SECURITY ENVIRONMENT

SECTORAL ANALYSIS AND IMPLICATIONS FOR THE CZECH ARMED FORCES 2024

RICHARD STOJAR et al.

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University of Defence

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INTRODUCTION

This collective monograph primarily aims to assess the development of the broader strategic security environment of the Czech Republic in 2024 based on an analysis of individual sectors. An expert publication with this focus has been produced on an annual basis over the past decade. This facilitates long-term monitoring and identification of the principal development trends. The ambition of the Centre for Security and Military Strategic Studies (CSMSS, 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 CSMSS 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 CSMSS, 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 certain areas this connection is more pronounced than it has been in the relatively recent past. The monograph analyses the period of the year 2024, seeking to capture major events and trends with implications for the security environment in individual sectors, and further, to identify implications for defence policy and armed forces. The verification of the outputs was conducted within the framework of expert meetings, with the participation of members of the Ministry of Defence of the Czech Republic, Czech Armed Forces, and representatives of the community of security experts from the Czech Republic.

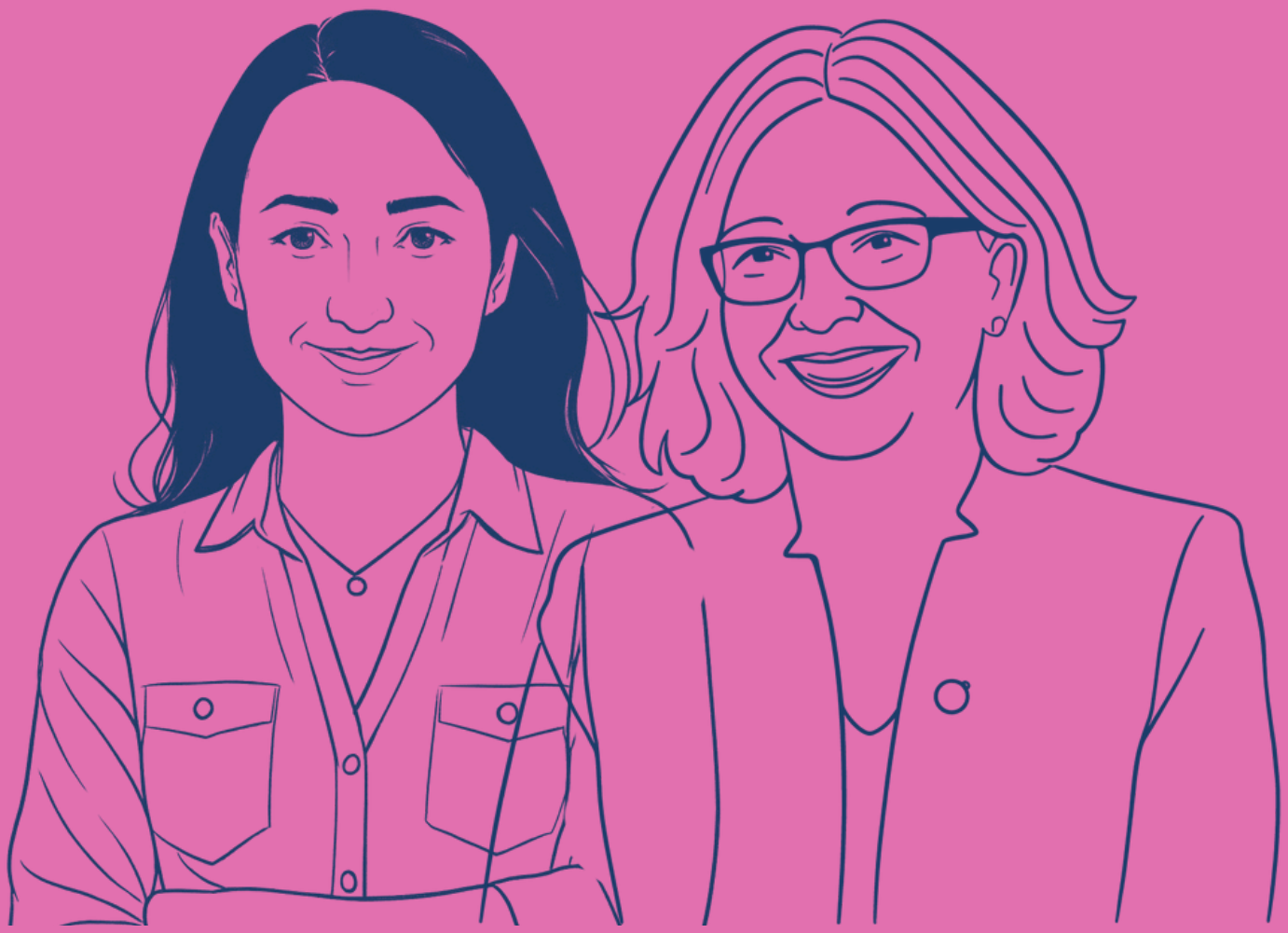
As in previous years, the addressed sectors and the related conclusions primarily analyse the situation for the past year and do not reflect the development, changes, and principal events that occurred after this period.

METHODOLOGY

The publication is based on the results of research and analyses of the Centre for Security and Military Strategic Studies and on the use of available analytical materials from open sources that assesses developments in individual sectors of interest. The specific and distinct nature of the sectors analysed is the reason for the different approach in treatment thereof. 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 searches, 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 CSMSS. Along with the sectors concerned, the monograph addresses the implications for the Czech Armed Forces 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 summarise 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.

POLITICAL SECTOR



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POLITICAL SECTOR

First, the political sector maps the specific events that affected developments in the sector in 2024, at both national (or intra-state) and international levels, including regional issues and relations among the superpowers. Subsequently, developments are mapped through three indicators to better identify certain trends.

DEVELOPMENTS AND EVENTS IN 2024

In 2024, several key political events and changes took place in the political sphere, causing government crises (Slovak Republic, Serbia, France, Romania, Bolivia, Venezuela, South Korea, Bangladesh), significant anti-government protests and political tensions (Slovak Republic, Serbia, Hungary, France, Poland, Georgia, Israel, Argentina, Colombia, Indonesia), including attempted military coups (Ethiopia, Burkina Faso, Democratic Republic of the Congo), humanitarian crises (Gaza, Yemen, Syria, Afghanistan, Ethiopia, Somalia, Sudan, Mali, Niger, Chad, Burkina Faso, Democratic Republic of the Congo, Bangladesh, Haiti, Honduras), and economic crises (Romania, France, Ukraine, Germany, Iran, Egypt, Pakistan, Sri Lanka, Argentina).

These events mostly took place at the national level. At the international and global levels, the war in Gaza, the conflict between Israel and Hezbollah in Lebanon, Israel's attack on Iran, and the war in Ukraine persisted from previous years. It can be said that all of these events have undoubtedly affected, and some of them continue to affect, the overall stability and security not only of individual countries and regions, but also the overall development of the international community and international security relations.

> "...the war in Gaza, the conflict between Israel and Hezbollah in Lebanon, Israel's attack on Iran, and the war in Ukraine... These events affected overall stability and international security."

NATIONAL AND INTERSTATE LEVELS

SLOVAK REPUBLIC

During 2024, Slovakia experienced significant tensions between the government and the political opposition, accompanied by frequent public protests highlighting concerns over the rule of law, media independence, and especially corruption. Other sources of political friction included Slovakia's foreign policy shift toward Russia, prompting it to be labelled as pro-Russian, as well as disputes over military aid to Ukraine and sanctions against Russia. In 2024, the government also pursued institutional consolidation of power through both legislative and personnel changes.

In February 2024, the Slovak government approved a reform of criminal law (including reduced penalties for corruption and economic crime, as well as shortened statutes of limitations) and changes to the judiciary, such as the abolition of the Office of the Special Prosecutor, which had operated for 20 years and handled the most serious corruption and criminal cases.

These measures sparked mass protests in Bratislava and other major Slovak cities throughout most of the year. Demonstrators, opposing the prime minister's pro-Russian stance and alleged violations of democratic principles, carried banners declaring "Slovakia is Europe". This, in turn, drew heightened attention from the EU and international organisations, raising questions over Slovakia's commitment to democracy, the rule of law, and media freedom (Šabata 2024).

THESE MEASURES SPARKED MASS PROTESTS IN BRATISLAVA AND OTHER major Slovak cities

Another significant political event in Slovakia in 2024 was the presidential election. In the second round, held on 6 April 2024, Peter Pellegrini (from the Hlas-SD party, supported by Smer) won and assumed office in June 2024. His main rival was Ivan Korčok, an independent candidate backed by the opposition (Votruba 2024). Key issues during the campaign included Slovakia's foreign policy, particularly military aid to Ukraine, and its relationship with NATO and the European Union.

Political tensions and broader societal unrest escalated sharply on 15 May 2024, when an assassination attempt was carried out against Prime Minister Robert Fico in the town of Handlová. The attacker fired several shots, leaving Fico gravely wounded and requiring multiple surgeries. Deputy Prime Minister Robert Kaliňák temporarily took over his duties.

In the second half of 2024, protests against the government continued, focusing on media freedom, the judiciary, and proposed healthcare reforms. Domestic tensions persisted and culminated in December 2024, when Prime Minister Robert Fico visited Moscow where he met Russian President Vladimir Putin (Pešeková 2024). This visit marked a major shift in Slovakia's previously established foreign policy. Nevertheless, the ruling coalition continues to maintain its majority and push forward with its agenda, while the opposition seeks to regroup in 2025 to challenge the dominant Smer party.

SERBIA

In 2024, political tensions were also evident in Serbia. Discontent had lingered in the country since Aleksandar Vučić became president in 2017, with his tenure widely described as a decline of democracy and a return to authoritarianism. Domestic tensions were further shaped by two key factors: Serbia's traditional historical ties to Russia, and the growing tendency among some Serbian politicians to look toward Europe, the European Union, and NATO, particularly after the outbreak of the war in Ukraine in 2022 (Stojanović 2024).

Several developments in 2024 had a decisive impact on Serbia's political trajectory and stability. First, there was a surge in civic activism, expressed mainly through the rising number of protests by students, regional communities, and environmental groups opposing projects seen as harmful to public interest and well-being. Second, corruption remained widespread, escalating after an incident in Novi Sad that was described as a serious failure of state oversight and transparency.

Third, the ruling Serbian Progressive Party (SNS) and President Vučić continued to consolidate power, extending their control at both the national and local levels, leading to eroding public trust in state institutions and disappointment over unfulfilled election promises. Fourth, growing ethno-nationalism was increasingly used by opposition politicians as a political tool to reinforce Serbian identity and ethnic issues across the republics of the former Yugoslavia. In June 2024, Belgrade hosted the first All-Serb Assembly, attended by Serbs from Serbia, Bosnia and Herzegovina (Republika Srpska), Montenegro, and other regions (Soria-Metais 2024). This event highlighted two important dynamics: the resurgence of ethno-nationalist politics in the Western Balkans and the declining influence of the European Union in the region. In July 2024, large-scale protests broke out in several Serbian cities (Šabac, Kraljevo, Aranđelovac) against lithium mining projects. President Vučić stated that the issue would be decided by referendum and that mining could not begin before 2028. The opposition responded by warning of corruption in contract allocations and the environmental risks posed by the projects.

Political tensions escalated further on November 1, 2024, when the newly renovated railway station in Novi Sad[1] collapsed, killing 16 people and injuring dozens. The tragedy was linked to allegations of negligence, mismanagement, and high-level corruption. In its aftermath, daily protests erupted, led by university students and citizens opposing the government and President Vučić, and soon spread across the country. Protest slogans included "Korupcija ubija" (Corruption Kills), with the image of a bloody hand becoming the symbol of the movement, representing the lives lost due to corruption in state and other institutions (European Western Balkans, 2025).

The protests culminated on December 22, 2024, when tens of thousands of demonstrators gathered in Belgrade, demanding a full investigation of the accident, accountability from those responsible, new elections, and stronger anti-corruption measures. What began as student-led protests grew into one of the largest civic movements in Serbia since the "Bulldozer Revolution" of 2000, which toppled Slobodan Milošević. The movement remained largely peaceful and decentralised, organising weekly marches in Belgrade with participation reaching up to 325,000 people. The slogan "15 minutes for 15 lives" became a symbol of the tragedy's victims.[2] The protests were supported not only by the general public but also by high-profile figures, including tennis champion Novak Djoković and members of the Serbian Orthodox Church. While the demonstrations ultimately forced Prime Minister Miloš Vučević to resign, President Aleksandar Vučić refused to step down.

participation reaching up to
325K
people

GEORGIA

In 2024, Georgia also faced political tensions, anti-government protests, and a government crisis. In the spring, the ruling party Georgian Dream (in power since 2012) introduced a package of constitutional amendments aimed at preserving so-called "traditional values", including restricting LGBT rights and prohibiting same-sex couples from adopting children. These measures were intended to reinforce cultural traditionalism and protect Georgia's cultural heritage, but they also drew sharp criticism from international human rights organisations, including the EU.

AMENDMENTS AIMED AT PROHIBITING SAME-SEX COUPLES from adopting children

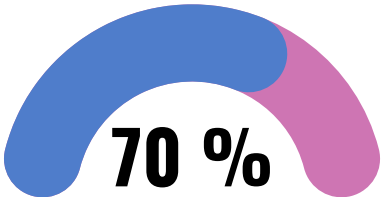
In April 2024, debates resurfaced over the government's proposed "foreign agents" law, triggering the first major protests in Tbilisi (Machaidze 2024). The opposition argued that the law was modelled on Russia's and would undermine the independence of media and NGOs. On 14 May 2024, the Parliament passed the law,[3] sparking mass demonstrations by tens of thousands in Tbilisi and other Georgian cities. Society grew deeply polarised. These protests were described as the largest since 1991, when Georgia gained independence from the Soviet Union. The international community, including the EU, the United States, and major human rights groups, condemned the law as anti-democratic and inspired by the Russian model. Its adoption also strained Georgia's EU membership prospects: in November 2024, accession talks were suspended. The ruling Georgian Dream party faced further criticism for authoritarian tendencies and for steering Georgia's foreign policy closer to Russia. The country has not joined Western sanctions against Moscow, resumed direct flights between Tbilisi and Moscow in 2023, and has become a key transit point for Western technologies and goods entering Russia.

On 26 October 2024, parliamentary elections were held under a fully proportional system with a 5% threshold for representation. Georgian Dream won, but the opposition accused the ruling party of manipulation, lack of transparency, and ballot fraud. These allegations ignited further protests, with demands for a recount or new elections. Demonstrations intensified after Georgian Dream announced it would suspend EU accession talks until 2028. This decision clashed with the views of roughly 70% of Georgians, who, according to polls, support European integration. Around 200,000 protesters took to the streets demanding new parliamentary elections, the release of those detained during demonstrations, and the restoration of a pro-European foreign policy. The EU responded that Georgia must reform its electoral and judicial systems, repeal the foreign agents law, guarantee media freedom, and reduce political and societal polarisation before accession talks can resume.

[1] The city of Novi Sad is located in the north of Serbia. It is the capital of the autonomous province of Vojvodina and the second largest city in Serbia (approx. 260 thousand inhabitants).
[2] A total of 16 people died, with the 16th victim succumbing to his injuries in March 2025
[3] The Foreign Influence Act states that organisations (media, non-profit organisations, or others) that receive more than 20% of their budget from abroad must be designated as "entities under foreign influence". These organisations are required to publish their financial income, including statements, every year and to report where their funds come from (mandatory transparency). Failure to disclose their income is punishable by high fines. These organisations fall under the jurisdiction of the Ministry of Justice.

On 14 December 2024, Georgian Dream's Mikheil Kavelashvili was elected president and assumed office on December 29. The opposition denounced the presidential election process as fraudulent, just like the parliamentary vote. Transparency International labelled the election illegitimate, which once again sparked mass protests across the country.

Infographics 1: European integration support in Georgia



ROMANIA

In 2024, Romania experienced government crises, political tensions, anti-government protests, and a fiscal crisis. Early in the year, heated debates began over the state budget and the growing fiscal deficit, an issue also flagged by the European Union. Prime Minister Marcel Ciolacu's government (Social Democratic Party) faced heavy criticism over the budget, particularly for its weak control of public spending. Although some austerity measures were introduced, the deficit continued to rise, as did tensions within the ruling coalition. The domestic crisis was further fuelled by a proposed tax reform and protests by public sector employees demanding higher wages. By 2024, Romania had one of the highest budget deficits in the EU, reaching 9.3% of GDP. Under EU pressure, Romania began preparing fiscal reforms and austerity packages, which in turn triggered widespread public dissatisfaction and union strikes (The Guardian, 2024).

n November 2024, the first round of presidential elections took place, with independent candidate Călin Georgescu emerging as the winner. This outcome sparked mass protests among young people and students in Bucharest and other cities. Soon after, then-President Klaus Iohannis released intelligence reports claiming that Russia had supported Georgescu's campaign through Russian-linked social media platforms, allegations that Moscow flatly denied, rejecting any interference in Romania's elections. Shortly thereafter, Romania's Constitutional Court intervened, annulling the election results before the scheduled second round and ordering a complete re-run. The court cited manipulation of the campaign and results through information channels, social media platforms (such as TikTok), and the involvement of the Russian Federation. Both Russia and the social media companies denied any role in influencing the campaign in Georgescu's favour. However, Georgescu was barred from participating in the second round or any future presidential election. This ruling triggered new protests in Bucharest against the court's decision (Dumitrescu, 2024).

In December 2024, a new pro-European coalition government was formed, led by Prime Minister Marcel Ciolacu and comprising the Social Democratic Party, the National Liberal Party, the Save Romania Union, and smaller Hungarian minority parties. The new government introduced strict austerity measures, including tax increases, reduced social benefits, and the freezing of some public sector wages and pensions (Calus, 2025). These measures once again sparked mass anti-government protests against the fiscal policies and reforms, ensuring that social tensions would continue into the following year.

FRANCE

Like in 2023, France in 2024 was again marked by economic crisis, domestic political tensions, and waves of anti-government protests and demonstrations. Political instability persisted, with deep divisions in parliament and the inability to form a majority government, leading to frequent collapses and reshuffling of cabinets. This instability made it difficult to push through economic and budgetary reforms and further weakened the government. Investor confidence, both domestic and foreign, declined, and public trust in government eroded. Within French politics, right-wing populist parties and left-wing coalitions gained influence, while society became increasingly polarised not only over political allegiances but also over issues such as migration, preservation of cultural values and heritage, public spending, and social rights. These themes dominated political and public debate. Economically, rising interest rates, growing budget deficits, and mounting public debt undermined reform plans and threatened France's ability to comply with EU fiscal criteria.

The year 2024 began with farmers' protests against high costs, environmental regulations, and especially cuts to agricultural subsidies. Farmers blocked roads and highways to pressure the government on agricultural policy. These protests continued into April and May, prompting the government to announce new support packages for farmers. At the same time, heated political debates erupted over budget cuts, as the EU flagged France's deficit exceeding 5% of GDP. On 1 May 2024, massive demonstrations were held against government policy, rising inflation, and proposed social reforms (RFI, 2024).
A landmark event occurred in March 2024 when France became the first country in the world to enshrine abortion rights in its constitution, hailed internationally as a step reinforcing France's open and liberal character.

THE FIRST COUNTRY TO ENSHRINE ABORTION RIGHTS in its constitution

Political tensions spiked in June 2024 during the European Parliament elections on 9 June, when Marine Le Pen's National Rally (RN) won 31.5% of the vote. President Macron's Renaissance coalition (RE) came far behind, with 14.6%. On the same day, President Macron dissolved the National Assembly and called snap parliamentary elections (held on 30 June and 7 July). No party won a majority. While the RN and the left-wing New Popular Front strengthened their positions, Macron's coalition weakened. The result was a hung parliament, making government formation nearly impossible.

In September 2024, Macron appointed Michel Barnier, former European Commissioner, as prime minister. However, his minority government fell on December 4 after a no-confidence vote. François Bayrou was then appointed prime minister. Bayrou's programme aimed to reduce the budget deficit, impose austerity, freeze social spending, and even proposed abolishing certain public holidays. These measures triggered fierce criticism and renewed protests, further intensifying political instability (Ellyatt, 2025).

One more noteworthy episode took place under Barnier's government: the use of Article 49.3 of the constitution to push through the social security budget without a parliamentary vote. (The same article had been invoked in 2023 by then, Prime Minister Élisabeth Borne to pass the pension reform.) This move again provoked mass protests across France and ultimately contributed to the government's fall as mentioned above.

ISRAEL

In 2024, Israel continued to experience significant political tensions and unrest in connection with the war in Gaza. The year 2024 was marked by intense military conflict, political changes, and economic impacts, which undoubtedly affected the wider region, where the situation remains tense. Israel's domestic and foreign policies were largely shaped by the ongoing conflict with Hamas, military operations against Hezbollah in Lebanon as well as against Iran, and growing public pressure on Prime Minister Benjamin Netanyahu to end the hostilities.

At the very beginning of the year, on 2 January 2024, Israel carried out a drone strike targeting Saleh al-Arouri, the deputy leader of Hamas residing in Beirut. The elimination of another Hamas leader worsened relations with Palestinian supporters, including Hezbollah and Iran.

In February 2024, municipal elections were held in Israel. However, voter turnout was low at 49.5%, due to the ongoing war in Gaza and months of delays (ČTK 2024). Special arrangements were made for tens of thousands of Israeli citizens to vote as soldiers at military bases. n northern and southern towns and villages largely evacuated since October 2023, elections were not held due to the minimal resident population.

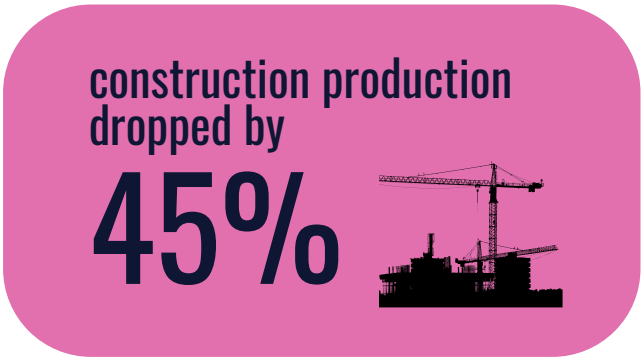
In May, primary elections were held within the Labor Party, resulting in Yair Golan, former member of parliament for the left-wing Meretz party and former Deputy Chief of Staff of the Israel Defense Forces, becoming the party leader. Golan is known for advocating a two-state solution to the Israeli-Palestinian conflict and for criticising the war in Gaza and the killing of civilians, including women and children.[4]

On 31 July 2024, Israel conducted an airstrike in Tehran, killing Hamas leader Ismail Haniyeh, who had led Hamas in Gaza since 2007 and had recently been involved in ceasefire negotiations with Israel mediated by Egypt, Qatar, and the United States. Palestinian Authority President Mahmoud Abbas condemned the killing, and mass demonstrations and general strikes erupted across the Palestinian territories. Russia, China, Turkey, Qatar, and Hezbollah also condemned the strike, warning that attacks on civilians would destabilise the region and undermine peace efforts, while reaffirming their support for the Palestinian cause and the establishment of a Palestinian state (Reuters 2024).

On 5 November 2024, Prime Minister Netanyahu dismissed Defense Minister Yoav Gallant, who had sought the rapid release of Israeli hostages in Gaza and investigations into the 7 October 2023 attacks. Gallant was replaced by Israel Katz.

Netanyahu cited weakened mutual trust as the reason for the dismissal, which sparked large-scale protests across Israel. Demonstrators in Tel Aviv and Jerusalem demanded an end to the war in Gaza and the release of hostages held by Hamas since the outbreak of conflict in October 2023. These protests became known as the "Gallant Night". On 21 November 2024, the International Criminal Court issued arrest warrants for Defense Minister Gallant, Prime Minister Netanyahu, and three Hamas leaders for war crimes and crimes against humanity committed during the Gaza conflict since 2023. Protests continued throughout December, focusing on ending the war and securing the release of Israeli hostages, 141 of whom were returned by the end of the year.

The economic impact of the Gaza conflict and other Israeli military operations in 2024 on Israeli economy was significant, though not catastrophic for the Israeli state administration. Military actions slowed economic growth, reduced domestic consumption and foreign investment, and increased national debt. Gaza's conflict caused labour shortages, especially in construction, where around 200,000 West Bank and 18,000 Gaza Palestinian workers had previously been employed. Construction production dropped by 45% in 2024, and Israel sought to replace missing workers with labourers from India, Thailand, and China. The war reduced GDP, increased unemployment, and rising defence spending widened the budget deficit.



Israel's total national debt reached 1.33 trillion shekels, or 69% of GDP. The government approved further borrowing, increased VAT from 17% to 18%, raised social security contributions, and proposed cuts in social welfare, healthcare, and education (Cordal, 2024).

The economy in Gaza remained in total collapse, as did agriculture and food production. Since the outbreak of war in 2023, Israel destroyed over 60% of Gaza's buildings and infrastructure. The region is now fully dependent on humanitarian aid. According to World Bank estimates, reconstruction will require more than $50 billion (around 1 trillion CZK) (Cordal, 2024).

SOUTH KOREA

In 2024, South Korea experienced significant political and economic tensions. Parliamentary elections were held in April 2024, with the main competing parties being the Democratic Party of Korea (DPK), then the ruling party in the National Assembly, and the conservative People Power Party (PPP), whose candidate Yoon Suk Yeol assumed the presidency in May 2022. e main leader of the Democratic Party was Lee Jae Myung, who survived an assassination attempt on 2 January 2024, and later became president. Voter turnout for the parliamentary elections was 67%, and smaller political parties gained stronger positions.[5]

[4] In a radio interview, the politician Golan stated regarding Israel's military action in Gaza: "A sensible country does not wage war against civilians, does not kill children for fun, and does not engage in mass displacement of its population." For more details, see https://www.nbcnews.com/world/middle-east/ex-israel-general-warns-gaza-pariah-rcna207615

[5] In 2020, South Korea introduced a mixed proportional representation political system to ensure greater representation of smaller political parties in the National Assembly

South Korea's key economic challenges in 2024 included rising inflation and food prices, increasing cost of living, higher unemployment, low economic growth, declining public trust, a rapidly aging population, and a shortage of healthcare professionals. These issues influenced the parliamentary elections, as President Yoon Suk Yeol's ruling party received very low support. Public dissatisfaction with his policies and the broader political establishment had been significant in recent years. Ahead of the elections, nationwide strikes by doctors protested the president's proposed reforms. These reforms aimed, among other measures, to increase the annual intake of medical students by up to 2,000. Doctors, however, argued that existing issues were being ignored, including worsening working conditions, low salaries, and declining quality of healthcare (Medium 2024).

Tensions culminated on 3 December 2024, when President Yoon Suk Yeol declared a state of emergency and martial law. He cited alleged connections between opposition parties, including members of the National Assembly, and North Korea, obstruction of parliamentary activity, and the need to safeguard constitutional order and freedom of speech. The same day, the National Assembly ended martial law, military forces stood down, and parliamentary authority was restored. The international community, as well as domestic politicians, condemned the event as an attempted coup, triggering public protests. Shortly afterward, an opposition-led vote to remove President Yoon Suk Yeol was held. On 14 December 2024, the vote was approved and later confirmed by the Constitutional Court. Yoon was stripped of all powers and charged with rebellion.

ARGENTINA

In 2024, Argentina underwent significant economic changes initiated by President Milei at the end of 2023. In previous years, Argentina had faced serious political and economic crises. Despite being one of the wealthiest countries in the world, it had long struggled with economic problems, including rising poverty, high inflation, and declining living standards. By the end of 2023, the country faced the threat of state bankruptcy.

> ...after one year under President Milei, Argentina's economy significantly improved, the recession ended, and the country experienced economic growth.

Annual inflation in 2023 reached nearly 200%, poverty exceeded 40%, economic growth was -1.6%, the fiscal deficit stood at 15% of GDP, and there was a long-standing trade deficit (IDEA INT 2024). However, after one year under President Milei, Argentina's economy significantly improved, the recession ended, and the country experienced economic growth.

In March 2024, President Milei presented for the first time a ten-point reform plan, known as the May Pact (Pacto del 25 de Mayo). The date of signing, 25 May, commemorates the May Revolution of 1810. The reform package included tax system adjustments, privatisations, fiscal reforms, economic deregulation, changes to federal revenue distribution, reductions in public spending, a balanced budget, labour and pension system reforms, strengthened provincial powers, and other measures.

The pact received varying support from provinces, but was generally accepted. In 2024, President Milei abolished 10 of Argentina's 18 ministries, reduced the salaries of top government officials, and dismissed around 34,000 public sector employees, lowering government spending by up to 30%. He also ordered the closure of the state news agency Telam,[1] established in 1945, which he considered a propaganda tool for the opposition Peronist party. Former employees (about 700 people) criticised the closure as a violation of press freedom and democracy, triggering large protests.

Infographics 2: Measures in state sector by president Milei

The public also protested economic and social reforms, particularly cuts to university funding, pensions, and support for people with disabilities. Despite the unpopularity of President Milei's policies, Argentina experienced a positive economic turnaround. In 2024, the country achieved its first budget surplus in more than a decade. Persistent challenges remain, however, including high inflation, rising prices, unemployment, and poverty (Stocklin, 2025).

AFRICAN STATES

In 2024, the African continent saw fewer military coups than in 2023. Many countries remained under military regimes established in previous years, yet several significant attempts at coups, internal power shifts, or consolidation of ruling military regimes still occurred. These events had wide-ranging political and economic impacts, worsened security, especially in the Sahel region, and led to humanitarian crises in the affected countries.

On 19 May 2024, an attempted coup took place in the Democratic Republic of the Congo, when an armed group led by Christian Malanga attacked the presidential palace. The attempt was unsuccessful and the uprising was suppressed, but it heightened political tensions in the country. Christian Malanga led the United Congolese Party (UCP), which he founded in the United States. In 2017, he formed a new exiled government in the African Zaire and declared himself president. During the May 2024 coup attempt, Malanga was shot.

This failed coup significantly strengthened the government of President Félix Tshisekedi, who arrested several foreigners involved in the plot, including Americans and British citizens, drawing international attention and diplomatic discussions. The African Union condemned the coup attempt (Chatelot 2024).

Other coup attempts in 2024 occurred in Ethiopia and Burkina Faso. In countries such as Mali, Niger, and Guinea, military regimes continued to hold power, having seized control in previous years.

[6] Telam was the largest public news agency in Latin America and the second largest in Spanish-speaking countries..

INTERNATIONAL AND GLOBAL LEVELS

The development of the international environment in 2024 was influenced by several significant events. These primarily included the ongoing conflict in Ukraine, the continuing conflict in Gaza, Israeli military operations in Lebanon and against Iran, and the conflict between the Houthi rebel group and the Yemeni government.

WAR IN GAZA

In 2024, the war in Gaza, which began on 7 October 2023, with the Hamas attack on Israeli territory called "Operation Flood", and the subsequent Israeli military counteroffensive in Gaza known as "Operation Iron Swords", continued. According to Hamas, the attack was prompted by the long-standing blockade of the Gaza Strip[7] and the ongoing illegal construction of Israeli settlements in Palestinian territories. During 2024, nearly 24,000 people were killed and approximately 52,000 injured in this conflict.Since the start of the conflict until December 2024, over 46,000 people died. The United Nations accused Israel of committing genocide in Gaza, which Israel refused, calling the UN's claims false and anti-Semitic. The United States repeatedly expressed support for Israel, viewing Hamas as a terrorist organisation threatening the region. The European Union (EU) did not always have a unified stance on the war in Gaza, with divisions among member states. However, the EU repeatedly called for an end to hostilities, the release of hostages, adherence to international law, and the provision of humanitarian aid for civilians in Gaza, where famine was spreading. The EU also supported international humanitarian and medical organisations operating in Gaza, such as the UN Relief and Works Agency for Palestine Refugees (UNRWA). Some of their staff were killed during their work in Gaza in 2024. UN Secretary-General António Guterres consistently warned of the catastrophic humanitarian situation in Gaza, including famine, lack of medical care, medicine, and basic necessities.

At the beginning of January 2024, the Israeli military withdrew from northern Gaza, but expanded operations to the West Bank and, in February, to the southern Gaza Strip. In January 2024, the Hamas leader living in Lebanon, Saleh al-Arouri, was killed, as previously mentioned. In spring 2024, the Israeli military carried out further attacks in northern Gaza, targeting the Shifa Hospital, and in the south, the Amal and Nasser hospitals in Khan Yunis. Israel claimed Hamas used these hospitals, which Hamas denied. The UN Security Council and the EU, for the first time since the conflict began, issued a joint statement supporting a ceasefire (Diamond 2024).

In April 2024, several Israeli airstrikes targeted a humanitarian convoy from the NGO World Central Kitchen, killing several staff, including Europeans.[8] Israel faced strong international criticism for this. One of the largest Israeli offensives occurred in late April 2024 in Rafah, aiming to destroy a Hamas rocket factory. The UN Office for the Coordination of Humanitarian Affairs (UNOCHA) declared the situation in Gaza a humanitarian catastrophe; by 20 May, over 950,000 people had fled Rafah. The International Court issued an order to halt the Israeli offensive and grant UN investigators access to the area, which Israel refused. Additional attacks struck a refugee camp near Rafah, and at the Israel-Egypt border, an Egyptian soldier was killed during an incident with Israel. om the second half of the year through December 2024, Israeli operations continued throughout Gaza, including Khan Yunis and Gaza City.

Fr In Tehran, Iran, Hamas leader Ismail Haniyeh was assassinated, and in October 2024, Yahya Sinwar, who had led Hamas since August, was killed in southern Gaza.

Although the international community, including the US, Russia, the UN, and the EU, condemned the Hamas attack on Israel, support for the State of Israel declined as the conflict continued. The war between Israel and Hamas caused significant international diplomatic tensions and affected regional and global relations. On one hand, Israel's right to self-defence was recognised, but during repeated Israeli offensives in Gaza, the international community increasingly condemned these military actions, labelling them as genocide and calling for an immediate halt to fighting (ČTK 2024). UN member states increasingly discussed a two-state solution to the Israeli-Palestinian conflict. During the war, the UN Security Council repeatedly proposed resolutions calling for an immediate ceasefire and the release of hostages, but these were vetoed by the United States. The first Security Council resolution on Gaza was approved on 25 March 2024, with the U.S. abstaining. During the conflict, the independence of the Palestinian state was recognised by Spain, Ireland, Norway, Armenia, Slovenia, Barbados, Jamaica, the Bahamas, Mexico, and Trinidad and Tobago.

This conflict in Gaza had a profound impact on international geopolitical and security relations, affecting stability, security, and development throughout the Middle East. The peace process in Israeli-Palestinian relations has been completely halted, and it is unclear whether it will resume soon. The conflict has also had broader implications, as Israel has used the war in Gaza to extend its offensives into other regions of the area.

CONFLICT WITH LEBANESE HEZBOLLAH

The Lebanese movement Hezbollah has long been a supporter of Hamas. In 2024, repeated attacks, counterattacks, and airstrikes occurred between the Israeli military and Hezbollah units. According to Israel, the aim of these strikes was to destroy Hezbollah's military infrastructure, stop its rocket and drone attacks from Lebanon on Israeli territory, and, if possible, create a security zone along the Lebanese border. Since 1978, this border has been monitored by the UN peacekeeping mission, UNIFIL.

A significant escalation occurred from 23 to 27 September 2024, when Israel conducted over 650 airstrikes on Lebanon, killing more than 700 people, including 50 children and 94 women. This Israeli military operation was named "Northern Arrows", with the objective of escalating tensions along the Israeli-Lebanese border.

[7] The Gaza Strip has been under an Israeli blockade since 2007, when Israel and Egypt imposed strict restrictions on the movement of people and goods in the Gaza Strip. The blockade was intended to be a response to Hamas winning elections in the Palestinian territories in 2006, defeating Fatah and taking over the government in Gaza. Fatah rules the West Bank.
[8] Over more than 200 aid workers died since the start of the conflict until December 2024.

Through the sheer number of airstrikes, Israel sought to weaken Hezbollah and eliminate its senior leaders. On 27 September 2024, a bombing operation targeted Hezbollah leader Hassan Nasrallah and other top figures of the organisation. This operation was preceded by a Mossad-planned action aimed at disrupting Hezbollah's communications network. On 17 and 18 September 2024, multiple explosions occurred at communication devices (pagers) used by Hezbollah members. Thousands of pagers simultaneously exploded in Lebanon and Syria, resulting in 42 deaths, including 2 children, and over 3,500 injuries (Pacchiani 2024).

Another major ground military operation by the Israeli Defense Forces in Lebanon began on 1 October 2024. The objective of this operation was the complete destruction of Hezbollah's military infrastructure. Israeli strikes targeted hospitals, roads, and infrastructure south of the Litani River, as well as in the capital, Beirut, which housed Hezbollah's intelligence mmand centre and weapons production facilities. Other targets included Nabatiyeh, one of Hezbollah's key centres, and UNIFIL peacekeeping posts in southern Lebanon, which refused to withdraw. On 26 November 2024, a 60-day ceasefire was approved. However, the following day, the Israeli military violated the ceasefire, with reports of several incidents affecting Lebanese civilians returning home. Israeli forces remained in southern Lebanon, and the Israeli Air Force continued operating in Lebanese airspace, conducting airstrikes against Hezbollah positions. Residents of southern Lebanon were not allowed to return to their homes. The ceasefire agreement provided for a 60-day halt to hostilities and the deployment of the Lebanese army along the Israeli-Lebanese border. According to Hezbollah leader Naim Qassem, only an agreement that preserves Lebanese sovereignty and ends Israeli shelling could be valid. Hezbollah opposed any presence of Israeli forces on Lebanese territory (Da Silva 2024).

Key EU states (the United Kingdom, France, Italy, Spain), as well as the United States, Russia, China, Turkey, and the UN, condemned the Israeli military offensive in Lebanon and fully supported the ceasefire agreement. In response, Israel barred UN Secretary-General António Guterres from entering Israeli territory.

IRANIAN-ISRAELI CONFLICT

The Iranian–Israeli conflict erupted on 1 April 2024, when Israel carried out airstrikes on the Iranian consulate in Damascus. Several high-ranking officials of the Iranian Revolutionary Guards were killed in the attack. Since the outbreak of the war with Hamas, Israel had repeatedly struck targets belonging to Hezbollah and Iran in Syria and Lebanon, both of which have long supported Hamas. In response to the Israeli strike in Damascus, Iran launched a large-scale attack, releasing hundreds of drones and missiles toward Israel. These were intercepted by Israel with assistance from the United Kingdom, the United States, and Jordan. Iran was supported by the Houthi rebels in Yemen and the Islamic Resistance organisation in Iraq. The international community demanded an immediate de-escalation, prompting the United States and the European Union to impose additional sanctions on Iran. On 18 April, reports emerged that the U.S. had authorised Israel to conduct a military operation in Rafah, Gaza, provided Israel refrained from retaliatory strikes against Iran (The Jerusalem Post, 2024).

Tensions escalated further after the assassination of Hamas leader Ismail Haniyeh in Tehran in July 2024, followed by Israeli airstrikes and a ground invasion of Lebanon in September and October 2024.

In retaliation for the Lebanon attack, Iran fired approximately 200 ballistic missiles at Israel (Operation True Promise II), targeting military airbases such as Nevatim, Tel Nof, and other strategic sites. Diplomatic discussions between the U.S. and Israel ensued regarding possible retaliatory measures and de-escalation efforts. The U.S. also bolstered Israel's defence with the THAAD missile defence system. Israel pledged not to strike Iran's nuclear or oil facilities. Nevertheless, on 26 October 2024, Israel carried out further airstrikes on Iranian military targets in Tehran and Damascus, specifically targeting facilities involved in the production of missile fuel supplied by Iran to Hezbollah and Yemeni rebels.

YEMEN AND THE HOUTHIS

Yemen remains one of the countries facing the world's most severe humanitarian crises. Over 18.2 million people, including 9.8 million children, require immediate humanitarian assistance. The political situation in Yemen has been in long-term conflict since 2014, following the so-called Arab Spring, and the civil war continues to this day. Two major factions effectively divide control of the country: the Houthis govern the northern regions, including the capital Sana'a, while the rest of Yemen is controlled by the internationally recognised government, supported by a coalition led by Saudi Arabia and the United Arab Emirates (with the temporary capital in Aden).

Since the end of 2023, and especially throughout 2024, the conflict has significantly expanded into the Red Sea region. The Houthis carried out intensive attacks on international commercial ships using drones and missiles, escalating political tension in the region and prompting increased international military responses, mainly from the U.S. and the U.K. These counterattacks often had substantial economic and humanitarian consequences, damaging critical infrastructure such as the Hodeidah port, which is essential for delivering humanitarian aid. This severely restricted the import of food, medicine, and other assistance.

In Houthi-controlled areas, food insecurity, famine, and malnutrition, particularly among children, intensified. The spread of cholera and other diseases increased significantly. Additionally, incidents of detention and disappearances, including among humanitarian workers and journalists, were reported. Infrastructure suffered heavy damage, with port facilities, power plants, and fuel storage depots destroyed.

Infographics 3: Situation in Houthi-controlled areas

According to the UN, Yemen in 2024 was described as a region at risk of escalating into full-scale war, with conflicts already taking on a regional dimension, posing a serious threat to future stability (ACLED News 2024). Diplomatic or other negotiations remain extremely difficult, particularly regarding the reopening of ports, banking systems, air links, and implementation of economic reforms. The potential for regional escalation is heightened by the involvement of states pursuing their security and strategic interests, including Israel, Saudi Arabia and its allies, and Iran.

The Houthis, supported by Iran, carried out several airstrikes on Israel since the outbreak of the Gaza war. For example, in July 2024, an Iranian-made drone exploded in Tel Aviv, killing one person and injuring several others. The Israeli army retaliated with an airstrike (Operation Long Arm) on the port of Hodeidah, causing six deaths and over 80 injuries. The Israel–Houthi conflict further escalated in December 2024, when the Houthis fired a missile at Israel, prompting Israeli airstrikes on Yemen's energy infrastructure and ports.

WAR IN UKRAINE

THE WAR CONTINUED WITH NO PEACE SOLUTIONS. SECURITY, or stability achieved.

In February 2024, President Zelensky dismissed General V. Zaluzhnyi from his position as Chief of the General Staff of the Armed Forces of Ukraine. In the same month, Russian forces captured Avdiivka, a suburb of Donetsk with a significant strategic importance, which was almost entirely destroyed. In April 2024, the U.S. House of Representatives approved a revised aid package of approximately $61 billion for Ukraine, including military and economic assistance for Ukraine and its allies. Around the same time, the Ukrainian president signed a new mobilisation act to increase the size of the armed forces. The mobilisation age was lowered from 27 to 25, and men aged 18 to 65 were prohibited from leaving the country. Forced mobilisation was carried out in the streets by Ukrainian authorities (Ukrainian Institute of Politics 2024).

Further attacks occurred in June 2024 in the Kharkiv region. Russia intensified its attacks on Ukraine's energy infrastructure throughout 2024, frequently targeting thermal and hydroelectric power plants, such as those on the Dnipro River (DniproHES). Significant missile and drone attacks by Russia took place in August 2024 across several Ukrainian regions. In response, the Ukrainian army launched its first offensive into Russian territory, attacking the Kursk region and capturing the town of Sudzha. In October 2024, soldiers from North Korea joined the conflict on the Russian side.

In June 2024, Ukraine officially began accession negotiations with the European Union.

men aged 18-65 were **PROHIBITED** from leaving country.

ASSESSMENT OF SELECTED INDICATORS

Selected indicators serve to illustrate the development in the political sector with quantitative data. However, compared to the previous Security Environment publications, data for only three out of six indicators were available for the year 2024 at the time of writing (see Table 1).

Table 1: Selected indicators

Indicator	Source index	Publisher of the index	Index scale*
Democracy	Democracy Index (DI)	Economist Intelligence Unit	1-100
Corruption	Corruption Perception Index (CPI)	Transparency International	1-100
Terrorism	Global Terrorism Index (GTI)	Institute for Economics and Peace	1-10

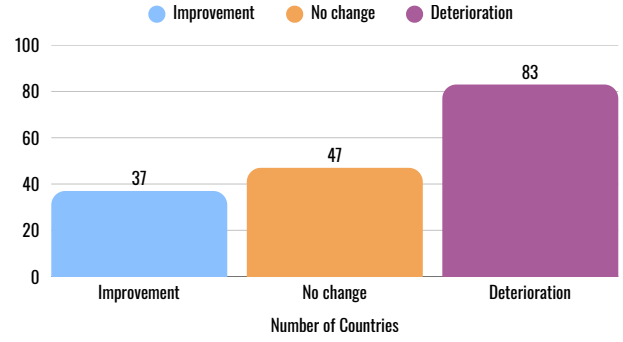
* Green indicates optimal state, red indicates critical state
Source: authors

Below are presented the basic findings, including the best and worst performers and the major changes per indicator. The state and the change in indicators in 2024 are then evaluated from three perspectives: the entire world, the European Union, and the Czech Republic, with each value assigned a specific score. The evaluation of the state ranges from 1 to 5, where a higher value corresponds to a better situation. The change 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 process is primarily intended to unify the approach across indicators, thereby enabling comparisons across them (see Table 8). Finally, multivariate analyses (principal component and cluster analysis) of the three indicators were conducted in R software to understand and visualise the associations between indicators and between individual cases.

DEMOCRACY

In 2024, the Democracy Index continued to decline. It decreased by the same value as the previous year (-0.06) and thus dropped to a new historical minimum of 5.17 since its inception in 2006. This trend has raised questions about the functioning of democracy (EIU 2025). Moreover, in 2024, half of the countries deteriorated in terms of democracy (83 out of 167) with average decrease in index by 0.17, while only 37 improved with average increase by 0.15 (Figure 1).

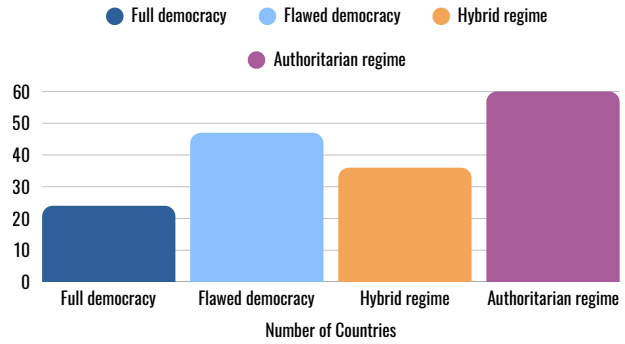
Figure 1: Changes in the DI in 2024



Source: authors, based on EIU (2025)

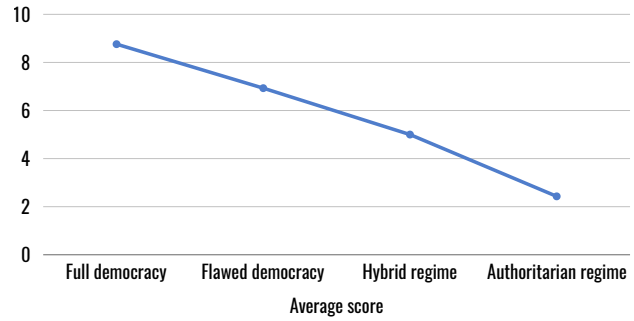
The authoritarian regime remains the most represented category (see Figure 2). At the same time, the average score for respective countries further decreased by 0.04, which led the Economist Intelligence Unit to conclude that "authoritarian regimes tend to become even more authoritarian" (EIU 2025, p. 9). On the other hand, full democracies constitute a minority, joined in 2024 by three states (the Czech Republic, Estonia, and Portugal), while two other states were downgraded to flawed democracies (France and South Korea). Three states (Papua New Guinea, Paraguay, and Romania) previously classified as flawed democracies were reclassified as hybrid regimes. Finally, Mauritania is the only one that moved down from hybrid to authoritarian regime.

Figure 2.1: Number of states by category in 2024



Source: authors, based on EIU (2025)

Figure 2.2 Average score by category in 2024



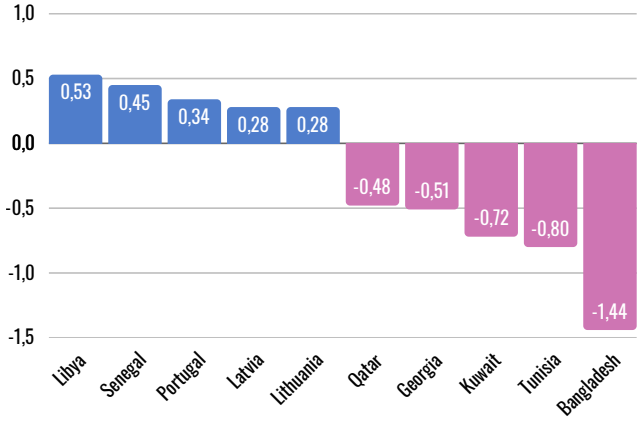
Source: authors, based on EIU (2025)

THE DEMOCRACY INDEX continued to DECLINE

The top of the scale is traditionally occupied by developed Western democracies (top 5 consists of Norway, New Zealand, Sweden, Iceland, and Switzerland). The opposite end contains states such as Syria and Afghanistan that have been struggling with internal instability and turmoil after significant changes in governance. However, there is also North Korea with a highly stable regime, yet at the expense of civil rights and liberties (cf. EIU 2025).

