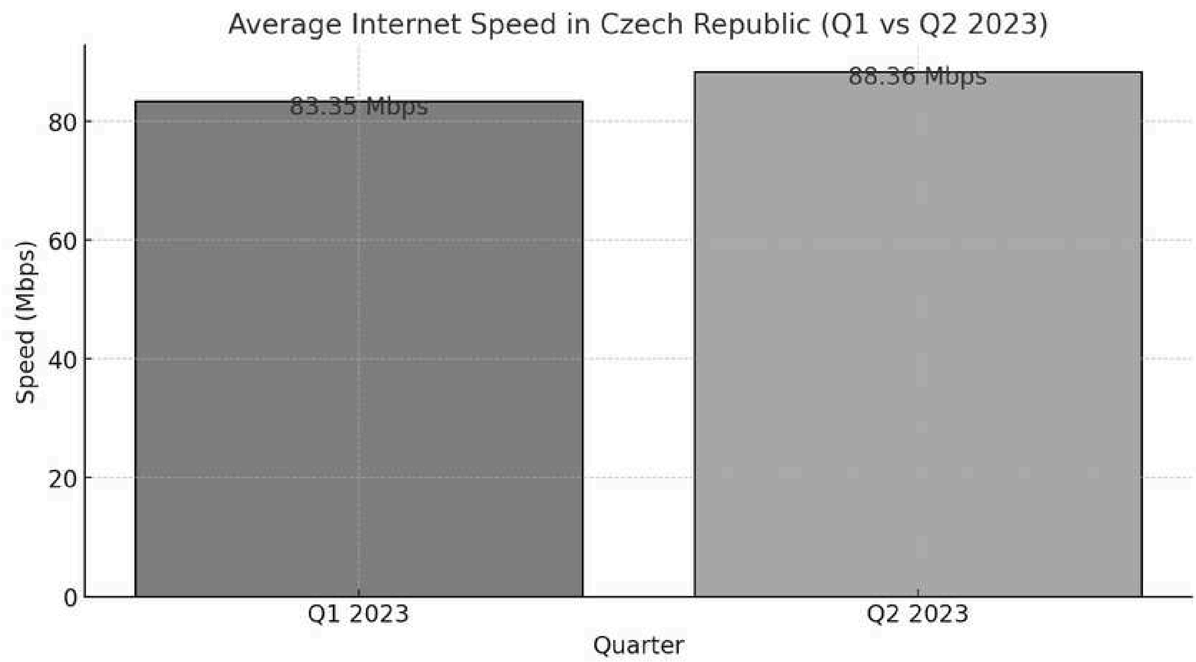
The analysis from last year concluded that the score of the Czech Republic had remained the same at the value of 4 – high readiness, based on the value of 0.77 according to the index. This is higher compared to 2021, when it was 0.75. Thus, according to the given methodology, the change was eveluated with the score of +1. However, in the ranking of countries, the Czech Republic fell from the 26th to the 30th place (UNCTAD 2023). The United States remains in the first place, followed by Sweden, Singapore, Switzerland, Liechtenstein, the Netherlands, and South Korea.

Analysis of the state of readiness for 2023

Use of ICT

In 2023, the proportion of internet users (as a percentage of the population) in the Czech Republic was 86%. In 2022 it was 84.5%, a year earlier 82.7%. The global average is 67.4% (ITU, 2023). With regard to the speed of Internet connections, the Czech Telecommunications Office (CTU) reports that the average speed of cable Internet connections reached 88.36 Mbps in the second and 83.35 Mbps in the first quarter of the year. This trend shows that the quality of Internet services in the Czech Republic is continuing to improve.





Research and development

According to the Global Innovation Index (2023, 112), compiled by the World Intellectual Property Organization, the Czech Republic produces more innovation output relative to its level of innovation and investment. In 2023, the Czech Republic ranked as the 31st in the world, a slight drop from 30th place in 2022. Despite this, the country has a strong performance in innovation outputs, specifically in knowledge and technology, where it ranks as the 21st. The GII 2023 report shows that the Czech Republic has a strong knowledge diffusion, with high technology production and exports contributing significantly to economic growth.

In terms of available patent data for 2023, 241 European patent applications come from Czech entities, which is 8.6% more than in 2022 (Kurfirstová a Vojtíšková 2024). Through the World Intellectual Property Organization (WIPO), individual patents filed as of 2023 can be searched for using codes that can be related to frontier technologies.[14] The total number is 54, majority of them in the field of biotechnology. In 2022, it was 38.
Via the SCOPUS database, we can track the number of publications related to frontier technologies. Here, the 2023 trend is similar to the previous two years.

241

European patent applications come from Czech entities in 2023

54

related to frontier technologies

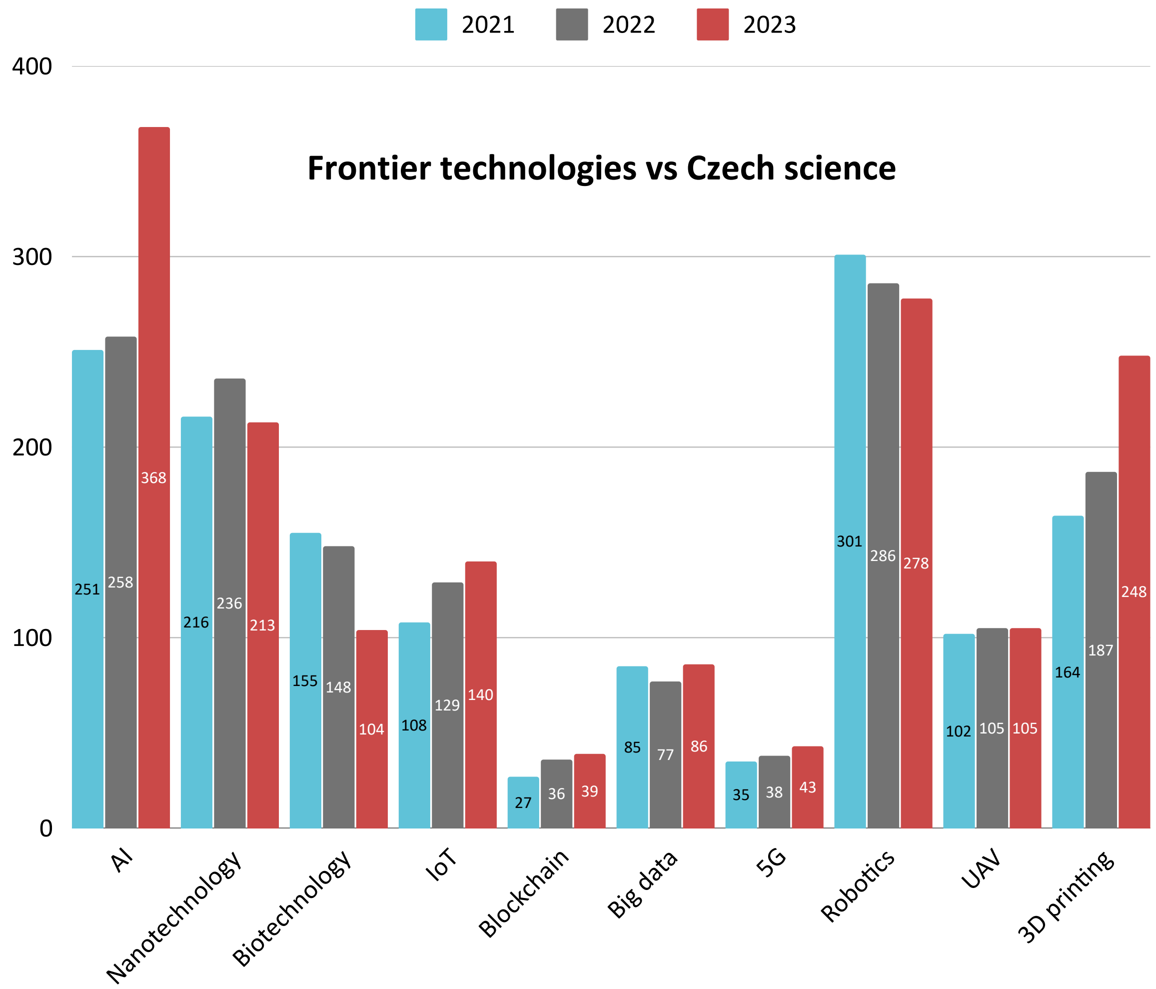
[14] G06N - Computer systems based on specific computational models (e.g., AI and neural networks), C12N - Micro-organisms or enzymes (e.g., biotechnology), H01L - Semiconductor devices; electric solid-state devices (e.g., nanotechnology),G01S - Radio direction-finding; radar (e.g., advanced radar systems), Y02E - Reduction of greenhouse gas emissions (e.g., green technologies).

