

# Responding to evolving military threat. Development of Polish Armed Forces after 2014

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## Abstract

The article describes development and technical modernization of the Polish Armed Forces after 2014. It explores the linkage between development and modernization efforts and evolving military threat posed by Russia. Discussion on evolution of military threat posed by Russia constitutes a starting point for further analyses. Then, a comparative analysis of development and technical modernization plans adopted for Polish Armed Forces after 2014 and tangible results of modernization efforts undertaken during this period is presented. The article concludes with predictions on sustainability of development and modernization of the Polish Armed Forces.

**KEY WORDS:** *Polish Armed Forces, military threat, Russia, technical modernization, 2014-*

## 1. Introduction

For the past two decades, the capability for national military defence, as well as collective defence within NATO and the strategic partnership with the United States, has remained a cornerstone of Polish defence policy. Changes in the security environment have stimulated the development of the Polish armed forces during that same period. This applied to strategic concepts as well as operational capabilities, armed forces, organisation and size. Following Poland's accession to NATO, initial plans for the development of the armed forces called for reduction, technical modernisation, and a focus on expeditionary operations. After 2015 in response to the increased military threat posed by the aggressive policies of the Russian Federation, Poland made significant efforts to develop capabilities needed for conventional defence, introduce new generations of weapon systems, and increase troop numbers, including territorial defence. Between 2015 and 2022, the rate of development sought a balance between new capabilities and resources available. Russian aggression against Ukraine in February 2022 increased the sense of urgency and influenced priorities, scope, and pace of development of Poland's armed forces. Poland's ambitious plans for military development merit closer examination, specifically, the coherence and adequacy of the development of its armed forces as confronted with evolving security environment and military threats. The degree of implementation of development plans, as well as the sustainability of defence solutions adopted by Poland, deserve closer inspection as well.

This research employs critical analysis of official documents related to the assessment of security environment and the development of the Polish Armed Forces. The research is limited the period after 2014 and the planning horizon of 2037, relying heavily on official governmental documents, statements, and press releases. Earlier data serves primarily for setting the stage for those assessments related to the period after 2014. Sources of the Ministry of Defence, the Supreme Auditing Office, and the Parliamentary Committee for National Defence form the basis of the data presented in this article. The research explores whether defence efforts, including those tied to development of Polish Armed Forces after 2014, have been relevant to evolving military threats and if the defence solutions adopted then are sustainable.

## 2. Military Threat Assessments

Since 2014, the assessments of the security environment contained in the strategic documents of Poland have reflected a comprehensive approach to a wide spectrum of threats, challenges and opportunities in the state's global, regional and immediate surroundings [1, 2, 3]. Military threats, generally described in national security strategies, have been treated in more detail in defence strategies or concepts, strategic security review reports and defence reviews, as well as in the conceptual documents of armed forces or their respective services. In the case of Poland, perceptions of military threats fall into two basic broad categories, which are directly reflected in the plans and practice of the

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development of the armed forces and their technical modernisation. The most important category of threats, which determine the development of the armed forces, are those military threats that directly threaten the security of Poland. The development of the armed forces also takes into account military threats that do not pose an immediate danger, but that may require military capabilities to fulfil Poland's international obligations outside of the country.

The debate over how Poland's perception of the military threat posed by Russia evolved after 2014 requires some historic context. Russia has posed a threat to Poland for several hundred years. It participated in the eighteenth century partition of Poland, then attacked it with Nazi Germany in World War II, and dominated it as the Soviet Union until 1989. Polish efforts to join NATO were predominantly motivated by the security guarantees from the Russian threat and protection from so-called grey security zone in the Eastern and Central Europe that emerged following the end of Cold War. Despite strategic partnership and special relations between NATO and Russia during the first decade of 21st century. Poland has remained aware of Russia's hegemonic ambitions. Russian aggression against Georgia in 2008 was considered a forewarning of future Russian aggressive behaviour [4, 28]. Those concerns were reflected in strategic assessments early in the second decade of twenty-first century. Immediately prior to the Russian aggression against Ukraine and the annexation of Crimea in 2014, a strategic review of national security was carried out in Poland for the first time. It aimed to comprehensively assess the security environment and propose preparatory and operational strategies to secure long-term security goals of the state. The 2013 strategic review of national assessed that there would be no radical change in Russia's domestic and foreign policy. It was predicted that Russia would try to maintain the status quo by intensifying the more effective political and economic subjugation of the former Soviet republics (other than the Baltic states) and by constant political use of energy supplies. Such a policy, however, was expected to differ in relation to individual states. The strategic review of national security did not anticipate a breakthrough, such as the formation of a strong political structure led from Moscow as a counterweight to the united West. In 2013, Polish strategic assessments emphasised the fact that relations between Russia and the West could continue to be a dynamic combination of cooperation and rivalry, with occasional non-military confrontation [1].