While changes in individual countries were rather small in 2024, the most pronounced change was experienced by Bangladesh, whose index dropped by almost one and a half points (see Figure 3).

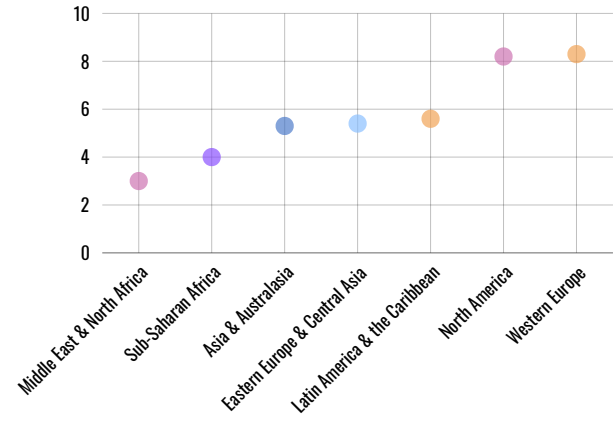
Figure 3: States with the major change in the Democracy Index in 2024



Source: authors, based on EIU (2025).

Regional perspectives are comparable to 2023. Again, only Western Europe improved in terms of democracy, although marginally (+0.01), while North America stagnated. These are the only two regions whose average scores correspond to full democracies. Index decreased the most for the MENA (-0.11), which remains the only region with average score corresponding to authoritarian regime. No shifts of regions were observed between the categories, although the average for Sub-Saharan African states dropped to 4.0, the margin between hybrid and authoritarian regimes (see Figure 4).

Figure 4: Democracy index by regions as defined by EIU



Source: authors, based on EIU (2024, 2025)

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

Table 2: State of democracy in 2024

	Value	Score	Method of score allocation	
			Value	Score
Global average	5.17	3	0.00-1.99 (authoritarian regime)	1
			2.00-3.99 (authoritarian regime)	2
EU average	7.93	4	4.00-5.99 (hybrid regime)	3
			6.0-7.99 (flawed democracy)	4
Czech Republic	8.08	5	8.00-10.00 (full democracy)	5

Source: authors, based on EIU (2024, 2025).

While the EU average approached the threshold of full democracy, the Czech Republic managed to overcome it and now ranks as a full democracy. It is located on the 11th position within the EU, while globally it ranks the 23rd out of 167 with lower rank indicating a better state. The global average continues to correspond to a hybrid regime.

Table 3: Change in the state of democracy compared to 2023

	Value	Score	Method of score allocation	
			Value	Score
Change in global average	-0.06	0	decrease by more than 1.00	-2
			decrease by 0.10 to 1.00	-1
Change in EU average	+0.03	0	-0.09 to +0.09	0
			increase by 0.10 to 1.00	+1
Change in the Czech Republic	+0.11	+1	increase by more than 1.00	+2

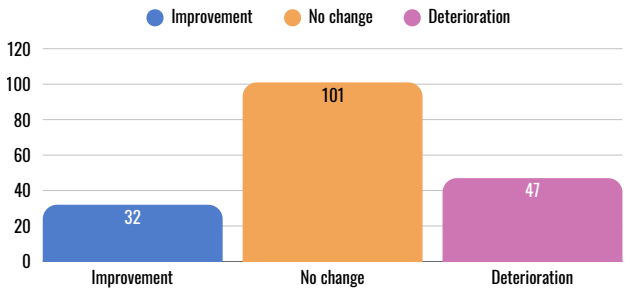
Source: authors, based on EIU (2024, 2025)

Among the three levels, the Czech Republic experienced the largest, yet still relatively small change. This improvement, however, was significant in its effect as it allowed the Czech Republic to rejoin full democracies (from where it dropped in 2014).

CORRUPTION

Corruption perception has remained relatively stagnant in 2024 compared to the previous year. Most countries did not experience any change at all (see Figure 5), and even if they did, the average change was minor (2.64 for average increase in CPI and 2.19 for average decrease). The average score (43), as well as the score for two-thirds of the states, remain below the mid-point (Transparency International 2025b).

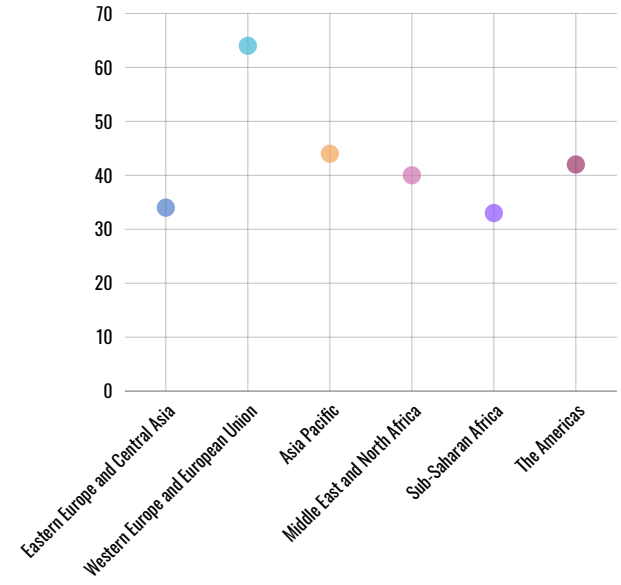
Figure 5: Changes in the CPI in 2024



Source: authors, based on TI (2025b)

The states with the lowest corruption perception are dominated by Western democracies (Denmark Finland scoring the highest), while on the other end of the spectrum are states struggling with conflicts and governance (South Sudan, Somalia, and Venezuela scoring the lowest) (see Transparency International 2025a). This is further supported by broader regional trends where Western Europe and the EU remain far from all the other regions in terms of corruption perception, and the only regions scoring above the mid-point (see Figure 6).

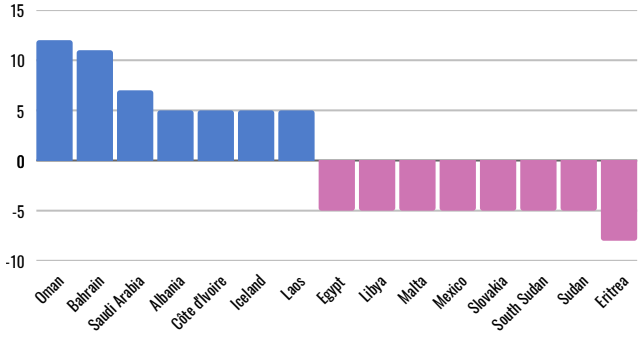
Figure 6: CPI by regions as defined by Transparency International



Source: authors, based on Transparency International (2024, 2025)

On the other hand, while Oman, Bahrain, and Saudi Arabia witnessed the major improvements (see Figure 7), two European states, Slovakia and Malta, ranked among the states whose index decreased the most, right after Eritrea. Yet still, all the individual changes were relatively minor, with only two states observing a change higher than 10 points.

Figure 7: States with major CPI change in 2024.



Source: authors, based on TI (2025a)

For this study, corruption is assessed as follows:

Table 4: Corruption perception in 2024.

	Value	Score	Method of score allocation	
			Value	Score
Global average	42.66	3	0.00-19.99	1
			20.00-39.99	2
EU average	62.33	4	40.00-59.99	3
			60.00-79.99	4
Czech Republic	56	3	80.00-100	5

Source: authors, based on TI (2025).

Table 5: Change in Corruption Perception compared to 2023

	Value	Score	Method of score allocation	
			Value	Score
Change in global average	-0.31	0	decrease by more than 10.00	-2
Change in EU average	-1.26	-1	decrease by 1.00 to 10.00	-1
Change in the Czech Republic	-1	-1	-0.99 to +0.99	0
			increase by 1.00 to 10.00	+1
			increase by more than 10.00	+2

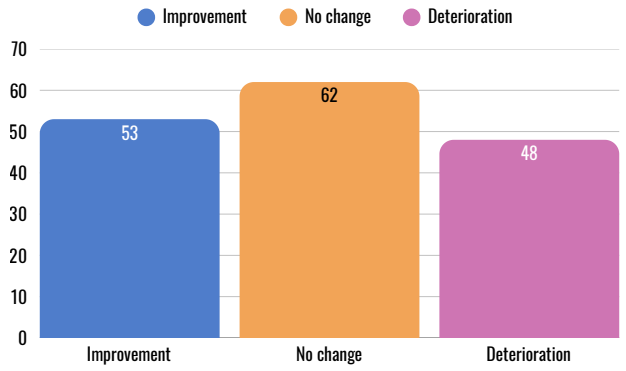
Source: authors, based on TI (2024, 2025).

Although minor deteriorations were observed in corruption perception at all three levels compared to 2023, they do not represent any dramatic shifts. The situation across the world, as well as in the EU and the Czech Republic, can thus be regarded as relatively stable in terms of corruption perception, with no significant changes.

TERRORISM

No dramatic changes were observed in terms of the impact of terrorism in 2024. Quite a similar number of states witnessed either improvement or worsening (see Figure 8), although the average worsening (increase in index) was slightly more pronounced (average increase by 0.74 compared to average decrease by 0.47).

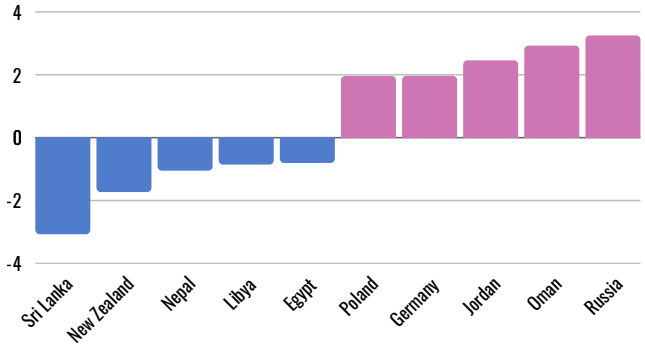
Figure 8: Changes in terrorism index in 2024



Source: authors, based on IEP (2024, 2025)

Poland and Germany are among the five most worsened states in terms of terrorism impact (see Figure 9). While Poland had a score of 0 in 2023, Germany was already struggling with terrorism, and its score climbed to 4.748 in 2024.

Figure 9: States with the major change in the terrorism index in 2024



Source: authors, based on IEP (2024, 2025).

From the regional perspective, the Sahel has been labelled the epicentre of terrorism, with five out of ten states most impacted by terrorism in 2024 located in this region (Burkina Faso, Mali, Niger, Nigeria, Cameroon). Mainly due to developments in the Sahel, the Sub-Saharan Africa observed the most significant increase in terrorism over the last 15 years (Institute for Economics and Peace, p. 39). On the other hand, 64 states experienced no impact of terrorism in 2024 and scored zero.

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

Table 6: Impact of terrorism in 2024.

	Value	Score	Method of score allocation	
			Value	Score
Global average	1.736	5	0.000	5+ (no impact of terrorism)
			0.001 to 2.000	5 (very low impact of terrorism)
EU average*	1.069	5	2.001 to 4.000	4 (low impact of terrorism)
			4.001 to 6.000	3 (medium impact of terrorism)
Czech Republic	2.906	4	6.001 to 8.000	2 (high impact of terrorism)
			8.001 to 10	1 (very high impact of terrorism)

*Except Luxembourg and Malta
Source: authors, based on Institute for Economics and Peace (2025).

Surprisingly, the score for the Czech Republic is above the global and the EU average. In the EU, only Germany and Greece had higher scores in 2024. This is explained by the shooting at Charles University in December 2023 (GTI takes into account five previous years, although with decreasing weight as it goes to the past). It should also be noted that the Czech Republic did not classify this incident as a terrorist act. Despite this fact, we decided to follow the GTI ranking for the sake of consistency. In any of the previous cases, we did not assess the position of respective states towards the attacks. Not to mention that the incident at Charles University had a non-negligible impact on security and its perception in the Czech Republic, thus it should be reflected in this study.

Table 7: Change in the impact of terrorism compared to 2023

	Value	Score	Method of score allocation	
			Value	Score
Change in global average	+0.066	0	increase by more than 1.000	-2
			increase by 0.100 to 1.000	-1
Change in EU average	+0.229	-1	-0.099 to +0.099	0
			decrease by 0.100 to 1.000	+1
Change in the Czech Republic	-0.671	+1	decrease by more than 1.000	+2

Source: authors, based on IEP (2024, 2025)

When comparing the scores to 2023, an inconsistency has to be addressed. According to the report GTI published in 2024 (evaluating the year 2023), the Czech Republic was assigned the score 0 (no impact of terrorism). However, the report GTI published in 2025 (evaluating the year 2024) retrospectively took into consideration the active shooter at Charles University.

Table 7: Change in the impact of terrorism compared to 2023

	Value	Score
Change in global average	+0.066	0
Change in EU average	+0.229	-1
Change in the Czech Republic	-0.671	+1

Source: authors, based on IEP (2024, 2025)

Method of score allocation	
Value	Score
increase by more than 1.000	-2
increase by 0.100 to 1.000	-1
-0.099 to +0.099	0
decrease by 0.100 to 1.000	+1
decrease by more than 1.000	+2

It claims that the index in 2024 decreased for the Czech Republic by 0.671, which means that in 2023 it should have been as high as 3.577 (instead of 0). This would make it the second highest increase in 2023, right after Israel. However, this score was not published in GTI 2024, hence it was not reflected in the publication Security Environment 2023. Therefore, for comparison purposes, we decided to recalculate the average global and EU scores for 2023, taking into account the adjusted score for the Czech Republic (3.577 instead of 0). As a result, although the Czech Republic's score for 2024 is higher than the EU and global averages (Table 6), the situation in 2024 improved, unlike the EU and global levels (Table 7).

Table 8: Summary of indicators and their scores for 2024 and the change compared to 2023.

Score						
	World		EU		Czech Republic	
Indicator	state*	change**	state	change	state	change
Democracy	3	0	4	0	5	1
Corruption	3	0	4	-1	3	-1
Terrorism	5	0	5	-1	4	1
Overall score***	11	0	13	-2	12	1

* The state is rated on a scale of 1 to 5+, where a higher value corresponds to a better state.
** The change from 2023 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 values for individual levels (world, EU, Czech Republic). The state can take a maximum score of 15, while the change ranges from -6 to +6. Higher or positive values correspond to a better situation or improvement.
Source: Authors.

The differences between the three levels are mild, with the EU enjoying the best conditions in terms of the three indicators combined, closely followed by the Czech Republic. On the other hand, the EU witnessed a slight overall worsening, while globally, all three indicators stagnated. The Czech Republic saw a marginal improvement, close to stagnation.

MULTIVARIATE ANALYSIS

For a better understanding of the data, multivariate analyses of the three indicators (Democracy Index, Corruption Perception Index, and Global Terrorism Index) were conducted using R software.

PRINCIPAL COMPONENT ANALYSIS

Principal component analysis was selected to visualise the three indicators and individual cases in a reduced two-dimensional space (see the biplot in Figure 10). Only those states were considered in the analysis that had data for all three indicators available (159 cases).

Findings in Table 9 suggest that the first dimension mainly represents DI (very strong correlation and 85% of shared variance) and CPI (very strong correlation and 83% of shared variance). GTI is better represented by the second dimension (very strong negative correlation and 81% of shared variance). This two-dimensional model explains 92.5% of the data variance, resulting in only a slight loss of information.

The biplot in Figure 10 suggests, and further analysis confirms, that there is a strong positive correlation between Democracy and the Corruption Perception Index (r = 0.77). This indicates that working democracies (higher DI) tend to perceive corruption as lower (higher CPI). See the scatterplot in Figure 11 for the visualisation of this relationship. The same cannot be claimed about the relationship between the two indicators and GTI. GTI shows a contrasting pattern, loading negatively on both dimensions and being inversely associated with DI and CPI (see Table 9). This suggests that higher GTI values are generally linked to lower DI and CPI values. However, the moderate loading on the first component (–0.432) indicates that this inverse relationship is not strongly linear — a finding further supported by separate bivariate analyses between GTI and both DI and CPI.

*

Table 9: Principal component analysis

		Dim.1	Dim.2	Sum
Principal component loadings	DI	0.924	-0.183	-
	CPI	0.912	-0.242	-
	GTI	-0.432	-0.901	-
Communalities	DI	0.853	0.0333	0.886
	CPI	0.831	0.0588	0.890
	GTI	0.187	0.813	1.00
Eigenvalue		1.87	0.905	2.775
Variance explained		62.4	30.2	92.5

Figure 10: Principal component analysis – biplot

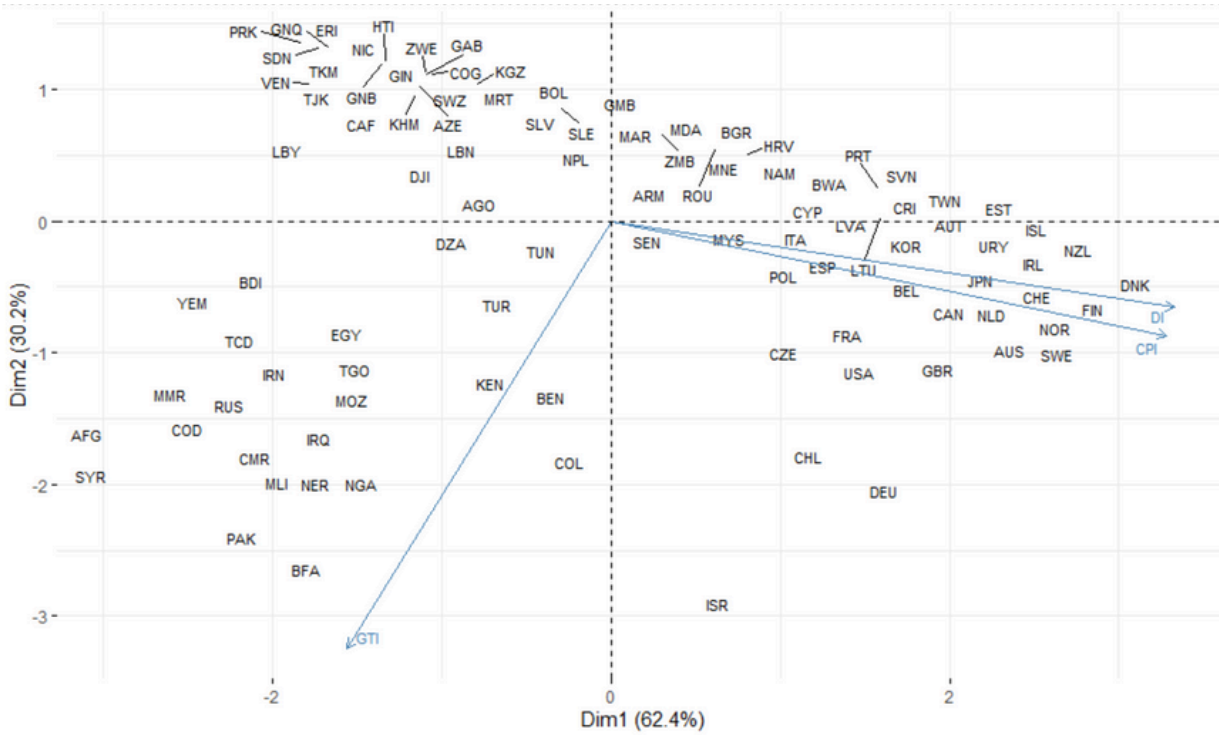
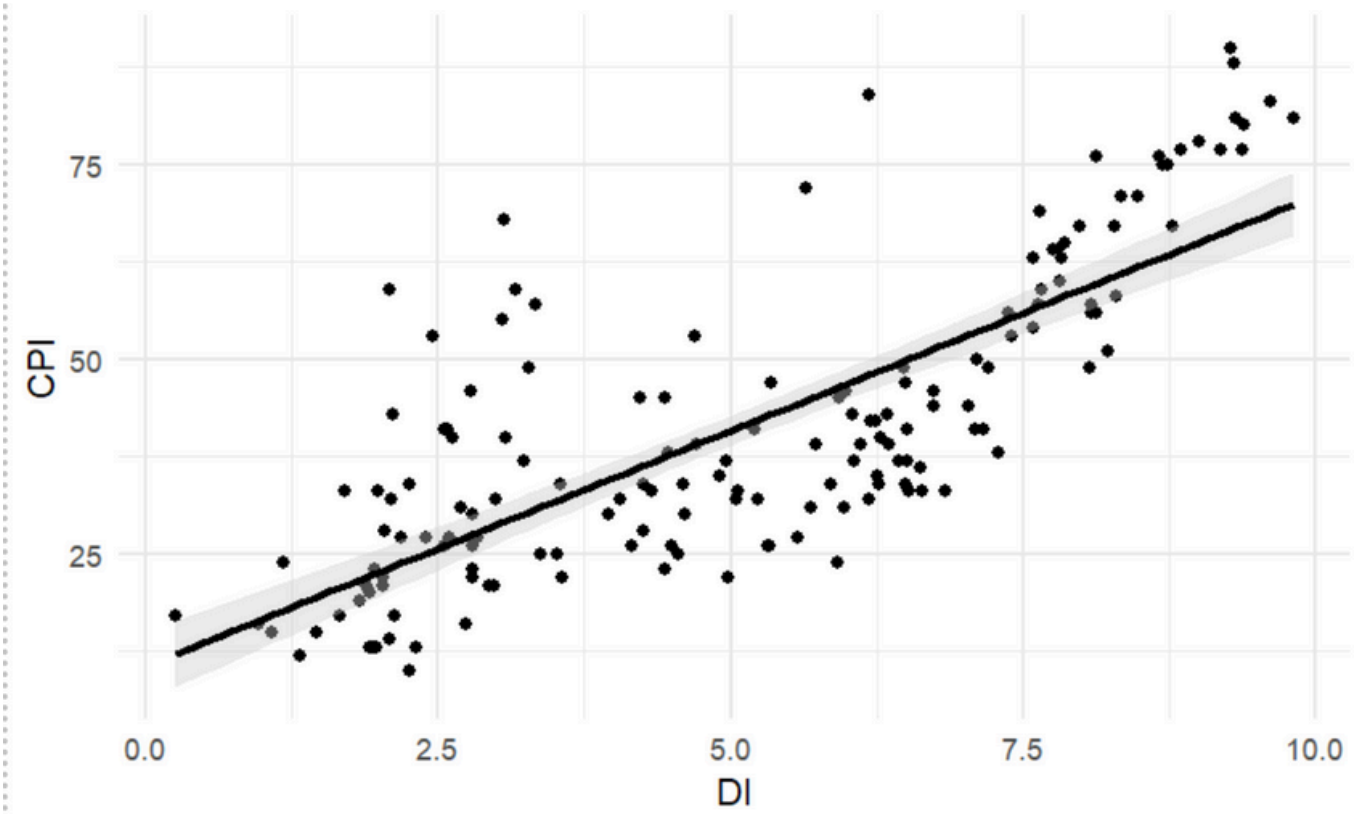


Figure 11: Correlation between DI and CPI.



The biplot also shows the position of individual nations in this two-dimensional model. Out of 159 nations, it only visualises those whose communality is at least 90%. This means that the simplification has not distorted their position in the plot too much, and they are thus well represented in the reduced two-dimensional system. At the top part, there is a group of nations with a low GTI score, while nations with a high GTI (including Burkina Faso, Israel, and Pakistan) occupy the bottom part of the biplot. As for democracy and corruption perception, while Afghanistan and Syria are at one end of the spectrum, with low democratic records and widespread corruption perception, Nordic states (Denmark, Finland, Sweden, Norway) and New Zealand are at the opposite end. While this representation is illustrative, given that dimensional reduction inevitably entails a loss of some information, it highlights the main trends that align with the findings described in the text above.

CLUSTER ANALYSIS

Cluster analysis was then applied to the EU or NATO member states only. A total of 34 states were considered, excluding Luxembourg and Malta, due to missing data for at least one indicator. The objective of cluster analysis was to uncover a structure within the data based on the similarities among the states.

The silhouette plot suggested five clusters as the optimal number. K-means clustering was then employed to visualise these five clusters (see Figure 12) and their means (Figure 13). The means come from standardised data and only serve for comparison purposes.

The analysis suggests that Türkiye is an atypical case given that it has not been clustered with any other state. Figure 13 shows that, compared to other clusters, it has a higher GTI, while also having a lower DI and CPI.

The Czech Republic is clustered with mostly Western states, exhibiting relatively high values in all three indicators in comparison to other clusters.

Hierarchical clustering was then employed to create a dendrogram, thereby further visualising the similarities between cases (see Figure 14). Different methods were initially used, yielding similar results. UPGMA was selected based on its performance in preserving the original dissimilarities between observations. It achieved a cophenetic correlation coefficient of 0.79, indicating a strong correspondence between the dendrogram and the original pairwise distances. The coefficient of determination achieved 0.63, indicating that the dendrogram captures approximately 63% of the variance in the original Euclidean distance matrix.

Figure 12: Cluster plot

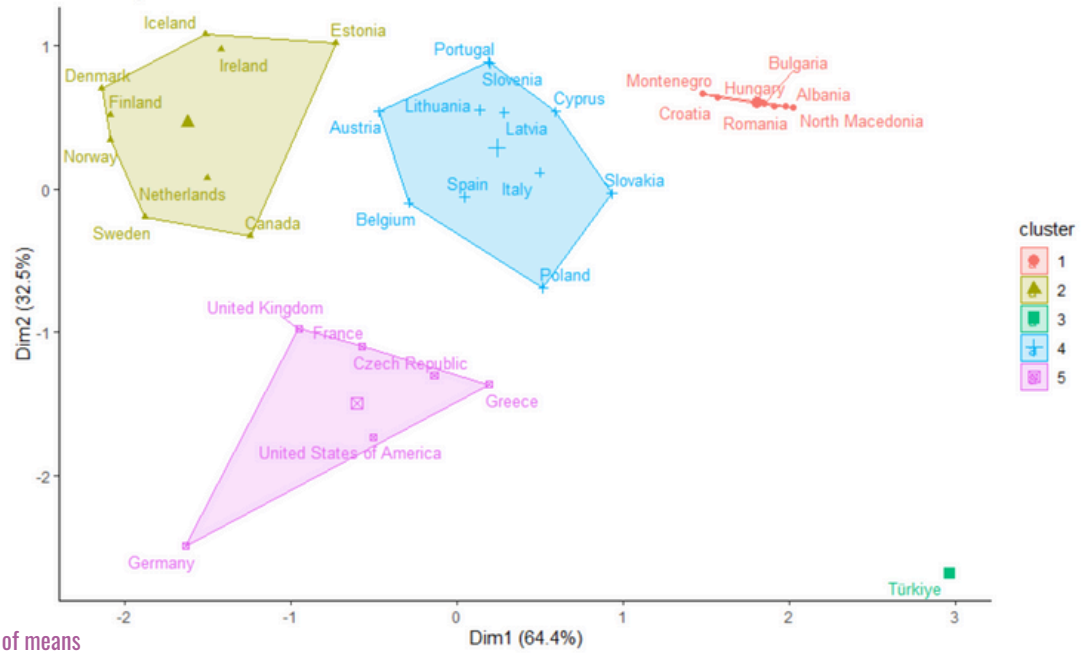
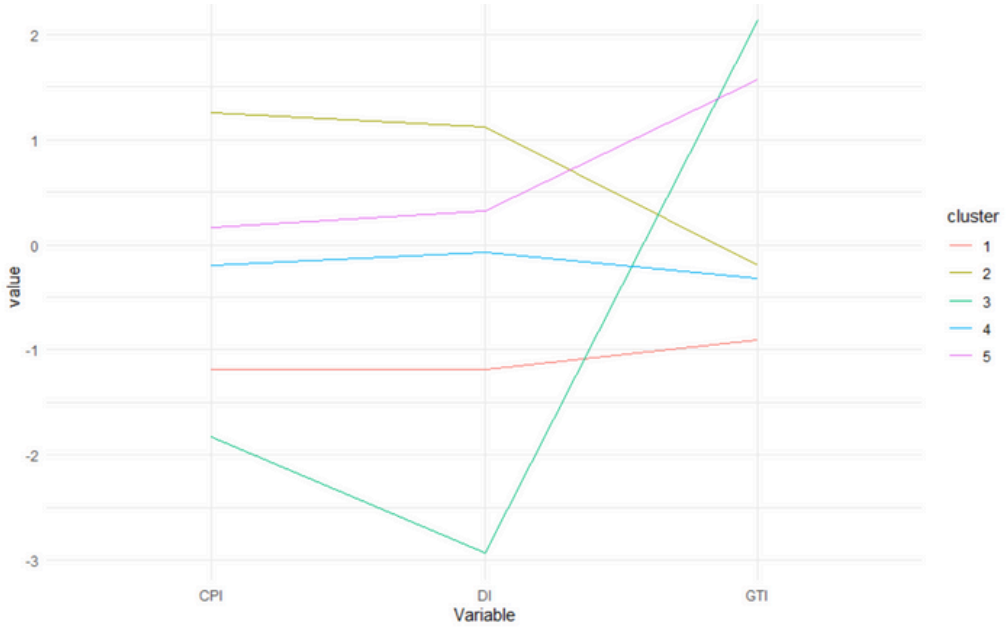
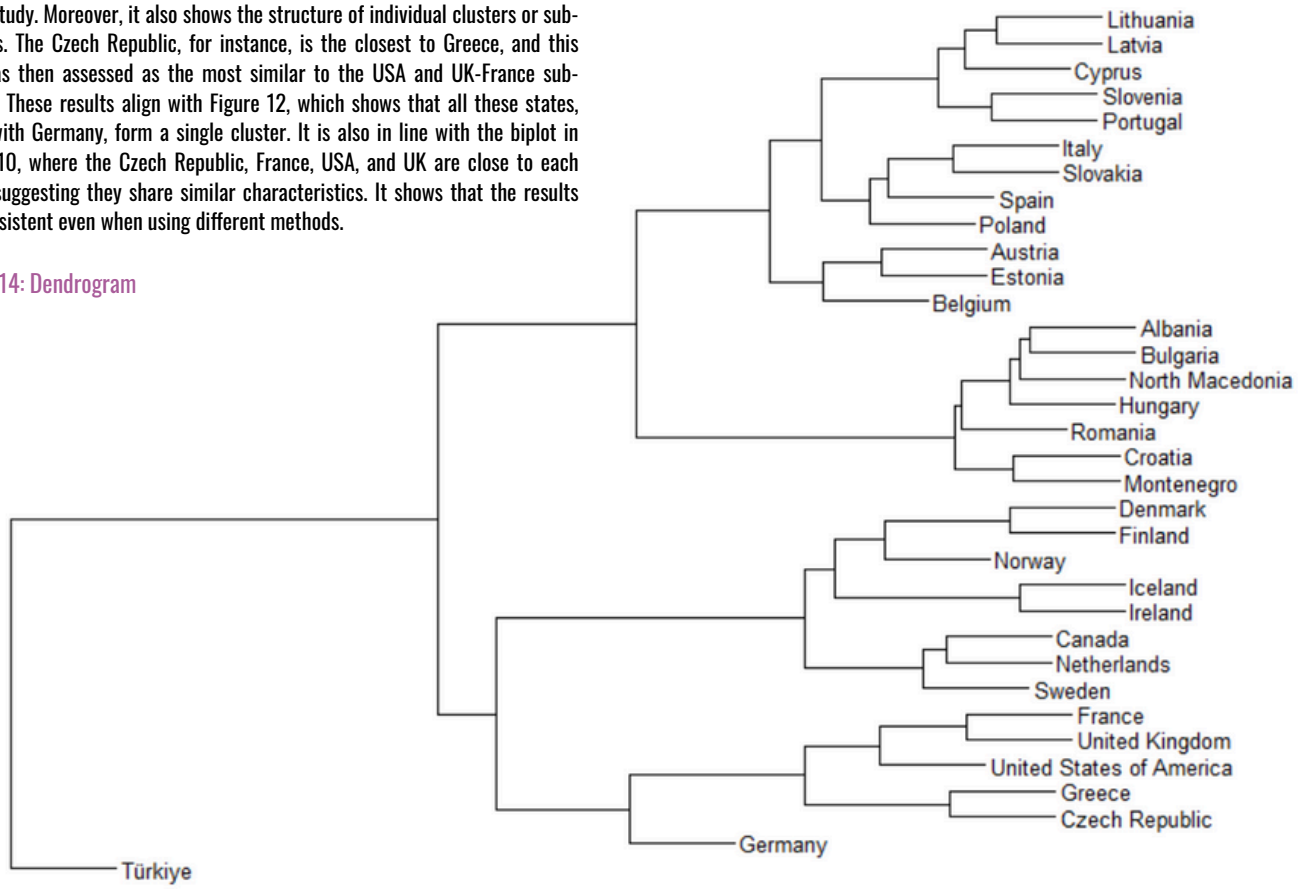


Figure 13: Plot of means



The dendrogram confirms Türkiye as an atypical case in terms of the studied indicators. It forms a separate branch, suggesting it is unlike any other state under study. Moreover, it also shows the structure of individual clusters or sub-clusters. The Czech Republic, for instance, is the closest to Greece, and this pair was then assessed as the most similar to the USA and UK-France sub-cluster. These results align with Figure 12, which shows that all these states, along with Germany, form a single cluster. It is also in line with the biplot in Figure 10, where the Czech Republic, France, USA, and UK are close to each other, suggesting they share similar characteristics. It shows that the results are consistent even when using different methods.

Figure 14: Dendrogram



IMPLICATIONS FOR THE ARMED FORCES

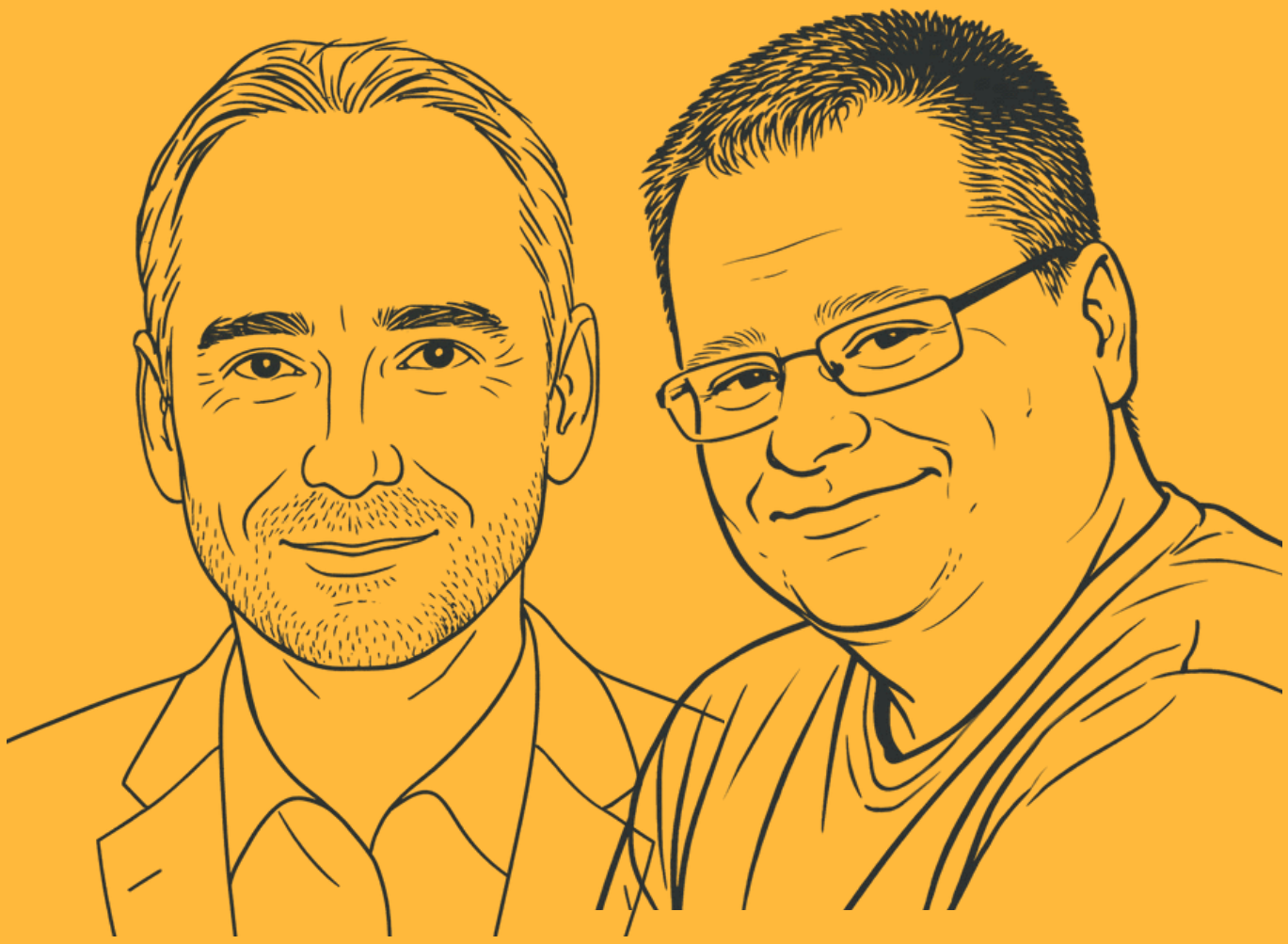
Historically, the Czech Armed Forces have been engaged in counter-terrorism and state building in Africa, Middle East, and Asia. Therefore, changes in GTI may point to new possible areas of operation or interest in terms of counter-terrorism. Given that these are often states with fragile institutions, counter-terrorism efforts go hand in hand with the demands for state building (as experienced in Afghanistan and Iraq). At the same time, these efforts can be challenged by high corruption which is not uncommon in states facing long-term conflicts, instability, and governance issues. There is one specific region, that seems to be more worrisome than others in terms of all three indicators: sub-Saharan Africa has the lowest CPI from all regions, its average DI dropped to the margin between hybrid and authoritarian regime and its Sahel region has been labelled the epicentre of terrorism. At the same time, any possible involvement of Western states in this region will be largely affected by persisting Russian and Chinese interests and influence there.

However, terrorism is not only the issue of fragile states, but it does also concern the West, although often under different patterns. Regardless of whether we label the shooting at the Charles university an act of terrorism or not, the fact that it happened in a country with no such previous experience points to emerging challenges in the contemporary security environment. It is in line with broader trends observed in other countries (USA, Finland, Russia, and Germany among others) where schooling institutions have already suffered attacks by young students. It raises demands on enhanced protection of soft targets within the Czech Republic but also points to the need to address the issue of mental health of young people.

Moreover, with average democracy index dropping to minimum since 2006 and corruption perception witnessing rather decreasing trends or stagnation, the issue of institutional resilience comes into play. This is especially important when it comes to adversarial actors seeking to exploit institutional vulnerabilities. Resilience building thus will play a pivotal role in countering hybrid interference. On one hand, it can generate tasks for the Czech Armed Forces operating in areas affected by such vulnerabilities and risks. On the other hand, worsening democratic records or even corruption perception in some Western states has already proven to be critical when it comes to maintaining multinational coalitions and partnerships based on values of freedom and democracy.

In line with this, multivariate analysis of all three indicators uncovered differences across EU and NATO members states. Several clusters of states emerged revealing similarities among the states of the same cluster and differences between the clusters. Such differences risk provoking frictions within institutions that can negatively influence their decision-making capabilities and ability of member states to achieve consensus. It can further undermine the shared perception of security and understanding of threats and jeopardise common approach or willingness to counter them.

MILITARY SECTOR



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MILITARY SECTOR

METHODOLOGY AND DATA SOURCE

The developments in the analysed military sector of the security environment are assessed using a set of indicators that make it possible to record changes and trends even in the long term. However, attention is focused primarily on potential impacts on the Czech Republic (the geographical distance of ongoing conflicts, the number of refugees from conflict zones, links to the Czech Armed Forces and the defence industry, etc.). A separate, more detailed analysis of the military sector from the perspective of the operational environment is prepared by another specialised CBVSS study; for this reason, some aspects of this nature are not examined here in greater depth. Likewise, with regard to the analyses of other sectors addressed in this publication – particularly the political and technological sectors – some issues related to the military sector are captured only from a more general standpoint and in a limited scope. The analytical model used is based exclusively on data drawn from open and publicly available sources which, for specific reasons in this sector, are not always fully accurate and typically appear with a significant time lag. In line with previous publications, the assessment of this sector is based on an analysis of selected actors and conflicts that took place over the past year.

With regard to implications for the Czech Republic, attention was focused primarily on conflict regions with the greatest impact on the Czech security environment. These include the war between Ukraine and the Russian Federation, and the Middle East – specifically the Israeli operation in Gaza. These regions are subsequently evaluated on the basis of selected indicators and presented in a simplified and concise table, together with a threat index and an assessment of their relevance to the Czech security environment.

The year 2024 represented a period of significant escalation of armed conflicts across the world. According to the Peace Research Institute Oslo (PRIO), 61 armed conflicts were actively taking place in 36 countries in 2024. This number exceeded the already record-high levels of armed clashes documented in previous years – 59 in 2023 and 56 in 2022. The main conflicts of 2024 include the Russian invasion of Ukraine, the Israeli offensive in the Gaza Strip, Israel's action against Hezbollah in southern Lebanon, and conflicts in Nigeria and Ethiopia. As a result of these conflicts, almost 160,000 people were killed last year. The deadliest among them is the conflict in Ukraine, where approximately 76,000 people died in connection with the fighting (ACLED 2025; UCDP 2025). These conflicts had complex repercussions not only for the directly involved states, but also for international politics, the global economy, the humanitarian situation, and the security strategies of NATO member states, including the Czech Republic.

Infographics 1: Global conflict escalation 2024

Overall, last year can be described as a continued period of escalation of both old and emerging conflicts in the field of international security. From a global perspective, a gradual loosening of the rules of the international system became evident, accompanied by a weakening of the traditional institutions such as the UN or the OSCE. Regional powers and non-state actors came to the forefront, increasingly employing hybrid, cyber, and information tools in their strategies. Warfare is gradually becoming a complex phenomenon that can no longer be understood merely as a confrontation between armies, but rather as a clash of politico-technological ecosystems. Conflicts are unfolding across multiple domains, from kinetic operations to the struggle for narratives and control over the information space. A key trend is the development and application of new technologies that fundamentally affect all phases of armed conflicts. Their use blurs the distinction between the zone of direct kinetic confrontation and the rear area. Sensors, drones, and data networks enable technologically advanced actors to maintain continuous situational awareness and carry out precise strikes deep within enemy territory.

THE CONFLICT IN UKRAINE AND ITS DEVELOPMENT IN 2024

In 2024, the long-term conflict in Ukraine continued, marked by the massive deployment of armed forces and the characteristics of a war of attrition. The dynamics of the conflict remained largely static, despite efforts by both sides to achieve more significant territorial gains at the expense of the adversary and to conduct offensive operations in selected sectors of the extremely long front line.

THE DYNAMICS OF THE CONFLICT REMAINED LARGELY STATIC

In the first months of 2024, it became evident that the Russian military had regained a firmer operational initiative following the end of Ukraine's summer offensive in 2023. This was due to several factors: first, Russia adapted to Ukrainian tactics, significantly expanded the production of drones and ammunition, and implemented a more extensive system of trenches, anti-tank obstacles, and fortifications. Second, Ukraine suffered from a dramatic shortage of artillery ammunition because Western deliveries were limited and the United States faced a months-long political blockade of its aid package. Third, the Russian Air Force shifted to the systematic use of glide bombs (UMPK), which were capable of striking fixed points of Ukrainian defence without entering the range of Ukrainian air defence systems.

These factors had dramatic consequences during the fall of Avdiivka in February 2024, which represented Russia's greatest tactical success since the capture of Bakhmut in May 2023. Avdiivka had long been one of Ukraine's strongest defensive positions in the Donetsk region.

However, in January and February, Russian forces managed – through a combination of artillery superiority, glide bomb strikes, and overwhelming manpower – to break through Ukrainian defences and force the defenders to withdraw. The fall of the city had a significant impact: it allowed Russian units to advance westwards and triggered a chain of reactions and reorganisations that undermined the cohesion of Ukrainian defences throughout the sector. Among the innovations used by Russia, the increasing deployment of glide bombs became one of the most pressing tactical challenges for Ukraine in the first half of the year, especially near the border, where Russian aircraft could release bombs from beyond the range of most Ukrainian air defence systems (Hardie 2024a).

At the same time, in winter and spring, Russian forces launched a renewed campaign against Ukraine's energy infrastructure. The strikes in March were among the largest since the beginning of the war, targeting thermal power plants, substations, and hydroelectric facilities. This resulted in widespread power outages, disruptions to industrial production, and increased pressure on the population in several regions. The attacks also limited Ukraine's ability to manufacture and repair military equipment, which subsequently affected units deployed on the frontline.

Avdiivka - Russia's greatest tactical success since the capture of Bakhmut.

In the early months of 2024, a growing shortage of both human and material resources on the Ukrainian side became evident. Western military support began to encounter political obstacles and hesitation regarding its long-term sustainability. The Ukrainian Armed Forces faced difficulties with mobilisation, which was insufficient to compensate for previous losses and placed increasing demands on existing military personnel, particularly frontline infantry. Rotation periods were extended, leading to exhaustion among the troops.

Most od deployed soldiers were middle-aged – around 40 – and the average age did not decline, despite numerous reports of rising fatigue and exhaustion and the need to rejuvenate many frontline units already early in 2024. The average age of Ukrainian frontline soldiers ranged between 43 and 45 years (Safronova and Krasnolutska 2024). This was a consequence of policies on both sides not to send young conscripts but instead to rely on older mobilised men or contract soldiers, driven by societal considerations and unfavourable demographic trends. Despite the shrinking recruitment pool and rising economic costs, Russia remained capable of replenishing its invasion forces without resorting to unpopular mass mobilisation. In contrast, Ukrainian forces struggled with personnel shortages, especially in frontline infantry – a factor that significantly shaped the course of the conflict. Unlike in 2022 and 2023, Ukrainian units in the hardest-hit areas began to be outnumbered by Russian manpower. This marked a stark change compared to the early phase of the invasion, when Ukrainian numerical superiority – particularly in infantry – helped offset Russia's material advantage. Even during Ukraine's successful autumn 2022 offensive as well as the summer 2023 offensive, Ukrainian troop numbers on key axes remained favourable.

In response to personnel shortages, Ukraine reduced the mobilisation age from 27 to 25 and increased financial bonuses for volunteers. These measures had only limited effect, and demands by several military officials for more substantial mobilisation were not accepted, largely for domestic political reasons. The shortage of infantry led to controversial measures, including the reassignment of highly trained specialists — such as air defence operators, drone pilots, and Air Force mechanics – to frontline infantry roles.

RUSSIAN MANPOWER OUTNUMBERED UKRAINIAN UNITS IN THE HARDEST-HIT AREAS

The primary Ukrainian problem at the beginning of 2024 was the lack of artillery ammunition. Russian invasion forces had an advantage in ammunition roughly 8:1 – in some sections of the front as much as 10:1. Although Ukraine partially compensated it with the use of small drones, their numbers were insufficient to halt Russian advances (Courtney and Hoehn 2024). Over the course of the year, Ukraine managed to reduce this disparity, and thanks to increased domestic production and external supplies, Russia's artillery advantage dropped to about 3:1 in the second half of the year. Although parity was not achieved, the reduced Russian advantage was insufficient to deliver major battlefield breakthroughs.

Infographics 2: Ammunition advantage of Russian forces

Given these factors, Russia maintained initiative and continued to press the front, particularly in the Donetsk and Luhansk regions, relying on artillery superiority and attritional tactics, albeit at the cost of significant own losses. Overall, both sides greatly expanded the deployment of offensive drones and improved their capabilities and effectiveness.

By mid-year, Russian forces had captured a number of municipalities in the Donbas region. Their primary objective was the city of Pokrovsk – a crucial transport and communication hub and a former centre of Ukraine's heavy industry. Capturing Pokrovsk would open the way for further advances towards Sloviansk and Kramatorsk and allow Russia to effectively achieve the administrative border of the Donbas region, representing its declared wartime objective. In May, Russian forces launched more significant offensive operations in the Kharkiv region, prompting Ukraine to redeploy limited reserves to that area and increasing Russian pressure on the Pokrovsk axis.