Table 2. Scientific outputs on frontier technologies for the Czech Republic during 2021-2023 according to the Scopus database. [15]

Technologies	Year		
	2021	2022	2023
AI	251	258	368
Nanotechnology	155	148	104
Biotechnology	155	148	104
IoT	108	129	140
Blockchain	27	36	39
Big data	85	77	86
5G	35	38	43
Robotics	301	286	278
UAV	102	105	105
3D printing	164	187	248
Total	1444	1500	1624

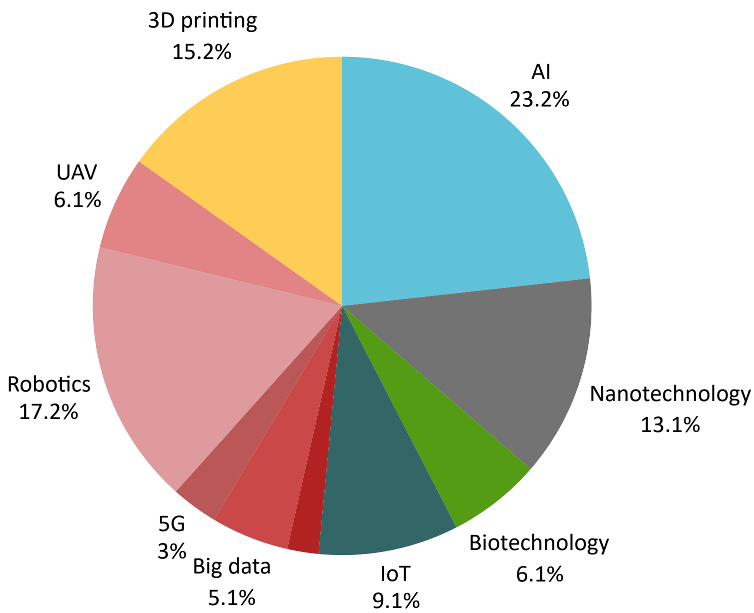
Source: Authors according to SCOPUS data

[15]
TITLE-ABS-KEY (artificial intelligence) AND (LIMIT-TO (AFFILCOUNTRY,"Czech Republic")
TITLE-ABS-KEY (nanotechnology OR nanotechnologies OR nanomaterials OR nanodevices) AND (LIMIT-TO (AFFILCOUNTRY , "Czech Republic"))
[TITLE-ABS-KEY (biotechnology OR biotechnologies OR crispr OR "gene editing" OR "genome editing") AND (LIMIT-TO (AFFILCOUNTRY , "Czech Republic"))
[TITLE-ABS-KEY ("Internet of Things" OR "Smart Devices" OR "IoT Systems") AND (LIMIT-TO (AFFILCOUNTRY , "Czech Republic"))
TITLE-ABS-KEY ("blockchain" OR "Distributed Ledger Technology") AND (LIMIT-TO (AFFILCOUNTRY , "Czech Republic"))
TITLE-ABS-KEY ("Big data" OR "Data Analytics" OR "Large-scale Data Processing") AND (LIMIT-TO (AFFILCOUNTRY , "Czech Republic"))
TITLE-ABS-KEY ("5G" OR "5th Generation Mobile Networks" OR "Next Generation Mobile Networks" .) AND (LIMIT-TO (AFFILCOUNTRY , "Czech Republic"))
TITLE-ABS-KEY ("Robotics" OR "Automation" OR "Robotic Systems" OR "Artificial Intelligence in Robotics" .) AND (LIMIT-TO (AFFILCOUNTRY , "Czech Republic"))
TITLE-ABS-KEY ("Drones" OR "Unmanned Aerial Vehicles (UAVs)" OR "Autonomous Vehicles" .) AND (LIMIT-TO (AFFILCOUNTRY , "Czech Republic"))
TITLE-ABS-KEY ("Additive Manufacturing" OR "3D Printing" OR "Rapid Prototyping" .) AND (LIMIT-TO (AFFILCOUNTRY , "Czech Republic"))



Source: Authors according to SCOPUS data

Scopus publications in 2023



Source: Authors according to SCOPUS data

The number of scientific publications in the Czech Republic in frontier technologies increased between 2021 and 2023. This indicates a growing level of activity and interest in research and development in these key areas. The most significant growth was seen in the field of artificial intelligence (AI), where the number of publications increased significantly, reflecting the growing importance of this technology.