The assessment of the military threat from Russia adopted in the strategic review of national security was proven to be incorrect to some extent just a year later, when Russia used armed force against Ukraine and occupied Crimea. As a result, the National Security Strategy of the Republic of Poland, adopted in November 2014, incorporated some new elements of the assessment of the military threat from Russia. The strategy assessed that in the near future, Europe would remain a continent with various threats in the military dimension. The security situation of countries engaged in institutionalised political and military cooperation and belonging to multilateral cooperation structures (NATO and the EU) was considered relatively safe. However, sources of potential destabilisation in Europe were identified, including political and territorial disputes, ethnic and religious tensions that could lead to armed conflicts. The 2014 national security strategy assessed a risk of regional and local conflicts near Poland. Such conflicts were thought to impact Poland's security in a direct or indirect manner. At the same time, Poland could be subjected to various forms of political pressure and the use of military argumentation. Large concentrations of military forces, to include offensive capabilities, in the immediate vicinity of Poland were considered as a potential threat to Poland's security. The 2014 national security strategy stressed that threats to Poland could, under unfavourable circumstances, lead to non-military and military crises. Regarding military threats, there was a fear of military crises and armed conflicts of various scales. The strategy warned against a hypothetical armed conflict that could threaten Poland's security. It pointed however; that such a conflict might range from a military action below the threshold of a classical war to a less likely large-scale conflict. The threat posed by Russia was directly indicated in the national security strategy of 2014, It assessed that Russia's relations with the West would remain an important factor influencing the security of Poland, the region, and wider Europe. It also concluded that Russia's attempts to regain its great power status at the expense of its neighbours and the intensification of its confrontational policy led to the deterioration of security situation in the region [2]. The strategy pointed at conflict with Ukraine, including the annexation of Crimea, as an example of the evolving military threat posed by Russia.

An unequivocal perception of Russia as a source of a direct military threat to Poland was included in the Defense Concept of the Republic of Poland published in May 2017. The concept was an unclassified part of the conclusions of the 2016 and 2017 strategic defence review. The period for assessing military threats in the defence concept was set for 2032, which was consistent with NATO's 15-year planning horizon for the development of operational capabilities. The threat posed by Russia was perceived in many dimensions. The concept stated that the Russian Federation aimed to strengthen its position in the global balance of power by using various methods of a military and non-military nature, such as, amongst others, violations of international law, the regular use of force and coercion in relations with other countries, and attempts to destabilise Western integration structures [5].

It was determined that such actions by Russia primarily endanger Poland and other countries in the region. However, the concept stressed that this situation threatens also other countries interested in a stable international order. Russia's hostile policy towards NATO was underlined. The concept emphasized that Russia considered NATO to be