The first half of 2024 could be characterised as a six-month phase of attrition with partial Russian successes. The fall of Avdiivka and Ocheretyne shifted the frontline in the Donetsk sector; Chasiv Yar became a new focal point; and Russian assaults in northern Kharkiv in May tied down Ukrainian reserves.

Strategic strikes on Ukrainian energy infrastructure continued, alongside Ukrainian strikes on Russian energy and oil facilities. Western aid remained essential for sustaining Ukrainian defences and enabling air operations deep into Russian territory. Despite intense fighting, no strategic breakthrough occurred, and both sides showed visible signs of exhaustion while preparing for the next phase of the war in the second half of the year.

Western aid remained essential for sustaining Ukrainian defences.

Russia's offensive initiative, which produced steady territorial gains and conveyed an impression of gradually weakening Ukrainian defensive capabilities, was unexpectedly halted in early August by a surprise Ukrainian offensive in Russia's Kursk region. For the first time, the confrontation of ground forces extended significantly onto the territory of the Russian Federation - except for earlier minor incursions by Russian volunteer groups operating from Ukraine, which had been largely symbolic. Ukrainian forces deployed elite assault units that initially encountered weak resistance, advanced more than 10 km into the Russian territory, and gradually took control of nearly 1,250 km^2, including a key gas pipeline station and the town of Sudzha, forming the so-called Sudzha pocket.

Ukrainian forces captured hundreds of prisoners and demonstrated that – despite recent setbacks – they retained substantial capability to conduct successful offensive operations. The first phase revealed tactical innovations, Western-style coordination, and effective use of intelligence gathered by Ukraine and provided by external partners (FDD's Long War Journal 2024.2).

UKRAINIAN FORCES CAPTURED HUNDREDS OF PRISONERS

The primary objective of the Kursk operation was likely to compel Russia to redeploy reserves from the Donbas and thereby reduce pressure on Pokrovsk. Although Russia's substantial reserves prevented this, the fighting in the Kursk region became a priority in some areas, particularly for Russian air operations, which reduced their activity on the Donbas front. One of the publicly stated objectives of the Ukrainian operation was to secure and hold part of Russian territory for potential future peace negotiations. However, given the disproportion between Ukrainian-held Russian territory and large areas of Ukrainian territory occupied by Russia, this aim was unrealistic. More plausibly, Ukraine sought a symbolic military success that would boost morale among the armed forces and the population and reassure foreign partners of Ukraine's continued resilience and offensive capabilities. Another objective was to force Russia to deploy additional forces to defend its own territory, even in regions previously untouched by intense combat, thereby reducing Russia's ability to concentrate large assault groupings along key axes of the front.

Militarily, the Ukrainian operation in Kursk did not represent a decisive challenge for Russia, as it did not disrupt major logistics routes or strike highly significant targets. Politically, however, the incursion became a priority for Russia to eliminate, as it exposed vulnerabilities in the security of its own territory and the inability of political and military leadership to prevent such an event. Although Russian units from the Donbas were not redeployed, Russian air assets were significantly redirected to the Kursk region. Limited Russian capacity and personnel shortages resulted in the unprecedented deployment of foreign troops on Russian soil – regular North Korean forces engaged in combat in the Kursk region, adding a new dimension to the conflict. he broader Russia – North Korea military cooperation, including increasing deliveries of North Korean-produced military equipment, underscored the limitations of Russia's defence industry and its strained ability to supply its armed forces. The controversy surrounding the close Russia – North Korea partnership further highlighted Russia's growing international isolation.

Source: Google maps

Overall, the assessment of the Ukrainian Kursk offensive remains complex, despite being the most successful Ukrainian offensive since the Kharkiv operation in autumn 2022. Critics pointed to the expenditure of limited resources and reserves and noted that human and material losses were likely higher than during Ukrainian defensive operations.

Alongside efforts to repel Ukrainian forces in the Kursk region, Russia continued offensive operations in the Donbas. Fighting around Chasiv Yar, Ocheretyne, and the sectors near Pokrovsk followed a characteristic attritional approach, with heavy use of artillery and air support. In 2024, the Russian military relied heavily on its industrial superiority. While Ukraine faced ammunition shortages, Russia increased production and acquired additional munitions from abroad, particularly from North Korea, albeit of lower quality.

At the same time, the conflict expanded geographically. Ukrainian long-range drones struck targets not only in Belgorod and Kursk but also in Tatarstan and around St. Petersburg. The objective was to reduce Russia's industrial capacity, disrupt missile and ammunition production, and bring the war into Russia's strategic rear. Russia responded by strengthening air defences and conducting increasingly frequent missile strikes on Ukrainian cities.

Thus, the second half of 2024 once again brought a renewed wave of attrition rather than decisive breakthroughs. Russian forces achieved limited gains, especially in the Donetsk region, but the front moved slowly, infrastructure withstood repeated strikes, and Western political-military support remained essential for Ukraine. Apart from the Kursk operation and the subsequent Russian counter-offensive, the conflict remained highly static, shaped by the characteristics of a prolonged war of attrition.

The year 2024 was significant not only due to the military developments on the battlefield but also because of major transformations in the strategic environment in which the conflict unfolded. While 2022 ended with Ukrainian momentum and hopes of expelling Russian forces from all occupied territories, 2023 showed that Ukrainian offensive capabilities were insufficient to achieve decisive victories. And 2024 demonstrated that neither side could achieve a strategic breakthrough.

Despite extensive activity by both parties, no fundamental shift occurred in the dynamics or trajectory of the conflict in 2024. The large-scale, protracted war of attrition persisted, and neither side achieved significant territorial gains or an operational-level victory. Militarily, the trend of adaptation to new technologies continued, particularly the expanding role of drones, which became decisive in many aspects of the battlefield. Both sides adapted effectively to each other's innovations, preventing either from obtaining clear dominance. The conflict gradually shifted from a linear front-based war to a complex, multi-layered system of attrition involving not only frontline combat but also deep-rear operations, strikes on infrastructure, information and economic dimensions, and – newly – large-scale Ukrainian offensive operations directly on Russian territory near the border.

> 2023 showed that Ukrainian offensive capabilities were **insufficient** to achieve decisive victories.

The war became, to a significant extent, a test of endurance, economic resilience, and adaptability to technological change, especially in the realm of long-range strikes and unmanned systems. In 2024, the war stabilised into an attritional model with high consumption of ammunition and energy. A decisive factor became the shortening of the sensor-to-shooter loop—the time between detection and engagement. Ukraine accelerated this cycle through the integration of satellite (SAR/optical), FPV drone swarms, EO/IR sensors, and brigade-level data nodes. Drones significantly altered the economics of firepower, as inexpensive FPV drones could destroy targets for which air defence missiles were financially inefficient. According to the Ukrainian commander of unmanned systems, Vadym Sukharevskyi, more than 60% of targets were destroyed by drones, and Ukraine produced over 1,200,000 drones in 2024 (Hambling 2025; Hunder 2025). Analyses from late 2023 and early 2024 also indicate a rapidly increasing use of FPVs and their competition with Russian Lancets (DanieleB 2024; Defense Express 2024). These findings support the conclusion that industrial capacity and supplier modularity are as important as tactics. Both Ukraine and Russia intensified electronic warfare (EW) and anti-UAS measures. The success of FPVs prompted necessary adaptations: jamming, camouflage, distributed logistics, and micro-stockpiling of supplies. The battlefield became highly data-saturated, and military command increasingly relied on data fusion and predictive models.

NEITHER SIDE could achieve STRATEGIC BREAKTHROUGH

As in the previous year, Russia's capabilities, sustainability, and initiative remained a decisive factor for the continuation of the conflict in 2024, despite significant material, human, and economic losses. These capabilities were sustained through continued close cooperation with external partners – in military terms primarily with North Korea, which became directly involved in the ongoing conflict, and economically with China. Overall, cooperation with China remained crucial for enabling Russia to sustain its military potential and maintain operational initiative in Ukraine.

Although Ukrainian forces again demonstrated high effectiveness in defence and the capacity to conduct larger-scale offensive operations, they continued to face persistent shortages of military personnel. On the other hand, ongoing modernisation, adaptation to battlefield conditions, and continued support from external partners prevented a dramatic deterioration despite the imbalance in military power.

From a geopolitical perspective, the conflict in Ukraine continued to have a profound impact on Europe's security environment in 2024. NATO member states – especially those in Central and Eastern Europe, such as Poland, the Czech Republic, and the Baltic states – continued to view Russian aggression as a direct threat and intensified their defence capacities. NATO strengthened its presence in Eastern Europe and continued to modernise its armed forces to counter potential further Russian expansion.

WAR IN GAZA

The year 2024 in the Gaza Strip conflict was marked by a protracted and highly destructive Israeli military campaign against Hamas and other Palestinian armed groups. At the same time, it brought a dramatic deterioration of the humanitarian situation, mounting international pressure on both Israel and Hamas, and increased initiatives by external actors, particularly the United States, Egypt, and Qatar. While the end of 2023 was characterised by stalled fighting, the collapse of a temporary ceasefire, and Israel's attempts to crush the military core of Hamas, the year 2024 showed that the conflict had transformed into a multi-layered crisis with repercussions extending far beyond the borders of Gaza.

Over the course of 2024, the Israel Defense Forces (IDF) adapted to a new phase of the conflict, in which direct manoeuvre was replaced by sustained pressure, permanent presence, and operational control over the Gaza area. After the massive initial strikes at the end of 2023, the IDF transitioned to a systematic operation aimed at ensuring the complete destruction of Hamas's infrastructure while maintaining the ability to respond to asymmetric threats emerging from the tunnel network and the civilian environment.

HIGHLY DESTRUCTIVE ISRAELI MILITARY CAMPAIGN AGAINST HAMAS

Similarly, the organisational and tactical structure of Hamas in 2024 represented a synthesis of long-developed asymmetric methods and rapid improvisations reflecting experience from previous cycles of confrontation with Israel. Based on the lessons learned from combat activities in 2024, the importance of local command nodes increased – that is, decentralised command posts that were granted greater autonomy in planning and conducting tactical operations. This shift was driven by the effort to minimise the impact of Israeli strikes against the top-level leadership.

Decentralisation was also reflected in logistics and planning. Instead of centralised supply systems, containers, small depots, and mobile resupply nodes were dispersed among civilian structures and underground facilities. In practice, this meant that the destruction of a single node did not have an immediate paralysing effect on the operational capabilities of neighbouring cells. Hamas's primary tactic in 2024 was based on small, flexible cell-based organisation: teams of 6–12 fighters capable of rapid movement, ambushes, and asymmetric attacks. These cells were often multi-layered – one underground, one embedded within residential buildings, and one functioning as a mobile reserve – allowing for rapid re-engagement after Israeli strikes and the replacement of any single degraded layer. This structure facilitated the execution of hit-and-fade operations, sabotage missions, strikes against logistics, and the use of improvised explosive devices (IEDs) against vehicles and infantry forces.

Hamas systematically expanded the use of IEDs, pressure mines, and improvised traps placed in the streets, buildings, and tunnel entrances. These elements served a dual purpose: to slow the advance of the IDF and inflict moral and material damage, while simultaneously acting as a selective tool for degrading mechanised formations. In combination with well-concealed sniper positions and mobile assault teams, IEDs became one of the main factors increasing the demand for Israeli engineering capabilities. Despite its adaptations, Hamas continued to face major limitations, including constrained logistics, reliance on improvised ammunition supplies, limited capacity to manoeuvre larger forces in open terrain, and vulnerability to Israeli strikes on key command nodes. Additional constraints included the low quality of fighter training and restricted ability to conduct large-scale coordinated operations.

At the beginning of 2024, intensive Israeli operations continued in the northern part of the Gaza Strip, where Israel declared that it had achieved military gains and dismantled the core infrastructure of Hamas. Nevertheless, during January and February, pockets of resistance re-emerged, and armed units of Hamas and Palestinian Islamic Jihad were able to carry out attacks, plant improvised explosive devices, and make surprisingly effective use of the tunnel network (Abuamer 2024). The Israel Defense Forces (IDF) were repeatedly forced to return to areas previously designated as cleared, particularly the refugee camps of Jabalia and Shati. These recurring operations indicated that the structural elimination of Hamas in northern Gaza would not be possible without a prolonged military presence. During the same period, fighting intensified in central Gaza. Israel identified this area as the heart of Hamas's tunnel infrastructure. The underground network, in some places running 20–30 meters below the surface, enabled militants to move and strike at Israeli forces without direct exposure.

> Deep tunnel networks enabled concealed militant attacks on forces.

The specific underground environment – the so-called Hamas Metro – strongly shaped the course of the fighting and the IDF's combined-arms approach to attempts at complete neutralisation. Some estimates indicate that before the war, there were roughly 1,300 tunnel entrances and hundreds of kilometres of interconnected passages. Post-war estimates suggest approximately 560–725 km (Spencer 2024). Israeli sources reported in summer 2024 that roughly 80% of the tunnel network in the Rafah area had been destroyed (Yonah 2024). The estimated costs and construction pace of this subterranean system illustrate Hamas's long-term investment and strategic preparation, as well as the difficulty of achieving its total destruction (Spencer 2024).

Israeli forces focused on systematic tunnel destruction through airstrikes, specialised penetrating munitions, and secondary explosions, which frequently caused extensive above-ground damage (Abuamer 2024). This phase of the fighting had a significant impact on civilians, as the area was one of the most densely populated parts of Gaza outside Gaza City itself. Humanitarian agencies repeatedly warned that access to drinking water, medical care, and food was critically limited in January and February.

Roughly
80 percent
of the tunnel network in the Rafah area had been **destroyed**

Source: Google maps

The most significant escalation at the beginning of the year, however, occurred in the southern Gaza Strip, particularly in the city of Khan Yunis. According to Israeli sources, this was the location of Hamas's most important command structures and the hiding place of senior leaders, including Yahya Sinwar. Between January and March, Khan Yunis became the epicentre of some of the fiercest fighting of the entire conflict. Intense bombardment, the advance of tanks and infantry, and urban combat caused extensive destruction. Many neighbourhoods were effectively levelled. The humanitarian situation deteriorated sharply, as the southern part of Gaza had been the primary refuge for civilians fleeing from the north since October 2023. The number of internally displaced persons in and around Khan Yunis reached several hundred thousand.

THE HUMANITARIAN situation DETERIORATED SHARPLY

Source: Generated with Nano Banana

A turning point came in spring 2024, when attention shifted to Gaza's southernmost city – Rafah. Israel identified Rafah as the last major stronghold of Hamas and the central node of the organisation's smuggling and tunnel infrastructure connecting to Egypt. In April and May, Israel announced the start of an operation in Rafah despite strong international pressure, particularly from the United States, which warned of potentially catastrophic humanitarian consequences.

At that time, more than 1.3 million civilians had gathered in the area. Israeli forces first seized the Rafah border crossing, then advanced into the eastern parts of the city and conducted operations targeting tunnels leading to Egypt. The operation unfolded gradually to avoid the total encirclement of civilians; however, it still triggered another massive exodus toward the so-called humanitarian zones in central Gaza, which were subsequently also subjected to Israeli airstrikes.

By mid-2024, the conflict entered a phase in which the IDF controlled most of northern and central Gaza and parts of eastern Rafah. Israel claimed to have destroyed the majority of Hamas brigades, although it acknowledged continuing resistance. Armed groups continued to launch improvised attacks, snipe at Israeli units, and conduct ambushes. In some locations, fighting recurred for months, as Hamas fighters repeatedly infiltrated previously cleared areas, taking advantage of the massive destruction of urban terrain.

Meanwhile, the humanitarian situation in Gaza was critical. According to the UN, a large part of the population was on the brink of famine during 2024. The temporary opening of several crossings allowed only a limited flow of aid due to security restrictions, logistical obstacles, and the bombing of transport routes. The healthcare system had effectively collapsed; most hospitals were non-operational or functioning only in emergency mode. Doctors reported that surgeries were being performed without anaesthesia, sterile materials were unavailable, and thousands of patients were waiting for basic medical care. The spread of diseases – particularly diarrhoeal and infectious illnesses – rose sharply.

Infographics 2: Humanitarian situation in Gaza

The international political dimension of the conflict intensified, especially during spring and summer 2024. The United States and European states criticised the scale of Israeli operations, particularly in Rafah. U.S. President Joe Biden repeatedly warned that American weapons support could be limited if Israel entered densely populated parts of Rafah without an adequate plan to protect civilians. At the same time, however, the U.S. continued uninterrupted deliveries of ammunition and air defence systems and traditionally blocked several UN resolutions critical of Israel. Israel argued that without an operation in Rafah it would be impossible to destroy the remaining major Hamas units and to secure the release of hostages.

Negotiations on a ceasefire and hostage exchanges continued throughout 2024 with varying intensity. Egypt and Qatar played key roles as mediators. In the spring, a multi-phase ceasefire and hostage exchange agreement appeared close, but ultimately collapsed due to incompatible demands from both sides. Hamas insisted on a permanent end to the war, while Israel insisted on continuing operations until Hamas was entirely destroyed as a military force. The stalemate therefore persisted into the summer of 2024. The regional "Shia axis of resistance" gradually became more involved in the conflict. Hezbollah in Lebanon initiated shelling in northern Israel, to which Israel responded with strikes on Lebanese territory. At times, the situation approached the threshold of a wider war, particularly after rocket attacks on the Golan Heights or the elimination of senior Hezbollah commanders by Israeli drones. The conflict in Gaza thus increasingly became integrated into a broader regional security crisis.

In the second half of 2024, some parts of Gaza began to show signs of total devastation. Satellite imagery confirmed the destruction of 60–70% of buildings in certain districts of northern Gaza and Khan Yunis. Economic infrastructure was virtually destroyed.

By the end of 2024, the conflict was still ongoing, although the intensity of fighting was in some places lower than in the spring. Hamas had lost a significant portion of its military capabilities, but it had not been completely eliminated. Israeli forces continued to conduct operations in previously cleared areas, indicating that full control over Gaza remained difficult to achieve despite the enormous deployment of military assets. The international community continued to press for a lasting ceasefire, but a comprehensive political settlement remained distant. The year 2024 thus demonstrated that the conflict had transformed into a long-term, multidimensional crisis with profound regional, humanitarian, and political implications.

DEVELOPMENTS IN WEAPONS PROLIFERATION IN 2024: SALW, MAJOR CONVENTIONAL ARMS AND WMD

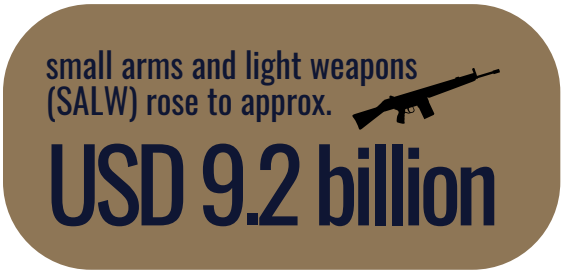
The growing proliferation of weapons – that is, the spread of arms – whether conventional (small arms and light weapons or major conventional arms) or non-conventional (weapons of mass destruction, i.e. nuclear, chemical or biological weapons), unfortunately, also characterised the year 2024. Weapons proliferation is a significant factor shaping the incidence, frequency, duration, and consequences of armed conflicts. The year 2024 was marked by ongoing or escalating conflicts, in particular the war in Ukraine, the fighting in Gaza, conflicts in Africa (in the Sahel region, especially in Ethiopia, Sudan, and elsewhere), as well as by intensifying strategic rivalry between the United States and the People's Republic of China (especially in relation to Taiwan and the South China Sea) and between the United States and Russia.

Ongoing conflicts and the growing competition and mutual distrust among major powers, as in previous years, acted as a major driver of proliferation across all weapon categories. This process manifested itself in three parallel trends:

- The proliferation of small arms and light weapons (SALW) remained significant, while effective control over their spread continued to be extremely difficult and largely ineffective.
- There was quantitative growth in proliferation in specific regions and technological acceleration, especially in the area of major onventional arms, drones and long-range strike systems.
- Modernisation and expansion of capabilities in the field of weapons of mass destruction (WMD), above all nuclear weapons, continued in parallel with the erosion of arms control regimes (George et al. 2025).

SMALL ARMS AND LIGHT WEAPONS

According to analysis by the Small Arms Survey, in 2024, the value of the global legal trade in small arms and light weapons (SALW) rose to approximately USD 9.2 billion, the highest level since 2019. Roughly half of this value consisted of ammunition (35 per cent). The major exporters remained the United States and states in Western Europe. The increase in demand was driven primarily by state procurement (re-armament and modernisation of armed forces in Europe and Asia), but the civilian market is also non-negligible, especially in countries with high levels of crime and political polarisation, notably parts of Latin America as well as the United States (Small Arms Survey 2025a).



In the Czech Republic, there is likewise a gradual upward trend in the number of small arms held by the civilian population. In 2024, the number of legally held firearms in the Czech Republic reached 1,073,534 (PCR 2025a), while the number of firearms licence holders rose to 319,559 persons (PCR 2025b). The overwhelming majority of these weapons fall into categories B and C (personal short firearms, sporting and hunting weapons, and similar types).

The proliferation of SALW continued to expand in 2024. It takes place in an environment of a record number of armed conflicts and rising levels of violent deaths caused by firearms. It is driven both by legal state demand, motivated by the modernisation and expansion of armed forces and by the growth of the global arms market, and by persistent illegal demand, usually on the part of non-state actors (this is typical, for example, in Afghanistan, Pakistan, the MENA region, or the Caribbean, e.g. Haiti) Proliferation is also fuelled by the spread of non-industrially produced "privately made" firearms and is partly a consequence of insufficient guarding and control of weapons and ammunition stockpiles by states (Small Arms Survey 2025b).

The existence of protracted, large-scale internationalised conflicts (such as the wars in Afghanistan, Syria, or Ukraine) increases the risk of secondary or illicit proliferation, i.e. the onward transfer of equipment from one conflict to others. In 2024, for example, Small Arms Survey documented the availability of NATO-pattern weapons in the border areas of Afghanistan and Pakistan (Small Arms Survey 2025b) and the illicit proliferation of man-portable air defence systems (MANPADS) in the Middle East and North Africa region, indicating that part of the materiel once legally supplied to Afghan security forces is now circulating on regional black markets.

In the Middle East, SALW and light munitions contributed to high numbers of civilian casualties in the Gaza Strip, where the region is being supplied both by legal transfers (e.g. arms for Israeli security forces) and by weapons that are smuggled or diverted into the hands of non-state actors. In the case of weapons intended for military use, the period also saw a sharp rise in European (and especially Eastern European) imports, which accounted in 2024 for fully 40 per cent of reported global imports. In Eastern Europe, the value of imports between 2019 and 2024 increased more than ten-fold (Small Arms Survey 2025a).

The Czech Republic was in 2024 a significant exporter of weapons in SALW categories. It exported the largest volumes of such weapons to Spain, Poland and Lebanon (UNROCA 2024). Ukraine is a key export destination for the Czech Republic primarily in the category of major conventional arms; however, support to Ukraine also includes decisions to relocate part of SALW production directly to Ukrainian territory, notably the Bren 2 assault rifle (Colt CZ Group SE 2024).

Table: 1 Three most important importers of SALW from the Czech Republic in 2024

Recipient state	Type of weapons	Number of items
Spain	Revolvers and self-loading pistols	5922
	Sub-machine guns	2516
	Hand-held under-barrel and mounted grenade launchers	25
Poland	Revolvers and self-loading pistols	1382
	Rifles and carbines	15
	Sub-machine guns	1938
	Assault rifles	2004
	Light machine guns	871
	Heavy machine guns	8
Lebanon	Revolvers and self-loading pistols	3487
	Sub-machine guns	325
	Assault rifles	110

According to UNROCA 2024a

MAJOR CONVENTIONAL ARMS (MCA)

Similarly to small arms and light weapons, the category of major conventional arms has undergone a profound transformation in the European context since 2022, driven by Russia's aggression against Ukraine. Imports to Europe in 2020–2024 increased by 155 per cent compared with 2015–2019. Ukraine thus became the world's largest importer of major weapon systems in 2020–2024 (8.8 per cent of global imports), with its imports almost one hundred times higher than in the previous five-year period (+9627 per cent). Most deliveries were provided by the United States, Germany, and Poland; a large part consisted of donated or second-hand equipment. It was the only European country among the world's top 10 arms importers in 2020–2024. The United States was by far the largest exporter of major arms in 2020–2024 with a share of 43 per cent of global arms exports. Russia's arms exports decreased by 64 per cent between 2015–2019 and 2020–2024, making it the world's third largest arms exporter behind the USA and France (George et al. 2025).

From a proliferation perspective, 2024 consolidated a trend whereby major conventional weapons and sophisticated strike capabilities are increasingly concentrated in the hands of a relatively small group of U.S. allies, while Russia – previously the world's second-largest exporter – has sharply curtailed its exports in favour of its own wartime requirements (a 64 per cent decrease in exports between 2015–2019 and 2020–2024). At the same time, new exporters – especially South Korea and Türkiye – are playing an increasingly important role, with their exports having risen steeply over the past decade. From a security perspective, this leads to "bloc" proliferation (rapid armament of allies in Europe, the Middle East, and Asia) and heightens the risk of regional arms races, particularly in the Indo-Pacific (Japan, Australia, Taiwan) (George et al., 2025).
In 2024, the Czech Republic was also a significant exporter of major conventional arms. It exported the largest volumes in these categories to Ukraine, Uganda, and the Netherlands (UNROCA 2024a).

Table 2: Three most important importers of MCA from the Czech Republic in 2024

Recipient state	Type of weapons	Category	Number of items
Ukraine	Battle tanks	I	50
	Armoured combat vehicles	II	110
	Large-calibre artillery systems	III	97
	Large-calibre artillery systems	III	372
Uganda	Large-calibre artillery systems	III	62
The Netherlands	Battle tanks	I	23
	Large-calibre artillery systems	III	9
	Unmanned combat aerial vehicles	IV(b)	24

According to UNROCA 2024a

As part of support to Ukraine, the so-called "Czech Ammunition Initiative" was launched, announced by Czech President Petr Pavel at the Munich Security Conference in February 2024. It was a response to the critical shortage of large-calibre ammunition for the Ukrainian Armed Forces. he principle of the initiative is that Czech private defence-industrial firms identify available tocks of ammunition.

The principle of the initiative is that Czech private defence-industrial firms identify available stocks of ammunition (155 mm and 122 mm) around the world and negotiate their purchase, while partner states (e.g. Germany, the Netherlands, Belgium, Canada, Norway, Denmark) finance the acquisitions. By the end of 2024, approximately 1.5 million artillery shells had been delivered to Ukraine under the initiative (CTK 2025).

The year 2024 also accelerated the development of new technologies and non-traditional weapon systems. It exacerbated the problem of 3D-printed weapons and online trade in key components (UNODA 2025b). The proliferation of drones and loitering munitions increased markedly. Armed military-grade systems and their commercial counterparts became a standard component of the arsenals not only of states (Russia, Ukraine, Israel, Iran), but also of numerous non-state actors (the Houthis in Yemen, militias in the Sahel). Iran is emerging as a significant supplier of drones and missiles to Russia and other partners, de facto circumventing traditional missile technology control regimes (George et al. 2025).

The United States remains the dominant supplier of long-range conventional strike capabilities: in 2020–2024 it accounted for 45 per cent of exports of ground-launched missiles with a range over 250 km and had contracted deliveries of similar systems to 13 states beyond 2024 (ibid.).

WEAPONS OF MASS DESTRUCTION (WMD)

NUCLEAR WEAPONS

The year 2024 has confirmed the existing trend whereby the world is moving away from the paradigm of gradual reductions in nuclear arsenals and entering a phase of renewed nuclear build-up, especially in China and North Korea, alongside the erosion of international arms control regimes. Almost all nuclear-armed states – the United States, Russia, the United Kingdom, France, China, India, Pakistan, the Democratic People's Republic of Korea (North Korea), and Israel – continued intensive nuclear modernisation programmes in 2024, upgrading existing weapons and introducing newer variants.

According to SIPRI, at the beginning of 2024 there were an estimated 12,121 nuclear warheads worldwide, of which approximately 9,614 were in military stockpiles and around 2,100 warheads were kept at high operational alert, primarily in the United States and Russia, with China now joining them in this regard. The post-2017 trend of gradual reductions in the total number of warheads has thus effectively been halted – most nuclear-armed states are modernising their arsenals and in some cases expanding them quantitatively. Around 90 per cent of all warheads belonged to Russia or the United States (SIPRI 2025b).
In line with the developments in previous years, 2024 remained a period of markedly heightened nuclear risk: geopolitical tensions in particular continued to widen the gap between states that possess nuclear weapons or seek to acquire them. The factor of nuclear deterrence – including nuclear rhetoric and explicit threats – is gaining importance in connection with regional tensions in the South China Sea, around Taiwan, in the Middle East, and in the context of the armed conflict in Ukraine.

In an apparent response to increased NATO support for Ukraine, President Vladimir Putin of the Russian Federation signed in November 2024 a new nuclear doctrine entitled Basic Principles of State Policy of the Russian Federation on Nuclear Deterrence. The doctrine signalled that greater involvement of NATO states – in particular the presence of their forces – or support by a non-nuclear-weapon state for an attack on Russian territory could trigger a nuclear response. Notably, the section of the doctrine devoted to the "principles of nuclear deterrence" no longer contained the previous provisions on respecting international arms control commitments (Ministry of Foreign Affairs of the Russian Federation 2024).

At the same time, one can speak of the continued erosion of arms control regimes. The validity of the New START Treaty (Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms), signed between the United States and the Russian Federation in Prague in 2010, was suspended by the decision of the Russian president in 2023; it is due to expire in February 2026 and attempts to revive dialogue between the two countries have brought no breakthrough.

The People's Republic of China is increasingly becoming a third pole in what was traditionally a US–Russian nuclear rivalry. In 2024, the prospect of an unprecedented three-way arms race strengthened further. China faced growing pressure to increase transparency and accountability with regard to its nuclear arsenal, against the backdrop of widespread reports of rapid quantitative expansion, which Beijing consistently denied. China's nuclear arsenal is developing at an exceptionally fast pace. The U.S. estimates from late 2024 suggest that China possesses more than 600 operational nuclear warheads and roughly 300 silos for intercontinental ballistic missiles, with expectations that it will reach at least 1,000 operational warheads by around 2030 (SIPRI 2025b).

The United States announced that it would adapt its approach to arms control and non-proliferation to a new era "characterised by evolving proliferation risks and rapid technological change". This policy change includes preparing to compete with two nuclear rivals simultaneously, while reaffirming its commitment to modernising both the U.S. nuclear triad and the command, control and communication systems of its nuclear forces, in order to maintain – and if necessary strengthen – the U.S. capabilities and posture (UNODA 2025a).

In the regional context of the Middle East, Iran's ambitions and activities attracted considerable attention. In 2024, Iran made a significant progress in building its capacity to acquire nuclear technology and markedly increased its production of fissile material for nuclear weapons. By the end of the year, Iran was assessed as being able to obtain sufficient material for 5–6 nuclear bombs within two weeks. At the same time, Iran was taking steps that restricted the possibilities for international monitoring of its nuclear programme, and Iranian officials warned that the country might reconsider its policy on nuclear weapons and could withdraw from the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) if sanctions were re-imposed (Arms Control Association 2025).

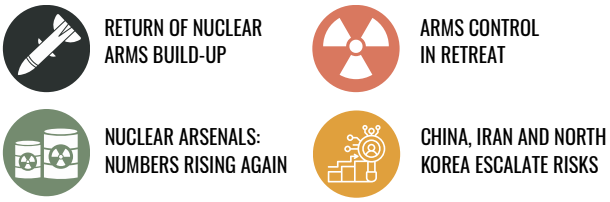
The U.S. Intelligence Community continues to assess that Iran is not currently building a nuclear weapon, but warned in November 2024 that Iran's nuclear activities "better position it to produce" nuclear weapons "if it so chooses". The same report also highlighted that Iran continues to "publicly discuss the utility of nuclear weapons" (Office of the Director of National Intelligence 2024).

In the case of another "rogue state", the DPRK, 2024 likewise saw a continuing increase in nuclear risk. Over the year, North Korea continued to develop its nuclear and missile programme in line with its five-year military development plan announced in 2021. In 2024, in violation of UN SC, it launched 45 ballistic missiles of various ranges – more than in 2023, when fewer than half of the 70 launches conducted in took place. Activities in 2024 included tests of a new solid-fuel intercontinental ballistic missile, three launches of medium-range ballistic missiles equipped with hypersonic glide vehicles and multiple independently targetable re-entry vehicles (MIRVs), as well as several short-range ballistic missiles. The DPRK also took further steps consistent with its five-year military development plan (UNODA 2025b).

Iran was assessed as being able to obtain sufficient material for 5–6 **nuclear bombs** within two weeks.

According to SIPRI, North Korea possessed around 50 nuclear weapons and material for up to 90 warheads as of January 2024, and during 2024 it continued testing new missile types and developing the reactor at Yongbyon, with the potential to produce tritium and plutonium for enhanced warheads (SIPRI 2025b).

Infographics 3: Nuclear weapons in 2014



CHEMICAL WEAPONS

In 2024, chemical weapons no longer had the relevance they used to have in previous decades or in the 20th century and the declared state stockpiles were verified as destroyed as of July 2023, in accordance with the 1997 Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction (CWC) (MFA n.d.). Nevertheless, 2024 saw new allegations of their use, especially in the context of armed conflicts.

Perhaps the greatest attention was attracted by a series of allegations by Ukraine and Western states that Russia was systematically using both the banned choking agent chloropicrin and riot control agents (e.g. CS) as a method of warfare (U.S. Embassy and Consulate in Poland 2024). In November 2024, the Organisation for the Prohibition of Chemical Weapons (OPCW) published a report from its technical assistance visit, which confirmed the presence of CS in samples taken from battle sites. The OPCW recalled that the use of such agents as a method of warfare is prohibited under the CWC (OPCW 2024).

In December 2024, Syria witnessed the rapid and unexpected collapse of Bashar al-Assad's dictatorship, a development viewed as an opportunity to map and eliminate Syrian chemical weapons (Syria had not been a party to the CWC). At the same time, there was a deep concern about the fate of known or declared but still unaccounted-for chemical weapons (Albalawi and Burck 2024), including sarin (Warrick 2024).

Issues related to chemical weapons in 2024 also arose in the context of the civil war in Sudan, where the government was accused by the United States of using chemical weapons against rebel forces (U.S. Department of State 2025), and where there were documented cases of the use of chlorine (France 24, 2025). In the same year, the government of Georgia used a chemical weapon (chloracetophenone, "CN gas") to disperse anti-government protests (Hudson, Marocico, and Buckley 2025).

Infographics 4: Chemical weapons in 2014

BIOLOGICAL WEAPONS AND DUAL-USE TECHNOLOGIES

In the field of biological weapons, 2024 did not see any confirmed use of such weapons nor the uncovering of an active state biological weapons programme. However, the security community is increasingly focused on the convergence of rapidly developing biotechnologies (synthetic biology, gene editing, AI-assisted pathogen design) with the still insufficiently robust regime of the Biological Weapons Convention (BWC). Within the United Nations, 2024 saw ongoing preparations for further strengthening of BWC verification-related mechanisms, and a number of states (including EU member states and the United States) updated their national biosecurity strategies. Nevertheless, these efforts have yet to produce a major breakthrough towards a binding international verification protocol (United Nations General Assembly 2024).

ASSESSMENT

The table provides a comparative analysis of the two main regions (Ukraine and the Middle East) from the perspective of the Czech Republic's security environment, focusing on three key indicators: geopolitical significance, conflict factors, and the humanitarian crisis. Each indicator is assigned a weight (according to its relative importance), and each region is assessed based on its associated risk levels. These values are then used to calculate an overall threat index for each region.

INTERPRETATION OF THE INDEX:

The index ranges from 0 to 10, where 0 represents minimum threat and 10 represents maximum threat. Higher index values indicate a greater degree of both military and non-military risks arising from the conflict region that may affect the Czech Republic's security environment.

Table 3: Summary of indicators and their scores for the situation in 2024

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

IMPLICATIONS FOR THE ARMED FORCES

Key implications for the defence policy of the Czech Republic and for the development of the Czech Armed Forces (CAF/AČR) in 2024 continue to stem primarily from the war in Ukraine. As a conflict between two militarily advanced actors in the European theatre, the war in Ukraine shapes and defines requirements for the future capabilities and force structure of European armed forces. A fundamental implication remains in the emphasis on building combined-arms capabilities and ensuring the long-term sustainability of force deployment in the event of a high-intensity conflict. Given the continued threat posed to NATO's eastern flank by the Russian Federation and its hostile activities, the necessity of establishing a credible deterrent is evident –at minimum in the form of robust and rapidly deployable Allied forces designated for the defence of this area. Mobility and sustainability of Allied units, in light of lessons from the ongoing war in Ukraine, remain among the core prerequisites, and the development of armed forces should be primarily aligned with achieving adequate capabilities in this domain.

Closely related is the geographic significance of the Czech Republic with regard to the potential support for Allied forces under the Host Nation Support framework. Due to its location, Czech territory would likely be a key corridor for the movement of Allied units toward the threatened region. This would place considerable demands on the existing transport infrastructure and associated support systems. It also highlights the fact that the logistical sustainment of the Czech Armed Forces currently has notable limitations, and capability development should prioritise addressing these deficiencies.

The year 2024 has confirmed that modern military conflicts unfold across multiple domains, where alongside conventional weapons, data, algorithms, autonomous systems, and industrial capacity play decisive roles. The war in Ukraine served as a laboratory for high-intensity warfare, underscoring essential factors such as the enormous consumption of military material, the importance of industrial logistics, and the mass employment of unmanned systems (FPV, UAS). By contrast, Israel's operations in the Gaza Strip in 2024 reflected a conflict of relatively low intensity, fought against an asymmetric adversary in an extremely urbanised environment, where synchronisation, precision, and the management of civil–military interaction are paramount. In both settings, the significance of human–machine teaming continues to grow: machine sensors and AI accelerate human decision-making but do not replace it.

Both conflicts demonstrated that despite the growing trend toward automation, robotics, and modern technologies, the human factor remains indispensable. Even the effective and large-scale use of drones – and their dominant role on the contemporary Ukrainian battlefield – could not fully compensate for Ukraine's structural limitations, particularly the shortage of frontline infantry. Long-term military operations in both high-intensity (Ukraine) and low-intensity (Gaza) conflicts require immense personnel endurance, including sustainable rotation cycles and psychological support. This generates stringent demands for sufficient personnel capacity and emphasises the need to build and maintain adequate capabilities not only in materiel but also in human resources. For the Czech Republic, therefore, it is essential that the planned targets for increasing the number of active personnel are genuinely achieved, as well as objectives related to establishing the necessary reserves.

For small and medium-sized armed forces such as the Czech Armed Forces, developments in contemporary conflicts imply two principal requirements: adaptation to new technologies and sustainability (logistical, industrial, and personnel). The Czech Armed Forces, in cooperation with state and private entities, should seek to developa defence innovation ecosystem that would enable greater flexibility in designing and introducing new systems – shortening the cycle from development to acquisition and eventual operational use.

SOCIETAL SECTOR

MIROSLAVA PAČKOVÁ
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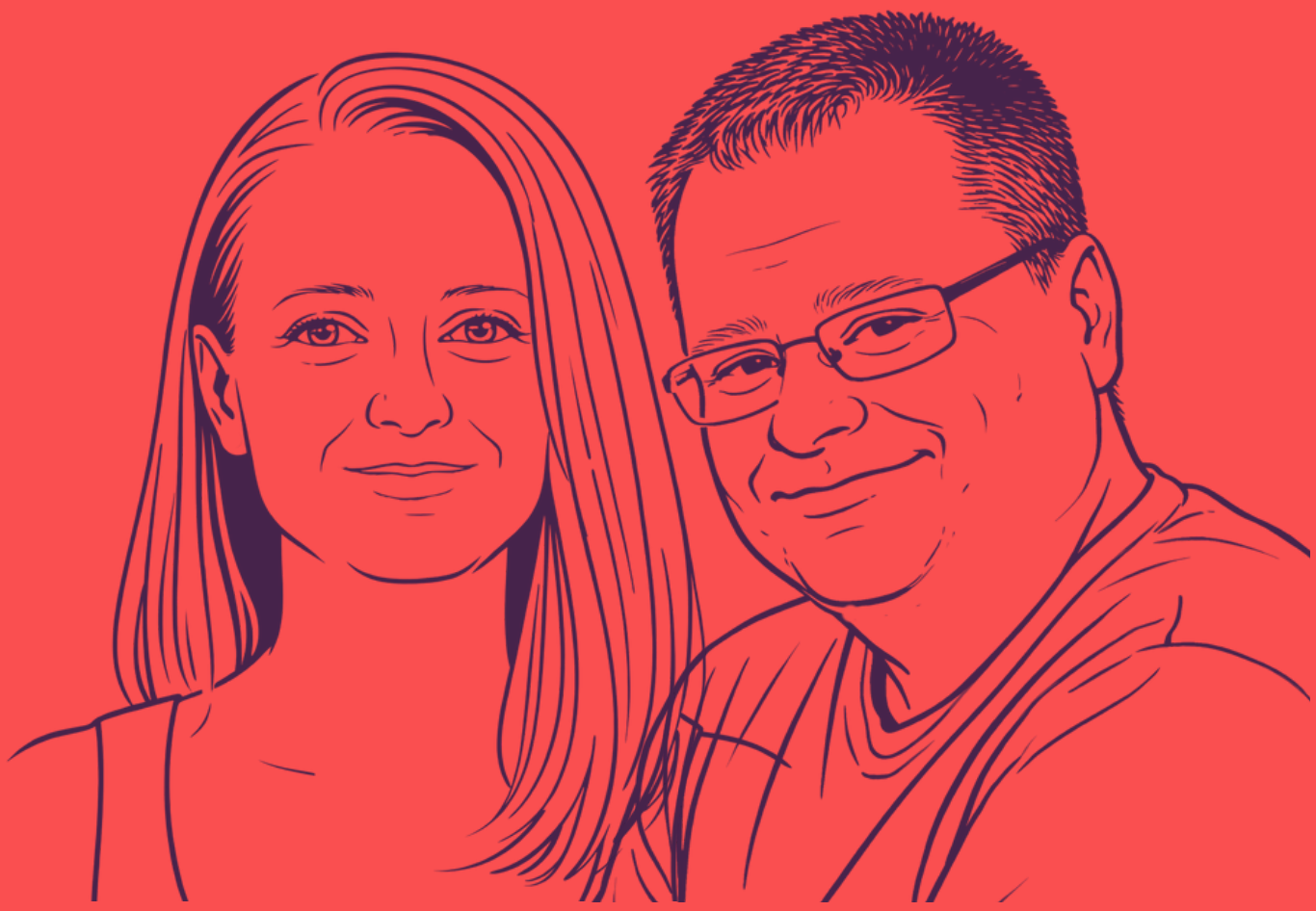

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SOCIETAL SECTOR

In 2024, the Czech societal sector was shaped by a combination of structural demographic change and a shifting landscape of institutional trust. The year confirmed two seemingly contradictory trajectories: the population continued to grow in absolute numbers, yet society continued to age rapidly. This is not merely a statistical paradox; it is a long-term transformation with direct implications for social cohesion, the sustainability of welfare and public services, and the human-resource base of key state institutions, including those in the security sector.

Alongside demographic pressures, 2024 was marked by diverging trends in institutional trust. Some institutions retained comparatively stable public confidence, while others – especially political institutions – continued to struggle with low credibility. Importantly, trust is not eroding uniformly.

At the same time, Czech societal resilience in 2024 remained closely tied to the informational environment. Disinformation, influence operations, and hybrid threats continued to undermine trust and intensify polarisation, often exploiting existing socio-economic insecurities and "crisis fatigue" linked to inflation, war-related uncertainty, and perceived pressures on public capacity. These dynamics affect how citizens interpret crises, how they evaluate state responses, and how willing they are to support costly or demanding policy measures – especially where solidarity and long-term strategic orientation are required.

Taken together, the 2024 developments highlight that the societal sector is not a "soft" background variable but a central driver of security outcomes. Demographic ageing constrains state capacity and increases competition over resources. Migration and minority relations continue to shape perceptions of social order and fairness. Institutional trust affects compliance, cooperation, and crisis management. Finally, information manipulation and domestic polarisation determine whether societies can maintain a shared understanding of threats and coordinate responses.

Influence operations eroded trust amid crisis fatigue.

BASIC DEMOGRAPHIC INDICATORS

The year 2024 confirmed an already visible trajectory of demographic development in the Czech Republic, characterised by seemingly contradictory trends: growth in the size of the population and population ageing. The population of the Czech Republic continued to increase in 2024 and reached its highest value in history, 10,919,500 inhabitants, of whom 5,354,579 were men and 5,554,921 were women (CSO 2025a).

At the same time, 2024 saw the lowest number of births in the country's recent history, with only 84,311 live births. The mean age of mothers at childbirth (30.5 years) and the mean age of mothers at first birth (29 years) increased, representing the highest values recorded so far and indicating increasingly limited possibilities for simple (replacement-level) reproduction of the population.

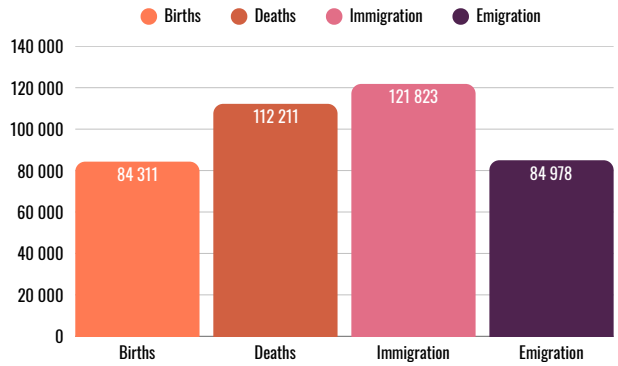
The total fertility rate stood at the very low level of 1.368 children per woman (CSO 2025g). It is worth recalling that, in order to maintain the size of the population in the absence of immigration, a minimum value of 2.1 live births per woman is required.

MAINTAIN THE SIZE OF THE POPULATION 2.1 CHILDREN PER WOMAN IS REQUIRED

The ageing index, defined as the number of persons aged 65 and over per 100 persons aged 0–14, reached a value of 133.4. The old-age dependency ratio, which expresses the ratio of the number of persons in the economically inactive age groups (0–19 years and 65 years and over) to the number of persons in the economically active age group (20–64 years), reached a value of 72. The average age of the population also increased to 43.1 years (41.6 years for men and 44.5 years for women), and life expectancy at birth rose to 77.2 years for men and 83.1 years for women. All of these basic demographic indicators for 2024 exceed the values observed since 1989 (CSO 2025g). For the first time, the number of centenarians and older persons in the population exceeded one thousand (CSA 2025).

In 2024, there were 112,211 deaths in the Czech Republic, 84,311 children were born, 84,978 persons emigrated, and 121,823 persons immigrated. Natural population change (the difference between the numbers of deaths and births) reached a negative value of –27,900 persons, but this decline was offset by net migration of 36,845 persons. Overall, the population increased by 8,945 inhabitants. Although this total increase in 2024 was comparable to the period roughly ten years earlier, it was several times lower than in the subsequent period and an order of magnitude lower than in the record years 2022 (310,822 persons) and 2023 (73,026 persons), which were affected by the migration wave from Ukraine (CSO 2025c). These facts suggest that population growth is coming to an end and that a decline is approaching, despite positive net immigration.

Figure 1.: Population Balance of the Czech Republic (2024)



Source: authors, based on CSO 2025g

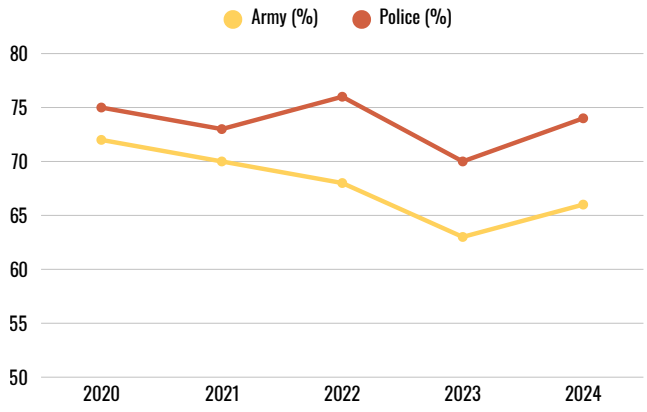
As of 31 December 2024, there were 1,091,525 foreign nationals residing in the Czech Republic, of whom 372,217 held permanent residence permits and 719,308 long-term residence permits (CSO 2025c). Within this total, the largest group consisted of foreigners with temporary protection (primarily refugees), whose number reached 388,879 at the end of the year. The total number of foreign nationals increased by 2.7% compared to the previous year, by 28,349 persons, and foreigners thus once again accounted for 10% of the population of the Czech Republic in 2024. More than half of all foreign nationals (54%, i.e. 589,456 persons) were citizens of Ukraine, 11% were citizens of Slovakia (121,471 persons), 6% citizens of Vietnam (69,015 persons) and just under 4% (38,970) citizens of Russia (MOI 2025a). The downward trend in irregular migration also continued in 2024, with a total of 9,461 persons detected on the territory of the Czech Republic, representing a year-on-year decrease of 31.9% compared to the previous year. Approximately two thirds of irregular migrants were citizens of Ukraine, Moldova, and Vietnam (MOI 2025c). In the field of international protection, the Czech Republic did not hold a particularly prominent position in the European context in 2024 either. In 2024, the second lowest number of applications for international protection since 2015 was lodged in the Czech Republic. In total, there were 1,363 recorded applications, representing a year-on-year decrease of 4.4%. The most numerous groups of applicants for international protection in 2024 were citizens of Uzbekistan (MOI 2025a).