On the other hand, some areas, such as biotechnology and nanotechnology, showed slight declines, which may reflect the change in research priorities or a temporary reduction in investment. Nevertheless, the overall trend points to a dynamic development of the scientific base in the Czech Republic, which is reflected in the increased production of academic papers focused on innovative technologies, which is a positive signal for the future technological development of the country.
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UNCTAD index formula:

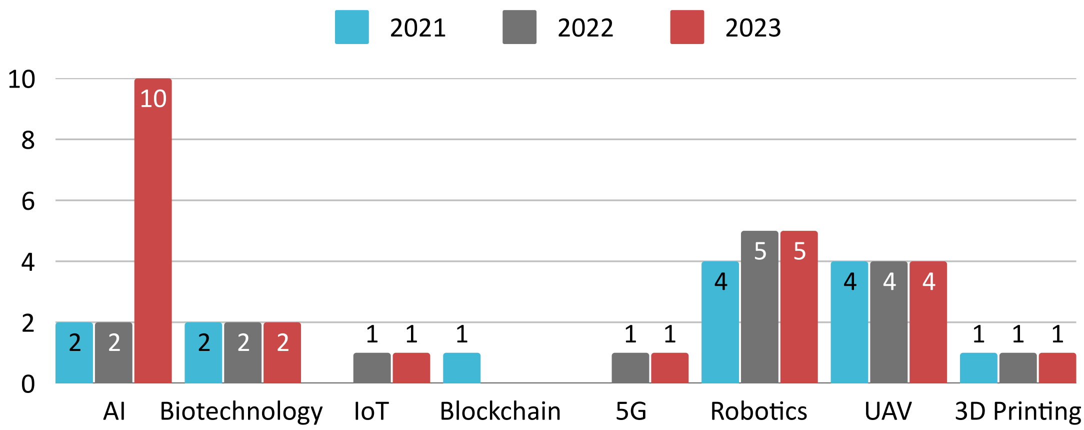
Calculating individual scores:

Calculating the score for publications
16241500=1.0827\frac{1624}{1500} = 1.082715001624=1.0827

Calculating the score for patents
5439=1.3846\frac{54}{39} = 1.38463954=1.3846

The science and research activity index for 2023 is 1.4984, which means that there was an increase in activity of approximately 49.84% compared to 2022. This indicates a growing trend in research and development in frontier technologies in the Czech Republic, both in the number of scientific publications and the number of patents filed. The R&D activity index calculated is not a direct percentage change, but a combined increase in both variables (publications and patents). This index shows that the combined increase in activity in scientific publications and patents is approximately 49.84% higher than the previous year (publications up 8.27%, patents up 38.46%).

Scientific outputs dealing with frontier technologies in the Czech Republic in 2021-2023 according to the Scopus database, related to military and defence



Source: Authors according to SCOPUS data

For more specific illustration, we have also filtered out those articles that are specifically related to the military or defence. In addition to the keywords associated with the technologies, combinations of the codes “military”, “defense”, and “defence” have been added.[16]

The results of the Scopus database search focused on military and defence applications of technology in the Czech Republic for the years 2021, 2022, and 2023 show limited but gradually increasing scientific activity in some areas.

There was a significant increase in publications on artificial intelligence in 2023, indicating a growing interest in its military applications. Conversely, areas such as nanotechnology and biotechnology had little or no scientific activity related to military applications. Robotics and unmanned aerial vehicles (drones) maintained a relatively stable level of interest, with slight fluctuations in the number of publications. Other technologies such as 5G, blockchain, Internet of Things (IoT), and 3D printing exposed very low levels of activity, suggesting that these technologies are either not yet priority areas for military research or that their applications are just beginning to develop. Overall, it can be said that while some areas, such as AI and robotics, are gaining importance, other technologies remain on the edge of interest in the context of military research in the Czech Republic.

while some areas, such as AI and robotics, are gaining importance, other technologies remain on the edge of interest in the context of military research in the Czech Republic.

[16] E.g., TITLE-ABS-KEY ("artificial intelligence" AND "military") AND (LIMIT-TO (AFFILCOUNTRY , "Czech Republic")).

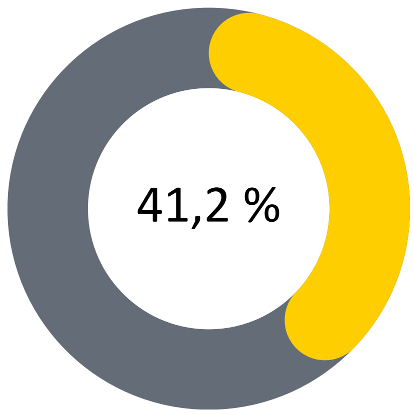
In 2024, the Czech government approved a budget for science and research of CZK 40.19 billion, the same as in 2023 (Government of the Czech Republic 2023; Ministry of Finance of the Czech Republic 2023). For 2025, the budget is set at CZK 39.3 billion, which would be a real drop in funding due to inflation and rising costs. As a proportion of GDP, this is 0.58%, which is significantly lower than in the past, when it was as high as 0.66%. This decline may negatively affect not only long-term research projects, but also foreign cooperation, the prestige of Czech science (Věda a výzkum 2023; Sulimenko 2024), and eventually the ability of the Czech Republic to keep up with the latest technological developments.

The Czech government's budget for science and research remains insufficient, risking negative impacts on long-term projects, foreign cooperation, and the country's technological competitiveness.

Skills

Skill values are determined by the expected number of years of schooling and the employment ratio in high-skilled occupations. For the number of years of schooling, the data for 2023 is not traceable, however, the value for 2022 was 16.3 years (Our World in Data 2023).

The share of highly skilled workers (% of the working population) in 2023 was 41.2%, up from 40.05% in 2022. This increase in the share of highly skilled workers is partly due to the decline in total employment rate and increased demand for professional skills (CZSO 2023).



The share of highly skilled workers in the Czech Republic

However, as stated in the article "Nedostatek kvalifikovaných pracovníků ohrožuje konkurenceschopnost české ekonomiky" (Lack of skilled workers threatens the competitiveness of the Czech economy), the Czech economy continues to face a significant shortage of skilled workers, which threatens its competitiveness. Despite the increase in the share of skilled workers, this shortage is perceived as a key factor hindering further growth and modernisation of the industry (Automa 2023).

Industrial activity

In terms of industrial activity, the latest available data is from 2022. However, the last three years (2020-2022) recorded a significant growth in exports of high-tech products in the Czech Republic. In 2020, exports reached approximately USD 34.8 billion, rising to USD 38.9 billion in 2021 and surpassing USD 43 billion in 2022. This growth shows the increasing importance of the high-tech industry in the Czech economy (World Bank, 2023). In 2022, digitally provided services accounted for up to 60% of total services exports in developed countries, including the Czech Republic, where IT and communications services continued to dominate. Data for 2023 is not yet available, but the importance of these services is expected to continue to grow (OECD 2022).

Access to finance

In 2022, the share of domestic credit to the private sector in the Czech Republic was 50.52% of GDP, while in 2023 it fell to 49.77% of GDP. This decline suggests a slight reduction in the availability of finance for the private sector (World Bank 2023).

Summary

Based on available data and trends, it can be estimated that the Technology Readiness Index (TRI) of the Czech Republic for 2023 could be slightly higher than in 2022, when it reached 0.77. This estimate is supported by growth in key areas such as artificial intelligence (increase in publications) and an increasing share of highly skilled workers.
Although there were declines in some areas, overall technological progress and relative stability in ICT could help maintain or slightly improve the index. A possible value could be between 0.77 and 0.78, but without official data and full data for 2023, this estimate is speculative.

Outer space

The year 2023 witnessed a significant acceleration of space activities and confirmed the growing importance of the outer space as a strategic domain. Global military spending on space activities saw a dramatic 18% increase to a total of USD 57 billion (Hitchens 2024), reflecting modern societies' increasing reliance on space-based systems for communications, navigation, and intelligence, as well as rising geopolitical tensions between major space powers.