the main threat to its security, despite numerous actions by the Alliance proving its defensive nature. It mentioned also an increased military threat to Poland resulting from the continued increase in military spending and the ongoing modernisation of the Russian armed forces. The 2017 defence concept assessed that Russia's ultimate goal was to introduce a new international order based on a so-called "concert of powers". Russia was predicted to maintain its aggressive stance in foreign and security policy until 2032. Such a situation was to pose a direct threat to Poland and other countries of NATO's eastern flank due to the asymmetry of military potential between Russia and the aforementioned countries. Assessments of the military threat from Russia included in the defence concept of 2017 were portrayed using examples of previous aggressive actions by Russia on the international arena. The concept pointed at Russia's use of armed force to pursue political goals in the 2008 war with Georgia, as well as the illegal annexation of the Crimean peninsula and the attack on Ukraine in 2014. In the assessment of the military threat from Russia, Russia's readiness to destabilise the situation in other countries and undermine their territorial integrity, while openly violating international law was emphasised. It was also noted that the actions taken by Russia were frequently concealed and carried out below the threshold of war in a so-called grey zone of conflict. The defence concept had not ruled out that Russia may cause a regional conflict by 2032, in which one or more NATO member states may be involved [5]. It was thought that Russia to instigate proxy conflicts in various parts of the world in order to create new fields of pressure on Western countries.

The 2017 defence concept described the increasing military threat from Russia stemming from the implementation of wide-ranging plans for the technical modernisation of its armed forces, an intensive program of military exercises, and the progressive militarisation of Russian society. This assessment stressed Russia's prioritisation of military spending, keeping it a large portion of the GDP despite long-term economic stagnation. It should be noted that the assessment of the military threat from Russia included in the 2017 defence concept of saw it as a merely part of multidimensional spectrum of threats. It described the close coordination of military threats with the operations of secret services, including active measures (e.g., disinformation), which were to be applied against other countries. It was also noted that Russia used tools that allowed reducing the asymmetry of forces in relation to NATO, such as attacks in cyberspace or threats of using force against select countries, including tactical nuclear weapons against countries that do not have their own nuclear potential.

In addition, Russia's actions were recognized as the most critical threat to Poland's security in the latest national security strategy adopted in May 2020. The strategy described the progressive decomposition of the international order and the negative impact of this process on the security environment of Poland, the implementation of its national interests and the achievement of strategic goals. The strategy described Poland's security environment as characterized by uncertainty and unpredictability, resulting from, amongst other things, Russia's failure to respect international law and to fulfil international obligations. The strategy observed also an increase in the number of threats and security challenges of various nature. Russia's neo-imperial policy was declared the most serious threat to Poland [3]. Such an assessment stemmed from Russia's frequent use of military force for implementation of this policy. Russian aggression against Georgia, the illegal annexation of Crimea, and its actions in eastern Ukraine were referenced as recent examples to prove this point. Poland considered all of those acts of aggression as gross violations of the basic principles of international law, undermining the pillars of European security system.

The 2020 Polish security strategy referred directly to military aspects of threat posed by Russia. Poland was concerned by an intensive expansion of Russia's offensive military potential, including in the Western strategic direction. The strategy mentioned also development of anti-access systems in the Kaliningrad Oblast. The 2020 national security strategy took also into account the threats generated by Russia's large-scale military exercises, based on scenarios involving a conflict with the countries of the North Atlantic Alliance, the rapid deployment of large quantities of troops, and even the use of nuclear weapons. At the same time, the threat assessment from Russia took into account the country's operations of a hybrid nature below the threshold of war. The strategy indicated that such activities may be associated with the risk of a conflict outbreak. It described a possibility of an unintended conflict that may result from a sudden escalation of a military incident [3]. Similar to previous strategic documents, the security strategy of 2020 pointed out that the military threat from Russia has been reinforced by comprehensive actions using non-military means. Such means included cyber-attacks, disinformation campaigns undertaken in order to destabilise the structures of Western countries and societies, and to cause divisions among the Allied states. The strategy concluded that Russia would continue its policy of undermining the current international order based on international law in order to rebuild its superpower position and spheres of influence.

To summarise, Poland has been well aware of the evolving military threat posed by Russia even before 2014. While the risk of a large-scale conflict in Eastern and Central Europe was discarded as highly unlikely in the first decade of twenty-first century, Russian aggression against Ukraine in 2014 necessitated a revision of the previous assessments. It proved that Russia posed a long-term direct military threat to Poland, accompanied by a spectrum of non-military hybrid threats. Such an assessment of the military threat influenced Polish defence planning, translating into efforts to develop the Polish Armed Forces.