INSTITUTIONAL TRUST

Over the past five years, public confidence in the Czech Army has gradually declined. While in 2020 more than 70% of citizens expressed trust, this figure dropped to around 63% in 2023 – the lowest level since 2008 – before slightly recovering to 66% in 2024. The decline is partly linked to growing political polarisation, which shapes how different groups of voters perceive the armed forces. Among young people (18–29 years), however, trust remains much higher, close to 80%.

The Police of the Czech Republic, on the other hand, has maintained relatively stable levels of public trust. Since 2020, support has fluctuated between 70% and 76%, with the latest survey in 2024 showing 74%. Unlike the Army, confidence in the Police is less dependent on political preferences and remains broadly consistent across the population (STEM 2024c).

Figure 1: Public confidence in Army and Police



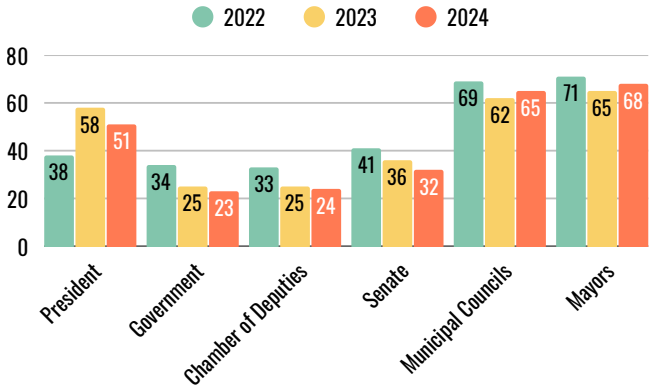
Source: authors, based on STEM 2024c

The security sector itself shows both strengths and gaps. A 2023 survey of police and army officers found generally high resilience, with strong trust in public broadcasters and rejection of fringe portals. Yet soldiers proved more receptive to patriotic messaging, and socio-demographic factors (education, age, gender) shaped vulnerability—indicating that tailored counter-disinformation approaches are needed (Matejova, Drmola, and Spáč, 2025).

In recent years, public trust in Czech institutions has shown diverging trends. Judicial bodies such as the Constitutional Court, the Supreme Court, and the Supreme Administrative Court have remained relatively stable, with trust levels around 60–65%, though with slight declines. In contrast, political institutions continue to struggle with low credibility: in 2024 only about 23% of citizens trusted the government and 28% the Chamber of Deputies, while trust in the Senate stood at 36%. President Pavel initially enjoyed higher levels of public confidence (around 56%), but this fell slightly to 51% by late 2024. Local authorities, especially mayors and municipal councils, consistently receive the strongest trust (65–70%) (Červenka 2024a; Červenka 2024b)

In a 2024 analysis, STEM observed that the decline in public trust in the Czech Army is increasingly linked to political preferences. Whereas in 2020 trust in the Army was high and fairly uniform across supporters of different parties (~80%), by 2024 there are major gaps: for example, about 81% of ODS voters expressed trust versus only 36% among SPD supporters. This suggests that rather than a general institutional erosion, trust in the Army has become a polarised topic, correlated with party alignment, making the Army not just a national institution but one embroiled in political identity (STEM 2024c).

Figure 2: Public Trust in Key Institutions (2022–2024)



Source: authors, based on Červenka 2024a; Červenka 2024b)

ATTITUDE TOWARDS THE EUROPEAN UNION

In late 2024, STEM found that anti-EU sentiment among Czech citizens had slightly weakened, despite persistent scepticism about domestic developments. Survey data showed increasing satisfaction with EU membership and a lower share of people who would vote to leave the EU if a referendum were held. Analysts pointed out that while the general "bad mood" driven by inflation and other crises remained prevalent, it did not strongly influence attitudes toward the European Union. "Although public mood remains gloomy," says Martin Kratochvíl, "it doesn't strongly influence attitudes toward the European Union." (STEM 2025a).

Sociological research conducted by STEM has shown that Czech society can be divided into six groups based on their relationship with the EU: Euro-enthusiasts, Supporters, Lukewarm Supporters, the Uncertain, Opponents, and Hard Opponents. This division reflects not only trust in EU institutions but also the perceived benefits and drawbacks of membership, levels of criticism, and visions for future cooperation (Urbanová et al, 2024). Citizens who better cope with financial crises tend to belong to pro-EU groups (Euro-enthusiasts, Supporters), while those struggling with debt or financial instability are more likely to fall among Opponents or Hard Opponents. Yet the division is not absolute: well-off citizens may also be EU sceptics, and the highly educated are not uniformly pro-European – 45% of Euro-enthusiasts hold a university degree, but so do 12% of Hard Opponents (Ibid.).

While exact CVVM time-series data on trust in the EU are not available for 2024, other surveys point in a similar direction. The Eurobarometer placed Czech trust levels at around 43%, and GLOBSEC measured 41%, both broadly consistent with earlier CVVM figures from 2022–2023 (≈44–46%). STEM data also suggest a slight improvement in satisfaction with EU membership and a decline in support for leaving. Taken together, these findings allow only approximate comparison across sources, but they confirm that Czech scepticism toward the EU has not deepened further and may even be softening at the margin (European Commission, Directorate-General for Communication 2024; GLOBSEC 2024; STEM 2025a).

ATTITUDE TOWARDS NATO

According to CVVM's 2024 survey (published in January 2025), Czech trust in international leaders remains fragmented and largely sceptical. The highest levels of trust went to U.S. Vice President Kamala Harris and French President Emmanuel Macron (33% each), followed by Ukrainian President Volodymyr Zelenskyy (31%). At the opposite end, trust in Vladimir Putin fell to 9% (84% distrust), while Belarus's Alexander Lukashenko reached only 7% (Červenka 2025b).

Compared with 2023, distrust declined modestly for several Western leaders (Biden –7 points, Zelenskyy –6, Macron –5, Scholz –4, Erdogan –8), but increased for Viktor Orbán (+4). The sharpest deterioration concerned Slovakia: distrust toward Robert Fico and Peter Pellegrini jumped by 14 and 15 points, respectively. The only leader with a slight gain in trust was Donald Trump (+4 since 2021).

The results confirm a persistent Czech tendency to express more distrust than trust toward global figures. Yet the marked rise in negative views of Slovak leaders suggests that evaluations are not only about geopolitical alignment but also about immediate regional politics. This points to a Czech public highly sensitive to domestic and regional shifts rather than to abstract international dynamics (Červenka 2025b).

Table 1. Support for NATO Membership – Central and Eastern Europe

Year	CEE Average Support (%)	Score	Czech Republic Support (%)	Score
2022	72	4	87	5
2023	80	4	85	5
2024	81	5	77	4

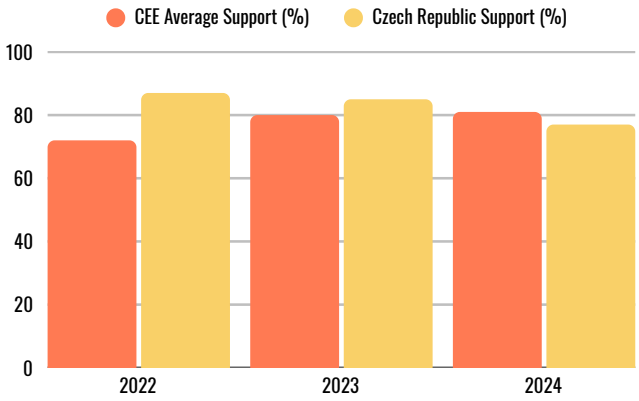
Source: own analysis with data retrieved from GLOBSEC 2022–2024

Table 2: Change in support for NATO membership

Year	Change in CEE Average (%)	Score	Change in Czech Republic (%)	Score
2023	8	1	–2	–1
2024	1	0	–8	–1

Source: own analysis with data retrieved from GLOBSEC 2022–2024

Figure 2: Change in support for NATO membership



Source: own analysis with data retrieved from GLOBSEC 2022–2024

Table 3: Methodology of Evaluation (Scale)

Indicator (Support Level)	Value (%) Range	Score
Very high support	81–100 %	5
High support	61–80 %	4
Medium support	41–60 %	3
Low support	21–40 %	2
Very low support	0.001–20 %	1
Indicator (Change Year-to-Year)	**Value (pp) Range**	**Score**
Significant improvement	more than +21 pp	2
Slight improvement	+2 to +20 pp	1
Stagnation	–1 to +1 pp	0
Slight deterioration	–2 to –20 pp	–1
Significant deterioration	more than –21 pp	–2

Source: own analysis with data retrieved from GLOBSEC 2022–2024

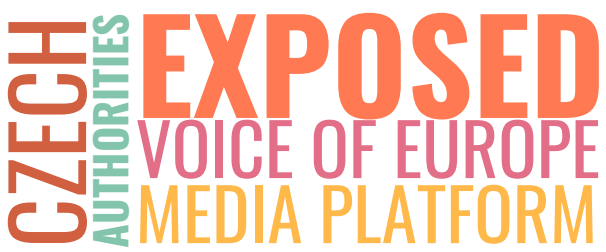
Between 2022 and 2024, support for NATO membership in a hypothetical referendum remained consistently high across Central and Eastern Europe, though with notable national differences. The regional average rose slightly from 72% in 2022 to 81% in 2024, reflecting stable or strengthening commitment to the Alliance. In contrast, Czech support declined from 87% in 2022 to 77% in 2024, dropping from the "very high" to the "high" category, which indicates a modest deterioration despite overall continued majority backing (GLOBSEC 2022–2024).

By late 2024, only 43% of Czechs followed the war in Ukraine, the lowest since 2022. Yet most still viewed it as a threat (73% to world peace, 71% to European security, 66% to Czech security). Support for government policy declined to 36%, with 58% opposing, mostly because they saw the aid as excessive. Clear majorities backed diplomatic pressure on Russia (73%), while support for financial (45%) and military aid (42%) was weaker. Deployment of Czech troops remained overwhelmingly rejected (11% support, 85% oppose). This shows a paradox: threat perceptions remain high, but support for costly measures is falling. War fatigue, combined with economic concerns, has eroded solidarity despite continued recognition of Russian aggression as a major danger (Červenka, 2025a). In 2024, Czech views of the Israeli–Palestinian conflict grew more sceptical toward both parties. While early CVVM data showed 40% blaming both sides and rising support for recognising Palestine (46%), later STEM surveys confirmed declining sympathies for both Israel and Palestine, with Palestine seen most negatively. The trend points to waning support overall and a perception of shared responsibility rather than clear alignment (Červenka 2024c).

Infographics 4: Support for Deployment of Czech troop in the Ukraine

DISINFORMATION, HYBRID THREATS, AND RESILIENCE OF SOCIETY

Disinformation and information operations remain the main "securitised" threat in the societal sector, undermining trust, fuelling polarisation, and weakening cooperation in crises. The Disinformation Resilience Index 2024 (Nemečkayová and Havlíček 2024) and SIS (2025) report confirm Czechia's persistent exposure: capacities are improving, but vulnerabilities endure.



In 2024, the Ministry of the Interior reported that Russia conducted hybrid operations in Czechia to erode trust in state institutions and promote pro-Kremlin values, particularly among anti-system movements. While Moscow's messaging has shifted from overt minority-targeted hate to subtler value-shaping, hostility persists – merging with pro-Russian attitudes. Hate speech against Ukrainian refugees and antisemitic incidents increased, and the Gaza war was exploited to amplify conspiracies (Ministry of the Interior of the Czech Republic 2025). In the same year, Czech authorities also exposed the Voice of Europe platform, linked to Viktor Medvedchuk, which spread pro-Kremlin narratives and covertly supported sympathetic politicians. Prague placed the platform and its patrons on the national sanctions list and later secured EU-wide sanctions, underscoring both the scale of Russia's disinformation operations and Czechia's proactive response (ČT24 2024a; MFA 2024a; Radio Prague International 2024).

These sanctions refer to EU-wide restrictive measures adopted since 2022 in response to Russia's full-scale invasion of Ukraine. The Council of the European Union placed several Russian state-controlled media outlets – such as RT, Sputnik, Rossiya Segodnya, and later on platforms such as Voice of Europe – on the sanctions list for conducting information manipulation campaigns, spreading war propaganda, and attempting to destabilise EU member states. The sanctions prohibit the broadcasting, retransmission, hosting, translation, or any form of distribution of their content within the EU. Member states must ensure that operators, platforms, and individuals do not knowingly facilitate the circulation of sanctioned content.

> Czechia backs EU sanctions on Russian media, but enforcement lags.

In practice, however, enforcement varies across the Union. In Czechia, the government publicly supported the inclusion of Russian propaganda outlets on the EU sanctions list and advocated its expansion. Yet domestic enforcement remains limited. Although EU law requires member states to criminalise circumvention of sanctions — including retranslating or republishing banned content — Czech authorities have not consistently investigated or penalised such violations. Key institutions (FAÚ, police, Ministry of Foreign Affairs, Ministry of the Interior) acknowledge the legal obligations, but responsibility for enforcement is fragmented and no agency has taken clear ownership of determining when a violation has occurred. As a result, despite the Czech Republic's diplomatic leadership at the EU level, systematic domestic enforcement of these sanctions remains weak, inconsistent, and politically sensitive (Council of the EU 2022; Council of the EU 2024; MFA 2024a; Boháč 2025).

Despite relatively strong resilience compared to neighbours (Nemečkayová and Havlíček 2024), weaknesses are evident. Public trust in Czech media remains low, civil society initiatives lack coordination and resources, and political leaders have yet to commit to a comprehensive resilience strategy. Domestic ideological battles also interact with external influence: the 2024 debates over the Istanbul Convention became a symbolic conflict exploited by pro-Russian networks and conservative actors, deepening polarisation (Tkáčová 2024).

Independent investigations confirm the breadth of the Czech disinformation ecosystem. Voxpot showed that in 2024, Czech disinformation websites produced more daily content than mainstream outlets, much of it translated from Russian state-controlled media, often with ties to SPD or indirect Russian funding (Boháč and Pecka 2025). CEDMO monitoring documented how these narratives adapt to crises: from fabricating Ukrainian military losses to reframing floods or food prices as proof of government failure, with AI-generated content blurring lines between propaganda and satire (CEDMO 2024). EU DisinfoLab and European Values highlight that Czech disinformation outlets operate not only as ideological actors but also as business enterprises – monetising clicks, donations, and esoteric services – creating structural incentives to sustain polarising narratives (Tkáčová a Ševčíková 2023).

Research underscores how disinformation is localised. Energy narratives, for example, consistently portrayed Russia as a reliable supplier and shifted blame for high prices onto sanctions or Czech policy, linking these claims to fears of poverty and insecurity (Paličková and Černoch, 2024). Other analyses show how domestic topics – from COVID-19 to WWII memorial disputes – are parasitised and mutated into anti-Western and pro-Kremlin frames (Cvrček and Fidler, 2024).

The security sector itself shows both strengths and gaps. A 2023 survey of police and army officers found generally high resilience, with strong trust in public broadcasters and rejection of fringe portals. Yet soldiers proved more receptive to patriotic messaging, and socio-demographic factors (education, age, gender) shaped vulnerability – indicating that tailored counter-disinformation approaches are needed (Matejova, Drmola, and Spáč, 2025).

Overall, the Czech case demonstrates a layered resilience: while state institutions, media pluralism, and civil society create buffers against foreign interference, disinformation actors – ranging from Kremlin-linked networks like Voice of Europe to domestic "entrepreneurial" portals – continue to exploit social cleavages, economic insecurities, and political polarisation.

PERCEPTIONS OF MINORITIES AND RELATIONS BETWEEN POPULATION GROUPS

In 2024, attitudes towards minorities in Czech society were shaped by the war in Ukraine, the conflict in Gaza, and domestic socio-economic uncertainties. In the Czech context, although attitudes towards minorities are not a particularly salient issue, they are nonetheless formative for public attitudes and opinions (STEM 2024b). Public opinion research in 2024 recorded growing fatigue with the war in Ukraine and declining interest in international affairs. This created a context in which attitudes towards "visible" minorities – primarily Ukrainians, Roma, Jews, Muslims, and LGBT+ individuals – continued to evolve (Červenka 2025a).

Regarding data illustrating criminal offences linked to extremism and bias-motivated hatred, the Ministry of the Interior of the Czech Republic registered 33 criminal offences with an antisemitic bias in 2024 (an increase of 15 offences compared to 2023). These constituted 20.75% of all criminal offences with an extremist background in 2024 (compared to 9.9% in 2023). Over the same period, a total of 17 criminal offences motivated by hatred against Roma were recorded (a decrease of 8 offences compared to 2023); these offences accounted for 10.69% of all criminal offences with an extremist background in 2024 (13.8% in 2023). In addition, 14 offences motivated by hatred of the LGBT+ community were registered, i.e. one more than in 2023. Over the monitored period, 71 offences motivated by hatred of Ukrainians were recorded (MOI 2025b).

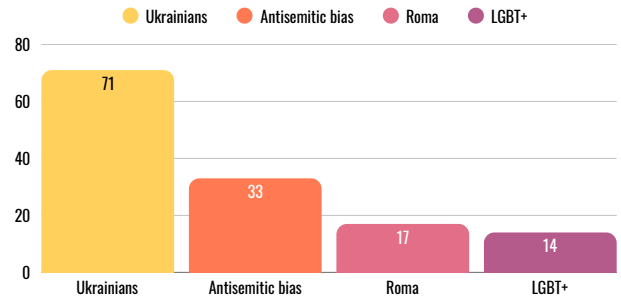
ETHNIC MINORITIES

Attitudes of the Czech public towards foreigners, i.e. towards national minorities, were also examined by the research agency STEM based on data collected in 2024. The survey showed that, among foreigners, Slovaks are by far the most acceptable group for Czechs – more than 90% of respondents would have no problem accepting them as neighbours – and that inhabitants of economically advanced Western countries are also perceived very positively.

Over the last decade, acceptance of Vietnamese has increased significantly: whereas around 2014 roughly 40% of Czechs would have been comfortable with a Vietnamese neighbour, by 2023/2025 the figure reached approximately 70–71%, which STEM interprets as an indication that the Vietnamese community has been "accepted" by the majority population.

The war in Ukraine has also altered perceptions of Ukrainians, who, after the Russian invasion, have come to be seen as more acceptable neighbours than Russians, whereas before 2022 the opposite was true. At the bottom of the acceptance hierarchy, by contrast, we find Roma and people from the Middle East: according to STEM's interpretation of the data, a substantial proportion of Czechs would not want them as neighbours, and only a minority of society and only a minority of society can imagine living next door to Arabs, Syrians, or Afghans. This often carries over into the perception of Muslims in general as a "security" problem. Everyday coexistence with Jews is mostly unproblematic, but the increase in incidents in 2024 suggests that social acceptance of this minority is fragile and can easily be called into question in times of crisis (STEM 2025b).

Figure 1: Recorded hate/extremism offences by target group (2024)



Source: authors according to MOI 2025b.

UKRAINIANS

Refugees from Ukraine probably attract the greatest public attention; attitudes towards them remained ambivalent in 2024, but were rather pragmatically accepting in general. According to a CVVM survey from February 2024, a majority of respondents supported the settlement of Ukrainian refugees in the Czech Republic (11% supported permanent settlement and 60% settlement until the end of the war), while roughly one quarter (28%) were opposed to their settlement. At the same time, 58% of respondents held the view that the Czech Republic had accepted "more refugees than it can manage", whereas 35% considered their number appropriate. Despite these concerns, a majority of the public evaluated integration relatively positively: 55% believed that the integration of Ukrainian refugees was rather successful (up from 46% in 2023), while only 38% expressed the opposite view (46% in 2023) (Červenka and Kyselá 2024d). An overwhelming majority of Czechs had ordinary contact with Ukrainians, primarily in public spaces (87%), but only a smaller share encountered them as colleagues or classmates. The overall picture therefore combined humanitarian willingness to help, the economic use of Ukrainian labour, and a sense of "overload", especially among more socio-economically vulnerable segments of the population (Červenka and Kyselá 2024d; STEM 2024a).

Despite the clearly positive attitude of most Czech citizens and the active efforts of refugees to integrate into Czech society, the Ukrainian refugee minority remains to a large extent pauperised due to limited knowledge of the Czech language, barriers to accessing qualified employment and the gradual reduction of state support. Some Ukrainians face verbal and sometimes physical attacks because of their origin (Šafářová et al. 2023). Since 2022, a substantial increase in anti-Ukrainian incidents has been observed. Whereas in the years 2015–2021 this category represented at most 5% of all recorded bias-motivated incidents in a given year, in 2022 the proportion reached 31%, followed by 24% in 2023 and 23% in 2024 (In Iustitia 2025).

ROMA

According to the 2021 Census of Population, Houses and Dwellings, 21,691 inhabitants of the Czech Republic declared Roma nationality. Qualified estimates suggest that approximately 250,000 Roma live in the territory of the Czech Republic (Government of the Czech Republic 2022). In 2024, the Roma minority remained the group towards which both latent and open discrimination are most persistent and deeply entrenched in Czech society. The governmental Report on the Situation of the Roma Minority in the Czech Republic in 2023 and 2024 states that, despite partial progress – for example, in the field of inclusive education – Roma continue to experience high levels of poverty, spatial segregation, and discrimination in the housing and labour markets. The report explicitly employs the concept of antigypsyism as a structural prejudice manifested in everyday communication, the media, and institutional practices (Government of the Czech Republic 2025a).

In 2024, the Government of the Czech Republic adopted an updated version of the document Strategy for Equality, Inclusion and Participation of Roma (Roma Integration Strategy) 2021–2030, which states that the situation of the Roma minority is among the most pressing issues Czech society has faced after 1989. Despite partial successes – for example in creating conditions for Roma emancipation, supporting Roma culture and the Roma language, and launching major reforms relating to the education of Roma children and the functioning of institutions tasked with facilitating Roma integration – it has not been possible to achieve an overall positive turnaround. Trends leading to marginalisation, social exclusion, and territorial segregation of part of the Roma population continue to persist (Government of the Czech Republic 2024).

A year later, the government endorsed the Report on the State of Human Rights in the Czech Republic in 2024, which highlights above all the persistent and most serious problem of unequal access of Roma children to education and its consequences (Government of the Czech Republic 2025b).

In 2024, following many years of public debate, the Memorial to the Holocaust of the Roma and Sinti in Bohemia in Lety u Písku was opened. Its aim is to integrate Roma memory into national history and to contribute to changing majority perceptions of Roma as full-fledged citizens who are part of Czech history and society (Památník Lety 2024). Unfortunately, such symbolic measures penetrate everyday public attitudes only to a limited extent; the stereotypical image of Roma as "unadaptable" persists and is often used as a tool of political mobilisation (Government of the Czech Republic 2025a).

MUSLIMS

Attitudes towards Muslims and, more broadly, towards migrants from predominantly Muslim countries are, in the Czech context, shaped more indirectly than through direct coexistence, because the Muslim population in the Czech Republic is numerically small and geographically as well as socially relatively dispersed. Existing estimates generally suggest that there are between 20,000 and 30,000 Muslims, with the vast majority of them – between 80% and 90% – being foreign nationals (Skalický 2025). In public opinion, the media image of Muslims is shaped predominantly by information and stereotypes associated with the migration crisis and terrorism; direct personal experience is largely absent and is frequently replaced by politically motivated narratives (SPD 2015).

This combination of limited personal experience among most of the population and a strong media discourse means that Muslims are thematised in Czech public debate primarily as an abstract security issue rather than as a concrete minority living in the Czech Republic (see, e.g., Ostřanský 2024).

MEDIA IMAGE OF MUSLIMS IS SHAPED PREDOMINANTLY BY STEREOTYPES

Paradoxically, this is illustrated by an event in 2024, when an international group of young radicals was uncovered who, while promoting the so-called Islamic State on social media, spread hatred against the LGBT+ community and Jews and prepared an arson attack on a synagogue in Brno. According to the Police of the Czech Republic, the suspects did not know each other beforehand; they were united by a fascination with violence and were radicalised very quickly online, initially by searching for videos and texts with such content. According to the police, they had no links to the Muslim community in the Czech Republic and embraced the ideology of the so-called Islamic State via the internet (ČT24 2024b).

JEWS

It is estimated that there are between 15,000 and 20,000 members of this national and religious group in the Czech Republic. In 2024, the Jewish minority was primarily perceived through the lens of rising antisemitism, which was closely linked to polarised reactions to the war in Gaza. The Federation of Jewish Communities' annual report on antisemitism in the Czech Republic for 2024 describes a sharp increase in recorded incidents, particularly verbal attacks and hate speech online, as well as physical violence and threats against Jewish children and institutions. A total of 4,694 antisemitic incidents were recorded, which is an increase of 8.46% compared to 2023, when 4,328 incidents were registered. The vast majority of cases involved verbal incidents or online attacks. However, there were also attempted arson attacks and acts of vandalism, as well as isolated cases of attempted terrorist attacks. Physical violence occurred in "only" four cases (Federation of Jewish Communities in the Czech Republic 2025).

LGBT+ – LESBIAN, GAY, BISEXUAL, TRANSGENDER, AND INTERSEX MINORITIES

LGBT+ people were very visible in the Czech public sphere in 2024 – both due to major legal changes and because of alarming findings on the extent of discrimination and violence. The survey Do You Know Your Rights? conducted among almost 1,900 LGBT+ respondents showed that, in the previous year, 42% reported experience of discrimination or harassment and 23% had experienced physical or sexual violence. Up to 90% of these incidents remained unreported, mainly due to distrust in institutions. The study also showed that LGBT+ people in the Czech Republic see the Constitutional Court as the most trustworthy protector of their rights, while trust in parliament and the government is very low (Queer Geography and Prague Pride 2024).

In legal terms, 2024 brought significant yet ambivalently perceived changes for the LGBT+ community. At the end of February, the Chamber of Deputies did not approve marriage for same-sex couples but adopted an amendment to the Civil Code introducing the institution of "partnership" with roughly most of the rights associated with marriage (including community property, survivors' pensions and a common surname), but without full rights to joint adoption of children from institutional care. The Senate subsequently approved the amendment and the President signed it in the spring, with effect from 2025 (Advokátní deník 2024). According to a CVVM survey, almost half of respondents (48%) were in favour of allowing same-sex couples to marry, while more than one third (35%) were opposed (Kyselá 2024). A second major development was a ruling of the Constitutional Court which annulled the statutory requirement of a surgical procedure, including sterilisation, as a necessary condition for legal gender recognition, finding that it violated the right of trans people to bodily integrity and human dignity; the annulment will take effect in mid-2025 (Constitutional Court of the Czech Republic 2024).

As a result, LGBT+ minorities perceived the Czech state in 2024 as an ambivalent actor: on the one hand, it is willing to remedy manifest injustices (sterilisation, unequal status of partnerships), while on the other, high levels of everyday violence persist alongside political debates in which LGBT+ people are frequently the object of cultural contestation (Jsme fér 2024). The security dimension of perceptions of minorities in 2024 is well illustrated by the case of a Czech minor who was charged in the spring with establishing an extremist group and supporting terrorism in connection with a planned attack on the Bratislava Pride parade. In response, the Police of the Czech Republic significantly reinforced security measures at the Prague Pride festival, even though they had no information about a specific threat in Prague (ČT24 2024b). Similarly, a counter-terrorism operation against a group inspired by the so-called Islamic State, which, in addition to planning an attack on the synagogue in Brno, spread hatred towards Jews and the LGBT+ community on social media, shows that different forms of hatred – antisemitic, Islamist and homophobic – often merge in today's Czech environment into a single online radicalisation "mix" (ČT24 2025).

FULFILLING THE RECRUITMENT TARGETS OF THE CZECH ARMED FORCES AND THE STRUCTURE OF THE ARMY

In 2024, the Army and the Ministry of Defence introduced several tools to make recruitment more effective. Since autumn 2023, a virtual recruitment centre enabled applicants to begin the enlistment process online, and scholarships were offered to high school students committing to service after graduation (iRozhlas 2024a; Agentura personalistiky Armády České republiky 2025). Despite these measures, the Defence Report emphasised that recruitment levels still failed to meet required targets and needed to be intensified (Armáda ČR, 2024a). In the context of an aging and shrinking population, the Czech Armed Forces must reach out to a broader spectrum of potential recruits, including currently underrepresented groups.

Medical exams disqualified about 45% of applicants.

A key development in 2024 was the reform of medical fitness requirements. The new Decree No. 288/2024 Sb., effective from October, relaxed overly strict health criteria by allowing individualised assessments of certain chronic or manageable conditions (Zákony pro lidi, 2024; iRozhlas, 2024b). Medical examinations had previously been a major ottleneck, disqualifying roughly 45 per cent of applicants (Český rozhlas, 2022). The reform is therefore expected to enlarge the pool of eligible candidates and speed up the recruitment process, although its full impact will only become evident in the following years (Armáda ČR, 2024b).

RECRUITMENT RESULTS – CZECH ARMED FORCES

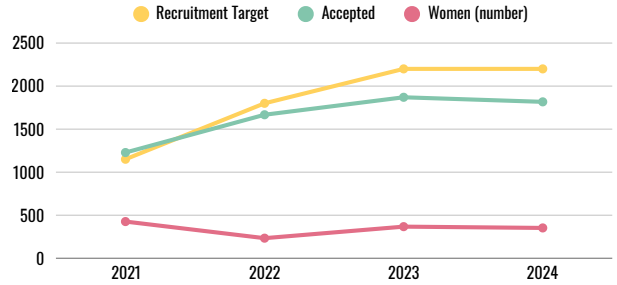
Between 2021 and 2024, the Czech Armed Forces (CAF) struggled to maintain recruitment levels in line with increasing targets. After exceeding the goal in 2021 (106.8%), fulfilment steadily declined: 92.6% in 2022, 85.0% in 2023, and only 82.6% in 2024. Despite active measures by the Ministry of Defence, including virtual recruitment, scholarships, and a reform of medical fitness requirements, the recruitment gap persisted (MoD, 2023-2025).
The score-based evaluation of recruitment targets confirms this trend. While recruitment was consistently rated as successful until 2021, the results of 2022–2024 fall into the "-1" category (80–94% fulfilment), reflecting the inability to meet the rising personnel requirements. In other words, despite modest progress in recruitment tools, the CAF remains below the level necessary to compensate for demographic decline and the growing demand for manpower.

Table 4: Recruitment targets fullfillement between years

Year	Recruitment Target	Accepted	Fulfillment of Target (%)	Women (number)	Share of Women among Accepted (%)	Share of Women in CAF (%)
2021	1150	1228	106,8	426	34,7	13,6
2022	1800	1667	92,6	233	14	14
2023	2200	1870	85	367	19,6	14,3
2024	2200	1817	82,6	352	19,4	14,3

Source: (own analysis with data retrieved from MoD 2023-2025)

Figure 2: Fulfillment of Recruitment Targets – Czech Armed Forces



Source: (own analysis with data retrieved from MoD 2022-2025

Table 4: Methodology of Evaluation (Scale)

Year	Fulfillment of Recruitment Targets (%)	Score
2016	100+ %	1
2017	100+ %	1
2018	98,90%	1
2019	86,00%	-1
2020	100+ %	1
2021	106,80%	1
2022	92,00%	-1
2023	84,90%	-1
2024	82,60%	-1

Score	Percentage Range
1	100+ % – 95 %
-1	94 – 80 %
-2	79 – 60 %
-3	59 – 40 %
-4	39 – 20 %
-5	19 – 0 %

WOMEN IN THE CAF AND THE GLASS CEILING EFFECT

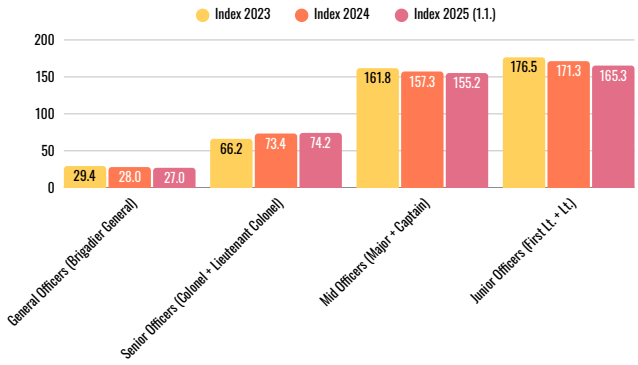
The role of women remained relatively stable: around 14% of total force strength, while their share among new intakes varied more widely – from 34.7% in 2021 (an exceptional peak) down to about 19% in 2023–2024. This indicates that gender balance in recruitment has not yet translated into a sustained rise in the overall share of women in the CAF.

Women were historically restricted to support roles and excluded from combat, which limited career advancement and visibility in the military. This slow path toward full inclusion has had long-lasting effects on recruitment and retention (Costello et al., 2002; Clemmitt, 2009). Military life includes frequent relocations, deployments, and long hours—conditions that often conflict with societal expectations of women as primary caregivers. This makes military careers less appealing or feasible for many women (Iskra, 2008).

The proportion of women among professional soldiers in the CAF has been growing slowly but steadily. As of 31 December 2023, women represented 14.3% of the Czech Armed Forces (Ministry of Defence of the Czech Republic 2024), compared to 14.0% a year earlier and only 13.6% in 2021 (Ministry of Defence of the Czech Republic 2023).

As of 1 January 2024, women made up 21.15% of all Ministry of Defence employees (including both servicewomen and civilian staff), while professional servicewomen accounted for 14.33% of all professional soldiers (Ministry of Defence of the Czech Republic 2024). On the other hand, women remain underrepresented in senior leadership positions – they held only 5.3% of command posts (Ministry of Defence of the Czech Republic, 2024).

Figure 3: Index Concentration of Women by Rank in the Czech Armed Forces



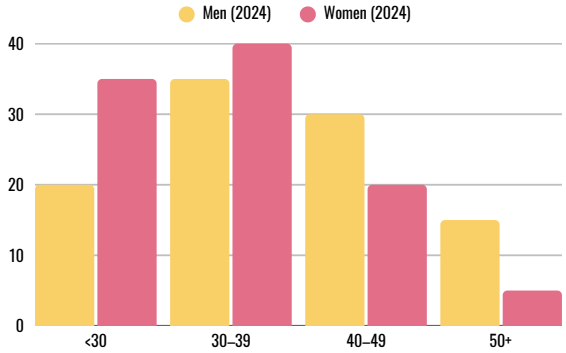
(Source: own analysis with data retrieved from MoD 2023-2025)

The concentration index compares the share of women in a given rank to their overall share in the armed forces (14.3%).
100 = exactly proportional (representation matches their share in the overall population).
>100 = overrepresentation (more women in that rank than expected).
<100 = underrepresentation (fewer women than expected).

Female generals (4%) remain extremely underrepresented, with a concentration index of around 27, showing no progress. Among senior officers (colonels and lieutenant colonels) there has been a slight increase in women's presence (from 9% to 11%), corresponding to an index between 66 and 74. Middle-ranking officers (majors and captains) consistently show a strong concentration of women, with shares of 22–23% and an index between 155 and 162. Junior officers (first lieutenants and lieutenants) are long overrepresented at 24–25%, but their concentration index has slightly declined from 176 to 165.

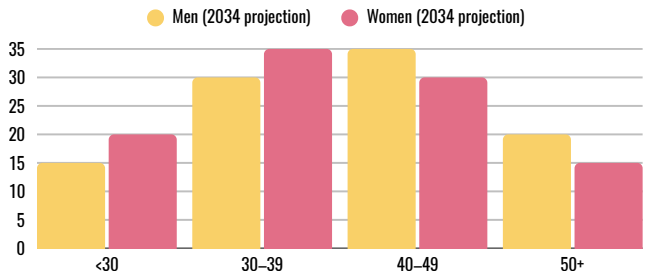
The trend is clear: women are successfully advancing mainly in the middle and lower officer ranks, while the general and senior officer positions remain limited by a "glass ceiling".

Figure 4: Age Structure of Professional Soldiers in the Czech Armed Forces (2024)



(Source: own analysis with data retrieved from MoD 2023-2025)

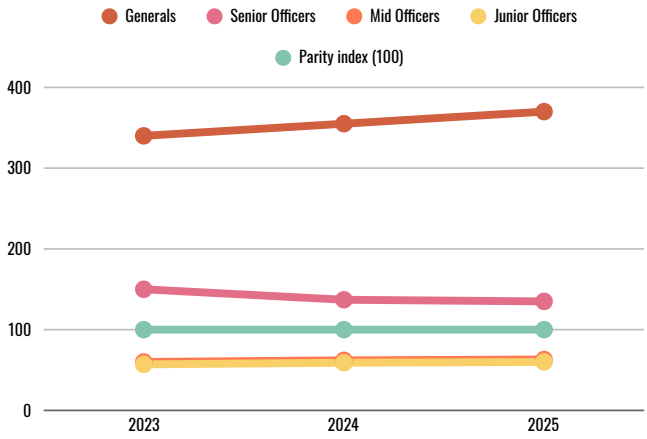
Figure 5: Projected Age Structure of Professional Soldiers in the Czech Armed Forces (2034)



(Source: own analysis with data retrieved from MoD 2023-2025)

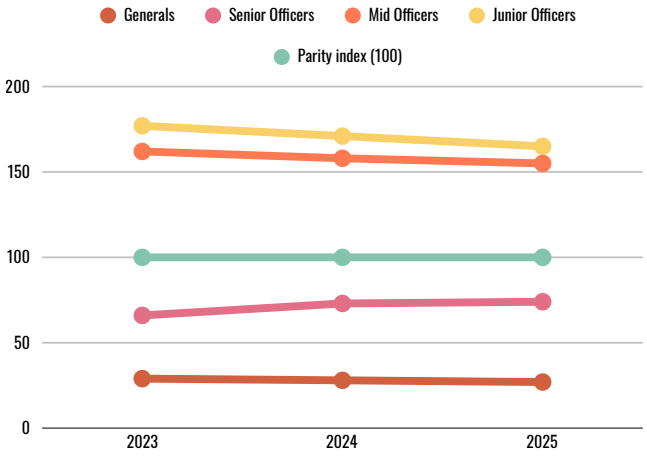
The projection suggests that women's underrepresentation in top leadership roles is partly a generational issue. As today's younger cohorts age and gain experience, women's presence in senior and general ranks is likely to increase – provided retention remains stable. For men, the structure will continue to age more evenly, with steady representation in all age brackets.

Figure 6: Concentration Index of Men in CAF by Rank Structure Trends (2023–2025)



(Source: own analysis with data retrieved from MoD 2023-2025)

Figure 7: Concentration Index of Women in CAF by Rank Structure Trends (2023–2025)

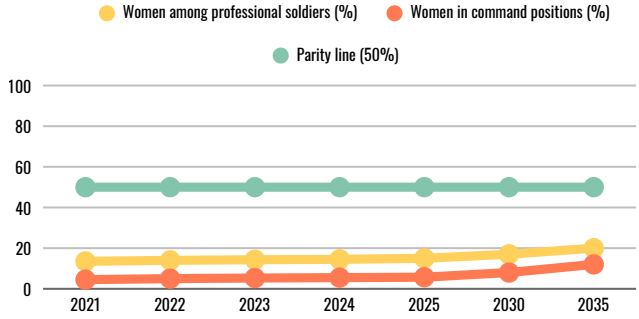


(Source: own analysis with data retrieved from MoD 2023-2025)

Male generals are strongly overrepresented, with concentration indexes well above 100, showing that men dominate the highest leadership positions. Among senior officers (colonels and lieutenant colonels), men are also slightly overrepresented, but their values are approaching parity. In contrast, in the middle and junior officer ranks (majors, captains, lieutenants, and first lieutenants), men fall below the parity line, meaning they are underrepresented relative to their overall share in the armed forces. In other words, the men's pattern is the mirror image of women's: where women are overrepresented (middle and junior officer levels), men are underrepresented, and where men are strongly overrepresented (general ranks), women face a glass ceiling.

WHERE MEN ARE OVERREPRESENTED WOMEN FACE A GLASS CEILING

Figure 8: Women in the Armed Forces: Trends and Parity Line (2021–2035)



(Source: own analysis with data retrieved from MoD 2023-2025)

Drawing on the observed trends between 2021 and 2025, it is reasonable to project that women may constitute approximately 17% of professional soldiers by 2030 and 20% by 2035, while their representation in command positions is expected to increase more gradually to around 8% and 12%, respectively. These projections are based on historical data extrapolated through a linear growth model and presented on a 0–100 per cent scale to enable comparison between overall participation and leadership representation. As a baseline scenario rather than an official forecast, the estimates assume the continuation of existing patterns and do not incorporate the potential effects of policy interventions, institutional reforms, or other exogenous factors that could accelerate or inhibit progress. Average salary data from 2014–2024 show that women in the Czech Armed Forces consistently earn more than men, with the gap reaching almost 5,000 CZK in 2024 (MO ČR 2024). This reversal of the typical gender pay gap can be explained by structural patterns identified earlier: women are disproportionately concentrated in junior and mid-level officer ranks, where salary tariffs are higher, while men dominate in lower enlisted and non-commissioned positions with lower pay. Although women remain underrepresented in senior command and general ranks, these posts are too few in number to significantly affect the overall average. Thus, women's higher average earnings in the CAF reflect their concentration in officer roles rather than parity in leadership opportunities.

IMPLICATION FOR THE CZECH ARMED FORCES

The societal trends observed in 2024 have direct and compounding implications for the Czech Armed Forces. Demographic ageing, record-low fertility, and the gradual end of rapid population growth fundamentally reshape the recruitment environment: the pool of young people is shrinking, competition for qualified labour is intensifying, and the proportion of citizens with health limitations or caregiving responsibilities is rising. Even with modernisation measures (digital recruitment, scholarships, revised medical fitness standards), the CAF will likely face persistent shortfalls unless it broadens target groups, improves retention, and adapts service conditions to the realities of a smaller and older society.

The second implication relates to the legitimacy of the social contract between the military and the public. Although trust in the army remains relatively high by international standards overall, 2024 has confirmed an important qualitative shift: trust is becoming increasingly polarised along political lines. This is strategically significant because the armed forces depend on widespread, cross-party legitimacy to sustain long-term investment, readiness for mobilisation, and public support during crises. If the army is perceived – fairly or unfairly – through identity-based political frames, it risks losing its role as a unifying national institution. For the CAF, this implies an increasing need for careful public communication, transparency, and engagement that emphasises professionalism, democratic accountability and national service, while avoiding symbolic culture-war conflict.

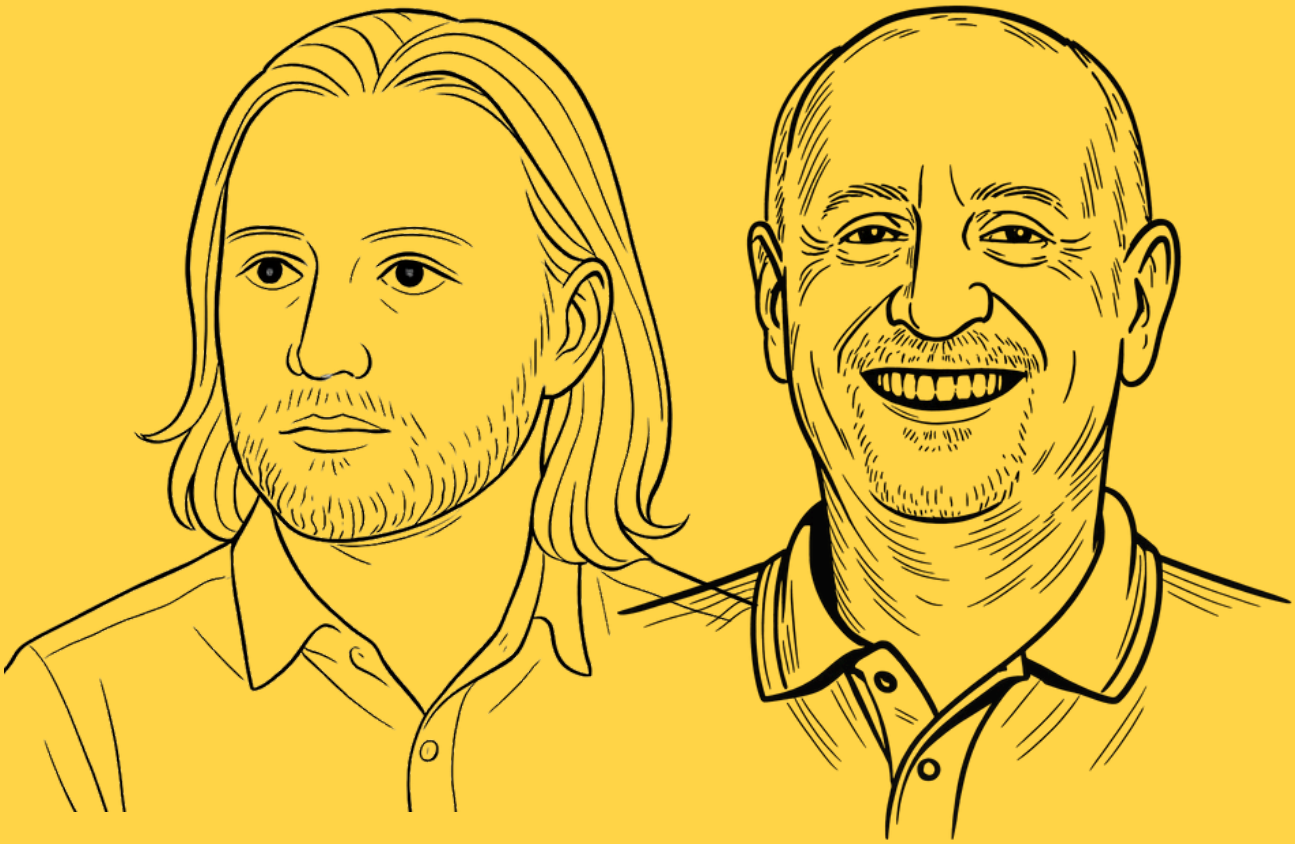
Thirdly, the societal information environment has become a frontline issue for military effectiveness. Disinformation and influence operations target not only the public, but also morale, recruitment narratives and confidence in leadership. They may also shape willingness to serve. Evidence that socio-demographic factors influence vulnerability to manipulative narratives suggests that building resilience cannot be a one-size-fits-all approach. The CAF and the Ministry of Defence will require tailored prevention and education approaches, especially for groups shown to be more susceptible to specific messaging frames. This is not just an “information operations” problem, but also a human security and force readiness issue. Cohesion, trust, and a shared strategic orientation are prerequisites for operational effectiveness.

Finally, the interaction between demographics, trust, and polarisation reinforces the importance of inclusivity and workforce diversification. With a shrinking youth cohort, underrepresented groups – especially women – are not a marginal “equality” topic but a strategic necessity. Yet, the 2024 data point to a persistent glass ceiling: while women are visible in junior and mid-level officer ranks, they remain markedly underrepresented in senior command positions. If this issue is not addressed, it will limit both recruitment potential and institutional legitimacy in a society where military careers must compete with civilian opportunities. Therefore, policies that improve career progression, reduce structural barriers and better accommodate family life constraints will be increasingly important for sustaining force size and quality.

Overall, the societal sector trajectory in 2024 suggests that the CAF is entering a period where manpower constraints, contested trust, and informational threats will be as decisive as equipment modernisation.

The core strategic implication is that defence planning must integrate societal resilience as a hard variable: recruitment, retention, legitimacy, and cognitive security will determine whether the Czech Armed Forces can meet rising demands in a less favourable demographic and political environment.