The United States, China, and Russia continued to intensively develop their military space capabilities. The US demonstrated its technological leadership by launching the secret X-37B military aircraft using SpaceX's Falcon Heavy rocket (Wattles a Strickland 2023). The move underlines the close cooperation between the US government and the commercial sector in space activities. At the same time, the US stepped up its efforts to increase the resilience of their space systems, with an emphasis on distributed architectures and small satellites (Erwin 2023).

Source: SpaceX, "Falcon Heavy Performance."

The European Union responded to the changing security environment by presenting its new Space Strategy For Security and Defence (Clapp a Evroux 2023). This strategy highlights the need to strengthen European space capabilities and improve coordination between the member states in the area of space security.

2023 also brought significant scientific achievements demonstrating the continued importance of peaceful space exploration. The European Space Agency successfully launched the JUICE mission to explore the icy moons of Jupiter, while NASA completed the return of samples from an asteroid with the OSIRIS-REx (Kuhn a O'Brien 2024)mission. These missions not only expand our scientific knowledge, but also provide valuable technological know-how for use in other fields.

In the commercial sector, rapid development of satellite constellations continued, particularly SpaceX's Starlink system. This expansion has raised growing concerns about the concentration of power in the hands of private actors and the potential impact on the geopolitical balance (Satariano et al. 2023).

At the same time, these systems offer new opportunities for global connectivity and resilient communications infrastructure.

The international community has been intensively engaged in issues of legal regulation of the military use of space and conflict prevention. There have been discussions at the UN on the need for new norms of behaviour in space, to prevent an arms race and to ensure the long-term sustainability of space activities (United Nations 2023). These discussions, however, have run up against divergent national interests and the difficulty of reaching consensus in the current global political climate.

A significant trend in 2023 was the increasing emphasis on the development of small satellites and increasing the resilience of space systems. The US Space Force has announced plans to launch its own swarms of small satellites (Skibba 2023), reflecting a broader shift towards more distributed and more resilient space architectures. This approach has the potential to reduce the vulnerability of space systems to any attacks and increase their overall robustness. Space is thus increasingly becoming an area of strategic competition, where scientific, economic, and security interests of different actors intersect. These dynamics create new challenges for international cooperation and for maintaining the universe as a peaceful domain for all nations. However, it also opens up new opportunities for technological innovation and economic development. Future developments will depend on the international community's ability to balance competing interests and develop effective mechanisms for managing this increasingly important domain.

Hypersonic technologies

The development hypersonic weapons remains one of the key areas of competition between world powers in 2023. Capable of reaching speeds in excess of Mach 5 (6125 km/h) while manoeuvring, these weapons systems pose a significant challenge to current missile defence systems (Bipindra 2023).
In this year, China consolidated its position as a world leader in hypersonic technology.

5-8K

km is estimated range of long-range China´s hypersonic missile

Reportedly, it successfully tested a new long-range hypersonic missile, the DF-27, with an estimated range of 5,000-8,000 km. In addition, China introduced an air-launched variant of the YJ-21 hypersonic anti-ship missile and it continues to develop the MD-22 unmanned hypersonic aircraft with a claimed range of 8,000 km and a speed of Mach 7 (Felstead 2023).
Russia continues to develop its hypersonic capabilities despite the complications caused by the conflict in Ukraine. In addition to well-known systems such as Avangard, Kizhal, and Zirkon, Russia is reportedly developing a new medium-range ballistic missile, Zmeyevik, with a hypersonic glide body and a range of around 4,000 km. Russia also continues to develop hypersonic anti-ship and anti-aircraft missiles such as the R-37M with a maximum speed of Mach 6 and a range of 300 km (Felstead 2023).
The United States was struggling with problems in its hypersonic programs in 2023. Testing of the AGM-183A Air-Launched Rapid Response Weapon (ARRW) system has shown mixed results, leading to uncertainty about the future of the programme (Bugos 2023). The U.S. Army has faced delays in deploying the Long-Range Hypersonic Weapon (LRHW) system, also known as Dark Eagle, due to technical problems and failed tests (Judson 2023b).

Despite these difficulties, the US continues to invest in hypersonic technologies. The Department of Defense requested USD 11 billion for hypersonic and long-endurance subsonic missile programmes for fiscal year 2024. In addition, the US is working with international partners, particularly Australia and Japan, to develop hypersonic weapons and defence systems (Bosbotinis 2023).

A significant moment in 2023 was the successful shooting down of a Russian Kinzhal hypersonic missile by a Ukraine-operated Patriot air defence system in May. This event challenged some assumptions about the invincibility of hypersonic weapons and highlighted the importance of developing effective defence systems (Tucker 2023).

In response to the growing threat of hypersonic weapons, the US Congress is pushing to accelerate the development and deployment of systems to intercept them. There, the new National Defense Authorization Act requires the Missile Defense Agency to achieve initial operational capability of the Glide Phase Interceptor by the end of 2029 (Judson 2023a).

Other countries, including France, Japan, India, and South Korea, are also continuing to develop their own hypersonic capabilities. For example, France conducted the first test of its V-MAX hypersonic glide vehicle demonstrator in June 2023 (Bosbotinis 2023).

The development of hypersonic weapons raises a number of technical, strategic, and ethical issues. While proponents argue with their potential for precision strikes on time-sensitive targets, critics point to the risks of destabilising the strategic balance and potentially escalating conflicts (U. S. Naval Institute Staff 2024).

With the continued development of hypersonic technologies, these systems can be expected to play an increasingly important role in the global security architecture in the coming years. At the same time, there will be increasing pressure to develop effective defence systems and potentially to create new international arms control agreements in this area.

While proponents argue with their potential for precision strikes on time-sensitive targets, critics point to the risks of destabilising the strategic balance and potentially escalating conflicts

Virtual, augmented, and mixed reality

The year 2023 brought significant shifts in the virtual, augmented, and mixed reality (VR/AR/MR) domain, but also some sobering of the exaggerated expectations of previous years. Although investment in this sector continued, the revolution in the everyday lives of consumers and businesses has not proved to be as rapid and all-encompassing as originally anticipated.

A major milestone in 2023 was the introduction of Apple Vision Pro in July. This device, combining AR and VR elements, represents a technological milestone in the field of mixed reality. With dual 4K displays for each eye, surround sound, and gesture and voice control, Vision Pro offers an unprecedented level of immersion and interactivity (Wiggers 2024). However, the high price, limited geographic availability and not yet very extensive support from third-party developers raise questions about its potential success in the market in 2024.

An interesting trend is the growing use of AR in mobile devices, especially in e-commerce and entertainment. Apps like Snapchat and Instagram continue to expand the possibilities of AR filters, while retailers are experimenting with virtual product trials (artlabs 2024). The automotive industry is also integrating AR into its products, for example to improve driving safety and navigation.

Apple Vision Pro with battery (Apple, 2023).

Despite continued investment and innovation, the notion of the “metaverse” that dominated the discourse in 2022 partially disappeared from the public debate during 2023. This shift is illustrated by the layoffs in Meta's Reality Labs division division, indicating some rethinking of its virtual reality strategy (Chin 2023).