ECONOMIC SECTOR



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ECONOMIC SECTOR

GLOBAL TRENDS

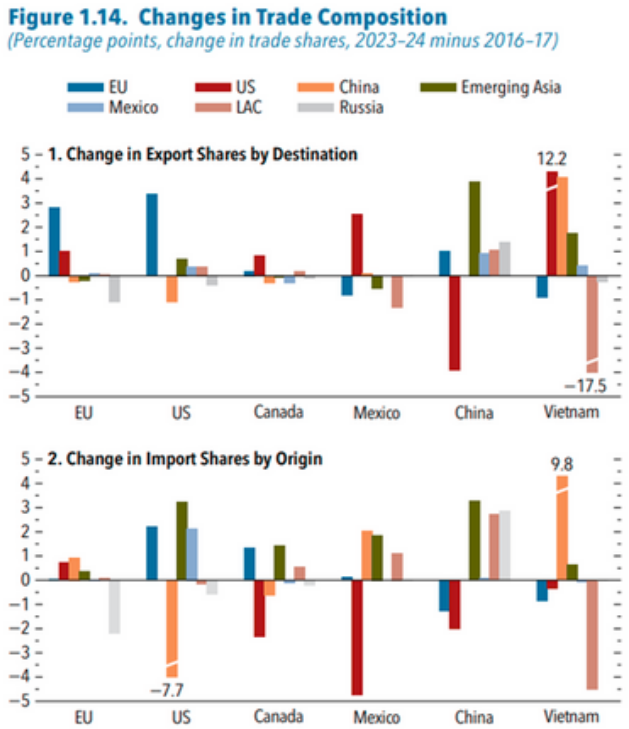
Overall global GDP grew by 3.4% during 2024, representing a result well within the long-term norm (IMF 2025). Developing countries experienced faster growth, with an average increase of 4.1%, whereas developed countries expanded their economies by 1.9% (ECB 2025a). At 2.2 percentage points, the difference between the two figures in 2024 was lower than is typical – between 1999 and 2023, the difference in growth between rich and poor countries averaged 3.9 percentage points (ibid.). This smaller gap in 2024 was largely due to China's slowing growth and the robust performance of the US economy, which expanded by 2.8% – surpassing its long-term average of 2.4%, already relatively high for such an advanced economy (IMF 2025). Global trade in goods and services grew at a similar pace of 3.8%, meaning the share of international trade in global GDP remained broadly unchanged from the previous year (ibid.).

In terms of economic policy, 2024 continued the trend toward deglobalisation, fragmentation, and regionalisation of the world economy, closely tied to the resurgence of economic nationalism and geoeconomic thinking. Governments are increasingly moving away from a laissez-faire approach centred on free trade, open markets, and consumer welfare or corporate profits as ultimate objectives. Instead, many are embracing a more strategic role for the state in shaping economic outcomes. This shift has been driven by recent shocks such as the COVID-19 pandemic and the war in Ukraine as well as longer-term pressures including climate change and the geopolitical implications of China's economic ascent. The new policy focus is on creating shorter, more resilient supply chains – especially in technologically advanced manufacturing sectors with high added value, dual-use potential, or systemic importance as chokepoints for broader production systems. Semiconductors are arguably the most prominent example of such a sector.

In the area of international trade, countries continued in their attempts to re-route their commerce to form trading blocs composed of geopolitically aligned countries, among whom production can be "friend-shored" (IMF 2025). This process includes the continuing imposition of Western sanctions on countries such as Russia (Astrov, Teti, Scheckenhofer, and Semelet 2024) or Iran, as well as the far more globally consequential, gradually escalating trade war and technological rivalry between the United States and China (Bown 2025).

> "...trend toward deglobalisation, fragmentation, and regionalisation of the world economy"

Figure 1: Changes in trade composition towards geopolitically aligned blocks



(Source: IMF 2025)

Note: "Emerging Asia" excludes China and "LAC" excludes Mexico. EMDE = emerging market and developing economy; EU = European Union; LAC = Latin America and the

Although Sino-American trade relations did not change dramatically during 2024, the tariffs imposed during President Trump's first term were left in place: the U.S. trade-weighted average tariff on Chinese goods stood at 19.3% throughout the year, while the reciprocal Chinese rate remained at 21.2% (ibid.). The United States also expanded its multi-layered export-control regime for China in order to slow down its progress in the semiconductor industry, chiefly by further restricting the export of advanced AI chips and semiconductor-manufacturing equipment (Covington 2024).

From a security point of view, as economic connections between geopolitically defined blocks are loosening, countries are generally becoming less prone to external economic sanctions, while vulnerability remains for those countries whose value chains remained dependent on potentially hostile states.

In addition to trade restrictions, 2024 also saw the continued rise of state-led industrial policies – measures aimed at promoting specific sectors through instruments such as direct subsidies, tax incentives, or preferential credit. This resurgence reflects a broader shift toward more interventionist economic strategies worldwide.

> "...defined blocks are loosening, countries are generally becoming less prone to external economic sanctions, while vulnerability remains..."

For an overview of global developments in this area, see World Bank (2023a). For a more detailed analysis of China's industrial policies – arguably the most consequential globally due to the scale and structure of its state-capitalist model – see DiPippo, Mazzocco, and Kennedy (2022).

In financial affairs, the world continued to recover from COVID-era public-budget deficits and inflation. Global inflation stood at 5.7% and was higher in developing countries, where it reached 7.7%, compared with 2.6% in developed economies – the latter broadly in line with central-bank targets (IMF 2025). This moderation allowed central banks to begin easing monetary policy by lowering their interest rates, thereby creating a more favourable environment for investment and reducing the cost of servicing public debt, which rose after COVID (World Bank 2025).

Figure 2: Comparison of inflation in OECD member

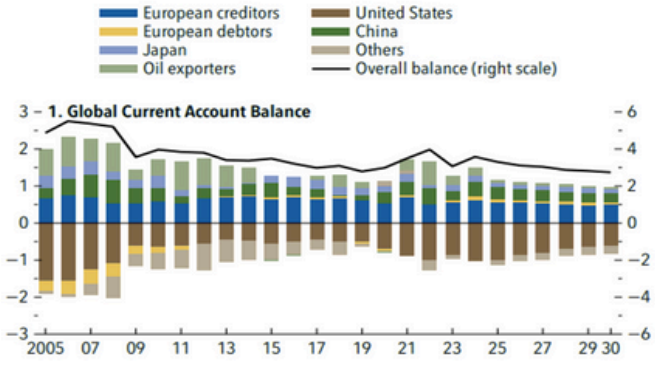
ote: Argentina and Türkiye are shown on the right-hand scale, all other countries on the left-hand scale. Personal consumption expenditure ice index for the United States, harmonised index of consumer prices for the euro area aggregate, euro area member states and the nited Kingdom, and national consumer price indices for all other countries. India projections are based on fiscal years, starting in April. OECD computed as the median of member countries.
ource: OECD Economic Outlook 117 database; and OECD calculations.

(Source: OECD 2025a)

From a security point of view, lower inflation, which is causally linked with lower public budget deficits and lower interest rates, creates more fiscal space for defence spending. Essentially, as the macroeconomic situation is becoming more consolidated, countries have the opportunity to use deficit spending on defence without increasing already high inflation or facing very high debt-servicing costs due to high interest on loans. This trend generally holds across the world, as the previous COVID crisis was global in nature.

With respect to cross-border investment, net capital flowed out of Europe, Japan, and several developing Asian economies – including China – while the United States remained a net capital recipient, underscoring its central role in the global financial and monetary system (IMF 2025).

Figure 3: Current account and international investment position of major economies, with the United States showing significant trade deficits and inflows of capital



Source: (IMF 2025)

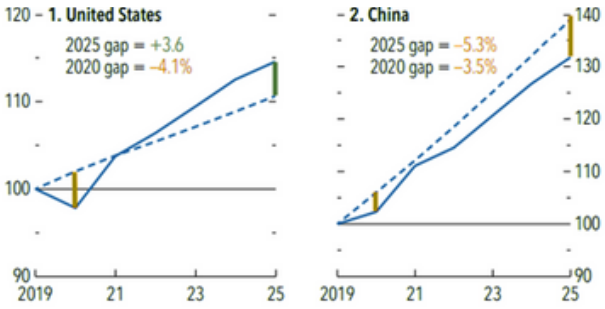
In 2023, the effects of COVID-19 were also still present.
According to the Stockholm International Peace Research Institute (SIPRI 2025a), in the defence industry, global revenues from the sale of military equipment and related services rose by 4.2% in 2024 and reached a total of USD 632 billion. Companies headquartered in the United States accounted for approximately half of this amount – USD 317 billion – and registered a year-on-year revenue increase of 2.5%. U.S.-based firms also dominate the SIPRI ranking of the world's largest arms producers by revenue, occupying 41 of the top 100 positions, including the top five spots (ibid.).

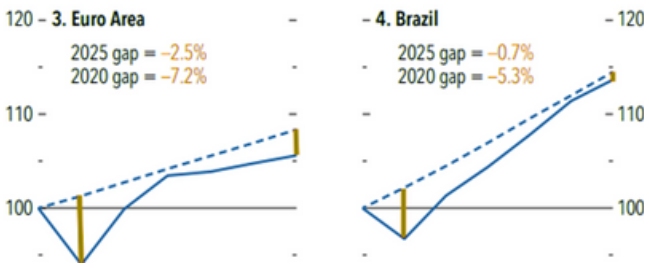
global revenues from the sale of military equipment reached
632 BILLION
USD

UNITED STATES

The United States has continued its post-pandemic rebound, having already exceeded its pre-COVID output in 2021 (Our World in Data 2024) and remaining the only major economy whose GDP now sits above its pre-pandemic trend (IMF 2025). The U.S. dynamism is unusual among advanced economies and contrasts sharply with the sluggish growth, or outright stagnation, of Western Europe and Japan, respectively (ibid.). Several structural factors appear to underpin this out-performance: a relatively young population continually refreshed by immigration, including many highly skilled students and workers; high labour mobility; relative energy independence owing to a positive trade balance in crude oil and liquefied natural gas (ibid.); a culture that favours entrepreneurship; and deep, liquid financial markets that give firms steady access to capital.

Figure 4: Real growth vs. pre-pandemic trend; showing the United states outperforming the pre-pandemic trend





Source: (IMF 2025)

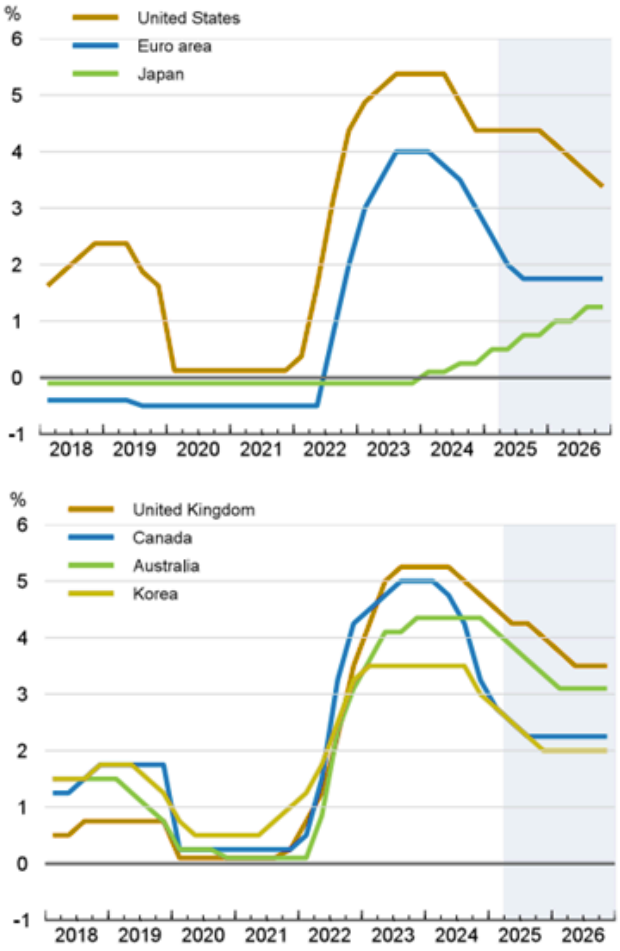
These underlying factors were reinforced by expansive fiscal policy, which continued to generate large deficits and add to the U.S. national debt. In 2024, the federal deficit amounted to 7.3% of GDP (ibid.), up from an already elevated 6.3% in 2023 (US Treasury, via Trading Economics 2025a) – an unusually high level for an economy enjoying a boom. The substantial fiscal gap stems from a spending surge that began during the pandemic, when government outlays replaced lost income and helped to avert a deeper recession, with fiscal discipline never having been fully restored since (OECD 2025a). As the COVID-induced recession receded, the Biden administration pivoted from short-term social supports to longer-term public-investment programmes in infrastructure and manufacturing.

Most notable among these are the Inflation Reduction Act of 2022, which devoted roughly USD 369 billion in clean-energy tax incentives, and the CHIPS and Science Act of 2022, which launched a further wave of subsidies earmarked for the semiconductor industry (Bistline, Mehrotra, and Wolfram 2023; Barbiero 2024). Both programmes, aside from their budgetary size, are also distinct as a departure from the liberal, laissez faire direction of American economic policy towards a stronger role of the state in the economy, especially in encouraging manufacturing, which is widely seen as hallmark of Biden's presidency (Chu, White, and Roeder 2024), sometimes nicknamed "Bidenomics". According to Financial Times, between 2022 and 2024, the two industrial programmes contributed to nearly 200 newly launched manufacturing projects, totalling almost 400 billion USD in private investment coming on top of the subsidies (ibid.).

While higher public spending helped to revive the U.S. economy after COVID, it came at a cost in terms of higher federal debt and increased inflation. Public debt, which already stood at 106% of GDP on the eve of COVID-19, rose further – from 120.2% of GDP in the last quarter of 2023 to 121.9% in late 2024 (Federal Reserve Bank of St. Louis 2025a). The increase is relatively modest only because strong nominal GDP growth and higher prices diluted the relative size of new borrowing – the absolute nominal size of the debt rose even more sharpy.

During the same period, high fiscal deficits combined with loose monetary policy predictably led to high inflation, reaching 7.1% in 2022. In 2024, inflation was brought back to 2.4%, close to the FED's target of 2% (IMF 2025), while real wages, which had never fallen below the pre-pandemic level, continued to grow (Federal Reserve Bank of St. Louis, 2025b). The adjustment, however, also came at a price, as the FED combatted inflation via increasing interest rates, which had a negative impact on domestic borrowers, as both firms and households started to face higher interests on their loans (Summers, Bolhuis, and Cramer 2024).

Figure 5: Changes of central bank interest rates in major developed economies (OECD 2025a)



Note: The first panel shows the midpoint of the federal funds target range for the United States and the deposit facility rate for the euro area.
Source: OECD Economic Outlook 117 database; and OECD calculations.

The negative impact of fiscal deficits and expansive monetary in terms of debt sustainability and inflation would have certainly been much more severe were it not for the U.S. dollar's global dominance. Because the United States issues debt almost exclusively in its own currency, created by its own central bank, the FED, it faces no exchange-rate risk and, in principle, can always obtain new dollars needed to service that debt. At the same time, foreign central banks and private institutions continuously accumulate large reserves of dollars, which flow out of the United States because of its chronic current account deficits. This sustained external demand for the currency helps absorb domestic monetary expansion and partially contains inflation. In addition, strong foreign appetite for dollar-denominated assets pushes down long-term U.S. interest rates, thereby reducing the federal government's interest burden. Overall, the dollar's reserve-currency status gives the United States more fiscal space than other countries enjoy. (For a more detailed discussion of the implications of the U.S. dollar's international status, see Waller 2024.)

Beyond debt sustainability and inflation, the dollar's role as the dominant reserve currency also allows the U.S. to run persistent trade deficits without suffering a corresponding depreciation of its currency. In 2024, the U.S. current account deficit in goods and services stood at 3.9% of GDP – consistent with a long-term pattern of trade deficits dating back to the 1980s (IMF 2025; Federal Reserve Bank of St. Louis 2025c).

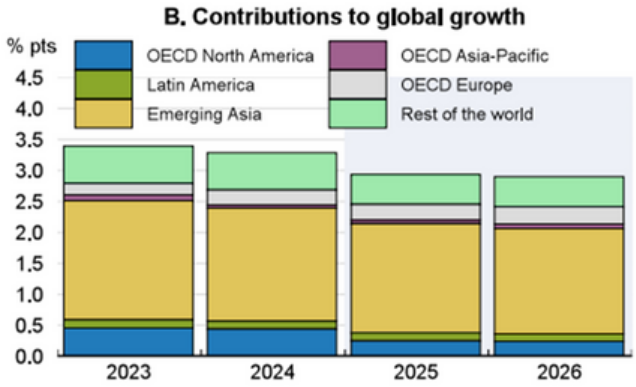
ASIA

Despite the robust growth of the U.S., the figurative centre of the global economy continued to move towards Asia during 2024. On average, developing Asian economies grew by 5.3% in 2024 – one percentage point faster than the developing world as a whole, and nearly 3 percentage points ahead of the United States. The ASEAN-5 region, comprising Indonesia, Malaysia, Singapore, the Philippines, and Thailand, recorded growth of 4.6% in 2024, maintaining its strong developmental track record. Vietnam, another emerging economy of Southeast Asia, grew by 7.1%, while India, the most populous country in the world and its fifth largest economy, added another 6.5% to its GDP, outpacing its regional rival, China (IMF 2025). This trend underlines the potential of Southeast and South Asia to emerge as a more prominent actor in the global economic landscape over time.

One geopolitical implication which can be drawn from this is that while the relative importance of Europe and the West in the global economy is decreasing due to the rise of Asia, emerging Asian countries include many states which are not necessarily anti-Western in their foreign policy orientation, often have a deep-seated fear of China, and might serve as a counterweight to China in an Asian-centric future global economy.

According to the OECD (2025a), developing Asian countries – including China – accounted for 2 percentage points of the 3.4% global GDP growth in 2024, making them the main engine of global expansion. They also contributed 2.1 percentage points to the 3.8% increase in international trade in goods and services (IMF 2025). Among the developed countries in Asia, Japan registered a mere 0.1% growth, continuing the economic stagnation which has affected the country since the 1990s. Meanwhile, South Korea grew by 2 percent, while Taiwan and Singapore registered growths of 4.3 and 4.4 percent, respectively, making them the fastest growing rich industrialised countries in the world (ibid.).

Figure 6: Contributions to global growth by regions, showing the dominance of developing Asian countries in global growth



(Source: OECD 2025a)

THE PEOPLE'S REPUBLIC OF CHINA

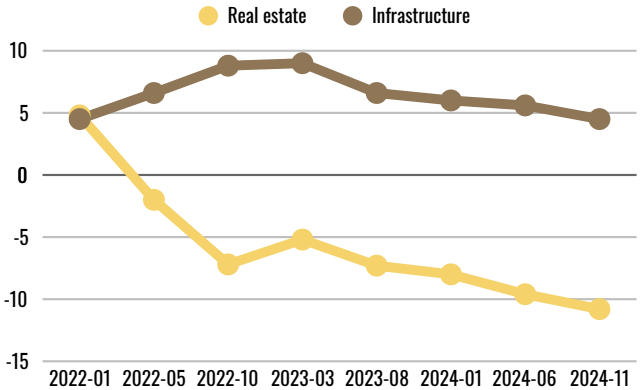
In 2024, the Chinese economy grew by 5% (IMF 2025), a relatively modest increase compared to the 1978–2008 period, when China's GDP expanded at a pace of circa 10 per cent per year (Our World in Data 2024). After the 2008 financial crisis and again after COVID, China's GDP growth seems to have permanently entered a less dynamic trajectory, leading many observers to postpone the expected date when China is going to overtake the U.S. as the world's largest economy in nominal terms from the late 2020s into the 2030s (The Economist 2023).

However, China has already been the world's largest economy since 2016 when measured in purchasing power parity terms (World Bank 2023b) – in other words, when differences in prices are controlled for and only the scale of output is taken into account. When this measure is used, China's economy already exceeded the American one by a quarter in 2023 (ibid.). Moreover, an annual growth of 5%, while lower than China's earlier growth, is above the average in developing countries (4.1), and also significantly above the average growth in Latin America (2.4%), Africa (2.4%), or the growth of the EU, Japan, or indeed the U.S. (IMF 2025).

The overall 5% growth figure moreover does not capture the divergent sectoral dynamics within the Chinese economy. While the country continues to face a severe crisis in the real estate sector, it is simultaneously consolidating its position as an industrial powerhouse – expanding its dominance across multiple manufacturing domains, often ones that are both highly technologically advanced and have significant dual-use potential. Both trends are connected by China's change in economic policy after the 2008 Financial crisis, when the country, already operating a mixed state-market model, shifted toward a more state-led development strategy, bringing a systemic change that was further deepened under the highly centralising leadership of Xi Jinping, which aims to consolidate the Communist Party's dominant position in Chinese society and secure its leadership role in economic decision-making (Naughton 2021; DiPippo, Mazzoco, and Kennedy 2022). At the core of the country's economic model today is arguably the state's control over the financial sector, particularly over the banking system, which allows the Party-state to direct capital into industries seen as serving the national interest, based on their technological sophistication and export potential (ibid.).

Meanwhile, industries seen as speculative and lacking strategic value, such as the real estate sector, face more restricted access to financing. This reallocation of capital has hit the real estate sector particularly hard. Long sustained by household savings, limited investment alternatives, and state-driven construction booms, the sector has seen a sharp decline in funding under Xi Jinping's leadership. The resulting property market correction has undermined household wealth and strained local government budgets, which rely heavily on land sales (Smith 2023a). Although China has so far avoided a systemic financial crisis, falling property prices have triggered investor losses and a broader drag on growth.

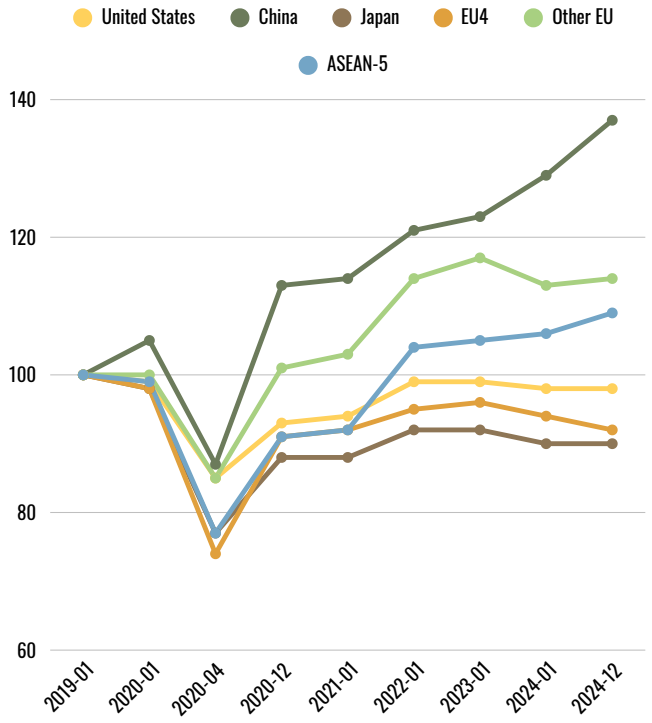
Figure 7: The decline of real estate investment in China



Own processing based on World Bank (2025)

On the other hand, the party-state continues to support strategic sectors through injections of below-market credit and various forms of subsidies. These policies find fertile ground in industries already enriched with technological know-how, acquired from foreign firms through both formal and informal channels, and further driven by intense domestic competition. As a result, China now holds a substantial lead in multiple manufacturing domains. It accounts for the majority of global output in steel, shipbuilding, batteries, and drones, and is overwhelmingly dominant in solar panel production (Naughton 2021; DiPippo, Mazzoco, and Kennedy 2022; Smith 2023b). Since the last pre-pandemic year of 2019, China's industrial sector expanded by 37% (IMF 2025). Over the same period, China transitioned from a marginal participant in global automobile trade to one of the leading exporters of electric vehicles (IEA 2025c). In 2024, it accounted for approximately 70% of global EV production, with Chinese firms responsible for about 80% of that output. Domestic production rose from 9 million units in 2023 to 12.4 million in 2024, and China contributed an estimated 40% of global EV exports (ibid.).

Figure 8: Industrial production trends in major economies, showing China's quick recovery from the pandemic-induced slump



Own processing based on IMF (2025)

It is also important to note that China's contemporary manufacturing boom is distinct from the success is enjoyed in the early 2000s. In that period, production in more advanced fields such as laptops or mobile phones was dominated by foreign corporations, who used their own know-how and imported components, with China being incorporated into their global supply chains. Today, China has its own technological giants,such as Huawei (telecom equipment), BYD (electric vehicles), DJI (drones), CATL (batteries), which often pursue vertical integration and for example design their own semiconductor chips or even control the mining of rare metals such as lithium which they use as inputs (Atkinson 2024).

The main security related implication which can be drawn from this is that China already dominates global manufacturing, in many cases not only quantitatively, but qualitatively as well, in terms of technology and added value, including in industries with a strong dual-use potential, such as steel, shipbuilding or drones. Combined with China's unique ability to mobilise resources enabled by its political regime, this suggests that China has a giant capability for military production, which dwarves the resources of the EU, and likely outstrips the entire collective West.

THE EUROPEAN UNION

The EU's economy grew by 1.1% in 2024, somewhat faster than the core Eurozone group, which only registered a modest 0.9% increase in its GDP. This discrepancy is largely explained by the continuing strong performance of Poland, whose economy expanded by 2.9%, making it one of the fastest growing advanced countries in the world (IMF 2025). Other high performers included Spain, whose economy grew by 3.2%, or Denmark, with 3.7% growth (ibid.). France grew by 1.1%, the Netherlands by 1% and Italy by 0.7%, all representing positive, albeit slow growth (OECD 2025a).

The situation is considerably more problematic at the core of the European economy. Germany's GDP contracted by 0.2% in 2024, with the country experiencing six consecutive quarters of recession beginning in mid-2023 (IMF 2025; CSO 2025e). Austria fared even worse, recording seven consecutive quarters of decline and an overall contraction of 1.3% in 2024 (OECD 2025a; CSO 2025e).

CONTINUING STRONG POSITION OF POLAND

The primary driver of this downturn was a sharp decline in manufacturing, a sector long central to the economic models of Europe's most advanced economies. In both Germany and Austria, this includes not only the automotive industry but also the Mittelstand: medium-sized, often family-owned firms that are global leaders in specialised fields such as mechanical engineering and precision tool manufacturing (Gao 2024). In other words, the economic downturn in Germany and Austria appears to be structural rather than cyclical – not primarily the result of a lower demand or a temporary shock, but rather a sustained reduction in their manufacturing capacity. This decline in manufacturing has affected Europe as a whole, but it has understandably had the greatest impact on countries with a high level of dependence on industrial production.

According to the Czech Statistical Office (CSO 2025e), industrial production in the European Union declined by 2.4% in the past year, returning to approximately the same level as in 2019. In the euro area, output contracted for seven consecutive quarters. Austria and Ireland recorded the sharpest annual drops in industrial production among EU member states, with declines of 5.1% and 5.0%, respectively. In the group of leading manufacturing countries, Germany's industrial output fell by 4.6% in 2024, amounting to a total contraction of 6.7% since 2021. Italy also registered a notable decline, with production decreasing by 4.0% over the year. The most affected sectors included mechanical engineering and the automotive industry, both among Europe's most vaunted legacy industries (ibid.).

The declining industrial prowess of Europe poses a major threat to its continuing global relevance. If this trend of deindustrialisation continues, a potential switch to war-economy will be even more difficult in the future than it otherwise would have been, combined with the fact that the likely adversary, Russia, might be able to fall back on Chinese support.

> Europe's declining industry threatens its global relevance and limits its future wartime capacity, especially if Russia gains Chinese support.

One of the causes of the poor performance or European manufacturing in 2024 was the steep increase in energy prices triggered by Russia's invasion of Ukraine. This shock was particularly severe given Europe's prior dependence on inexpensive Russian pipeline gas, especially in energy-intensive industries (Longaric et al. 2024; ECB 2025a).

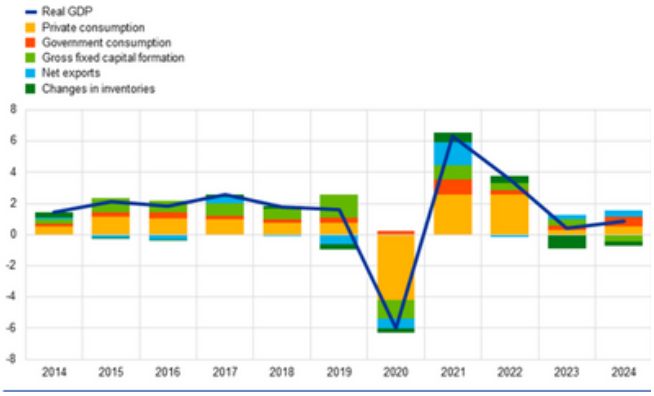
Another obstacle affecting European industry in 2024 was the lingering difficulty in accessing capital, a consequence of earlier counter-inflationary monetary tightening. Inflation had surged in 2022 due to post-COVID fiscal and monetary stimulus, combined with sharply rising energy prices after Russia's invasion of Ukraine. That year, inflation reached 8.4% in the Eurozone (ECB 2023) and 8.83% in the EU as a whole (Our World in Data 2025). In response, the European Central Bank raised interest rates sharply.

This monetary tightening was effective: by 2024, Eurozone inflation had declined to 2.4%, close to the ECB's 2% target (ECB 2025a). As inflation subsided, the ECB began cautiously easing its stance, lowering its two main policy rates from 4.0% to 3.0%, and from 4.5% to 3.15% (ECB 2025b). Nevertheless, monetary policy remained relatively strict, and borrowing costs stayed high. As a result, investment weakened: gross fixed capital formation in the Eurozone declined by 2.4%, with Germany seeing an even deeper drop of 2.7% (IMF 2025). The downturn likely hit capital-intensive sectors such as manufacturing particularly hard.

The European Union, and within it the European Commission, has responded to this downturn, as well as to wider global political and economic shifts, through the concept of "strategic autonomy". Its senior leadership acknowledges the need to engage in a broader reform of the Union's liberal economic model in order to adapt to a world characterised by great power competition and the widespread use of industrial policy by foreign powers. The EU's new industrial strategy is built around 14 industrial ecosystems (including aerospace/defence, agri-food, commerce, etc.) and is supported by a range of organisational and governance tools: industrial alliances (in areas such as batteries, hydrogen, industrial data, and semiconductors), monitoring of strategic dependencies, a strong standardisation strategy, and the launch of Important Projects of Common European Interest (IPCEIs) (European Council 2024). To support these initiatives, the Commission has published an Economic Security Strategy, based on three pillars: strengthening the Union's competitiveness, protecting against strategic risks, and building partnerships aimed at supply chain diversification. In early 2024, the Commission expanded this approach by enhancing screening of foreign investment in the EU, introducing new export control measures, identifying risks stemming from foreign investment in critical technologies, increasing support for dual-use research and development, and strengthening research security (European Commission 2024).

The source of overall, albeit modest, growth in the EU and the Eurozone in 2024 lay primarily outside the industrial sector. Instead, it was the services sector that provided the main momentum, supported by rising government spending and household consumption. According to the OECD (2025a), government consumption in Eurozone countries grew by 2.5%, while private consumption increased by 1.0%. These figures represent an acceleration compared to 2023, when growth stood at 1.4% and 0.6%, respectively. As such, consumption in the Eurozone countries outpaced their overall rate of growth and pulled their economies ahead despite decreasing investment, enabling a services-led growth.

Figure 9: : Sources of growth in the Euro area, dominated by private and government consumption



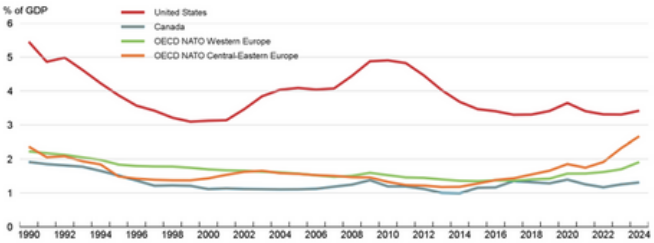
(Source: ECB 2025a)

A key contributor to rising government consumption in Europe has been the increase in defence spending following Russia's full-scale invasion of Ukraine in February 2022. The war prompted many European countries to rethink their previously restrained approach to military expenditure. According to the OECD (2025a), defence spending among Central and Eastern European NATO members rose from approximately 2.3% to 2.7% of GDP. Poland led this trend, allocating 4.1% of its GDP to defence in 2024, while the three Baltic states all surpassed the 3% threshold and reached a level of defence spending comparable to the United States. Several governments, including those of Poland and the Baltics, have announced intentions to further raise defence spending to 5% of GDP (NATO 2024a).

Germany, historically among the lowest defence spenders in NATO, increased its military budget from 1.38% of GDP in 2022 to 2% in 2024 and committed to further investment in the coming years (Oleksiejuk 2025). To facilitate this shift, the German government suspended its constitutional debt brake specifically for defence purposes. At the EU level, the European Commission encouraged member states to invoke the emergency escape clauses of the Stability and Growth Pact, allowing them to temporarily exceed the 3% budget deficit ceiling in order to invest in military capabilities (OECD 2025a).

SEVERAL GOVERNMENTS INTENDED TO RAISE DEFENCE SPENDING TO 5% OF GDP

Figure 10: Defence spending in OECD countries, showing pronounced increases on NATO's eastern flank



(Source: OECD 2025a)

While growing European defence expenditures are helping to revive economic growth and provide a lifeline to the struggling manufacturing sector, from the point of view of cost-efficiency and military readiness, the re-armament policies leave much to be desired. This is partially due to the fact that the production of military equipment remains fragmented, as all countries prefer to hand procurement contracts to domestic suppliers. As such, the European defence industries often lack sufficient economies of scale and thus continue to exhibit low production capacities and high per-unit costs.

The wider economic effects of increased defence spending remain subject to debate. On the one hand, public expenditure tends to have a multiplier effect, often stimulating additional private-sector investment and production, which can contribute to GDP growth and help offset deficits. Military spending is no exception – particularly when funds are directed towards domestically produced equipment and services (OECD 2025a). Estimates suggest that a 1.5% increase in military expenditure can yield between a 0.5% and 1.5% rise in overall GDP (ibid.).

For traditional industrial economies such as Germany experiencing a manufacturing downturn, increased defence spending may thus offer an opportunity to revitalise their defence sectors as a partial substitute for declining industries, and there is some evidence that this is already taking place. German defence firms are expanding domestically and abroad, recording strong order volumes and hiring new workers – often drawing from the struggling automotive sector. According to SIPRI (2024a), four major German defence companies saw their combined revenues rise by 7.5% to USD 10.7 billion, outpacing their European peers. Notably, the Diehl conglomerate climbed from the 98th to the 83rd place in SIPRI's global ranking between 2022 and 2023, thanks in part to robust demand for its IRIS-T SLM air defence system, which has proven highly effective in Ukraine.

On the other hand, this expansion in military budgets is largely deficit-financed and comes atop already elevated public debt levels, significantly expanded during the COVID-19 pandemic and through costly energy support measures. As of 2024, the average gross public debt in the Eurozone stood at 94% of GDP (ibid.). Given that interest rates remain relatively high, the growing cost of debt servicing poses an increasing burden on public finances.

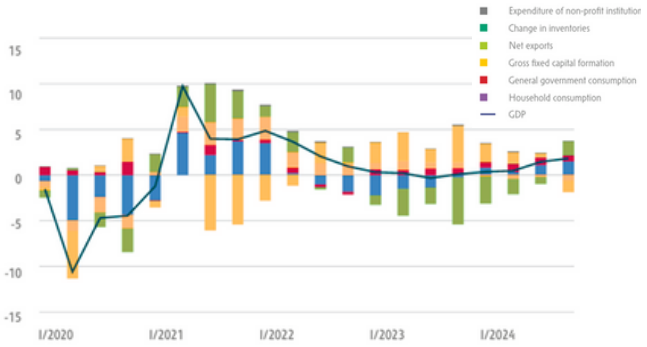
THE CZECH REPUBLIC

The Czech economy remained closely tied to the broader European Union during 2024 – not only through long-term export channels but also through ownership structures, with many Czech firms operating as subsidiaries of foreign companies, integrated into the corporate strategies of their owners.

Given this level of interdependence, it is unsurprising that the Czech economy followed similar trends and faced comparable challenges as the EU as a whole. In 2024, Czech GDP grew by 1.0%, matching the EU average and marking a notable improvement from the marginal 0.1% growth recorded in 2023 (CSO 2025e).

This recovery was driven primarily by household consumption and the expansion of services, as in the rest of the EU. Czech private consumption grew by 2.2% and government consumption by 3.3%, in part due to increased military spending. While overall exports grew more modestly by 1.5%, the country managed to register a current account surplus of 1.8% of GDP after it being in a significant deficit in 2022 and more or less balanced in 2023 (OECD 2025a). According to the Czech Statistical Office (SCO 2025e), the improved current account performance is largely due to export of goods, such as cars or electronic appliances.

Figure 11: Sources of GDP growth in the Czech Republic



(Source: Czech National Bank 2025)

Of particular concern is the 1.3% decline in gross fixed capital formation, signalling a drop in investment activity. Meanwhile, the gross value added (i.e. outputs minus intermediate consumption) of industry declined by 2.2%, reflecting a 1.3% decline in manufacturing and a sharper 4.4% drop in other industrial activities such as mining or energy production, which have been declining for the third year in a row. The machinery industry, traditionally a key pillar of the Czech economy, declined by substantial 8.4%, with decreased outputs registered across the entire sector (ibid.).

The even more vital automobile industry declined less dramatically by 1.3%. While production of finished vehicles increased, output of intermediate components fell – likely due to weaker demand from German partners. That said, the overall position of Czech-based car manufacturers remains comparatively stronger than in Western Europe, partly thanks to lower labour costs and reduced competitive pressure from Chinese EV brands, which appear to target higher market segments (ibid.).

Beyond the automotive sector, several other branches of manufacturing showed more positive performance in 2024. These include food and pharmaceuticals, electronics, as well as the chemical and metalworking industries – the latter two of which play an important role in the defence industrial value chain, particularly in ammunition production (ibid.). In this area, Czechia has been emerging as a notable player.

This growing role in the defence supply chain reflects broader trends in the Czech defence sector. The modernisation of the Czech Armed Forces, which has completed several major procurement processes in recent years, is expected to bring benefits to domestic industry through industrial cooperation tied to programmes such as the F-35 fighter jets and CV90 infantry fighting vehicles.

Equally important for Czech companies is participation in EU-led initiatives. The role of the European Defence Fund, focused on the development of new European military platforms, is expected to expand, alongside a growing emphasis on joint procurement across multiple member states.

Given the limited size of the Czech military, domestic demand alone cannot sustain the national defence industry. Exports remain crucial, accounting for over 90% of revenues. Czech defence firms have long-standing positions in markets such as the Middle East (particularly Saudi Arabia and the United Arab Emirates); Southeast Asia, including Indonesia, Vietnam and the Philippines; and Africa, where many countries continue to rely on Soviet-era systems that Czech companies can upgrade, maintain or replace. In addition, Ukraine has become a de facto second home market for Czech defence producers. These factors have led to record revenues for several Czech arms manufacturers and a sharp increase in defence exports.

UKRAINE HAS BECOME SECOND HOME MARKET FOR CZECH DEFENCE PRODUCERS

In the financial area, inflation in the Czech Republic dropped to 2.4% in 2024, marking a stark improvement compared to the 10.7% inflation recorded in 2023, or 15.1% in 2022 (CNB 2025). In reaction to the improved situation, the Czech National Bank was able to significantly relax its monetary policy, bringing its main policy interest rate from 6.45% down to 4% (ibid.).

Figure 12: Inflation in the Czech Republic

(Source: Czech National Bank 2025)

Czech public finances remained under pressure but showed signs of relative stabilisation in 2024. According to the Czech Statistical Office (CSO 2025e), total government expenditure amounted to CZK 2.237 trillion, with defence spending notably rising to CZK 64 billion, an increase by CZK 37 billion compared to 2023, driven primarily due to military procurement (ibid.). The state budget deficit for 2024 reached CZK 271 billion, which is CZK 17 billion less than in the previous year. This represented 2.7% of GDP, slightly below the EU average of 2.9%. The improvement was largely due to the phasing out of temporary subsidies and support mechanisms related to elevated energy prices (ibid.).

However, the cost of debt servicing continued to rise over the course of 2024. According to the Czech Ministry of Finance (MoF 2025a), interest payments reached CZK 88.5 billion – more than double the 2019 figure in nominal terms. Despite an 8% nominal increase in public debt in 2024, bringing the overall sum to CZK 3.37 trillion, the debt-to-GDP ratio rose only moderately – from 40.8% to 42.0% – thanks to nominal GDP growth and inflation (MoF 2025b). The Czech Republic thus remained comfortably within the Maastricht criteria, recording a general government deficit of 2.8% and a total public debt level (including regional and municipal governments) of 43.4% of GDP. Most of this debt continued to be domestically held, with approximately 41% being owed to Czech banks (CSO 2025e).

From a macroeconomic sustainability perspective, the debt level thus remained manageable, due to its relatively moderate scale, domestic character, and predominant denomination in CZK.

RUSSIA

In 2022, following the imposition of extensive Western sanctions, Russia's economic outlook appeared bleak. The IMF projected an 8% contraction in GDP, and even the Russian central bank anticipated a decline of up to 10% (Kolyandr 2025). In reality, however, GDP fell by just 1.2% that year, followed by a rebound of 3.6% in 2023 – enough to surpass the pre-war output levels from 2021 (World Bank 2024). Growth continued in 2024, reaching 4.1% (IMF 2025).[1] While the growth was unbalanced and distorted by Russia's embrace of a war economy, which carries notable long-term down-sides, the country's macroeconomic fundamentals appear overall strong.

According to the IMF (2025), Russia recorded a current account surplus equivalent to 2.9% of GDP in 2024, indicating that the country earned more from exports (primarily fossil fuels) than it spent on imports and other external payments. This suggests that Russia remained capable of accumulating foreign currency reserves and financing its imports. At the end of 2024, the Central Bank of Russia reported foreign exchange reserves totalling USD 609 billion (Central Bank or Russia, via Trading Economics 2025b), only a moderate decline from the USD 630 billion held at the start of the war. These reserves would, under current import levels, cover approximately 19 months of imports even in the absence of new export revenues (based on World Bank data sourced via Trading Economics 2025c). The Bank of Russia (2025) further noted that total reserves declined by only USD 4 billion over the course of 2024.

At the same time, Russia's foreign trade continues to be affected by Western financial sanctions, particularly the exclusion of many Russian banks from the SWIFT messaging system, which has disrupted international payment processing. Even the Bank of Russia (2025) acknowledges that although the country expanded its total foreign assets in 2024, a significant portion of this growth consisted of delayed foreign settlements. In other words, instead of investing abroad or receiving timely payments, Russia has been accumulating outstanding claims on foreign counterparties. This includes countries such as India, where capital controls and limited currency convertibility complicate settlement and reduce the liquidity of these assets.

[1] Russia has last participated in the IMF's Article IV consultation process, which normally results in detailed Country Staff Reports, in 2021, which means that data on the country's macroeconomic condition is somewhat scattered.

Another key challenge for Russia concerns the availability of imports due to Western export controls. While it is well known that such sanctions are frequently circumvented through the re-export of dual-use goods via third countries – typically Turkey, Georgia, Azerbaijan, or Central Asian states – it remains unclear whether Russia has been able to fully replace the volume and quality of previously legitimate imports, particularly in the category of machinery and other capital goods.

According to a report prepared for the German Ministry for Economic Affairs and Climate Action (Astrov, Teti, Scheckenhofer, and Semelet 2024), the effectiveness of sanctions ultimately depends on how the quality of replacement goods is assessed. Re-routing Western goods through third countries does not fully compensate for lost direct imports, and Russia has therefore increasingly turned to alternative suppliers, most notably China. However, it is uncertain whether these substitutes match Western standards. If not, then the report estimates that Russian imports of sanctioned goods may have declined by approximately one third between the beginning of the war and 2024. This represents the most adverse interpretation for Russia, yet still falls short of a catastrophic outcome from the Kremlin's perspective.

Russia's public finances remained unexpectedly stable.

In terms of public finances, Russia has maintained a degree of stability that may appear surprising given the scale of external sanctions and wartime spending. According to SIPRI (2024), Russian military spending in 2024 reached 149 billion USD, an increase of 38% compared to the previous year, and overall representing 7.1% of Russia's GDP and circa 20% of public expenditure.

Nevertheless, the World Bank (2024) projected a gross public deficit of merely 2.1% for 2024, a result in line with the peacetime fiscal stance of European countries, and in fact an improvement compared to the 4% deficit recorded during the COVID-19 pandemic in 2020. The Russian Ministry of Finance reported an even smaller deficit of 1.7% of GDP by the end of the year (as reported by Trading Economics 2025d). Meanwhile, overall public expenditure as a share of GDP increased only moderately over the course of the war, rising from 34.7% in 2021 to a projected 38% in 2024 (World Bank 2024). According to the World Bank (2024), the total public debt of Russia was projected to account for approximately 17% of GDP in 2024, with foreign debt – mostly denominated in foreign currencies and therefore harder to manage – standing at only 2.6% of GDP.

Russia is also experiencing an industrial expansion, particularly in defence-related sectors and those embedded in the broader military supply chain. Since 2022, increased production and mobilisation have contributed to a rise in job availability, including for lower- and middle-income workers. As a result, unemployment has fallen to just 2.5% (IMF 2025), while wages have increased as private firms compete with the state for increasingly scarce labour. Official Russian statistics claim a 9.4% rise in real wages in 2024. While this figure may be overstated, Kolyandr (2025) notes that Russia is undergoing its most significant wage growth and domestic investment surge in two decades. The World Bank (2024) has projected domestic private consumption to rise by 2.8% during 2024.

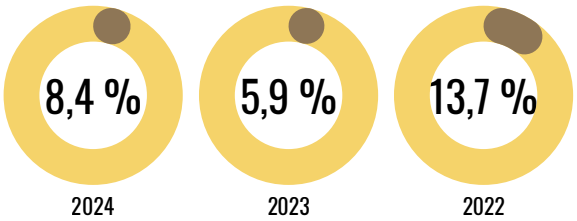
In terms of investment, Russian companies face two major incentives: the opportunity to supply the state with goods, components, or raw materials for use in the war against Ukraine, and the chance to fill the gaps left by departing foreign firms on the domestic market. Since the beginning of the invasion, approximately 1,200 Western companies have exited the Russian economy, creating ample space for import substitution, especially in an economy with rising wages and consumption (Kolyandr 2025). At the same time, Russian private capital remains constrained by both international sanctions and domestic capital controls, which limits outflows and encourages reinvestment into domestic industry and infrastructure (ibid.). As a result, the share of investment in Russia's GDP rose from 19.8% in 2019 to an estimated 22.8% in 2024 (World Bank 2024). Industrial performance also reflected this shift, with manufacturing expanding by 8.8% in the first quarter of 2024 (Astrov, Teti, Scheckenhofer, and Semelet 2024).

The ongoing industrialisation and resulting increase in tax revenue has, somewhat counterintuitively, made the Russian state less fiscally dependent on income from fossil fuels since the beginning of the war. Compared to 2022, energy revenue in the first quarter of 2024 was nominally lower by 1.5%, despite significant inflation, while non-energy revenue had risen by 22% (ibid.).

As for income from energy, state revenue from fossil fuel exports dropped by only 3% compared to 2023, after falling by 29% between 2022 and 2023. Overall, Russian energy income remained relatively stable throughout 2024, albeit at a lower level than before the full-scale invasion (Raghunandan, Katinas, Levi, and Wickenden 2025). While the share of Europe in Russia's exports declined, this was largely offset by increased sales to emerging market economies. In 2024, the largest customer was China, while India recorded the most significant relative increase, with average two-week payments for Russian energy rising from approximately 6 million euros before 2022 to about 150 million in 2024 (Russia Fossil Tracker 2025).

Arguably the greatest challenge to Russia's economic stability is inflation, compounded by the negative effects of restrictive monetary policy. According to the IMF (2025), consumer price inflation reached 8.4% in 2024, following rates of 5.9% and 13.7% in 2023 and 2022, respectively. While not catastrophic, this remains a relatively elevated level, comparable to the inflation spikes experienced by advanced economies in the aftermath of the COVID-19 pandemic.

Infographics 1: Consumer price inflation in Russia



In response, the Bank of Russia raised its policy interest rate from an already high 16% to 20% during 2024 (Kolyandr 2025). This move, however, appears insufficient to bring inflation under control, while increasing the cost of capital for both government and the private sector. The World Bank (2024) estimates that 10-year interest rates stood at 12.2% during the year, compared to 2.4% before the war – illustrating the steep rise in borrowing costs. Despite this, a credit crunch has not materialised, as evidenced by continued investment growth.