The slightly cooling interest of the consumer sector is offset by the rapidly growing adoption of these technologies in the military. Armies around the world are investing heavily in VR, AR, and MR for training, combat readiness, and operational effectiveness.

The U.S. Army is close to final testing and deployment of the Integrated Visual Augmentation System (IVAS) in 2023. This mixed reality device, developed in collaboration with Microsoft, aims to significantly improve soldiers’ situational awareness, navigation skills, and combat effectiveness (South 2023). IVAS combines night vision, thermal imaging, and augmented reality into one compact system that has the potential to revolutionise the way soldiers perceive and interact with the battlefield.

The U.S. Air Force is also actively implementing augmented reality technologies to improve readiness and training. Air Force Special Operations Command (AFSOC) has developed a comprehensive framework for integrating augmented reality into its training programmes, including flight simulations and tactical operations (Rasmussen 2023).

Another interesting development is the use of commercial technologies for military purposes. For example, the Chinese military has begun using Microsoft HoloLens 2 headsets for equipment maintenance, indicating a global trend of adoption of these technologies across different militaries (Wang 2023).

In the area of research and development, DARPA (Defense Advanced Research Projects Agency) has launched an initiative to protect tactical mixed reality technologies from cognitive attacks. This programme, called Intrinsic Cognitive Security (ICS), aims to develop mathematical approaches to secure the design of MR systems against potential threats (Manuel 2023).

Finnish company Varjo has become a technology partner of the US Army to provide high-quality VR/AR headsets for pilot training. These systems will be used for flight simulations of Apache, Chinook, and Blackhawk helicopters, allowing for more realistic and effective training (Erl 2023).

Military applications of VR, AR, and MR range from training and simulation to remote control of vehicles and UAVs to medical support and equipment maintenance. For example, the Remote Augmented Reality Maintenance Assistance (RARM-A) system, being developed by the US Air Force, facilitates aircraft maintenance using AR, allowing technicians to perform repairs and maintenance more efficiently (Tamer 2023).

A survey conducted by HTC VIVE showed that 67% of military personnel surveyed found VR/AR/MR training beneficial for preparing for stressful situations, while 80% said XR improved their training plans. These statistics indicate a positive perception and growing adoption of these technologies within the armed forces (Nelson 2023).

While the consumer and commercial sectors are going through a phase of realistic reassessment of the potential of VR, AR, and MR, military applications of these technologies are experiencing rapid growth and adoption. This divergent pace of development suggests that it is the defence and security sector where the most significant innovations and practical applications of these technologies can be expected in the near future.

67%

of personnel found VR/AR/MR training beneficial for preparing for stressful situations

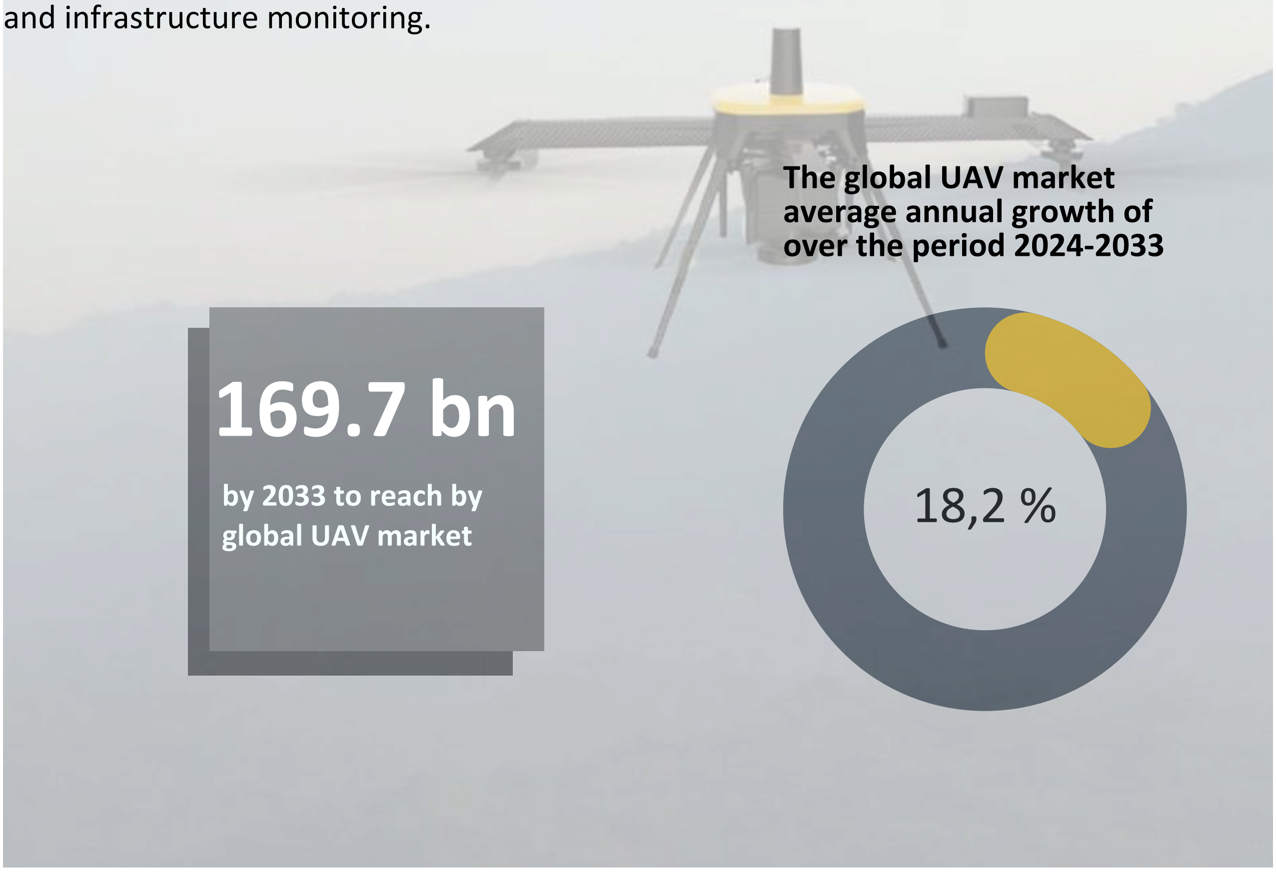
Unmanned systems

The year 2023 has confirmed the growing importance of unmanned systems in modern warfare and their increasingly widespread use in the commercial sphere. The most obvious example is the ongoing conflict in Ukraine, where drones have played a key role on both sides of the front.

The conflict in Ukraine has significantly accelerated the development and deployment of drones in military operations. Ukrainian forces have greatly expanded their use of FPV (First Person View) attack drones against Russian troops (Crumley 2023). These relatively inexpensive and effective weapons have proven extremely effective in destroying Russian equipment and inflicting casualties on live forces. According to some estimates, UAVs and UASs inflicted more casualties on the Ukrainian side in the final months of 2023 than Russian artillery, which was typically responsible for the majority of casualties (Lázňovský 2024).

The mass deployment of UAVs on the battlefield has resulted in soldiers' attention being focused primarily on the dangers from the air. Both sides of the conflict have been looking for ways to defend against this new threat, but the complete elimination of UAV strikes has not yet been achieved (Lázňovský 2024).

The global UAV market witnessed significant growth in 2023. It is forecast to reach USD 169.7 billion by 2033, with average annual growth of 18.2% over the period 2024-2033 (Precedence Research 2024). This growth is driven not only by military use, but also by the expansion of applications in the commercial sphere, including agriculture, logistics, and infrastructure monitoring.



Technological advancements in UAVs in 2023 focused on several key areas. There was a significant shift in the development of autonomy and artificial intelligence, where research focused on the development of sophisticated algorithms for autonomous flight and deeper integration of artificial intelligence into UAV systems. At the same time, battery and charging solutions were significantly improved, resulting in longer flight times and an overall increase in the UAV efficiency. Swarm technology also became an important trend, enabling coordinated real-time collaboration of multiple UAVs. Last but not least, increased emphasis was placed on the development of anti-UAV technologies aimed at the effective detection and neutralisation of enemy assets. Together, these advances have contributed to a significant shift in the capabilities and effectiveness of UAV systems (Certrust 2023).

The expansion of UAV production and exports had significant geopolitical implications in 2023. Turkey has established itself as a major exporter of UAVs, particularly the Bayraktar TB2, which has become a bestseller in Africa, Middle East, and Eastern Europe (Crisis Group 2023). These developments have strengthened Turkish influence in a number of regions while raising concerns about the potential escalation of conflict and humanitarian risks associated with the proliferation of UAV technology.

China also continued to develop its UAV industry, as demonstrated at the Drone Industry Development Conference in Mianyang, where new military UAVs were unveiled (Army Recognition Group 2023). This development confirms the growing competition in the global military UAV market.

Drone Industry Development Conference (China-Arms, 2023).

A significant milestone in the field of unmanned ground systems was the deployment of the first armed ground robots within NATO by the Netherlands. These systems, referred to as Tracked Hybrid Modular Infantry Systems (THeMIS), are equipped with machine guns and represent a new element in NATO combat operations (Gault 2022).
The year 2023 has confirmed that autonomous and unmanned systems have become an integral part of modern warfare and will continue to play an increasingly important role in future conflicts (Malin 2023). At the same time, their use in the civilian sector is expanding, bringing new regulatory as well as security challenges.
The trend toward greater autonomy, the integration of artificial intelligence, and the development of anti-UAV technologies can be expected to continue in the coming years. At the same time, ethical and legal issues related to the deployment of autonomous combat systems and their impact on international security will need to be addressed.

Cyberspace

The year 2023 has brought a further increase in cyber threats and attacks that have significantly impacted the global security environment. In the Czech Republic alone, the National Cyber and Information Security Agency (NÚKIB) of the Czech Republic recorded a record number of 262 cyber incidents, which represents an almost twofold increase compared to the previous year (NÚKIB 2024). This trend is not limited to the Czech Republic alone; similar increases have been observed in other countries, highlighting the global nature of this challenge.
One of the most significant types of attacks in 2023 was distributed denial of service (DDoS). Microsoft has confirmed that the widespread service outage in June 2023 was caused by a DDoS attack (MSRC 2023). This incident highlights the vulnerability of even the largest technology companies to cyber-attacks and the need to continuously improve defence mechanisms.

State-sponsored hacking groups continued to pose a significant threat. For example, Ukrainian cyber teams were forced to join the front lines of the war, using the latest technologies including UAVs and artificial intelligence (Corera 2023). These developments show how cyber warfare is becoming an integral part of modern conflicts.
In response to the growing threats, the U.S. Department of Defense has released its 2023 Cyber Strategy, aimed at operationalising national security priorities (Department of Defense 2023).

262

cyber incidents recorded by NÚKIB by 2023

The use of artificial intelligence (AI) in cyber attacks was also a significant trend in 2023. Attackers have started using large language models and generative AI to create more sophisticated phishing campaigns and malware (Applegate 2023). For more on the use of language models and generative AI, see below.

In addition to state actors, cyber threats have spread to non-state actors and hacktivist groups. They have become engaged in a variety of cyber operations, from DDoS attacks to data theft, often with political or ideological motives (Abrams 2024).

Significant steps have been taken in the regulatory and policy areas. In the United States, for example, the President has issued an executive order banning the use of commercial spyware that poses a risk to national security (Gangitano 2023). The European Union has been considering new eIDAS legislation that could have a significant impact on online privacy, including possible restrictions on the effectiveness of VPNs (Casreo 2024).

Cyber attacks in 2023 had a significant impact on critical infrastructure and large organisations. The most significant incidents included attacks on Royal Mail, T-Mobile, the British Electoral Commission, and others (Coker 2023). These attacks have highlighted the need for robust cyber defence strategies across all sectors.

Ukrainian war, it is clear that cybersecurity will continue to be a key component of national security strategies.

Given the growing importance of cyberspace in modern conflicts, as seen in the Russo-Ukrainian war, it is clear that cybersecurity will continue to be a key component of national security strategies (Duguin a Pavlova 2023). States and organisations must constantly adapt their strategies and invest in cyber defence to keep pace with the rapidly evolving threat landscape.

In summary, 2023 was characterised by a dramatic increase in cyber threats, leading to an increased focus on cyber security at both the national and international levels. Developments in artificial intelligence, state-sponsored attacks, and more sophisticated attack methods suggest that cybersecurity will remain a critical challenge in the coming years.

Artificial Intelligence

The year 2023 has become a breakthrough year for artificial intelligence (AI), which has come to the forefront of public interest and transformed many industries. The notion of AI is largely narrowed in public discourse and has come to be associated primarily with generative artificial intelligence, which has penetrated the mainstream. Generative AI, including technologies such as chatbots (e.g. ChatGPT), image generation systems (e.g. DALL-E, Midjourney), or tools for creating text, music or videos, has become synonymous with AI in the eyes of the general public.

It is important to note, however, that AI itself is a much broader concept. Some experts even argue that generative "AI" should not be considered part of artificial intelligence proper, as these systems are based on completely different principles. However, given the evolution of language and public perception in 2023, this shift in meaning must be taken as a fait accompli.

Over the course of the year, we saw significant progress in several key areas of AI. One of the most important trends was multimodality, i.e. the development of AI systems capable of working with different types of data simultaneously. For example, OpenAI's GPT-4 model has demonstrated the ability to analyse images and respond to them textually, opening up new possibilities for human-AI interaction (Perrigo 2023). This ability to combine different forms of input and output represents a significant step forward in the field of artificial intelligence.

Another important development was the concept of constitutive AI, introduced by Anthropic. This approach seeks to embed ethical principles and values directly into the foundations of AI systems, which has the potential to address long-standing issues with AI control and its trustworthiness (Perrigo 2023). This innovation reflects the growing emphasis on ethics and accountability in AI development that was evident throughout 2023.