Nonetheless, sustained high interest rates pose a challenge for private firms. If inflation continues to rise, as projected by the IMF, the central bank may face a difficult dilemma: whether to tolerate escalating inflation, or tighten monetary policy further at the risk of undermining economic activity.

Another issue that warrants closer scrutiny is the reliability of statistics published by Russian authorities, as well as by international organisations such as the World Bank, which ultimately depend on data provided by the Russian state. According to observers such as Kolyandr (2025), the official figures appear internally consistent, broadly plausible, and – at least in the case of foreign trade – can be partially cross-validated against data released by Russia's trading partners. Nonetheless, concerns about omissions and selective reporting remain justified.

One area of potential inconsistency is the coexistence of high inflation with reportedly balanced public budgets and a restrictive monetary environment. In principle, inflation is typically driven by expansive fiscal or monetary policies, which official data do not appear to support in Russia's case. Several factors may help reconcile this discrepancy: continued supply chain disruptions caused by sanctions, imported inflation due to a weakened ruble, or off-budget public spending.

The latter would suggest that while official public finances – especially the federal budget – appear sound, the state may be undertaking additional, debt-financed expenditures through state-owned enterprises, including ones in the arms industry, or regional governments. Such spending might not be reflected in headline debt statistics, yet it could still generate inflationary pressure and contribute to a hidden accumulation of public liabilities. (For more discussion of this issue, see SITE 2024.)

> "From the perspective national security, Russia's macroeconomic situation was **unfortunately** stable."

From the perspective of Czech national security, Russia's macroeconomic situation in 2024 was unfortunately apparently stable, while showing signs of rapid deterioration, with the caveat that Russian government statistic might be unreliable and artificially obscure de facto public debt, which may be fuelling dangerous inflationary pressures.

IMPLICATIONS FOR THE CZECH ARMED FORCES

The so far only partially successful European effort to develop and manufacture cutting-edge products represents one of the continent's most important long-term economic challenges, including from the perspective of its own security. Europe requires a much more coordinated industrial policy, faster decision-making, and massive investment if it is to remain economically competitive with China and the United States.

A key stimulus for economic development is the increase in defence spending across most EU member states, which has materialised in a sharp break with the preceding long-standing posture of negligence and complacency. Russia's invasion of Ukraine in 2022 re-energised European arms producers, including those in the Czech Republic. Business activity has grown not only due to contracts directly related to the conflict, but also indirectly, as European states have been replenishing their military stocks, a part of which had been transferred to Ukraine.

After decades of globalisation driven by market dynamics and free trade, governments and states have once again moved to the forefront of industrial development. Their influence has increased via their promotion of innovation, industry, and technologies, the control of which has become a matter of national security. Policy instruments such as tariffs, subsidy programmes, energy, export controls, monetary measures, raw materials, sanctions, and foreign investment have moved to the centre of governments' attention. It must further be acknowledged that, in relation to China, both the United States and the EU relied far too long on market forces alone. Only belatedly did they recognise the risks posed by China's monopoly on rare earth mining and its dominance in key manufacturing sectors, such as batteries or drones.

Looking ahead, the establishment of a unified European defence market is essential. Persistent inefficiencies result in unnecessary duplication and waste of European taxpayers' resources. The war in Ukraine demonstrates that fragmented capacities and a lack of production and repair facilities lead to delays and instability in the supply of ammunition, spare parts, and maintenance services.

Significant investment in the future of EU defence technologies is also necessary. The Union must substantially increase investment in new and innovative defence capabilities, including cyber defence, space, advanced materials and manufacturing, artificial intelligence, and nanotechnologies. In cooperation with its transatlantic partners, the EU should also pursue ambitious joint projects such as a common, interoperable missile defence shield or even a European nuclear deterrent.

Europe requires greater defence cooperation and more integrated capabilities. It needs higher levels of defence investment, sensible regulation, strengthened industrial capacities, and improved infrastructure. Innovative approaches to financing programmes must also be explored, including private investment in the European defence industry.

The modernisation of the Czech Armed Forces, which in the past two years proceeded with a series of complex procurement tenders, will also affect the domestic defence industry. Czech companies stand to benefit from industrial partnerships linked to the acquisitions of the F-35 fighter aircraft and the CV90 infantry fighting vehicle.

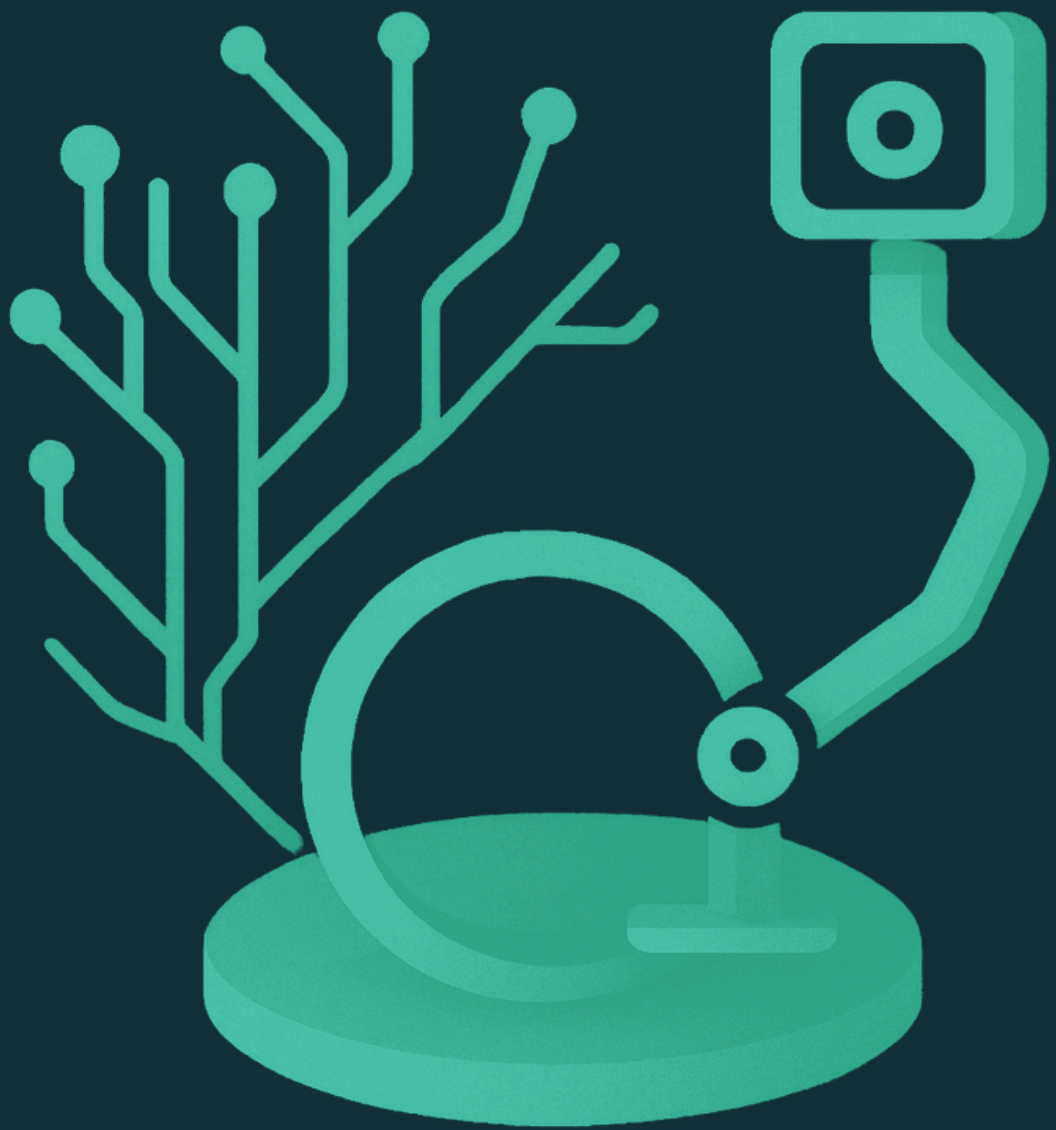
Equally important, however, is their participation in EU projects. The significance of the European Defence Fund, dedicated to the development of new European military platforms, will likely increase. Joint procurement of military materiel for multiple armed forces simultaneously will become a growing priority. Given the limited size of the Czech Armed Forces, the domestic market cannot sustain the Czech defence industry. Exports are therefore critical, accounting for over 90% of turnover. The current geopolitical reality is one of global rearmament, with armed forces on every continent modernising. In this sense, Ukraine has effectively become a "second home market" for Czech defence companies. Czech companies have long been successful in the Middle East, where Saudi Arabia and the United Arab Emirates are their largest customers, and in Southeast Asia, with Indonesia, Vietnam, and the Philippines. Africa remains a traditional market, as many African countries continue to use Soviet-era systems, which Czech companies are able to modernise, supply with spare parts, maintain, and replace. The result is unprecedented financial results for many Czech defence manufacturers and rapidly rising export volumes.

In the case of Germany, the global environment had worked in its favour for 35 years, now the opposite is true. China, previously a key market for German exporters, now produces many advanced goods domestically and is even able to export them, while Europe's energy prices are too high for the German industry to remain competitive. There are no quick fixes for improving its competitiveness: wage cuts are politically unacceptable and would be pro-cyclical in any case. The core problem is that what is occurring in the German economy is structural decline, not a temporary downturn (such as the contraction during the pandemic or a normal cyclical recession). The country has become overly dependent on industrial exports, while the global environment is shifting against Germany's traditional economic model.

The picture is different in the defence sector, where German industry is on the rise. This is driven by the increase in German defence spending, which after many years has reached 2% of GDP. German arms producers are expanding both domestically and abroad, with orders worth tens of billions of euros. They are also hiring large numbers of new employees, many of them from the struggling automotive industry.

Overall, it can be concluded that an arms industry boom, with a rising contribution of the defence sector to the overall economic performance of states, can be expected to continue in the coming period.

TECHNOLOGICAL SECTOR



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TECHNOLOGICAL SECTOR

The first subsection draws primarily on data from the United Nations Conference on Trade and Development (UNCTAD) (UNCTAD, 2025a) and examines the Frontier Technology Readiness Index (FTRI), which assesses states' preparedness to adopt new technologies based on their innovation capacity, digital infrastructure, and economic potential. Although the FTRI encompasses 17 "frontier technologies", its analytical lens is oriented chiefly toward economic development, innovation, and sustainable transformation, while it only partially captures the military or security implications of technological advancement. Given the growing role of modern technologies in the defence sector, this year's edition of the study supplements the FTRI-based assessment with an analytical dimension grounded in NATO's Emerging and Disruptive Technologies (EDTs) framework (NATO, 2025). The EDTs highlight technological domains that fundamentally reshape the character of military operations, command and control, strategic decision-making, and overall defence readiness. The combination of FTRI and NATO EDTs thus provides a complementary analytical framework that enables an integrated assessment of the Czech Republic's technological preparedness, incorporating not only economic and innovation performance but also dual-use potential, technological sovereignty, and relevance for contemporary defence environments.

Building on this macro-level perspective, the second subsection develops an in-depth analysis of selected EDTs that exhibit the most pronounced influence on the security environment and the highest strategic relevance for current and future defence capabilities. These technologies complement the findings of the first subsection and situate general indicators of technological readiness within concrete military and security contexts.

The study maintains continuity with previous editions and relies exclusively on publicly available data. As some global databases did not yet contain complete datasets for the entirety of 2024 at the time of drafting, the analysis also utilises individually published data sources covering the relevant domains to ensure maximum completeness and accuracy of the assessment.

FRONTIER TECHNOLOGY READINESS ANALYSIS FOR 2024

The overall assessment of the Czech Republic's technological readiness is based on an analysis of the Frontier Technology Readiness Index (FTRI) dataset (UNCTAD, 2025a), which provides internationally comparable measures across all core components (see Fig. 1). The FTRI provides a quantitative framework for assessing national technological readiness. To better reflect security and defence dimensions, selected components of the analysis are complemented by technological areas included in NATO EDTs framework (NATO, 2025), which are not explicitly represented within the FTRI methodology. For 2024, UNCTAD retains the same list of seventeen frontier technologies as presented in the Technology and Innovation Report 2023. The index therefore incorporates the following technologies: artificial intelligence (AI), Internet of Things (IoT), big data, blockchain, 5G, 3D printing, robotics, unmanned aerial systems (drones), nanotechnology, gene editing, solar photovoltaics (PV), concentrated solar power, biofuels, biomass/biogas, wind energy, green hydrogen, and electric vehicles.

The FTRI is composed of five categories of indicators (see Fig. 1), identical to those employed in the 2023 assessment (UNCTAD, 2025b).

Frontier technologies, owing to their transformative impact across key societal sectors, generate not only new opportunities for the development of defence and security capabilities but also create space for the emergence of novel threats. Their dynamic evolution therefore exerts direct strategic effects on the security environment. The FTRI evaluates states' technological capacities in terms of physical investment, human capital, and technological effort. It assesses not only the ability to adopt these technologies, but also to utilise, develop, and adapt them to national conditions. The index is derived from a global dataset, and each country's final score represents its relative position within the international comparison. It is thus not an absolute measure of progress, rather, it serves as an indicator that enables an assessment of whether a country's pace of technological readiness aligns with, lags behind, or outpaces global trends.

Figure 1: Overview of FTRI indicators

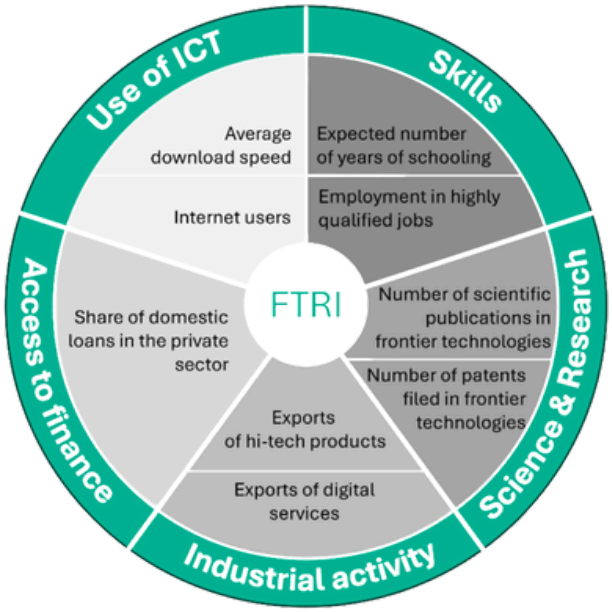
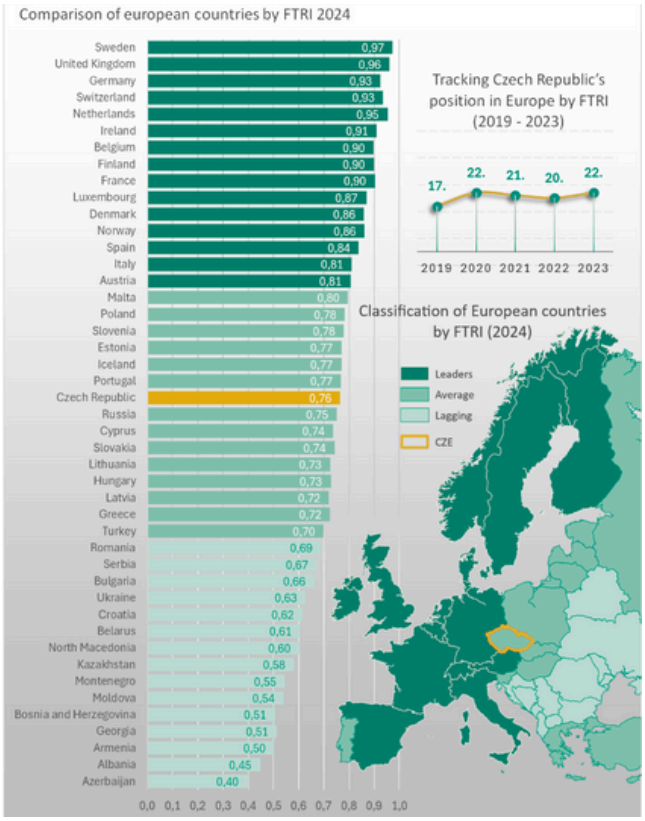


Figure 2 illustrates the FTRI for 2024 and the trajectory of the Czech Republic's position within the European context between 2019 and 2023. From a long-term perspective, the Czech Republic has maintained a stable ranking between the 17th and 22nd place within the European FTRI during this period. This consistency suggests that the country sustains a relatively balanced performance in its preparedness to adopt frontier technologies. The absence of substantial improvement or decline also indicates that no major systemic changes have taken place that would enable a significant strengthening of national innovation capacity. The Czech Republic thus remains situated within the broader European average, performing better than most Eastern and Southeastern European states but lagging behind the technological leaders in Northern and Western Europe. Such stability without notable upward movement may be interpreted as a form of stagnation in which the country does not fully exploit its potential and gradually loses opportunities to advance into the group of more innovation-intensive economies.

In the field of security and defence, technological readiness has direct implications for the state's ability to integrate new military and dual-use technologies and to maintain interoperability with allied partners. Stagnation in this area may lead to slower adaptation to EDTs shaping the modern battlespace, a limited ability to involve the domestic industrial base in international defence projects, and an increased dependence on external suppliers of critical technologies.

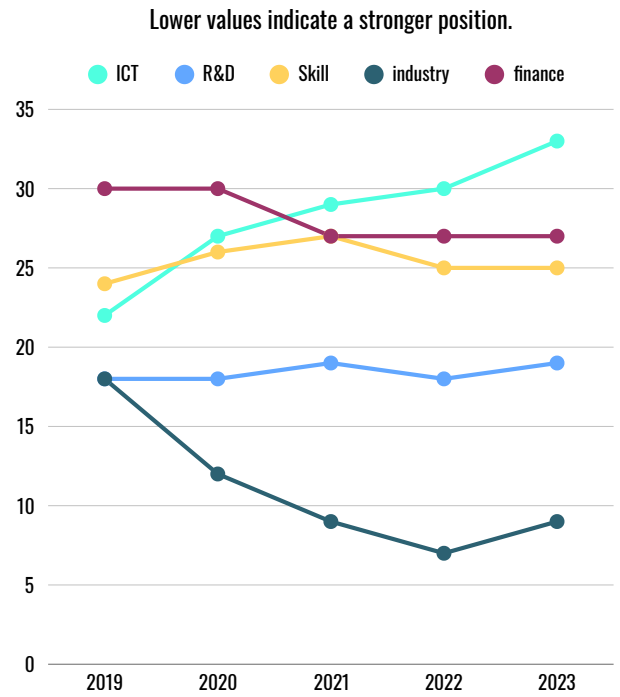
Figure 2 Frontier Technologies Readiness Index (FTRI) in Europe



ANALYSIS OF INDIVIDUAL FTRI COMPONENTS

A comparative reading of the trajectories across the five FTRI components shows that the Czech Republic's technological readiness profile has evolved unevenly between 2019 and 2023. The ICT component exhibits the clearest downward movement, signalling a gradual deterioration in the country's relative position within Europe. By contrast, Industry Activity demonstrates the only consistent upward trajectory, indicating a measurable improvement in the Czech Republic's ranking and suggesting incremental strengthening of industrial technological capacity over the period. The Skills and R&D components remain broadly stable, with only minor oscillations and no evidence of sustained improvement or decline. Access to Finance likewise shows limited movement, marked by shallow fluctuations around a relatively constant ranking interval. Taken together, these divergent trajectories reveal that while certain structural dimensions, most notably Industry Activity, have experienced gradual improvement, others such as ICT have weakened, and the remaining pillars have exhibited persistent stagnation. This asymmetry provides an essential contextual baseline for the subsequent component-level analysis of the Czech Republic's technological readiness.

Figure 3: Evolution of the Czech Republic's European ranking across FTRI components (2019–2023) (Lower number indicate a stronger position).



USE OF ICT

INTERNET USERS.

In 2024, internet use in the Czech Republic reached 87.7% of the population aged 16 and over, which is above the global average of 67.6% and slightly below the EU average of 91.2% (see Fig. 4) (ITU, 2025), (ČSÚ, 2025a). Long-term trends across population groups indicate a steady increase in connectivity. Internet use among students is effectively universal, utilisation rates among both employed and unemployed individuals approach full saturation, and adoption among older adults has been increasing in a sustained manner, rising from 40.8% in 2019 to 57.4% in 2024 (ČSÚ, 2025a) (see Fig. 5).

Figure 4: Iternet usage as percentile of the population aged 16+ (2024)

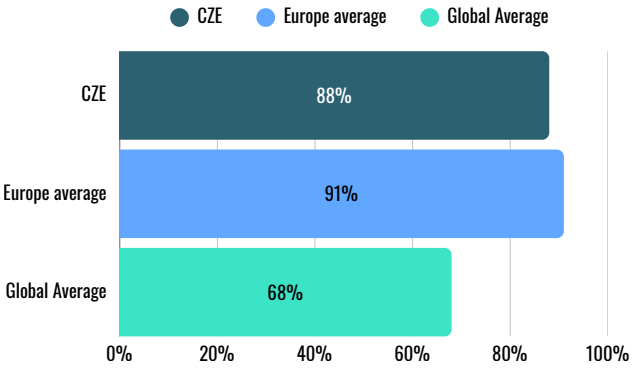
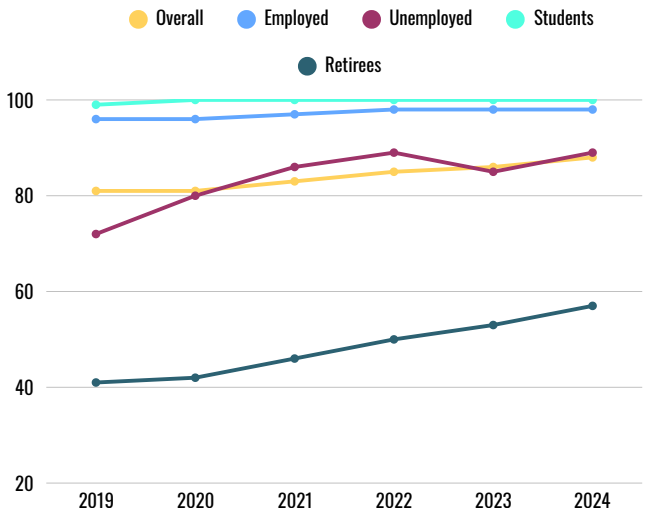


Figure 5: Internet use by economic status in Czech Republic: group percentiles (2019 - 2024)



This trend indicates that the proportion of the population remaining outside the online environment is steadily declining across all economic groups. From a security perspective, this development translates into broader population coverage through digital communication, a greater capacity for rapid dissemination of crisis information and enhanced resilience against informational isolation. Persistent digital disparities, particularly among older adults (see Fig. 3), nevertheless remain a vulnerability that can be exploited through targeted disinformation or cognitive operations.

INTERNET SPEED.

Internet connection speed is one of the key parameters of digital infrastructure and a significant factor influencing the ability of the state, institutions, and the population to utilise modern online services, including those with security relevance such as crisis communication, cyber defence, and real-time data transmission. The precise value of measured connection speeds depends on the underlying methodology and the availability of data (Rychlost.cz, 2025), which means that the results should not be interpreted as absolute figures but rather as indicative measures of broader developments.

An analysis of data from the Czech Telecommunication Office, measured through the NetTest application, covering average download speeds for all fixed-line services in the Czech Republic, demonstrates a continuous increase in download speed, with the average reaching 90.33 Mb/s in Q4 2024. This represents a substantial rise compared with the beginning of 2023 and indicates a gradual improvement in the quality of fixed internet services (ČTÚ, 2025). The spatial distribution of speeds in Q4 2024, however, continues to exhibit a markedly heterogeneous pattern. The highest average speeds (approximately 133–183 Mb/s) are observed in metropolitan districts and other areas with high penetration of fibre-optic or cable connections and ongoing modernisation of access networks, while lower values (approximately 41–70 Mb/s) occur in districts dominated by older access technologies such as xDSL and characterised by lower density of upgraded communication infrastructure (see Fig. 6). These disparities across districts represent a practical constraint on the uniform availability of advanced digital services and must be considered in planning for crisis communication and digital public services.

Figure 7.1 Trends in fixed (wired) broadband internet speed in the Czech Republic (2023–2024)

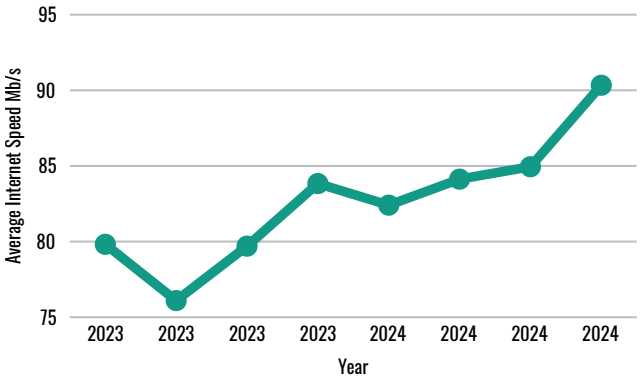
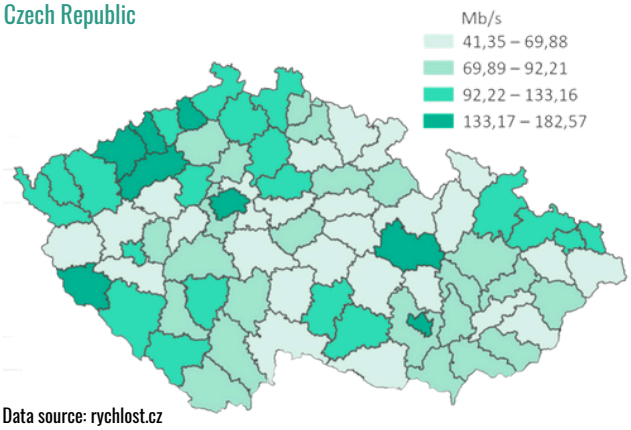


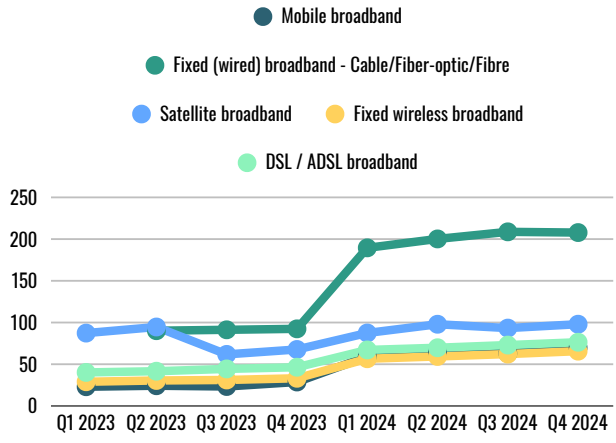
Figure 7.2 Average fixed broaband download speed by district in the Czech Republic



Data source: rychlost.cz

A supplementary analysis of download speeds by connection technology, based on data from the Rychlost.cz project (see Fig. 7), confirms substantial technological disparities. Fixed cable and fibre-optic connections consistently achieve the highest average speeds, with a sharp increase from approximately 100 Mb/s to around 200 Mb/s between Q1 2024 and Q4 2024. Mobile and satellite connections remain within the range of 80–100 Mb/s throughout the observation period, while DSL/ADSL and fixed wireless technologies persist at lower values of roughly 20–50 Mb/s (Rychlost.cz, 2025). These differences reflect the inherent technological limitations and the geographic availability associated with each type of connection.

Figure 6: Trends in internet speeds by connection type in the Czech Republic (2023–2024)

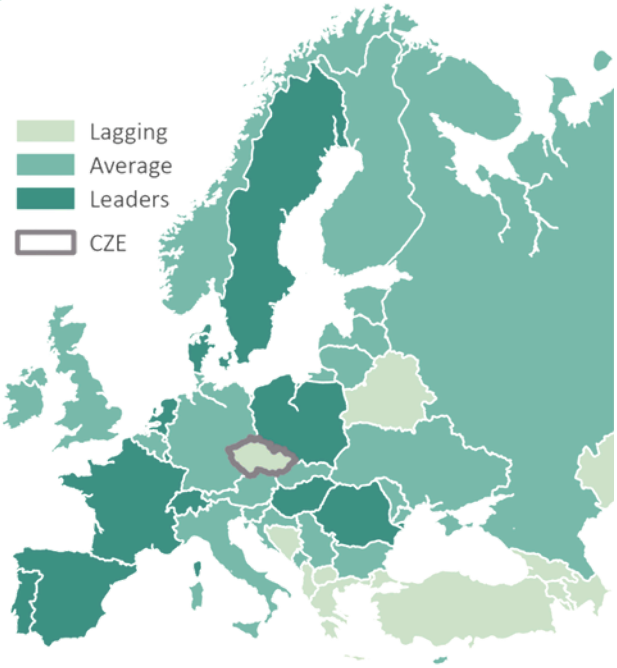


Data source: ČTÚ

A comparison of European countries based on connection speed, using data from the Ookla Speedtest Global Index, shows that in the fourth quarter of 2024 the Czech Republic falls into the "Lagging" category, that is, among states with below-average fixed-connection speeds (see Fig. 8) (Ookla, 2025). This group largely consists of countries that have not yet carried out comprehensive upgrades of their access networks or remain reliant on older technologies. In the case of the Czech Republic, this classification is consistent with the domestic analysis, which identified pronounced regional disparities and lower performance in areas with insufficient penetration of fibre-optic connections.

Within the broader European context, the Czech Republic lags not only behind technological leaders such as the Scandinavian countries or the Netherlands, but also behind several states in Central and Eastern Europe. This position may weaken its competitiveness in the digital economy and limit its ability to rapidly integrate new technologies that rely on high-capacity connectivity. In the wider security domain, it may also constrain the Czech Republic's capacity to fully participate in European initiatives related to cyber defence, data sharing, and international crisis communication, where reliable and high-speed connectivity constitutes a critical enabling factor.

Figure 8: Classification of European countries by internet speed in Q4 2024



Data source: Ookla

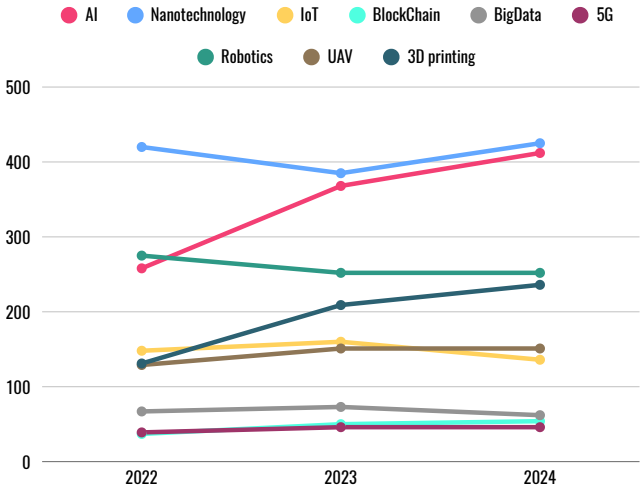
The availability and quality of high-speed connectivity directly influence the ability of the state and its institutions to operate effectively in the digital domain. High-performance networks are essential for crisis-management systems, real-time dissemination of warning and operational information, and secure transfer of large data volumes. Regional disparities in digital infrastructure can lead to uneven access to ICT capabilities, reducing the resilience of some areas to crises or cyber threats. Slower or less reliable connections increase structural vulnerability and may limit the capacity of public authorities and the population to respond promptly to emerging situations. In demanding scenarios, such constraints can delay the transmission of critical information and weaken response effectiveness, while also creating opportunities for adversaries to exploit low-connectivity regions through targeted disinformation or cognitive operations.

RESEARCH AND DEVELOPMENT

NUMBER OF SCIENTIFIC PUBLICATIONS IN FRONTIER TECHNOLOGIES

Research and Development (R&D) constitutes a key component of the technological sector, and its dynamics serve as an important indicator of a state's innovation capacity. Publication activity in the field of advanced and emerging technologies provides an indirect but reliable reflection of the directions and intensity of research efforts. This analysis draws on results obtained from targeted searches in the Scopus database based on predefined queries corresponding to selected technological domains included in the FTRI (Elsevier, 2025). Although the methodology may not capture every individual publication, the use of consistent criteria across all examined years ensures full comparability of the data and enables a valid identification of long-term trends.

Figure 9: Dynamics of research output across Frontier technologies in Czech science (2022–2024).



In the period 2022–2024, Czech research exhibits the strongest growth in publication activity in the field of artificial intelligence, which has rapidly risen from a previously less represented domain to a level comparable with the recently dominant area of nanotechnology. The momentum in AI reflects the emergence of generative models, the expansion of applications across disciplines, and sustained support from both European and national funding programmes. Nanotechnology, after a moderate decline in 2023, experienced renewed growth in 2024, driven particularly by advances in new materials for energy systems, sensing technologies and healthcare. Robotics and 3D printing also display steady growth, linked to the broader automation of production, efforts to strengthen supply-chain resilience and increasing relevance for defence applications. These four domains, artificial intelligence, nanotechnology, robotics, and 3D printing, thus emerge as key areas of Czech research with substantial dual-use potential, ranging from enhanced industrial competitiveness to direct implications for national security and defence capabilities (see Fig. 9).

While the analysis of publication outputs provides valuable insight into the scientific performance and visibility of the Czech Republic in the domain of frontier technologies and EDTs, the mere ability to generate new knowledge does not automatically ensure its practical application. For this reason, the 2024 study also includes an analysis of projects supported by national funding programmes, using Starfos database, which provides insight into the concrete allocation of research

and development investments (TA ČR, 2022). This approach complements the publication-based perspective with an assessment of applied relevance and illustrates the technological areas into which the state and funding bodies deliberately channel support, which has direct implications for future defence and security capabilities

The development of the number of projects in frontier technologies and EDTs between 2022 and 2024 indicates a steady expansion of Czech research activity, particularly in technologies with high strategic impact. Artificial intelligence and nanotechnology maintain a dominant position over the long term, with the broadest project base and a continuous influx of new initiatives (see Fig. 10). These technologies form a crucial foundation for strengthening national innovation capacity and have immediate implications for defence and security capabilities. Growth is also evident in robotics, quantum technologies and biotechnologies, which NATO identifies as key EDTs (NATO, 2025). Their systematic development suggests that the Czech research ecosystem is aligned with global technological trends, many of which have strong dual-use potential and direct relevance for the security and defence environment. In contrast, technologies such as hypersonic applications, blockchain and big data remain less represented, highlighting existing gaps in areas that are considered of significant importance.

Figure 10.1 Development of the number of projects funded from national programmes

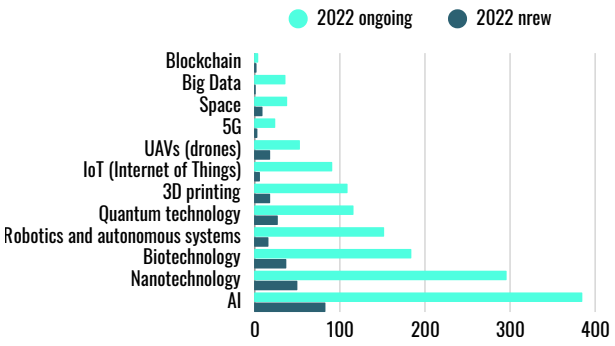


Figure 10.2 Development of the number of projects funded from national programmes

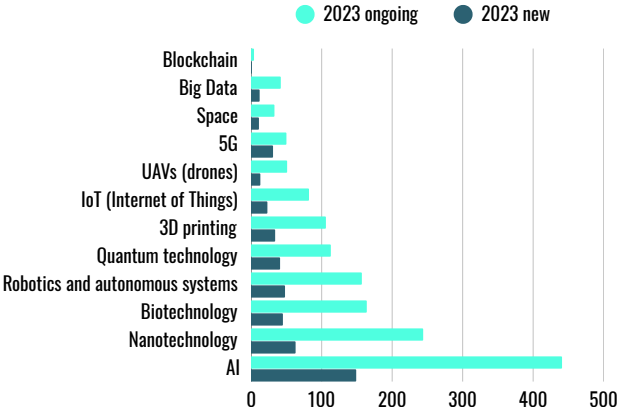
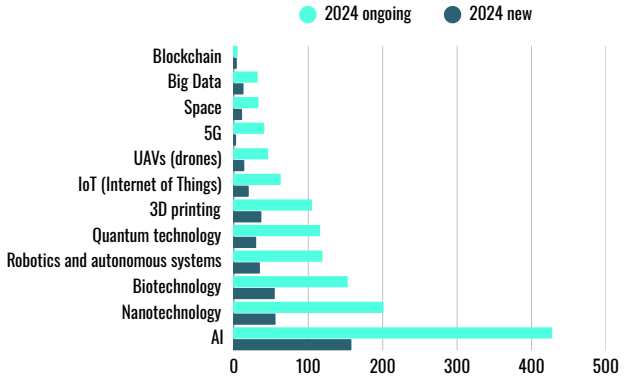


Figure 10.3 Development of the number of projects funded from national programmes



For the defence sector, it is essential that projects in strategic domains, such as AI, robotics, quantum technologies, and biotechnologies, create a foundation for the transfer of knowledge and innovation into military applications, thereby supporting interoperability and modernisation of the armed forces. At the same time, the findings indicate a need for targeted support of less represented areas that hold significant importance for the future character of military operations and for the technological sovereignty of the state. Such an imbalance may, over time, limit the Czech Republic's ability to actively contribute to allied initiatives in these segments and may also increase the risk of technological dependency. Hypersonic technologies are shaping new generations of air-delivered offensive systems and air-defence capabilities, blockchain can enhance the security of military communication and logistics systems, and big data is fundamental for the development of military intelligence and predictive analytics (Reding, 2023).

To contextualise these findings within the national strategic framework, the following section examines how the Defence and Applied Research, Development and Innovation Concept for 2023–2029 aligns with the technological and R&D trends observed in this study (MO ČR, 2023). Considered in this context, the Concept demonstrates a close alignment with those domains in which the Czech research and innovation ecosystem exhibits the strongest momentum, particularly in AI, nanotechnology, robotics, and advanced materials. The Concept's emphasis on JISR/C2, electronic warfare, cyber defence, and autonomous systems likewise corresponds to areas highlighted in this study as gaining strategic significance. At the same time, several EDT areas emphasised in the Concept, such as hypersonic technologies, blockchain and big-data exploitation, remain less prominent in the current national project portfolio, indicating that the implementation of the Concept's priorities remains uneven across the wider EDT spectrum. The Concept thus offers a well-grounded strategic orientation; however, its practical relevance will ultimately be shaped not only by how these EDT-related gaps are addressed, but also by other structural factors, including but not limited to the skills-related constraints discussed in the subsequent assessment of high-skill employment and workforce readiness.

To achieve its objectives, the Concept foresees institutional and purpose-driven support for research organisations, most notably the University of Defence, as well as systematic engagement in international defence research and innovation platforms, including NATO Science and Technology Organization (STO), European Defence Agency (HEDI, CapTechs), European Defence Fund (EDF), and the DIANA/NIF initiatives.

Emphasis is placed on the effective transfer of research outputs into operational practice and capability development. A major element in this architecture is the PRODEF programme for defence-oriented applied research, development, and innovation. Introduced by the Technology Agency of the Czech Republic (TA ČR) and approved by Government Resolution No. 300 of 7 May 2024, PRODEF represents a new systemic instrument designed to strengthen technological sovereignty and defence preparedness in line with NATO and EU strategic frameworks. Planned for the period 2024–2032, the programme provides targeted support for R&D activities directly linked to the defence and security capability requirements of the Czech Republic (TA ČR, 2024).

PRODEF is examined in this study due to its strategic orientation, focusing on areas defined at both national and allied doctrinal levels, such as C4ISR, autonomous systems and materials innovation – its anticipated contribution to defence capability development and the technological readiness of the security sector, as well as its potential to facilitate deeper integration of the defence industry and research organisations into European defence innovation ecosystems. In this sense, PRODEF may constitute a critical institutional enabler for addressing existing capability gaps in domains associated with EDTs, thereby enhancing the technological resilience and interoperability of the Czech defence environment. Given that programme implementation is scheduled to begin in 2025, future editions of this analysis will allow for systematic monitoring of supported project outputs and for assessing their contribution to EDT-related capability development.

This national R&D trajectory directly reinforces the Czech Republic's defence interoperability, modernisation, and capability resilience amid growing technological competition. Active participation in the NATO Science and Technology Organization (STO) is likewise strategically important, as it provides access to shared knowledge, research outcomes and Allied innovation essential for maintaining technological interoperability and staying aligned with emerging scientific and technological developments. In 2024, NATO STO research panels conducted 438 activities (NATO STO, 2025), although country-specific participation data is not publicly available.

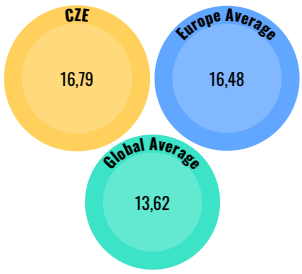
> "Active participation in the NATO Science and Technology Organization (STO) is likewise strategically important, as it provides access to shared knowledge."

SKILLS

EXPECTED YEARS OF SCHOOLING

The analysis draws on the data from the Global Change Data Lab, last updated in 2023. Given the low year-to-year variability of this indicator, the dataset provides a sufficiently robust basis for assessing the situation in 2024. According to this data, the Expected Years of Schooling in the Czech Republic remained stable at around 16.8 years between 2021 and 2023, indicating a consistently high level of educational capital. This stability reflects the potential of the national population to sustain a qualified workforce capable of supporting both the adoption and maintenance of advanced technologies in the defence and security sector and the development of a scientific and industrial base able to keep pace with global technological trends. Using the same dataset, an international comparison shows that the Czech Republic's values are broadly in line with the European average while exceeding the global average (see Figure 11).

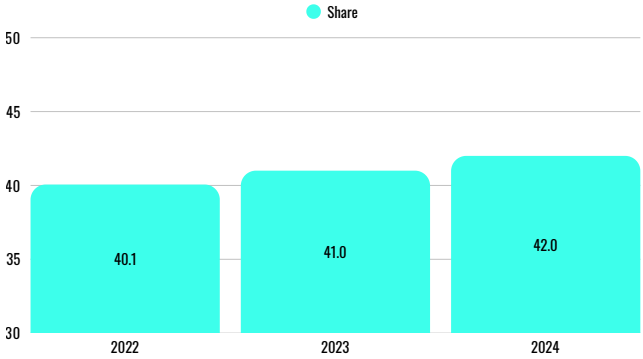
Figure 11: Expected years of schooling (2023)
comparison of Czechia with european and global averages.



HIGH-SKILL EMPLOYMENT

The analysis of the share of employment in highly skilled occupations is based on data from the Czech Statistical Office classified according to CZ-ISCO, which corresponds to the International Standard Classification of Occupations (ISCO-08) (International Labour Office, 2012). In line with the FTRI methodology, the calculation includes ISCO major groups 1 to 3 (Managers, Professionals, and Technicians and Associate Professionals), which serve as a proxy indicator for the qualification structure of the workforce relevant to the absorption of advanced technologies. Developments between 2022 and 2024 (see Figure 12) show a gradual increase in the share of these occupations from 40.1% to 42.3%, indicating a steady strengthening of the Czech Republic's skilled labour profile. From a security perspective, this trend reflects improving national prerequisites for the adoption, operation and further development of technologically sophisticated capabilities and systems that constitute an increasingly important component of modern defence and national technological sovereignty.

Figure 12. High-skill employment trends in the Czech Republic (2022–2024)
based on CZ-ISCO categories 1–3, in accordance with the FTRI methodology.

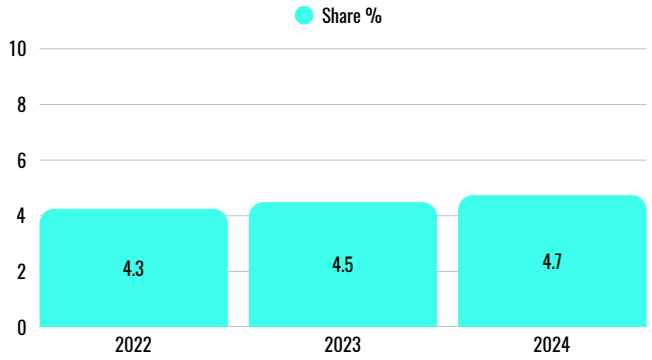


Because the High-Skill Employment indicator within the FTRI captures only the occupational structure relevant to the absorption of frontier technologies (UN, 2021), it is analytically useful, in the Czech context, to complement this perspective with an assessment of employment in the high-tech sector, which more directly reflects workforce capacities associated with technological development and innovation. This supplementary analysis draws on the Czech Statistical Office's classification of high-tech industries (ČSÚ, 2025b) and on the same employment dataset used for ISCO major groups 1 to 3. Unlike the ISCO-based occupational perspective, high-tech sector employment captures the sectoral characteristics of technologically intensive production and services, thereby offering a broader view of the economy's structural ability to support high value-added technologies.

By combining these two perspectives, occupational structure and sectoral specialisation, it becomes possible to more accurately assess the actual scope of available capacities relevant to technological development and the deployment of advanced systems in the security environment.

This expanded analytical framework provides a more precise understanding of the extent to which the Czech Republic is capable not only of generating a qualified labour force, but also of employing it in segments that are critical for technological sovereignty, dual-use innovation and the long-term resilience of national defence capabilities.

Figure 13. Share of employees in the high-tech sector in total employment in the Czech Republic



The share of employment in the high-tech sector in the Czech Republic increased from 4.3% in 2021 to 4.7% in 2023, representing a modest yet stable upward trend (see Fig. 13). While this development indicates a gradual strengthening of the economy's orientation towards higher value-added technologies, its pace remains relatively conservative when compared with the dynamics of technological change at the global level. As one of the key structural pillars of technological self-reliance, the high-tech sector plays a crucial role in underpinning national innovation capacities. From a security perspective, the current trajectory suggests that although the Czech Republic is neither stagnating nor regressing, the growth observed to date is not sufficiently dynamic to substantially enhance the state's ability to develop advanced technologies, particularly those relevant for defence and strategic resilience.

In summary, the Czech Republic possesses a growing base of high-skilled labour, yet the share of employment in high-tech industries remains relatively low. This disparity between the professional potential of the workforce and the structural orientation of the economy constitutes a significant challenge for national security and technological sovereignty. Without adequate strengthening of the high-tech industrial base, the available human capital cannot be fully leveraged for the development, implementation and sustainment of advanced technologies. This, in turn, reinforces dependence on foreign technologies, weakens the ability to maintain modern systems in both peacetime and crisis conditions, and slows innovation in areas essential to the state's defence capabilities.

INDUSTRIAL ACTIVITY

HIGH-TECH MANUFACTURES EXPORT

The analysis draws on data from the World Bank. The absolute volume of high-tech exports in the Czech Republic reached approximately USD 52.4 billion in 2024, marking the highest value recorded between 2020 and 2024 and confirming the stable growth of production capacities in technologically intensive industries (World Bank, 2025). However, the share of these products in total exports fluctuates around 20–23 per cent (see Figure 14) and does not exhibit a clearly rising long-term trend. This suggests that the structure of the Czech economy is not shifting towards higher technological intensity at a faster pace than other industrial segments.

This development indicates that although revenues from high-tech production are increasing, their overall significance within the economic structure is not substantially strengthening. The growth in absolute values is therefore not accompanied by a structural transformation that would meaningfully expand domestic capacities in critical technologies and enhance technological sovereignty. For states seeking to bolster their competitiveness and resilience to disruptions in global supply chains, this stagnation in the relative share of high-tech production serves as an important warning signal.

For the defence and security sector, the absence of a stronger structural expansion of domestic high-tech industries may constrain the Czech Republic's ability to rapidly integrate advanced military technologies, increase reliance on foreign suppliers of critical systems, and slow innovation in domains where dual-use technologies are becoming essential to operational effectiveness and strategic resilience.

Figure 14. 1 High-technology exports in the Czech Republic (US$ bn)

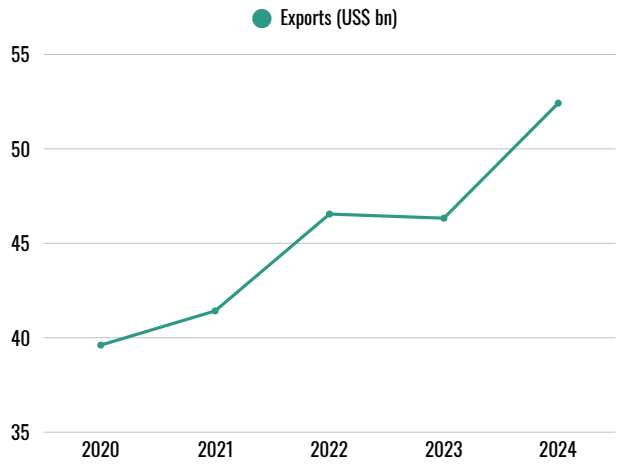
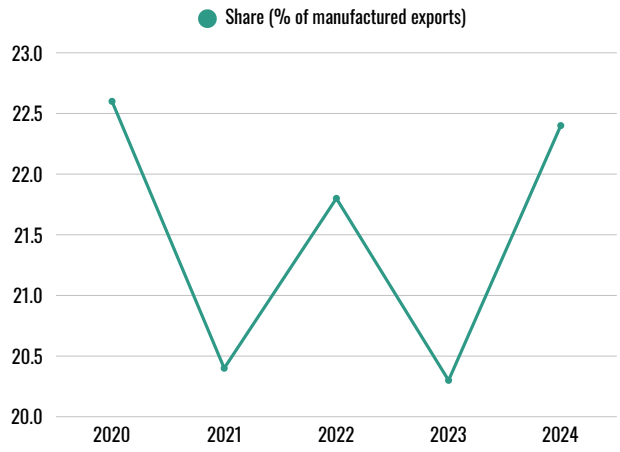


Figure 14. 2 High-technology exports in the Czech Republic (US$ bn)

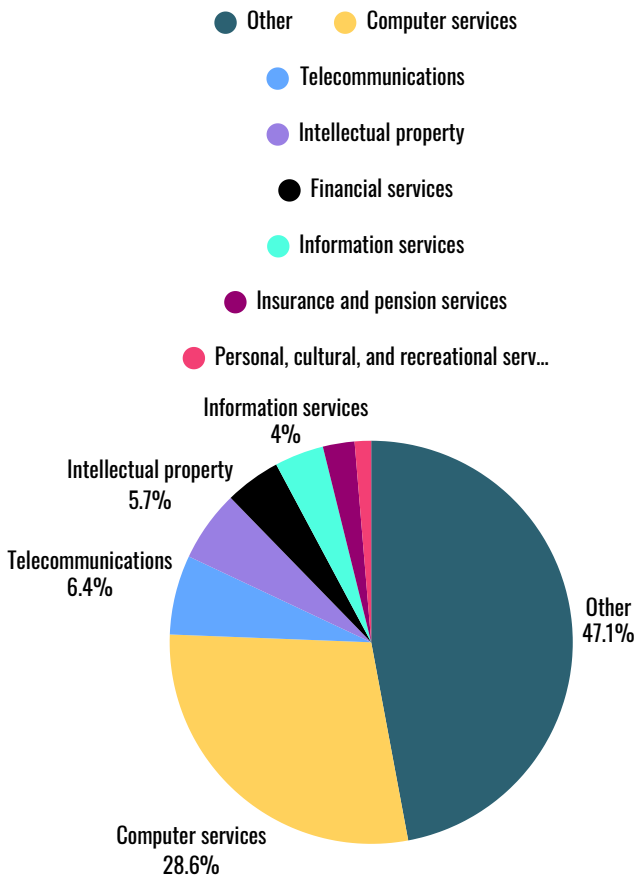


For the defence and security sector, the absence of a stronger structural expansion of domestic high-tech industries may constrain the Czech Republic's ability to rapidly integrate advanced military technologies, increase reliance on foreign suppliers of critical systems, and slow innovation in domains where dual-use technologies are becoming essential to operational effectiveness and strategic resilience.

DIGITALLY DELIVERABLE SERVICES EXPORTS

According to data from the World Trade Organization, exports of digitally deliverable services in the Czech Republic reached approximately USD 18,2 billion in 2024. The structure of these exports, illustrated in Figure 14, shows a strong concentration in Other business services (47.1%) and a substantial share of Computer services (28.6%), while other segments, particularly telecommunications, financial, insurance and intellectual property-related services, constitute supplementary but quantitatively less significant components of the overall export portfolio (WTO, 2025).

Figure 15: Composition share in digitally delivered services export in the Czech Republic in 2024



In the more narrowly delineated category of ICT services exports, as defined by the Czech Statistical Office, the latest available data pertain to 2023, indicating revenues approaching CZK 150 billion. In relative terms, this represented approximately 17 per cent of total services exports, a slight year-on-year decline that nonetheless confirms the long-established strength of the ICT segment within the Czech export structure (ČSÚ, 2025b). This development suggests that the Czech Republic continues to maintain a relatively robust capacity in digital and knowledge-intensive services, which constitutes a key prerequisite for strengthening technological sovereignty and for the rapid integration of advanced information and communication technologies into the defence and security sector.

SUBCONCLUSION

Overall, the FTRI analysis for 2024 indicates that the Czech Republic maintains a stable level of technological readiness within the European context, yet without evidence of the dynamic structural acceleration that would position the country among technological frontrunners. Macro-indicators of digital infrastructure, research and development, and workforce qualification attest to a gradual improvement in absorptive capacity; however, the limited expansion of employment in high-tech industries and the stagnating share of high-tech manufactures in total exports highlight a persistent gap between human-capital potential and the structural orientation of the economy. This gap has direct implications for the defence and security domain: rising demand for advanced technologies confronts the constrained depth of the domestic industrial base and delayed modernisation of infrastructure, conditions that may slow adaptation to EDTs and deepen reliance on external supply chains. The analysis presented in this first subchapter thus shows that, while the Czech Republic possesses a growing technological potential, it has not yet been fully translated into capabilities essential for the state's technological sovereignty and strategic resilience.

KEY EMERGING AND DISRUPTIVE TECHNOLOGIES SHAPING THE SECURITY ENVIRONMENT IN 2024

This subsection builds on the macro-level assessment of technological readiness presented in the previous subsection, which examined the Czech Republic's position through the FTRI framework and complementary indicators of industrial and digital capacity. The focus now shifts toward a detailed examination of selected emerging and disruptive technologies (EDTs) that, in 2024, are shaping the future security environment with increasing intensity. While the preceding analysis outlined national potential in terms of human capital, digital infrastructure, and innovation ecosystems, this subsection concentrates on technological domains whose rapid acceleration is generating substantial implications for strategic stability, defence planning, and the conduct of military operations. Drawing on the findings of the earlier assessment as well as trends monitored within NATO, particular attention is devoted to artificial intelligence, biotechnologies, robotics and autonomous systems as areas characterised by high developmental momentum, growing geopolitical competition, and direct relevance for modern armed forces.

ARTIFICIAL INTELLIGENCE

The year 2024 witnessed the diffusion of AI across virtually all domains of society. Public administration, healthcare, the military, and other sectors in various countries expressed interest in adopting and/or regulating these technologies, a trend driven by the emergence of cheaper and more efficient generative AI models (Maslej, 2025). Global investment in AI reached $252.3 billion in 2025, a 25.5% increase compared to the previous year. Although this is still far from the heights of the 2021 boom, it clearly indicates that the AI sector's upward cycle continues, once again driven almost exclusively by private actors (Maslej, 2025).

Twelve countries published their AI strategies in 2024 – three times more than in 2023 (Nettel, 2024). This does not necessarily indicate rapid acceleration on its own, as many pioneering states had already developed their national strategies by the end of the previous decade. Rather, it reflects a continuing global trend of public-sector adaptation to the technology.

The Czech Republic also released its National AI Strategy 2030 in the same year; in the Czech case, however, the document builds on the 2019 strategy. The updated strategy presents the country's vision and guiding principles and includes a SWOT analysis of the contemporary AI landscape in the Czech Republic (MPO, 2024).

In terms of the implementation of the 2019 strategy, 49 of its 177 goals had been considered fulfilled by 2024, with most of the remaining tasks still in progress. The largest gaps were identified in the legal and ethical domains (MPO, 2024). It is also important to mention the public consultation on AI conducted by the Ministry of Industry and Trade in 2023 as it offers non-governmental opinion on state of things. The survey indicated that while a majority of respondents view AI positively, they also believe that Czechia could perform better in the practical implementation of the technology (Odbor digitální ekonomiky a chytré specializace MPO, 2023).

The trend of ongoing global adaptation was also reflected in the legal domain: 2024 recorded the second-highest number of AI-related laws enacted worldwide since the emergence of the technology, with forty such laws adopted that year (Maslej, 2025). From a Czech perspective, the most significant one is the European AI Act (Regulation (EU) 2024/1689). Entering into force on 1 August 2024, it gives both the state and the private sector two years to adapt to the new rules and to harmonise domestic legal norms accordingly (European Commission, n.d.). The Act aims to mitigate the harmful effects of rogue or high-risk AI models and to regulate the EU market in this regard.

Efforts of this kind represent one of the countermeasures against growing concerns about the use of AI as tool in information warfare, cybercrime or harassment. Research shows that people demonstrate only moderate ability to distinguish AI-generated voice – around 60% of respondents, which indicates a vulnerability that can act as a multiplier in disinformation campaigns (Barrington, 2025). Deepfakes and the blending of artificial and real content may lead to serious security and political consequences, potentially triggering crises when the time available for information verification is limited.[1] As seventy-two countries held elections in 2024, concerns were high regarding the potential impact of artificial intelligence and deepfakes on electoral integrity. Although AI technologies were widely present, used by political campaigns, state actors, and malicious groups alike, Schneier and Sanders argue that their overall effect on election outcomes has not yet been conclusively demonstrated (Schneier, 2024).

AI TECHNOLGIES EFFECT ON ELECTION HAS NOT YET DEMONSTRATED

From a strategic perspective, we can observe an escalation in AI-related spending and development among key global actors, who believe the technology could become a potential game-changer in geopolitical affairs. This dynamic has been described as an "AI arms race", as scholars draw parallels with earlier periods of rapid capability acquisitions (Eslami, 2025). According to the AI Index Report (Maslej, 2025), Chinese AI models matched the performance of certain U.S. models in 2024, particularly in areas such as Massive Multitask Language Understanding and human evaluations. However, overall AI capability rankings suggest that China still lags behind the United States, largely due to higher private investment and greater model production in the latter (HAI, 2024).

[1] For a recent example, see (OECD, 2025).

In the military sphere, China continues its pursuit of "intelligentized warfare", an approach centred on technological superiority and information dominance (Baughman, 2024). This strategy was reflected in the People's Liberation Army's 2024 reorganisation, during which the Strategic Support Force was dissolved and replaced by three new branches, including the Information Support Force (Nouwens, 2024).

BIOTECHNOLOGIES

While the use of biological processes to develop new products and innovations has long been regarded as one of the most versatile and promising areas, biotechnology is still considered by some to be an emerging field (Sadiku et al. 2024), particularly when compared to other, more heavily funded sectors. In the military context, it holds substantial potential in CBRN protection, human performance enhancement, and data analysis. Research published in 2024 reports advances in wearable biosensors, pre-infection monitoring, brain – computer interfaces, and related technologies (Gisselsson, 2025).

As in other technological sectors, biotechnology is increasingly tied to geopolitical competition among major powers, primarily the United States and China, with others following their lead. This competition creates several choke points, as the technology is highly sensitive. The Geopolitics in Biotech report identifies both data and digital infrastructure as key areas of concern for future development, noting that leading actors may eventually stop sharing them with their rivals which could hinder future development and progression (Lazard Geopolitical Advisory, 2025). In April 2024, the Alliance released NATO's Biotechnology and Human Enhancement Technologies Strategy, its first document of this kind. Although only a brief summary has been made public, it suggests that NATO recognises the potential of biotechnology and seeks to strengthen cooperation on its development among member states. The strategy also underscores the binding nature of the Biological Weapons Convention. As the document admits, strategic competition is a principal driver behind this new initiative (NATO, 2024).

"Since 2022, Russia has been building a laboratory near Moscow to study deadly pathogens, officially framed as bioterrorism defence."

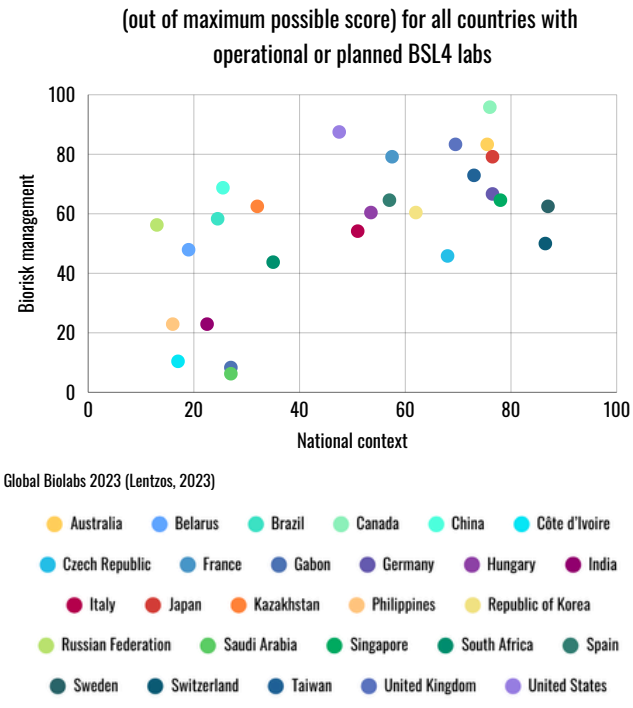
As both the United States and China are massively increasing their investments, it is important to remember that their capabilities remain intertwined in certain respects, as they depend on one another for supplies, purchases, and basic research (ISAB, 2024). President Xi has identified the life sciences and biotechnology as crucial industries for revitalising the ountry's economy, envisioning both civilian and military applications for such research (Singleton, 2025). Russia can also be viewed as expanding in this segment, as a new military research facility (Sergiev Posad-6) near Moscow at the site of a former Soviet laboratory has been under construction since 2022. According to official statements, the facility will study deadly microbes such as Ebola and strengthen the country's resilience against bioterrorism. However, some experts associate the site with Russia's past involvement in bioweapons research (Warrick, 2024).

Last year's scholarly debate also focused on the impact of digital technologies, particularly AI, on biotechnology. As in other sectors, this convergence creates substantial opportunities as well as risks. The speed at which a genome can be sequenced has increased dramatically, making it feasible to complete sequencing within a single day and thereby opening the field to a wider range of industries.

In 2022, the majority of investment in biotech start-ups went into healthcare, yet the sector now holds significant potential for expansion into the energy, food, and chemical industries as well. As a result, its total value is projected to reach 3.6 trillion USD by 2030. Potential risks arise primarily from new avenues for the proliferation of biological weapons. Although AI-enhanced biological weapons would still be prohibited under the Biological Weapons Convention, the use of such technologies could complicate efforts to monitor and control proliferation. Genetic sequences and other critical design information can be transferred electronically, making detection, attribution, and enforcement significantly more difficult (Revill, 2024).

Europe remains an important player in biotechnology and biosafety, with 47 BSL-4 and BSL-3+ laboratories located in the region out of a global total of 126. According to the Global BioLabs 2023 report, the Czech Republic is listed among the 27 countries operating BSL-4 facilities, and the Biological Protection Department in Těchonín states that it has the capability to treat and isolate individuals at biosafety levels BSL-3 and BSL-4 – an indication of an advanced national capacity in this field. At the same time, however, the Czech Supreme Audit Office (NKÚ) reported in 2024 that "biological defence research and laboratory diagnostics of biological agents (e.g., bacteria, viruses, or fungi) that could be misused for bioterrorism or the development of biological weapons have not yet been carried out at the facility. As a result, the site does not constitute a fully functional unit at the highest level of biological security as originally planned." (NKÚ, 2024). Czechia attained an overall biorisk management score of 22 in the 2023 report, placing it behind the leading actors in this domain. However, with a relatively high national context percentile (68), the country appears as the only state positioned in the lower-right quadrant of the Global BioLabs scatter plot, an unusual combination of strong overall conditions and comparatively weaker management performance (see Fig. 16) (Lentzos, 2023). Nerveless it is important to note that the layout serves purely as a visualisation tool and does not imply any structural irregularity.

Figure 16 Quadrant scatter plot of national context percentiles against biorisk management score percentage



ROBOTISATION AND UNCREWED VEHICLES IN CIVILIAN SECTOR

Robotics was another field that experienced continuous growth. According to the International Federation of Robotics, more than half a million industrial robots were installed in 2024. This figure is very similar to the numbers recorded over the previous four years, indicating stable demand, and more than double the volume ordered a decade ago. An interesting aspect is that the majority of these installations (74%) occurred in Asia, with China accounting for more than half of all global purchases (IFR, 2025a). This trend may suggest that the centre of gravity of the industry is shifting toward Asia. However, already installed assets must also be taken into consideration, as they help identify markets that may already be approaching saturation.

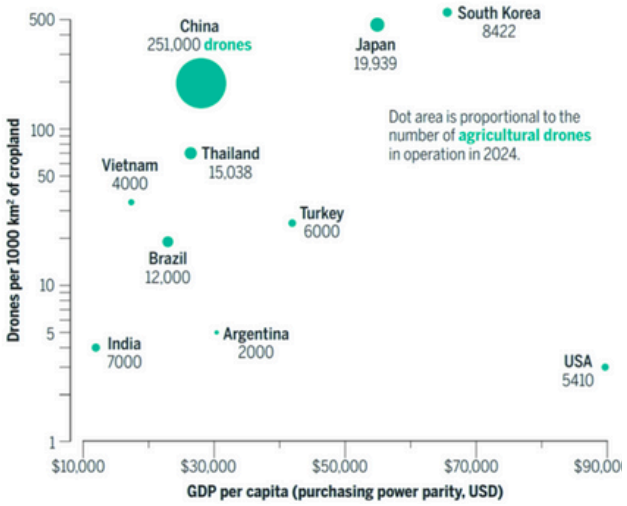
CENTRE OF GRAVITY IS SHIFTING TOWARD ASIA

Advanced East Asian economies such as the Republic of Korea (1,012 robots per 10,000 employees in the manufacturing sector) and Singapore (770) remain far ahead, while the EU employed only 219 industrial robots per 10,000 workers in 2023. Robot density in the Czech manufacturing sector was measured at 207 in the same year, higher than in France or Finland, though still significantly below the levels of the most advanced industrial economies (IFR, 2024).

Regarding key trends, considerable attention in the past year focused on the potential of artificial intelligence and the development of so-called physical AI, aimed at improving robotic interaction with complex and unpredictable real-world environments. Parallel efforts have centred on reducing the energy consumption of robotic systems (IFR, 2025b).

Focusing specifically on uncrewed autonomous systems, the number of drones used for delivery and other economic activities continued to grow, steadily increasing airspace density in certain areas (Huang, 2024). It is currently estimated that 70–80% of the commercial drone market is controlled by the Chinese company DJI (Andersson, 2024). Given the rapid pace of UAV technological development, the firm holds a surprisingly firm dominant market position with the potential for further leverage. The diffusion of drones in agriculture also continued in 2024, driven by improvements in model endurance, payload capacity, and other capabilities. Although UAVs were initially used primarily for crop monitoring and spraying, they are now able to perform a wide range of tasks, including seeding, fertilising, and feeding. While they have long been prominent in countries with high labour costs and limited arable land, such as Japan and South Korea, the past five years have seen a significant drone boom in the agricultural sectors of states in the Global South. Belton et al. (2025) describe this as technological "leapfrogging", as some of these countries have not yet reached high levels of traditional agricultural technological sophistication but have nonetheless become proficient in adopting and advancing UAV technologies both among large agricultural enterprises and small-scale farmers (Belton, 2025).

Figure 17: Comparison of purchasing power parity and drone density in 2024 (Belton, 2025)



The Drone Industry Survey conducted in 2024 among 964 UAV stakeholders worldwide identified regulatory obstacles as the biggest challenge facing the industry, followed by difficulties related to client acquisition and domestic politics (Wackwitz, 2024). This places two law-related factors at the top of stakeholder concerns. As with any emerging technology, achieving a balance between economic and technological freedom on the one hand and regulatory safety on the other is difficult and unlikely to satisfy all parties. Because legal norms generally evolve with some delay, certain providers may view their impact as disruptive to business, particularly in highly regulated, developed markets. By contrast, despite the volatile international environment, "geopolitics" ranked last, tenth, suggesting that companies did not regard it as a major issue in the UAV industry over the past twelve months (ibid.).

While the growing number of both robots and uncrewed aerial vehicles brings clear benefits, it also raises concerns related to safety, security, and sustainability, especially regarding their impact on everyday life (Huang, 2024). Increased deployment in both crowded urban areas and vulnerable rural regions heightens the risk of privacy violations, accidents, and environmental harm, all of which will require careful assessment. Potentially, the cheaper and more capable technology becomes, the greater the likelihood that agricultural workplaces will begin to disappear. This could lead to higher unemployment rates in the long term, which may prove particularly problematic in countries with large agricultural sectors.

UNCREWED AERIAL VEHICLES IN MILITARY SECTOR

From a military perspective, two trends were identified by the authors as the most significant in 2024:

1. the growing number of smaller aerial assets used on the battlefield by units at all echelons with estimates suggesting a "drone density" of 25 to 50 UAVs operating within every 10 square kilometres in Ukraine (Petráš, 2024); and

2. the increasing reliance on loitering munition systems, which are now being employed to carry out a range of tasks previously assigned to other military components, such as artillery, reconnaissance troops, or conventional UAVs.

[2] Thus consisting of categories small, mini, and micro.

Figure 18.1 : Analysis of the number of munitions used by the Russian Armed Forces in the conflict in Ukraine by type of munition (Galba, 2025)

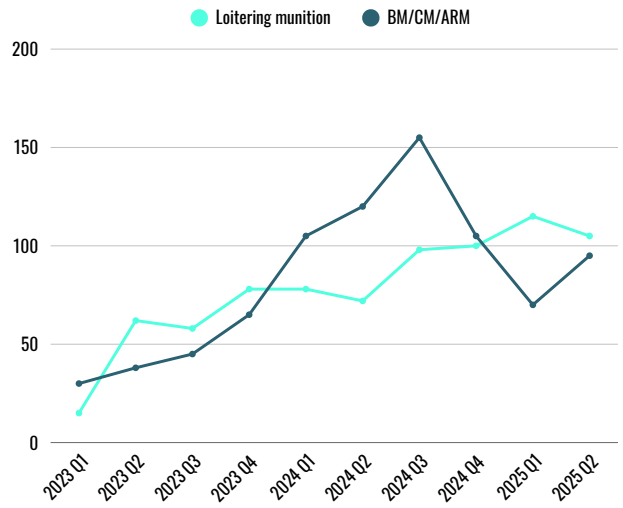
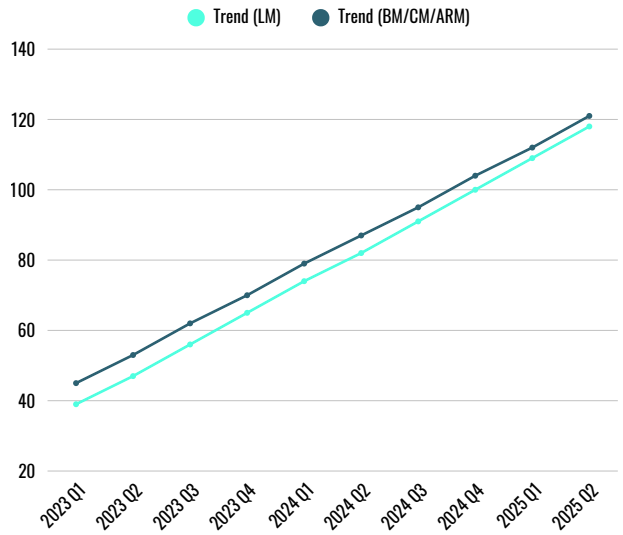


Figure 18.2 : Analysis of the number of munitions used by the Russian Armed Forces in the conflict in Ukraine by type of munition - Trends (Galba, 2025)



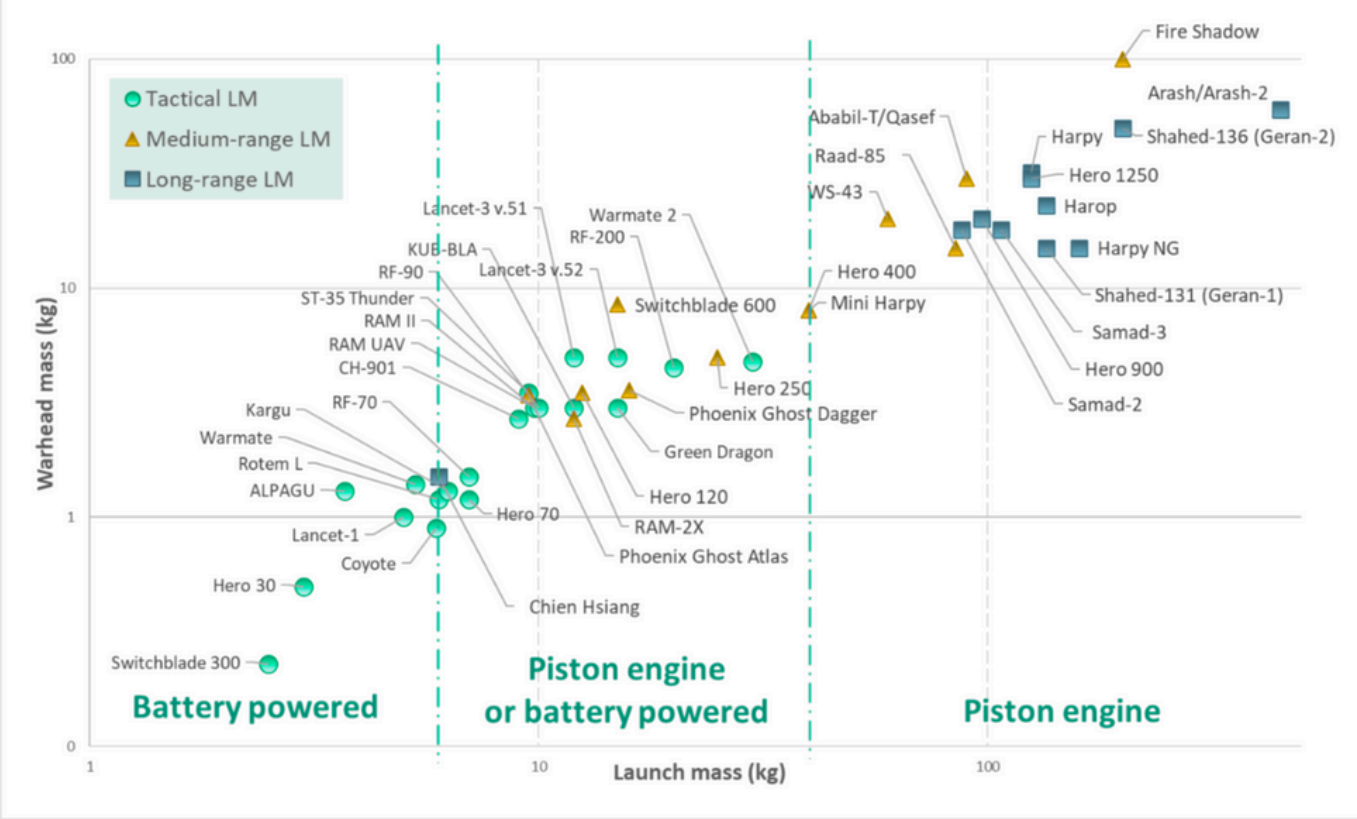
For the purposes of this analysis, the term "smaller" refers to drones belonging to Class I according to NATO terminology.[2] In the context of the most consequential current conflict, the war in Ukraine, these are generally UAVs with a range of up to 50 km, approximately five hours of endurance, and limited payload capacity. It is well established that traditional larger assets tend to disappear from the battlefield once the air domain becomes contested and oversaturated. For instance, TB2 Bayraktars lost much of their impact in 2022 when Russian forces began to coordinate their air defence and electronic warfare systems more effectively (Pettyjohn, 2024). This trend appears to remain valid. Moreover, the aforementioned commercial off-the-shelf drones have become a staple on the Ukrainian battlefield, being employed en masse and enabling civilian or dual-use assets to exert an unprecedented influence on conflict dynamics (ibid.). This does not necessarily imply that large UAVs represent a developmental dead end, as the character of each conflict differs, and many states continued to seek such systems over the past year.

Due to the rapid proliferation of UAVs and the absence of any comprehensive database (for instance, SIPRI tracks only international arms transfers and focuses on different categories of military systems), it is unfortunately impossible to present here exact figures for global drone procurement in 2024. However, the contrasting scale becomes clear when examining the war in Ukraine. Russia, for example, is reported to have tripled its production of Geran/Shahed loitering munitions between 2022 and 2024, reaching approximately twenty units manufactured per working day, compared to about seven previously (Albright, 2024). President Putin also claimed that the Russian military received around 140,000 UAVs in 2023 and that the plan for 2024 was to supply ten times that number (Denisova, 2024). Although this figure undoubtedly includes inexpensive off-the-shelf commercial drones and cannot be verified by independent sources, it nonetheless illustrates an unparalleled quantitative surge in technological-military investment.

In contrast, even a brief comparison of the militaries of Central Europe reveals a significant disparity. Among the states in the region, only Poland has managed to equip its armed forces with UAVs in both sufficient quantity and quality, covering a broad range of types. While Czechia recognises the relevance of uncrewed systems (Galba, 2025) and the Czech Armed Forces expressed a requirement in 2024 to acquire a loitering munition capability, no further information about a potential contract has been made public so far (Voska, 2024). The plan to procure three Heron 1 tactical UAVs was cancelled in 2023 in favour of a future purchase of 200 smaller drones (ČTK, 2023).

Although many NATO countries have a long tradition of employing drones in operations, this has been almost exclusively limited to small ISR assets or conventional MALE/HALE UAVs – typically in limited numbers. Before 2022, three NATO militaries[3] had implemented loitering munitions, and although this number has increased to fourteen in recent years (at least in terms of signed contracts), the quantities acquired are, with few exceptions, nowhere near the levels observed on the Ukrainian battlefield. Beyond other factors, this may be partly attributed to ethical and legal concerns surrounding lethal autonomous weapon systems (LAWS), as well as differing national doctrines regarding what precisely constitutes LAWS. Nevertheless, the situation appears to be shifting. As part of Germany's strategic turn toward rearmament, contracts have been signed for loitering munitions supplied by domestic firms Helsing and Stark (Geiger, 2025). However, these developments fall beyond the temporal scope of this paper and would therefore be addressed in a 2025 analysis.

Figure 19: Classification of contemporary loitering munition.



(source: Zhugan, 2024)

[3] USA, Poland, Türkiye.

Focusing on the EU as a whole, the Union clearly joined the "drone race" later than other major actors, although 2024 showed a noticeable acceleration of European efforts. In that year, the European Defence Fund increased the resources allocated to UAV development to more than 200 million euros, while research on the MALE Eurodrone, one of the EU's flagship autonomous-systems projects, continued. Fifteen EU member states also formed the core of the International Drone Coalition, established in February 2024, which aims to deliver thousands of FPV drones to Ukraine, with donations amounting to 550 million euros in April alone (Andersson, 2024). Equally important is the ongoing implementation of the EU's "Drone Strategy 2.0", adopted in 2022, which seeks to create a unified European drone market and to enhance European military UAV capabilities (European Commission, 2022).

The Union undoubtedly possesses the skilled workforce needed to play a major role in this sector: after all roughly 40% of all drone companies worldwide are headquartered in Europe (Andersson, 2024). However, as of September 2024, only three of the sixteen flagship actions defined in the drone strategy had been completed, namely the standardisation of airspace rules, the adoption of regulations for the certified category of drone operations, and coordination efforts in the counter-UAV domain (Millere, 2024). Ultimately, the effective use of UAV capabilities depends not only on platforms and quantities but also on networks, C2 systems, and target-acquisition software that link sensors and effectors with higher levels of command, or with one another (e.g., Russia's Strelets or Ukraine's Kropyva) (Pettyjohn, 2024).

CASE STUDY: EMERGING TECHNOLOGIES IN UKRAINE

While Ukraine scored only 60.57 in the Government AI Readiness Index 2024 (Nettel, 2024), more than twenty points behind the world's most advanced countries, its ability to adapt and develop in this field despite a large-scale military conflict is often considered an achievement in its own right. It also offers valuable lessons on how to innovate under conditions of high-intensity warfare and severe destruction. In 2023, Ukraine had 307,000 IT specialists, more than any other country in Central and Eastern Europe except Poland, and the number of AI companies reached 243 in 2024. Both indicators show substantial growth (in the case of companies, an increase of 16.27% since 2020) (AI House, 2024) and reflect the potential of the Ukrainian tech sector.

However, developments in the military use of AI and related technologies are even more fundamental, as they are directly tied to technological militarisation in real combat operations and environments. Although many of these innovations emerged organically, driven by the need to overcome shocks caused first by the conflict in Donbas and later by Russia's full-scale invasion, the institutional architecture supporting them has evolved rapidly since 2022 as the country shifted toward a more targeted approach (Bondar, 2024). Today, Ukraine has a robust and well-governed technological ecosystem, while maintaining a clear emphasis on open-source and dual-use software (Bondar, 2025a).

Efforts range from investment in domestic civilian technologies and industry, such as projects under the Brave1 platform, to the continued and expanded use of AI by the National Guard, Armed Forces, and other security institutions. For example, both the Security Service of Ukraine and the Defence Intelligence of Ukraine are reported to employ AI extensively (Yevtukh, 2024). At present, artificial intelligence and other technologies support the Ukrainian armed forces primarily in decision-making, data analysis, situational awareness, and battle-management systems (Bondar, 2024).

The attritional character of the war places a strong emphasis on quantity, as noted above. According to former Minister of Defence Umerov, Ukraine produced more than 1.5 million UAVs in 2024 (Fenbert, 2024), demonstrating the resilience of its industry. While the majority of drones on the Ukrainian battlefield are assumed not to be fully autonomous, as they still require human control, the trend is clear: to reach a point where extensive autonomy becomes a viable option (Bondar, 2025a). Both warring actors see this as a pathway to gaining an advantage, as innovative methods quickly become obsolete in the evolving conflict. For instance, the strike rate of standard FPV drones reportedly declined to around 10–30% in 2024, largely due to the widespread use of electronic-warfare countermeasures. Consequently, there is a strong belief that greater autonomy could reverse this trend and provide a decisive combat advantage (Kirichenko, 2024). The war in Ukraine is therefore as much technological as it is material and dependent on the will to resist. To streamline the innovation process, the Ukrainian state has decentralised procurement authority to the unit level. Nearly 700 frontline units are estimated to be able to "purchase critical systems directly from commercial vendors" (Bondar, 2025b). This approach is notably far removed from the Czech legal framework. Naturally, Ukraine is at war, and many control mechanisms and administrative principles are likely to be reduced for obvious reasons. Nevertheless, the streamlining of capability acquisition appears to be an advancing trend.

IMPLICATIONS FOR ARMED FORCES

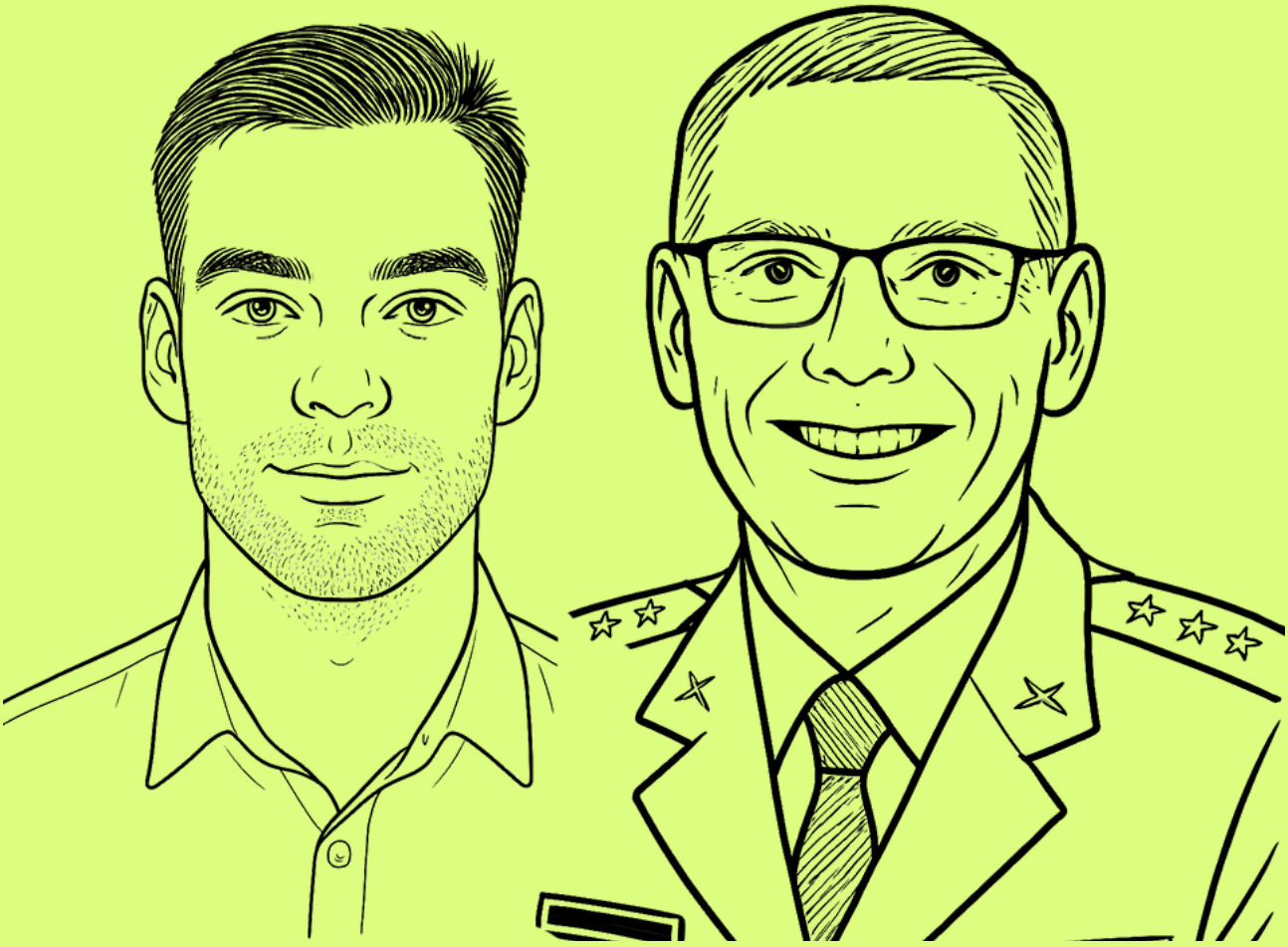
Armed forces must understand that rapidly advancing technologies are reshaping not only the information environment or a single domain but all operational domains, influencing areas ranging from cyber and intelligence to targeting and autonomous systems. Moreover, this shift is not a development of the foreseeable future, it is happening now, challenging the fundamentals of military operations, the customs of war, and information integrity. There are actors and military powers that pursue technological applications unconstrained by legal, ethical, or moral norms (Garcia, 2023), which presents a constant and highly relevant threat. At the same time, these technologies also offer significant opportunities, promising to accelerate the OODA loop and to provide force multipliers that mitigate personnel shortages. For armed forces of small size and founded on Western values, it is therefore crucial to adapt and develop at the highest possible standard in order to provide soldiers with the protection and capabilities needed to prevail in a broad spectrum of modern military operations.

It is true that obsolete weapons and technologies still have a role on the modern battlefield, as they can be repurposed to fill capability gaps in armed forces, as repeatedly demonstrated in Ukraine, and they typically require less sophisticated maintenance (Dyčka, 2025). However, failing to adapt risks becoming trapped in exhausting, attrition heavy operations that one cannot afford.

In a period of increasing instability, pandemic crises affecting national security, and the rising capability of non-state actors equipped with unorthodox or dual-use technologies, the promotion of biodefence programmes, research, and strategy appears more relevant than ever. This is especially true where national systems are not flexible or robust enough to respond to large-scale crises. According to the American Bipartisan Commission on Biodefense (Bipartisan Commission on Biodefence, 2024), raising safety and defence against biological threats should encompass broad categories of measures such as leadership, research, and preparedness, among others. The report places particular emphasis on cooperation mechanisms and on improving the attribution of biological events to support effective decision-making.

Linked to all of this is the importance of a strong domestic technological sector and a willingness to pursue innovation. The war in Ukraine has demonstrated that grassroots innovation can be crucial, delivering timely solutions that enhance armed-forces capabilities. However, to adapt consistently and fully to the modern environment, progress ultimately depends on a dedicated governmental approach and a state supported by robust and reliable digitalisation. As modern symmetric warfare can be extremely destructive to cheaper military hardware and cycles of measures and countermeasures accelerate rather quickly, a new question emerges: is it more important to maintain stockpiles of such systems, or to have flexible legislation, stable supply chains, and an industrial base capable of rapidly scaling up production when a crisis occurs.

ENVIRONMENTAL SECTOR



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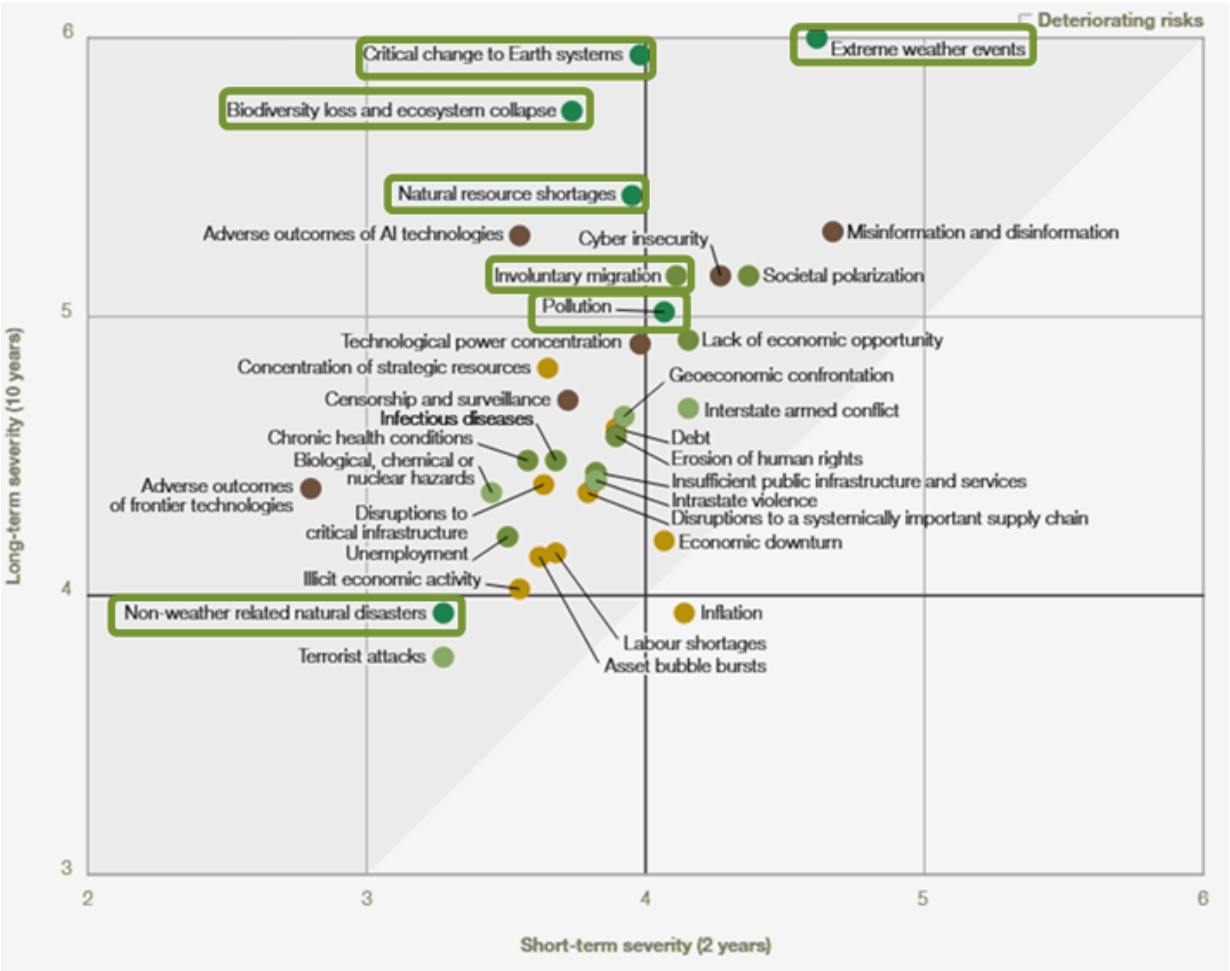
ENVIRONMENTAL SECTOR

In 2024, Earth experienced yet another exceptionally warm year, with nearly every major climate indicator continuing to worsen. As usual, environmental factors and hazards had direct – and in many cases severe – impacts on global developments across the military, economic, societal, and humanitarian sectors and areas. However, the situation cannot be assessed solely at the global level, as different regions faced distinct challenges and coped with climate change with varying degrees of resilience or resources. In the Czech Republic, the most closely watched environmental event was the September flooding, which highlighted both the system's ability to respond and its underlying vulnerabilities. Climate change therefore remains a fundamental challenge, and it is worth noting that the world is well aware of this.

This chapter is organised into four parts. The first offers an evidence- based overview of contemporary environmental developments. Second part focuses on its impact on security environment while the third examines the international community's responses and climate action dynamics. Finally, the implications for the armed forces are discussed and several recommendations provided by the authors.

NEARLY EVERY MAJOR CLIMATE INDICATOR WORSEN

Figure 1: Climate & Environment Impacts



(Source: World Economic Forum, 2025)

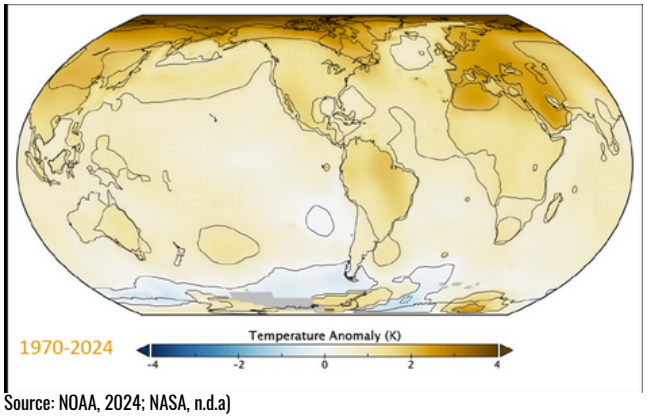
Diagram depicts the perceived relative severity of risks across five categories: economic, environmental, geopolitical, societal, and technological.

ENVIRONMENTAL SECTOR

GLOBAL CLIMATE DEVELOPMENT

Global warming does not exert uniform effects across all regions. Figure 2 illustrates the evolution of global temperatures from the late 19th century to the present, revealing that the most pronounced warming occurs in the Arctic, where the rate of temperature increase is approximately three times the global average (Ballinger et al., 2024; NOAA, 2024). This phenomenon, known as Arctic amplification, is driven by the loss of sea ice and the consequent reduction in albedo (NASA Earth Observatory, 2025; Huo et al., 2024), which enhances solar energy absorption and accelerates warming. Another observed pattern is that warming is more significant in the Northern Hemisphere than in the Southern Hemisphere. This disparity is primarily explained by the greater proportion of landmass in the Northern Hemisphere, which heats more rapidly than oceans, as well as by differences in aerosol distribution and atmospheric circulation that amplify regional climate changes (Friedman et al., 2013).