The year 2023 also witnessed significant advances in text-to-video technologies, demonstrating the expanding capabilities of generative AI. The ability to create video content based on text-based description is the next step in bridging the boundaries between different forms of media and opens up new possibilities for the creative industries (Perrigo 2023).

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There has been a significant shift in natural language processing with the introduction of new large-scale language models. Companies such as Google, Meta, and OpenAI have introduced models such as PaLM 2, LLaMA, and GPT-4, respectively, which push the boundaries of what is possible in human language understanding and generating (Pogla 2023). These models have demonstrated remarkable capabilities in a wide range of tasks, from answering questions to generating code, leading to discussions about potential impacts on the labour market and education.

In response to the rapid development of AI, there has been an increased focus on the regulatory and ethical aspects of its use. The European Union has introduced a draft Artificial Intelligence Act (AI Act) to regulate the development and deployment of AI systems within the EU (ODSC Team 2024). The move reflects a growing awareness of the potential risks associated with the uncontrolled development of AI and an effort to create a framework for its responsible use.

AI has become a key issue in military and defence. The U.S. Department of Defense has extensively explored the potential of AI use in various aspects of military operations, from autonomous systems to data processing and strategic planning (Klare 2023). The Israeli Defence Forces have unveiled the AI-equipped Barak tank, which can provide a 360-degree view of the battlefield, demonstrating the potential of AI in increasing soldiers' situational awareness (Aitken 2023).

The US Navy has begun to use data as a “secret weapon”, with AI playing a crucial role in analysing large amounts of information to improve decision making (Carton 2023). This trend reflects a broader shift towards data-driven decision-making in military operations.

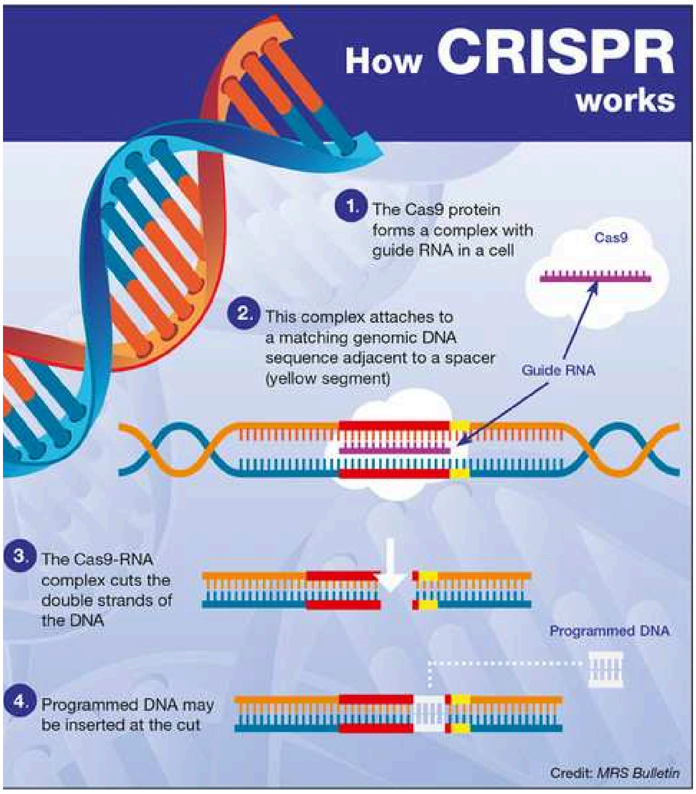
The growing importance of AI in the military has also led to intense discussions on the ethical aspects and the need for international regulation, especially in the context of autonomous weapons systems (Csernatoni 2023). These discussions highlight the complex nature of integrating AI into military strategies and the need to balance technological advances with ethical and security considerations.

The Israeli Defence Forces AI-equipped Barak tank (Archetype, 2023).

During 2023, there was also an increased emphasis on the development of Modular Open Systems Approaches (MOSA) and standards such as FACE (Future Airborne Capability Environment) in the defence domain. These initiatives aim to facilitate the integration of AI technologies into military systems while ensuring interoperability and flexibility (McHale 2023).

Overall, 2023 was a year of significant progress for AI along with increased awareness of its potential and risks. AI has become an integral part of discussions about the future of technology, work, education, and national security. As the capabilities of AI systems have grown, debates about the ethics, regulation, and societal implications of this technology have intensified. As AI continues to evolve and integrate into various aspects of our lives, it will be critical to continue these discussions and strike a balance between innovation and a responsible approach to AI development and deployment.

Human genome editing



How CRISPR works (Cambridge University Press, 2023.)

In 2023, significant advances were made in the field of human genome editing, primarily through CRISPR-Cas9 technology. One of the major milestones was the approval of Casgeva therapy, which is used to treat sickle cell anemia and beta thalassemia using genetic modification of stem cells (Live Science 2023; CRISPR Medicine News 2023). From a military perspective, there is increasing interest in using gene editing to improve the capabilities of soldiers, such as increasing resistance to radiation or creating “super-soldiers” with improved eyesight or strength (World Economic Forum 2023).

The US stresses that control of biotechnology is crucial to national security. In the future, genetic modification could protect against biological weapons or enable the creation of biological weapons based on specific genomes (BMC Medical Ethics 2023; Military Medical Research 2023). However, this also raises ethical issues, particularly regarding long-term security and their misuse in a military context (BMC Medical Ethics 2023).

Implications for the Armed Forces of the Czech Republic

Modern technology continues to shape the way military operations are conducted, with 2023 bringing a further shift toward “multi-domain operations”. These operations transcend the traditional boundaries of individual operational domains (space, airspace, surface, sea, and cyberspace) and require complex coordination and integration of forces across these domains. For the Army of the Czech Republic (ACR), this presents several key challenges and opportunities.

Outer space and its growing importance requires increased attention and investment in related technologies by the ACR. Although the Czech Republic does not aspire to become a space power, it is essential to develop capabilities in the use of satellite technologies for communication, exploration, and navigation. The ACR should seek to participate in international projects within NATO and the EU that focus on the development and sharing of space capabilities. At the same time, attention must be paid to protection against potential threats from space, including anti-satellite weapons and cyber-attacks on space infrastructure.

In the field of hypersonic technologies, the ACR must focus primarily on the development of defensive capabilities. Although the Czech Republic is unlikely to develop its own hypersonic weapons, it is essential that the ACR be able to detect and potentially defend against these systems within the framework of NATO’s collective defence. This includes investment in advanced radar systems, early warning systems, and integration into Alliance’s wider missile defence system.

Augmented and virtual reality represents a significant opportunity to improve the effectiveness of the ACR training. The implementation of these technologies can significantly increase the realism of the exercise, reduce costs, and enable the simulation of scenarios that would be difficult or impossible to implement in a real environment. The ACR should invest in the development and acquisition of advanced simulators and training systems using VR/AR, especially for training pilots, operators of complex weapons systems, and commanders at various levels.