Figure 2: Long-term trends in global warming



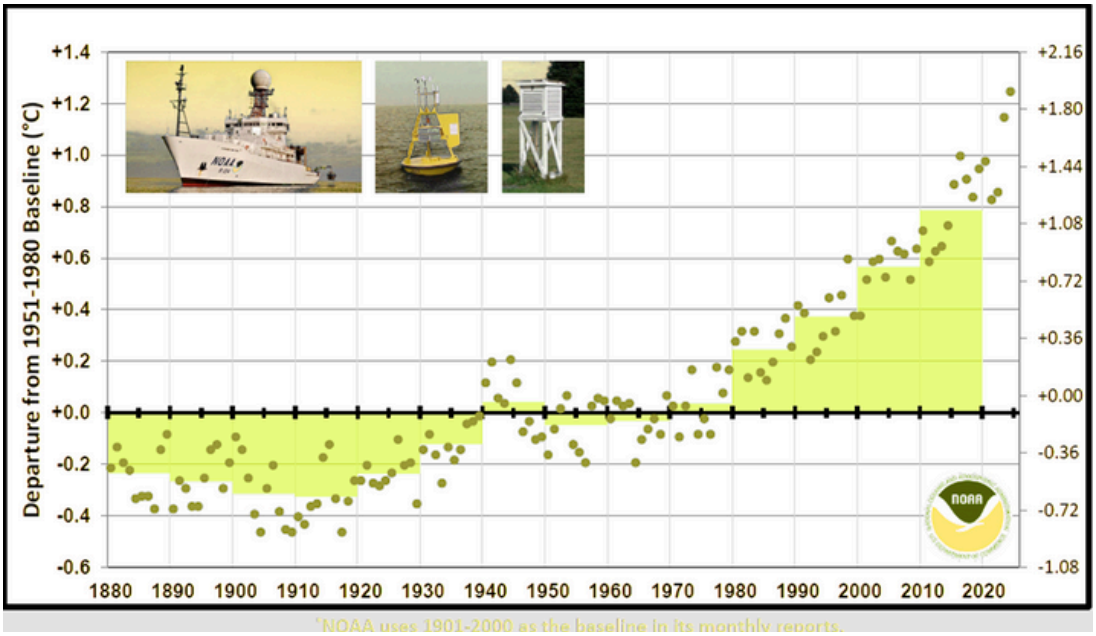
Source: NOAA, 2024; NASA, n.d.a)

A following detailed analysis of global climate evolution is presented through selected indicators, specifically global temperature, greenhouse gas concentrations, ocean heat content and sea-level rise, the state of glaciers and sea ice, and the occurrence of extreme meteorological events. These indicators were chosen for their high explanatory power regarding the condition and dynamics of the climate system. Global temperature serves as a synthetic measure of Earth's energy balance, while greenhouse gas concentrations reflect the primary anthropogenic driver influencing radiative equilibrium. Ocean heat and sea level are critical for assessing energy accumulation in the oceans and long-term impacts on coastal regions. Glaciers and sea ice indicate changes in the cryosphere, which significantly affect albedo and global circulation. The frequency of extreme weather events provides empirical evidence of climate variability and associated risks to human systems. Collectively, these indicators enable a comprehensive assessment of the causes, and consequences of climate change on a global scale (WMO, 2024; NOAA, n.d.; NASA, n.d.b).

GLOBAL TEMPERATURE

As shown in Chart 3, the year 2024 was the warmest on record, with the global mean surface temperature 1.55 ± 0.13 °C above the pre-industrial average (1850–1900) (WMO, 2025). NASA reports a temperature anomaly of +1.28 °C relative to the reference period 1951–1980 (NASA, n.d.c). Eleven months of the year recorded average temperatures exceeding the 1.5 °C threshold, marking the first calendar year to surpass the Paris Agreement limit (NOAA, 2025a; C3S, 2025). Still, global climate action has had a measurable impact, as global warming projections based on current emission reduction policies have decreased from just below 4 °C at the time of the Paris Agreement's adoption to below 3 °C today (UN Environment Programme, 2025a).

Figure 3: Long-term temperature trends

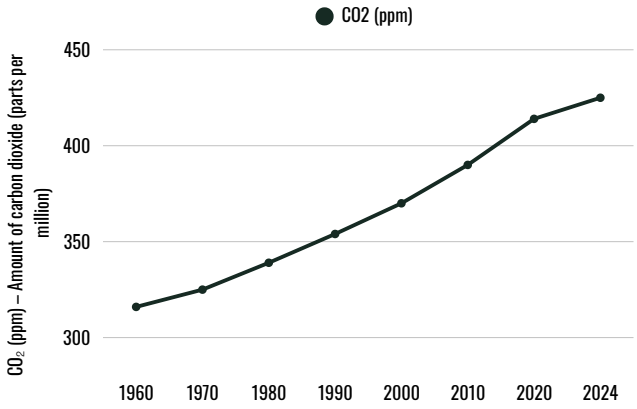


*NOAA uses 1901-2000 as the baseline in its monthly reports.

ATMOSPHERIC CARBON DIOXIDE CONCENTRATIONS

The atmospheric CO_2 concentration reached 422.8 ppm in 2024, which is approximately 52% higher than the pre-industrial level (~278 ppm) (NOAA 2025b). The annual increase between 2023 and 2024 was 3.75 ppm, representing the largest one-year rise ever recorded in the history of observations (ibid.). Moreover, the global greenhouse gas emissions rose again in 2024, reaching an estimated total of 53.2 billion tonnes of CO_2. This represents an increase of 1.3% compared to 2023 and 4.7% compared to 2019, i.e., the pre-pandemic level.[1] Although fossil fuels still play a key role in total greenhouse gas emissions, the increase observed last year is attributed primarily to deforestation and land-use change (UN Environment Programme 2025a).

Figure 4: Atmospheric carbon dioxide

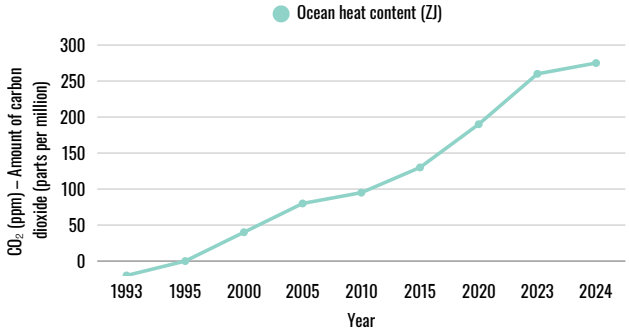


(Source: NOAA 2025b)

OCEAN HEAT CONTENT AND GLOBAL SEA-LEVEL RISE

According to the NASA data, approximately 90% of the excess heat from global warming is absorbed by the ocean, with a continuously rising trend and a marked acceleration since the 1990s (NASA, n.d.d; NOAA, 2025c). As shown in Chart 5, ocean heat content reached a historical maximum in 2024 (AMS, 2025; NOAA, 2025c). The global mean sea level rose to its highest value since the start of satellite observations in 1993, now standing at 105.8 mm above the 1993 average (NASA, 2025; Nature, 2025). Furthermore, 91% of the ocean surface experienced at least one marine heatwave during the year (World Energy Data, 2025).

Figure 5: Ocean heat content changes since 1995



(Source: NASA, n.d.)

GLACIERS AND SEA-ICE DYNAMICS

Cryospheric indicators reveal unprecedented changes in 2024. All 58 reference glaciers worldwide experienced mass loss, marking the largest average decline in the 55-year observational record (WMO, 2025; WGMS, 2025). This accelerated melting underscores the sensitivity of mountain glacier systems to sustained global warming and its implications for freshwater availability and sea-level rise (NOAA, 2025d; WMO, 2025). Concurrently, Arctic sea ice reached the seventh-lowest minimum extent in the satellite record, at 4.28 million km^2 (NSIDC, 2024; NASA, n.d.e). Antarctic sea ice remained significantly below the long-term average, registering the second-lowest maximum extent ever observed, which raises concerns about destabilisation of polar ecosystems and potential impacts on global ocean circulation. Collectively, these trends highlight the rapid transformation of the cryosphere and its cascading effects on climate stability and human systems (NASA, 2024; Mercator Ocean International, 2024; NOC, 2024).

In conclusion of this chapter, global climate exhibits a clear warming trend: 2024 was the warmest year on record (+1.55 °C above the pre-industrial baseline), and projections indicate an increase to +1.8 to +2.3 °C by 2040. Atmospheric CO_2 concentrations reached 422.8 ppm and may exceed 450–500 ppm by 2040, amplifying the risk of extreme events. Oceans absorb approximately 90% of excess heat, with ocean heat content at a record high and global mean sea level now 105 mm above 1993 levels; an additional rise of 80–100 mm is expected by 2040. Glaciers continue to lose mass, meaning the Arctic could be almost ice-free in summer, while Antarctic sea ice remains well below average. Extreme weather events are projected to become more frequent and intense, driving higher economic losses and increasing pressure for adaptation measures (NOAA/NASA, Annual Global Analysis for 2024; WMO, 2024; NASA, 2024; IPCC, 2023).

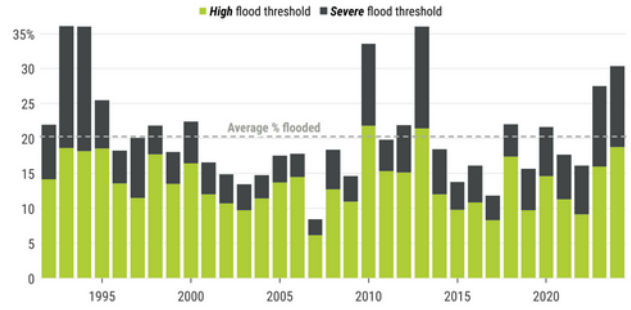
[1] However, different numbers could be find as for instance UN Environment Programme (2025, 14) speaks about 57.7 billion tonnes of CO2 and 1.6 per cent increase (European Commission, 2025).

EUROPEAN CLIMATE DEVELOPMENT

The year 2024 marked the warmest year on record for Europe, continuing the trend of accelerated warming on the continent. Europe is warming at roughly twice the global average, making it the fastest-warming continent on Earth (Copernicus Climate Change Service and WMO, 2025). The year was characterised by an east–west contrast: eastern Europe experienced extremely dry and record-warm conditions, while western Europe saw one of the ten wettest years since 1950, with widespread flooding (ECMWF, 2025). Heatwaves became more frequent and severe, and southern Europe faced prolonged droughts (see Figure 6). Glaciers across all European regions continued to lose mass at unprecedented rates and the Arctic recorded its third-warmest year on record (Royal Meteorological Society, 2025). These developments underline the urgency of adaptation and resilience measures for infrastructure and communities.

As illustrated in Chart 6, in 2024 Europe experienced its most extensive flooding since 2013, with river flows in 30 per cent of the continental network surpassing the "high flood" threshold and 12 per cent exceeding the "severe flood" threshold. In September, Storm Boris drove flows to at least twice the average annual maximum along approximately 8,500 kms of rivers – three times the length of the Danube. October brought severe flooding to Valencia, Spain, where national records were broken for cumulative rainfall over one-, six-, and twelve-hour intervals, though the twenty-four-hour record remained intact (Copernicus Climate Change Service and WMO, 2025; ECMWF, 2025).

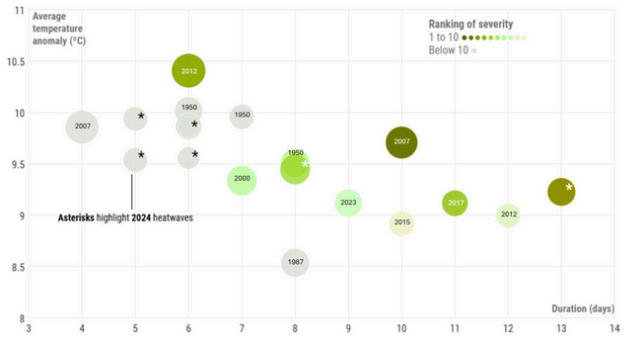
Figure 6: Annual percentage of the European river network experiencing flooding



(Source: Copernicus Climate Change Service and WMO 2025)

The southeastern Europe[2] was subject to exceptional thermal extremes during the summer of 2024, culminating in the longest heatwave on record in July. Although elevated annual temperatures were observed across most of Europe, the most severe heat anomalies occurred in this region, highlighting its pronounced susceptibility to compound hazards of heat and drought. (Copernicus Climate Change Service and WMO, 2025).

Figure 7: Most severe heatwaves in southeastern Europe



[2] Southeastern Europe is defined in this section as 39°–46° N, 15°–30° E.

Figure 7 illustrates heatwaves in southeastern Europe during 2024 alongside the fifteen most severe events recorded since 1950. The circle size is proportional to the spatial extent of each heatwave, with darker colours denoting the ten most severe events and grey indicating those ranked below the top ten. The year 2024 is represented by the circle marked with an asterisk. The evidence is clear – climate and environmental risks consistently rank among the top four, irrespective of whether the assessment concerns short-term or long-term horizons.

CLIMATE DEVELOPMENT IN THE CZECH REPUBLIC

The Czech Republic experienced one of its warmest years on record in 2024, consistent with broader European and global warming trends. Annual mean temperature anomalies exceeded +2 °C above the 1991–2020 baseline, with early onset of tropical days and nights, particularly in urban areas. This anomaly reflects the intensification of regional heat extremes linked to global climate change (Copernicus Climate Change Service and WMO, 2025; ČHMÚ, 2025). While atmospheric CO_2 concentrations are globally well-mixed, Czechia's monitoring station at Košetice confirmed continued record levels in 2024, aligned with global averages exceeding 420 ppm. National greenhouse gas emissions decreased by 13% year-on-year, totalling 40.9 million tonnes CO_2, primarily due to reduced coal-fired power generation and industrial output. Despite this decline, the energy sector remains the largest contributor to emissions (OTE, 2025; ČHMÚ, 2025).

Snow cover in mountain regions such as the Krkonoše and Jeseníky was significantly below average in 2024. Seasonal snowpack reductions affected winter tourism and water resource availability, while isolated extreme snowfall events in December (up to 25 cm in 12 hours) highlighted growing variability in winter precipitation patterns (ČHMÚ, 2025; Prague Morning, 2024). Extreme events dominated Czechia's climate profile in 2024 (see Chart 10). In September, Storm Boris caused catastrophic flooding, with six-day precipitation totals reaching 704.2 mm at Švýcárna station (among the highest in 200 years). Concurrently, a 13-day heatwave in July intensified heat stress across the country, compounding risks for public health and agriculture (Pánek et al., 2025; ČHMÚ, 2025).

Annual mean temperature anomalies in CR exceeded

+2 °C

ENVIRONMENTAL IMPACT

OCCURRENCE OF EXTREME METEOROLOGICAL PHENOMENA

In 2024, the number of recorded natural disasters (393) aligned with the long-term trend, slightly above the average of 371 events for the period 2004–2023. Mortality was significantly lower than the historical average (16,753 fatalities compared to 65,566), primarily due to the absence of "mega-events" such as major earthquakes or tsunamis. Nevertheless, the planet was disproportionately afflicted by storms, whose increase amounted to nearly 70 per cent compared to the average of the past twenty years.

Those disasters they negatively impacted the lives of 29 million people just in Asia alone (EM-DAT, 2024). Conversely, economic losses associated with those hazards reached approximately USD 242 billion, exceeding the average of USD 209.6 billion and confirming the trend of increasing financial exposure and the intensification of extreme phenomena (ibid.)

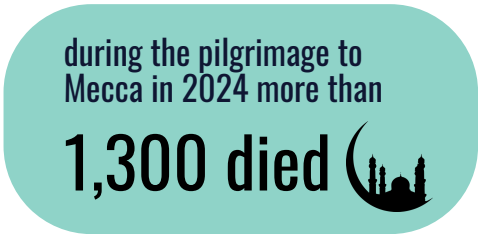
The year 2024 was also the third-wettest one since 1983, with record-breaking precipitation in multiple regions. For instance, Dubai recorded 250 mm of rainfall within 24 hours; this was nearly three times its annual average. Among the most destructive storms were Hurricane Helene, with estimated damages exceeding USD 55 billion, and Super Typhoon Yagi, one of the strongest in the past 75 years (EM-DAT, 2024; EOS, 2024). It is important to note that these are volatile phenomena with natural variability. A sharp increase in one calendar year does not necessarily mean that this trend will repeat next year. Experts from the IPCC remain uncertain about the long-term trend; however, it can be assumed that the average intensity of individual cyclones will increase, as suggested by data from the past several years (BBC, 2024).

Table 1: Ranking of countries according to the Climate Risk Index 2026 showing countries most affected by extreme weather in 2024 as well as Czechia.

Country	Rank 2024	Rank 1995-2024
St. Vincent and the Grenadines	1	35
Grenada	2	6
Chad	3	62
Papua New Guinea	4	63
Niger	5	50

Source: Adil et al. 2025)

Extensive heatwaves that struck the Northern Hemisphere during June and the following months proved abnormal, linked to rising average temperatures and an unusually hot summer. According to scientific estimates, approximately 62,000 people died last year in the 32 monitored European countries due to causes related to high temperatures (Janoš et al., 2025), indicating the population's high vulnerability to such threats. In this context, another widely discussed topic was the high mortality during the pilgrimage to Mecca in 2024, where more than 1,300 people reportedly died, among other reasons, from the effects of extreme heat (NBC News, 2024; Saeed, 2024).



GLOBAL FOOD SECURITY

295.3 million people faced high levels of acute food insecurity in 53 countries in 2024, according to available data, as they reached the IPC/CH phase 3 or worse. This means their households were affected by high or acute malnutrition or meet minimum food needs while depleting their essential livelihood (FSIN and GNAFC, 2025, 7).

This represents an increase compared to 2023 not only in absolute (281.6 millions of people affected) but also in relative numbers (22,5% in 2024 versus 21,5% in 2023 – The Joint Research Centre, 2025). It could therefore be said that actual food insecurity is a global issue the world is not able to reduce despite United nations' goal to end hunger and all forms of malnutrition by 2030 (UN, n.d.) However, the situation is not static as there are state with significant worsening of situation, such as Namibia, Chad, or Zimbabwe, where the number of people facing food insecurity raised in comparison to 2023 by 81%, 47%, and 43%, respectively. On the other hand, other countries experienced improvement, most significantly seen in Kenya where better climatic conditions in 2024 helped improve food production and reduced number of people in aforementioned insecurity levels by 64% (FSIN and GNAFC, 2025). As the data suggests, many countries are highly dependent on various factors influencing their food production, and nutrition crisis could emerge with considerable volatility, especially in Africa.

Table 2: Number of people facing various levels of food insecurity in 2021-2024

Factor/Year	2021	2022	2023	2024
IPC/CH Phase 3 (millions of people)	192,8	257,8	281,6	295,3
IPC/CH Phase 3 (% of global population)	21,3	22,7	21,5	22,6
IPC/CH Phase 5 (number of people)	507 900	351 300	705 200	1 949 400
Prevalence of undernourishment (% of global population)		8,7	8,5	8,2

(Source: FSIN and GNAFC 2025)

Significant worsening could be seen third year in row at the IPC/CH phase 5 level, which indicates catastrophe when people face "extreme lack of food" or other basic needs even when they used coping strategies to mitigate that. According to the methodology, this is reserved for situation when starvation or death is evident and in 2024 this was estimated to be true for almost 2 million people in five countries (FSIN and GNAFC, 2025). In 2023, over 80 per cent of such affected population lived in the Gaza Strip (FSIN and GNAFC, 2024). While the number of Gazans facing critical consequences of food shortages even raised in 2024 to approximately half of inhabitants of the territory, the major factor behind significant increase of numbers is situation in Sudan, which escalated rapidly and reached the level of famine, due to high mortality in the country ((FSIN and GNAFC, 2025).

The food crises in 2024 were caused or extrapolated by a number of various drivers. As the most significant drivers last year, the report identified conflict/insecurity (more on that below), weather extremes and economic shocks in this order. To provide notable examples how climate extremes impacted food prices in 2024, the heatwave in Ghana and Ivory Coast raised the price of cocoa by 280% in April 2024 compared to the year before, while a similar disaster caused the costs of potatoes and onion in India to increase by 89% during late spring (Kotz et al., 2025). However, these are not only the environmental hazards affecting food availability, but also the price itself in the long term, which was catapulted sky-high due to shocks caused first by the coronavirus pandemic and then the beginning of the war in Ukraine and a drop in wheat export volumes, as well as destabilisation of global energy markets (FAO, IFAD, UNICEF, WFP, and WHO, 2025). The world partially recovered in terms of food prices as both international wheat prices and the FAO food price index were significantly lower than in 2022 and slightly lower than in 2023 (FAO, 2024a). Speaking about the second one, it reached the value of 122 last year, compared to 124.5 index points in 2025 and 144.5 points the year before (FAO, n.d.).

That may be considered a positive sight, however the recovery process has worked differently for variable countries as many economics face declines in real earnings, which causes difficulties for households when managing they food needs. For example, in Peru food prices rose by 34.5% relative to the pre-COVID-19 levels, although earnings of workers increased only by 6,6% during same period, as analysis points out (FAO, IFAD, UNICEF, WFP, and WHO, 2025, 61).

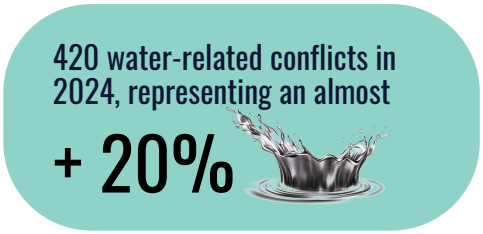
Heatwaves in Ghana and Ivory Coast drove cocoa prices up 280%.

ENVIRONMENTAL SECTOR AND CONFLICTS

Regardless of whether environmental factors or disasters functioned as triggers, multipliers, or outcomes, there was a clear environmental dimension to many conflicts and hostilities occurring in 2024. It is estimated that conflicts and insecurities negatively affected around 140 million people in 20 countries (or territories) in terms of food insecurity last year (FSIN and GNAFC, 2025). The Gaza Strip remained proportionally at the top in 2025, with virtually the entire population directly impacted. From an environmental perspective, more than half of all buildings in the territory were damaged or destroyed. Combined with rubble, shortages, and reduced water and sanitation capacity, this resulted in an unprecedented crisis in the area (Neimark, 2025).

Significant attention should also be paid to problems related to fresh water, as its withdrawal is predicted to increase by 20–33% by 2025 compared to 2010 levels. The Pacific Institute registered 420 water-related conflicts in 2024, representing an almost 20% increase compared to 2023. Approximately half of the recorded incidents (217) occurred on the African continent (Shimabuku et al., 2025). In most cases, water was classified as a casualty, meaning that water resources or water infrastructure were threatened or damaged during the incident. Moreover, 63% of the events took place at the intrastate level, either during civil wars or in disputes between farmers, pastoralists, or various clans (ibid.).

Generally, water conflicts can involve struggles over access to water, livelihood needs, changing demands for supply, resource expropriation, and more (Michel, 2020). Generally, water conflicts can involve struggles over access to water, livelihood needs, changing demands for supply, resource expropriation, and more (UN Water, 2024). Thus, a huge potential for potential conflict and escalation exists. In September 2024, Ethiopia completed the final filling of its new Grand Ethiopian Renaissance Dam, the construction of which has caused an international crisis with Egypt, a country almost entirely dependent on the Nile, which regards the dam project as a threat to its interests (Rijntalder, 2025). The key aspect is the absence of conclusions reached so far, despite the involvement of various mediators such as African Union, EU, or United States. The central issue remains how to manage periods of drought, where both countries express different visions (Morsy, 2025).



The situation further deteriorated in neighbouring Sudan, when violence between Sudanese Armed Forces and Rapid Support Forces escalated since April 2023, displacing almost nine million people by the end of 2024 (UN Environment Programme, 2025b). The war and extreme climate conditions like drought and floods are considered as major contributor to the collapse of food production, leading to famine in certain regions (FAO, 2024b). The vital Arba'at Dam collapsed in August last year, causing direct casualties, destroying around 20 villages, and leaving Port Sudan at risk of fresh-water scarcity. The collapse was attributed to excessive rainfall. According to Werner and Mohamed, about 65% of the sites listed in the Global Reservoir and Dam Database are over fifty years old, increasing the risk of future failure (Werner and Yasir, 2024).

WAR IN UKRAINE

While the impact of the Russian invasion was discussed in last year's analysis and its strategic implications remain valid, an environmental disaster of this scale cannot be ignored. When adding 2024 into consideration, the greenhouse gas emissions generated by the invasion are estimated to have reached 230 $MtCO_2$ since the start of the war. The assessment conducted by the Initiative on GHG Accounting of War includes a wide range of consequences, such as destruction, landscape degradation, and emissions from aircraft forced to take longer routes due to the conflict (De Klerk et al., 2025). It is therefore important to note that the analysis also accounts for indirect environmental impacts. To illustrate the magnitude, this figure is roughly equivalent to the annual emissions of Austria, Hungary, the Czech Republic, and Slovakia combined (ibid.)[12]

Due to the fuel crisis reducing traffic density, the destruction of parts of the industrial complex, and the massive flight of refugees from the country, there was an initial drop in $PM_{2.5}$ levels from 9.7 $\mu g/m^3$ in 2022 to 8.6 $\mu g/m^3$ in 2023. However, it is necessary to consider the pollution created by military operations and the impact it could have on the health of the population. Atypical peaks in O_3 concentration were also observed, correlating with massive rocket attacks (Belis et al., 2025, 57).

Table 3: distribution of GHG emission caused by war in Ukraine

Sector	Emissions (MtCO2e)	Percentage of total share
Warfare	82.1	36,00
Landscape fires	48.7	21,00
Energy infrastructure	19.0	8,00
Refugees	45 719,00	2,00
Civil aviation	45 761,00	6,00
Reconstruction	62.2	27,00
Total	229.7	100,00

(Source: De Klerk et al. 2025)

The impact on forests is much more visible, as 1.7 million hectares of forests were affected by the war, equal to 15% of the country's forest area (Belis et al., 2025, 58). Further consequences could be anticipated, such as loss of biomass and biodiversity. The harm to the Ukrainian landscape was especially devastating during last summer, when it reached an unprecedented scale. For the whole of 2024, the area burned by wildfires accounted for almost 1 million hectares. That matches approximately the year's total area affected by wildfires in the whole of Europe and parts of the Middle East and Africa, as monitored by the European Forest Fire Information System (ibid., 36) It is worth noting that most fires follow the frontline and areas of fighting in general or remain close to them.

1 MILION HECTARES BURNED. MOST FIRES FOLLOW THE FRONTLINE

The fighting, heavy bombardment, and mine planting have also had a significant degrading effect on the quality and integrity of soil and potentially on the entire agricultural sector, as explosives and ammunition can release potentially toxic elements such as arsenic or lead into the soil (ibid., 59). Considering also highly negative effect of extensive fortification building (Ovchinnikov, 2025), it could be concluded that the environmental damage caused by the war is severe, affecting not only the direct combat area but the whole region, with potential consequences in the public-health domain. For the armed forces, it demonstrates that terrain still can be – and in this case definitely is – massively shaped by modern wars, and that environmental degradation should be considered a strategic factor. Protracted conflicts also increase demand on engineering, CBRN and other supporting capabilities. Another significant burden for world ecosystem is represented by the reconstruction of Ukraine. The already ongoing process is often measured and projected in terms of fiscal and material costs, however, it brings also significant environmental impact.

RECONSTRUCTION EMISSIONS QUADRUPLE PREWAR LEVELS

According to the assessment mentioned, re-building efforts have been already responsible for one quarter of total greenhouse gas emissions caused by the invasion (de Klerk, 2025). Kobayakawa (2025) then estimates the carbon footprint of the post war reconstruction process to produce 741 MtCO2. That would exceed country's pre-war annual emissions four times. There are, of course, many different variables stepping into equation and each such study has its own limits (for example, it's unclear how much the country will turn toward sustainable industry). However, the estimates themselves indicate a large footprint of the construction industry as well as the scale of destruction.

THE REACTION AND DEVELOPMENT

WORLD

The global community experienced both progress and setbacks in its climate action and mitigation efforts in 2024. Among the key achievements were the continued reduction in the cost of renewable energy – with 91% of new renewable capacity reported to be cheaper than fossil alternatives – as well as the expansion of early warning systems and a decline in disaster-related mortality. However, several shortcomings were also identified, most notably the ongoing intensification of deforestation (calculated at 8.1 million hectares per year) and the limited financial resources allocated to adaptation (UNFCCC, 2025). And it was precisely the design of the future climate finance architecture that became one of the most anticipated issues at last year's Conference of the Parties, held in Baku, Azerbaijan, in November 2024. Although the parties agreed on providing USD 300 billion in finance for developing countries by 2035, no clear conclusion was reached on how these funds would be raised or who would be responsible for delivering them, thus leaving the matter partially unresolved (UN Environment Programme, 2024).

This contributes to the fact that, according to the Organisation for Economic Co-operation and Development, countries of the world were not on track to meet their Nationally Determined Contributions (NDCs) for 2030. Moreover, their current NDCs do not appear to be aligned with their long-term 2050 targets (OECD 2025b). By September 2025, only 64 parties of the United Nations Framework Convention on Climate Change had submitted new NDCs with mitigation targets for 2035, representing about one third of the signatories and 63% of global GHG emissions. When looking specifically at G20 members, their new targets for 2035 are expected to bring emissions in 2035 to around 3.6 billion tonnes of CO_2 below the current 2030 NDCs. However, this has been assessed as relatively unambitious and is subject to further uncertainty, particularly due to the position of the United States and other external factors (UN Environment Programme, 2025a).

> "...only EU and Japan managed to reduce their emissions in 2024.

Figure 9: different scenarios of projected emissions based on implementation of NDCs (Source: UN Environment Programme 2025a)

Year	Scenario	Projected GHG emissions (GtCO2e) – median (range)	Emissions gap Below 2.0°C (GtCO2e)	Below 1.8°C (GtCO2e)	Around 1.5°C (GtCO2e)
2030	Current policies	58 (51–62)	17 (11–21)	23 (16–27)	25 (19–29)
2030	Unconditional NDCs	53 (49–55)*	12 (9–15)*	18 (15–21)*	20 (17–23)*
2030	Conditional NDCs	51 (48–53)*	10 (7–12)*	16 (13–18)*	18 (15–20)*
2035	Current policies	54 (52–62)	19 (17–26)	28 (26–35)	30 (28–37)
2035	Unconditional NDCs	48 (46–52)*	12 (10–16)*	21 (19–25)*	23 (21–27)*
2035	Conditional NDCs	46 (45–49)*	11 (9–13)*	20 (18–22)*	22 (20–24)*
2050	Current policies continued	51 (33–71)	30 (13–51)	38 (20–59)	42 (24–63)
2050	Conditional NDCs and all net-zero pledges**	19 (8–29)	-1 (-12–9)	7 (-4–17)	11 (0–21)

(Source: UN Environment Programme, 2025a)

In the context of increased geopolitical tensions, the risk exist that climate action could be weakened or deprioritised. These concerns were especially visible in relation to the United States, where the November 2024 presidential election was closely followed because of its potential implications for future climate and environmental policy. Given President Trump's previously expressed scepticism towards climate action, some observers anticipated that a significant shift in the environmental agenda could occur. Indeed, his administration moved rather quickly after taking office, initiating once again the procedure for the United States to withdraw from the Paris Agreement at the beginning of his second term (Congressional Research Service, 2025). However, since his new presidency only began in 2025, an assessment of these developments falls beyond the scope of this report and will be addressed in next year's publication.

The renewable sector seemed to grow again in 2024 as global renewable electricity capacity increased by 22% from the 2023 level, reaching again an all-time high, with strong prospects of repeating this growth pattern in 2025 and potentially doubling the current capacity by 2030. This clearly indicates that the sector keeps momentum. However, the global growth forecast has been revised downward by 5% in contrast to estimates made in 2023 due to policy shifts in the United States and China, signalling higher uncertainly when it comes to diversification of green sources. While various actors performed diversification efforts in the renewable industry, the majority of both the mining and refining of rare earth elements still remains concentrated in a single country. Renewable energy sector and solar PV specifically may then face potential supply-chain security risks in future (IEA, 2025a), which can limit speed of adaptation.

UNITED STATES TO WITHDRAW FROM THE PARIS AGREEMENT

Focusing on security matters, estimates suggest that military activities contribute around 5.5% of global CO_2 emissions, meaning that if the world's armed forces were considered a single country, they would rank as the fourth-largest emitter on the planet (Belcher et al., 2023). It should be noted, however, that reporting of military emissions under the UN Framework Convention on Climate Change (UNFCCC) remains voluntary, which results in a significant data gap and makes it impossible to accurately determine the global carbon footprint of the military sector (UNFCCC, 2024).

On the other hand, the trend of militaries recognising climate change as a factor capable of undermining operational performance – and therefore requiring mitigation –continued to strengthen. At the same time, a more initiative approach seemed to emerge, with armed forces increasingly exploring ways to reduce their own carbon footprint. The U.S. Department of Defense published updated version of their Climate Adaptation Plan in 2024, stressing out need to both adapt and mitigate to increase overall resilience. It identifies five critical lines of effort to focus on, including climate-informed decision support, resilient supply chains or building climate-ready force among others (DoD, 2024a). Proactive approach seemed to prevail also within the United Nations, as the need to decarbonise humanitarian and peacekeeping missions was declared last year. According to the Greening the Blue report for 2024, UN peacekeeping operations accounted for approximately 41.6% of the total greenhouse gas emissions reported by the UN (United Nations, 2024). This figure underscores the importance of environmental transformation in peacekeeping, as military components represent one of the most energy-intensive parts of international operations.

NATO

NATO has already recognised climate change as a critical factor and threat multiplier influencing military capabilities and operational effectiveness. Therefore, the Alliance has mainstreamed climate considerations across defence planning, capability development, and missions in all five operational domains, including space and cyber. This mainstreaming is institutionalised through the annual Climate Change and Security Impact Assessment (most recently 2024), which builds on NATO's Climate Change and Security Action Plan adopted in 2021 and directs adaptation and mitigation efforts across the Alliance (NATO, 2024f; NATO, 2021). Document further identifies climate change as both a resilience challenge and a strategic competition factor influencing balance of power with other strategic competitors (NATO 2024g). In 2024, the Alliance has institutionalised this approach through initiatives such as the accreditation of the Climate Change and Security Centre of Excellence in Montreal, aimed at accelerating adaptation and research coordination (NATO, 2024f).

3.5% GDP DEFENCE EXPENDITURE INDICATE INCREASE TO 17–247 MIL. TONS OF CO2

However, rising defence spending raises concerns over emissions: estimates suggest NATO members could generate 98–218 million tons of greenhouse gases annually, while projections for a 3.5% GDP defence expenditure scenario indicate a potential increase to 17–247 million tons of CO2, underscoring the environmental cost of remilitarisation (Belcher et al., 2023; Parkinson 2025). Desire to reduce emissions within the military supply chain is also reflected in the considerations of the NATO Innovation Fund, established in 2023, as one of its sub-funds focuses directly on low-carbon and green technologies. However, no reference benchmark has been designated for the purpose of attaining the environmental characteristics promoted by said Sub-Fund 1 (IMCCS, 2024).

EUROPEAN UNION

It can be assessed that the European Union continued its efforts to meet its climate targets over the past year. These targets include:
1. reducing greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels; and
2. reaching climate neutrality by 2050.

In addition, the Commission began promoting a new target in February 2024, proposing a 90% emissions reduction by 2040 (Politico, 2025). This can be interpreted as a signal that the Commission intends to maintain and potential strengthen the Union's decarbonisation trajectory.

Two documents are important for forming a broader picture of the Union's environmental performance over the past year. The report Delivering the EU Green Deal provides an evaluation of 154 targets that make up the European Green Deal. It shows that 32% of these targets are on track, while 41% require acceleration if the declared level of ambition is to be met. In contrast, 10% of the targets are assessed as either stagnating or regressing, indicating potential setbacks. It is worth noting that some of these targets are binding, while others are not. Among the binding ones, insufficient progress was reported, for example, in the segment of renewable hydrogen and in reducing emissions from shipping. For the remaining targets, the authors did not have sufficient data to make a reliable assessment (European Commission, 2025). The Climate Action Progress Report 2025 projects that the Union can meet its 2030 target, with a remaining gap of only around one percentage point, provided that all additional policies and measures are fully implemented by the Member States (European Commission, 2025, 17). However, this implies that if countries fail to deliver these additional measures and rely solely on existing policies, the EU would remain approximately 8 percentage points short of the target.

In 2024, the European Union strengthened the integration of climate and environmental considerations into its defence and security agenda under the Common Security and Defence Policy (CSDP). A key development was the adoption of the CSDP Climate Security Package, which institutionalised climate-risk analysis in civilian and military missions and introduced environmental advisers and networks to improve operational resilience (European External Action Service, 2025).

Complementing this, the Climate Change, Environment, Security and Defence (CCESD) Training Platform was launched under the European Security and Defence College to consolidate climate-security training resources across Member States. The EU also advanced energy transition efforts through the Consultation Forum for Sustainable Energy in the Defence and Security Sector (CF SEDSS), assessing the implications of the Fit-for-55 policy for defence energy efficiency and resilience.

The Climate Action Progress Report 2025 projects that the Union can meet its 2030 target, with a remaining gap of only around one percentage point.

Strategic partnerships were reinforced, notably with UNEP, to provide evidence-based tools for conflict prevention linked to climate risks, while early warning systems were upgraded through the Global Conflict Risk Index (GCRI) and the development of a Dynamic Conflict Risk Model (DCRM) for sub-national risk assessment. Operational adaptation measures focused on reducing the logistical footprint and greenhouse gas emissions in missions, alongside preparations for energy security and carbon neutrality by 2050. Finally, civil-military coordination was enhanced in humanitarian assistance and disaster relief (HADR) and post-conflict environmental restoration projects under the Incubation Forum for Circular Economy in European Defence (IF-CEED) (European External Action Service, 2025).

CRITICISM OF THE EXISTING DIRECTION OF GREEN DEAL INCREASING

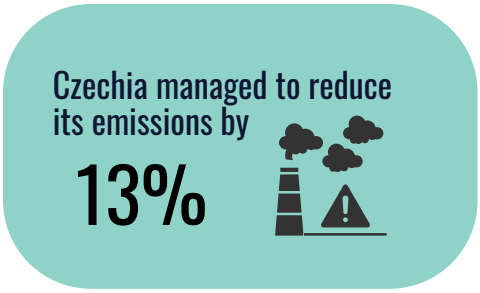
In March 2024, the European Parliament and the Council adopted Environmental Crime Directive (EU) 2024/1203 on the protection of the environment through criminal law, which replaces the previous 2008 directive and establishes minimum EU-wide standards for defining environmental criminal offences and penalties (European Union, 2024a). The directive expands the scope of environmental criminal law to ensure closer harmonisation of national legal systems in areas related to environmental protection, introducing twenty categories of offences, including illegal timber trade, unlawful ship recycling, and serious breaches of chemical legislation (European Union, 2024b). Member States are granted two years to transpose the directive into national law, aligning domestic legislation with the minimum requirements set out by the EU (European Union, 2024c).

Since Commission President von der Leyen began her second term in the autumn of 2024 following the European Parliament elections, it can be assumed that the existing policy direction will largely continue.

However, some adjustments are likely, particularly in relation to competitiveness and strategic autonomy, reflected for example in the new Competitiveness Compass. By the end of 2024, criticism of the existing direction of the European Green Deal had been increasing, and this new framing can be seen as a response to those pressures (European Commission, 2025).

CZECH REPUBLIC

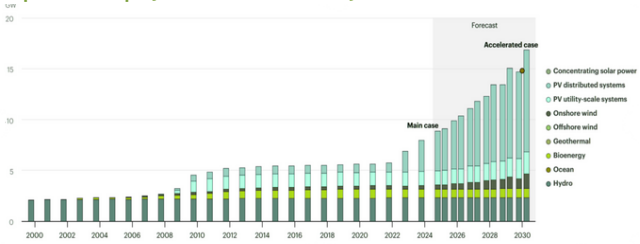
As mentioned above, Czechia managed to reduce its greenhouse gas emissions by 13% in 2024, following a similarly substantial reduction between 2023 and 2022, when the year-to-year decrease reached 15.1% (OTE, 2025). According to the annual Report on the State of the Environment (MŽP, 2025a, 89) the country is on track, with some margin, to meet the climate target of reducing greenhouse gas emissions by 55% by 2030 compared to the 1990 levels. If successful, it will be an important achievement from both an environmental and a European diplomatic perspective.



In the global comparison, Czechia ranked 17th out of 180 countries in the Environmental Performance Index (EPI) in 2024. Compared to 2022, the country improved both its position (from the 19th) and its overall score (from 59.6 to 65.5). Within the regional analytical group "Eastern Europe", Czechia ranked third, following Estonia and Greece. These results indicate that Czechia performs relatively well across several dimensions of environmental protection. Nevertheless, the interpretation of the EPI calls for a degree of caution, as with any composite indicator. Therefore, it could be said that Czechia's high ranking is driven primarily by its performance in the Ecosystem Vitality category (78 points), whereas the score for Climate Change Mitigation reached 52.2 points. This divergence highlights uneven progress across different components of environmental policy, particularly in comparison with European states that are among the leaders in emission reduction and energy transition (EPI, n.d.).

Specifically, when focusing on renewable sources, Czechia remains below EU average, with only a 19.6% share of renewables in 2024, representing a slow increase of one percentage point compared to 2023 (European Environment Agency, 2025). This would be partly influenced by the strong position of nuclear power in the country's energy sector, and the Czech Republic undoubtedly intends to rely on nuclear energy in the long term. The draft update of the State Energy Policy published in 2024 – which is currently facing criticism due to gaps in its preparation – foresees the share of nuclear power in the Czech energy mix reaching between 32% and 42%. Nuclear energy already surpassed coal as the main fuel for electricity generation in 2023 (with a 40% share), while its share in heat production remains negligible for the time being (MPO, 2024). The composition of the energy sector is relevant not only for the effectiveness of climate action, but increasingly also for national security, as over-reliance on unreliable partners heightens the vulnerability of the population and critical infrastructure.

Figure 10: Progress of cumulative capacity of renewables in Czech Republic with projection based on county's declared ambitions



(Source: IEA, 2025b)

The report on climate change adaptation in Czechia examined 322 tasks set by the National Action Plan for Climate Change Adaptation from 2021. By the end of 2024, 6% of the tasks were marked as completed, 63% as ongoing, 18% as partially fulfilled, and 12% as not fulfilled (MŽP, 2025b). The greatest proportion of shortcomings was identified under Specific Objective 4, which focuses on the resilience of human settlements and the development of green infrastructure with an emphasis on public health. Deficiencies were identified particularly in relation to reducing flood risks (ibid., 24–59). It could be said that report aims at whole-of-society adaptation and rightly points out that although adaptation is required across all resorts, it must also be implemented vertically, from the national level through the regional level down to municipal authorities. For this purpose, an analysis of strategic documents of territorial self-governing units was conducted (ibid., 17–18). The assessment shows that only six regions have developed a climate change adaptation strategy so far. If this situation persists, it may increase the risk of potential unsystematic measures at lower levels of public administration in future crises.

The worst climate-related disaster of 2024 was the previously mentioned flooding caused by the low-pressure system Boris in September, which shocked with its intensity and resulted in damages estimated at 70 billion CZK. While dry soil initially delayed the onset of the flood, in some locations the extreme hydrological response exceeded the level of a hundred-year flood, and in certain areas even a five-hundred-year event. Early warning system proved functional and essential, as it made possible to release water from reservoirs in advance and helped to mitigate harm at some locations. Subsequent analysis revealed the complexity of permitting procedures and the overall lengthy timeline for implementing major flood protection measures in Czechia. It also criticised complications in obtaining information on impacts and recovery, which are attributed to the existing legislation (ČHMÚ and MŽP, 2025). From the perspective of the Czech Armed Forces, precisely the floods were cause of particularly significant deployment of military personal, where troops were engaged from September[3] until the end of November 2024 in crisis-prevention activities, civilian evacuations, and post-disaster recovery.

[3] Since the government authorised their deployment starting on 17 September.

According to the General Staff, a total of 5,400 professional soldiers and members of the active reserve rotated through the operation. In addition to units forming part of the Integrated Rescue System, the deployment involved the 15th Engineer Regiment and firefighting forces. On 14 September, the Operations Command activated its operations centre, which was responsible for the coordination of deployed forces and assets (Dvořáková, 2024). The operation illustrates the growing demand placed on the armed forces in terms of assistance and response to humanitarian emergencies

IMPLICATIONS FOR THE ARMED FORCES

The development in environmental sector discussed through chapter indicates that the pressure for the "greening" of armed forces not only persists but is intensifying. Environmental considerations and sustainability are becoming key parameters in capability development, operational planning, and resource utilisation, as reflected in EU and NATO policies that increasingly integrate climate factors into defence planning (European External Action Service, 2025).

Another dimension of the relationship between armed forces and the environment is their growing involvement in mitigating the consequences of climate-related disasters. According to the Military Responses to Climate Hazards database, in 2024, there were 251 military deployments across 63 countries aimed at addressing the impacts of extreme climate events (Climate Security Observatory, 2024). The most frequent cause was storms and cyclones (42% of cases), followed by floods and areas affected by extreme rainfall (31%). This trend represents a significant shift compared to 2023, when military forces were most often deployed for floods and wildfires (Climate Security Observatory, 2023).

Moreover, the climate change directly affects base accessibility, personnel health and performance, equipment reliability, and the security of logistics lines. Accordingly, defence decision- making should integrate a climate lens, that means a structured assessment of thermal extremes, dust, humidity, and corrosion, and quantify these effects in life- cycle cost (LCC), reliability, and risk analyses from the outset of investment and acquisition processes. This approach is consistent with long- standing field doctrine on environmental impacts (e.g., desert dust, heat, and corrosion), and it aligns with NATO's recognition of climate change as a "threat multiplier" for allied security and operations (DoD, 2021; NATO, 2021).

Based on all of this and on the trends observed in documents of other militaries, the authors propose brief set of recommendations for Armed forces, which directly touches the environmental dimension.

In the immediate term, the following measures should be implemented:

- Mainstream climate risk into investment and acquisition decisions. Require a climate- ready checklist for all investment and procurement actions that specifies threshold tolerances for temperature, dust, humidity, and corrosion, which includes an explicit life- cycle- cost (LCC) impact statement; this institutionalises climate- informed decision- making in line with defence adaptation policy and allied doctrine on climate as a threat multiplier for installations and capabilities (DoD, 2021).
- Undertake rapid, evidence- based screening of installation vulnerabilities. Conduct expedited assessments of priority bases for flood, wind, wildfire, and grid- outage risks by exploiting existing hazard maps and focused audits; produce a ranked Top- 10 "no- regret" measures list for each site to accelerate implementation, that means an approach consistent with the federal practice on climate- resilient infrastructure and with dentified gaps in Arctic/sub- Arctic installation resilience (Office of the Federal Chief Sustainability Officer, 2021; DoD Office of Inspector General, 2022).
- Update heat- stress training and operational Standard Operation Procedures (SOPs) to current medical standards. Mandate wet- bulb globe temperature (WBGT) measurement at training sites, staged acclimatisation protocols, hydration planning, and medical surveillance for exertional heat illness, aligning practice with the most recent military medical guidance and emerging occupational- safety rulemaking (DoA, 2022; Occupational Safety and Health Administration, 2024).
- Pilot expeditionary energy efficiency through hybridised power. Deploy mobile hybrid microgrids (diesel generation with battery storage) in at least one field camp, with high- resolution metering of fuel use, load profiles, and logistics effects (e.g., convoy reductions); this tests under realistic, time- varying loads the documented fuel- saving potential of optimised microgrid scheduling and storage (Garcia, 2017; Joo, 2021).

Over the medium and long term, the following measures should be implemented:

- Develop resilience master plans for priority installations (physical and energy resilience), based on risk mapping; integrate nature- based solutions (e.g., retention features, living shorelines) to reduce flood/erosion risk and protect coastal or riverine infrastructure, building on defence–conservation partnerships (The Nature Conservancy, 2024).
- Codify climate and environmental performance parameters in binding acquisition specifications (e.g., climatic tolerances for temperature, dust, humidity, corrosion); require verification testing in climatic chambers/ranges and incorporate performance in formal evaluation criteria (DoD, 2021; NATO, 2021).
- Deploy Smart Energy in logistics by expanding microgrids, solar shade structures, insulated shelters, and silent- watch battery systems, with explicit linkage to tactical risk reduction (fewer fuel convoys and lower exposure of personnel). Evidence from expeditionary microgrid optimisation and energy- storage studies supports significant fuel savings and operational benefits (Garcia, 2017).
- Strengthen HADR interoperability with national responders through common standards and an annual "climate- disaster + security crisis" exercise that integrates civil–military coordination and data- driven after- action reviews (NATO, 2024g).
- Institutionalise climate security via a Resilient Bases Program (physical, energy, and cyber- energy) prioritising investments in critical nodes, dual feeds, decentralisation, and islanding capability for continuity of operations (Office of the Federal Chief Sustainability Officer, 2021; DOE, 2024).
- Embed climate doctrinally across the defence planning cycle (plans, wargaming, risk reviews, and periodic Climate & Security briefings for command) leveraging NATO's climate security agenda and the new Climate Change and Security Centre of Excellence (COE) for doctrine, training, and analysis (NATO, 2021; ACT, 2025).

- Develop targeted capabilities for Arctic/High- North and extreme- heat operations (equipment, maintenance, combat lifesaving, sustainment), and translate lessons learned into maintenance and supply standards; use high- latitude training infrastructure to certify readiness (DoD, 2024b; Eifler and Bouffard 2022).
- Ensure EU/NATO- interoperable HADR modules, trained and exercised to alliance standards and able to plug into multinational civil- protection frameworks during compound climate- security crises (NATO 2024g).

SUMMARY

This analytical study evaluated the development of the security environment of the Czech Republic in 2024. 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 2024 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.

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