Unmanned systems emerged as a key element of the modern battlefield in 2023, as confirmed by the conflict in Ukraine. For the ACR, this implies the need to expand its own fleet of unmanned aerial vehicles of various categories and purposes, from reconnaissance to offensive to logistics. At the same time, it is critical to develop robust capabilities in the area of defence against enemy UAVs (C-UAS), including electronic warfare and kinetic assets. The integration of unmanned systems into the broader concept of networked operations and the development of swarm technology capabilities can significantly compensate for the relatively small size of the ACR.

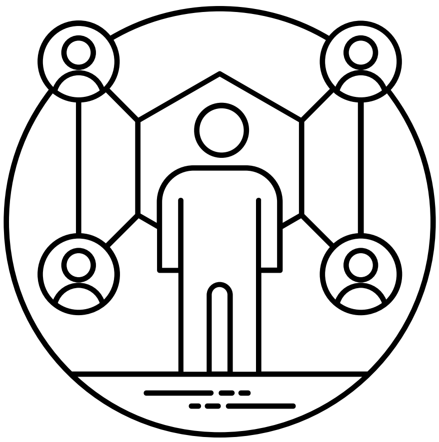
Cyberspace remains a critical domain where the ACR must continue to develop. Priority should be given to strengthening the cyber defence of its own systems and networks, developing offensive cyber capabilities to support conventional operations, and improving cyber intelligence and early warning capabilities. The implementation of advanced artificial intelligence technologies to detect and respond to cyber threats is key in this area.

Artificial intelligence, particularly generative AI, is revolutionising many areas of the military. For the ACR this means the need to use AI to improve decision-making processes at all levels of command and to implement it in intelligence, surveillance, and reconnaissance (ISR) systems to facilitate better analysis of large volumes of data. Generative AI can be used to create more realistic scenarios for training and planning, while the development of capabilities to detect and counter AI-generated disinformation is becoming increasingly important. Integrating AI into autonomous systems can significantly increase their efficiency and adaptability.

In the area of training and education, the ACR should implement adaptive training systems using AI to personalise training, develop multimodal simulations for comprehensive preparation for multi-domain operations, and use generative AI to create dynamic scenarios and virtual adversaries. These technologies can significantly increase the efficiency of staff training while reducing costs.

To streamline administrative processes, the ACR should consider implementing large language models to automate routine administrative tasks, using AI to analyse and optimise logistics processes, and deploying chatbots and virtual assistants for internal support and communication. These tools can significantly reduce the administrative burden and free up staff for more important tasks.

Era of multi-domain operations and rapidly evolving technological threats. In the field of autonomous systems, the ACR should focus on the development and integration of semi-autonomous systems for reconnaissance and logistics support, research on multi-agent systems (MAS) for coordinated operations, and addressing the ethical and legal aspects of the use of autonomous systems in accordance with international law. These systems have the potential to significantly increase the operational capabilities of the ACR while reducing the risk to human personnel.

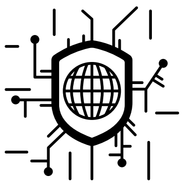


For the effective implementation of new technologies, it is essential to develop digital literacy and technological competencies of ACR personnel at all levels, to strengthen cooperation with academia and industry in the field of research and development, and to actively participate in international initiatives and projects within NATO and the EU. Creating a flexible acquisition system will enable rapid introduction of new technologies is crucial in this regard.

Given the relatively small size of the ACR, it is important to focus on the development of specialised (niche) capabilities that can bring significant added value to the Alliance, maximising the use of technology to increase combat effectiveness with limited human resources, and integrating advanced technologies into existing platforms to extend their service life and increase combat capability.

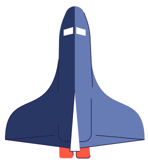
In can be concluded that the technological developments in 2023 have further deepened the need to transform the ACR towards a highly technologically advanced, flexible, and networked organisation. Successfully adapting to these trends will require not only investment in new technologies, but also fundamental changes in the organisational structure, doctrine, and mindset. The ACR must be prepared for the rapid pace of technological change and be able to respond flexibly to new challenges and opportunities that the future will bring. Only in this way can it ensure the effective defence of the Czech Republic and fulfil its obligations under NATO collective defence.

Impllication to armed forces

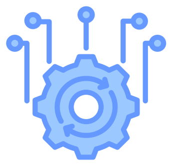


Multi-domain operations

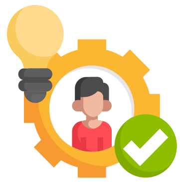
Cyber defence



Hypersonic protection



Autonomous systems



Digital competencies

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Other pictures and photos were inserted from Canva databank.

Conclusion

For the effective implementation of new technologies, it is essential to develop digital literacy and technological competencies of ACR personnel at all levels, to strengthen cooperation with academia and industry in the field of research and development, and to actively participate in international initiatives and projects within NATO and the EU. Creating a flexible acquisition system will enable rapid introduction of new technologies is crucial in this regard.

Given the relatively small size of the ACR, it is important to focus on the development of specialised (niche) capabilities that can bring significant added value to the Alliance, maximising the use of technology to increase combat effectiveness with limited human resources, and integrating advanced technologies into existing platforms to extend their service life and increase combat capability.

In can be concluded that the technological developments in 2023 have further deepened the need to transform the ACR towards a highly technologically advanced, flexible, and networked organisation. Successfully adapting to these trends will require not only investment in new technologies, but also fundamental changes in the organisational structure, doctrine, and mindset. The ACR must be prepared for the rapid pace of technological change and be able to respond flexibly to new challenges and opportunities that the future will bring. Only in this way can it ensure the effective defence of the Czech Republic and fulfil its obligations under NATO collective defence in the era of multi-domain operations and rapidly evolving technological threats. In the field of autonomous systems, the ACR should focus on the development and integration of semi-autonomous systems for reconnaissance and logistics support, research on multi-agent systems (MAS) for coordinated operations, and addressing the ethical and legal aspects of the use of autonomous systems in accordance with international law. These systems have the potential to significantly increase the operational capabilities of the ACR while reducing the risk to human personnel.

This analytical study evaluated the development of the security environment of the Czech Republic in 2023. The study is based primarily on materials prepared by the Centre for Security and Military Strategic Studies, as well as on analytical materials prepared in countries which share the same or similar security environment and security interests. The study presents the results of a comparative analysis of available open sources and contains an evaluation of selected state and trans-national actors. For the purpose of the study, a sectoral analysis based on the principles of the Copenhagen School was used, describing the political, social, environmental, military, technological and economic sectors.

The study analyses the period of the past year 2023 and tries to capture the main events and trends in specific sectors with impact on the security environment and to identify the implications for defence policy and the armed forces. Due to its specific nature, each sector was processed using a slightly different methodology. A specification of the methodological approach is thus given at the beginning of each chapter. These differences were caused, among other things, by the availability of quantitative data. However, the goal of this study was to maintain proportionality between the individual sectors, and the overall assessment of the security environment also tries to reflect the importance of all investigated sectors.

Security Environment.
Sectoral Analysis and Implications for the Armed Forces of the Czech Republic 2023

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