### 3. Plans for Development of the Armed Forces

The starting point for the development of the Polish Armed Forces after 2014 was constituted by the progress achieved in the previous years. The development of the armed forces after 1999 focused initially on achieving the interoperability with NATO forces [7]. The anticipated scope of changes and limited financial resources meant that activities for full military integration were to be prolonged over a period [6]. It was assessed that the achievement of NATO standards by around one third of the Polish Armed Forces might be achieved by 2006. The rest of the armed forces would meet NATO standards later. However, Poland's military involvement in Iraq in 2003 and then later in Afghanistan made it necessary to prioritise the development of capabilities to participate in expeditionary operations. With limited financial resources, this decision meant a lower level of financing for operational capabilities needed for defensive operations under the conditions of a conventional armed conflict. To resolve this dilemma, Poland decided to transform its armed forces in line with Western standards, making them more capable and fully professional. The strategic defence review of 2006 called for the reduction of the armed forces and the cancellation of compulsory military service, allowing more funds for the introduction of modern weapon systems. Because of the reductions carried out, the armed forces decreased from almost 200,000 soldiers in 1999 to about 100,000 after 2009 [6]. Nevertheless, despite significant reductions in the size of the armed forces, the degree of technical modernisation of the Polish Armed Forces before 2014 remained moderate. The ability to defend the state's territorial integrity and maintain capabilities for conventional warfare were limited due to the priority of modernisation necessary for participation in operations in Iraq and Afghanistan. As Russian aggression against Georgia exemplified, there was a need for a more balanced approach to the development and technical modernisation of the armed forces [8]. The ambitious plans for the development of the Polish Armed Forces for the years 2013-2022 were designed to ensure an increase in the operational capabilities necessary to conduct a defensive operations. It was also planned to acquire deep strike capabilities to increase capabilities for military deterrence. However, most of the technical modernisation priorities remained unfulfilled in 2014. Despite the introduction of the F-16 multi-role aircraft, the Rosomak wheeled armoured personnel carrier, and Spike anti-tank missile, the armed forces were armed mostly with modernised post-Soviet equipment, which met the requirements of the future battlefield only to a limited extent [9]. Consequently, in the face of Russian aggression against Ukraine and the occupation of Crimea, the Polish Armed Forces turned out to be too small, insufficiently modern and not fully optimized to the needs of the potential defence of the territorial integrity of the state in the perception of a significant part of the Polish political elite.

After winning the parliamentary elections in 2015, the Law and Justice party precipitated fundamental changes in the concepts and plans for the development of the armed forces. To some extent, it was a new opening in the development of the armed forces. As a result of the strategic defence review carried out in 2016 and 2017, a defence concept was adopted. It contained the basic decisions for the development of the armed forces. The priority was clearly given to the preparation of the armed forces to defend the territorial integrity of the state, increasing their numbers, paired with extensive technical modernisation. The main elements of these ideas and concepts for the development of the armed forces directly resulted from a change in the perception of the military threat from Russia after 2014. The concept proposed that the Polish Armed Forces in 2032 would be ready to carry out majority of the tasks related to ensuring the military security of the state [5]. Such plans were not contrary to NATO collective defence. Development of the Polish Armed Forces was planned to create conditions for mobilisation and an effective collective defence operation, not fighting to gain advantage or project power. The planning of the simultaneous increase in the number of armed forces and the introduction of new weapons systems resulted in the acceptance of a compromise in terms of the modernisation of weapons systems and military equipment. In addition to modern equipment with high potential, trained soldiers, and rehearsed operating procedures, it was assumed that some old, appropriately modernised equipment would be kept in reserve. It should be emphasised that the defence concept discussed not only typical, classic military threats. It was assumed that by 2032 the Polish Armed Forces must be ready to cooperate with other services in crisis management operations, both on the territory of Poland and in Allied countries. This approach resulted from assessments of the growing use of irregular activities in the vicinity of Poland and the need for the coordinated use of armed forces and non-military institutions in such situations. The focus on the development of the armed forces for the needs of defending the territorial integrity of the state did not mean that the concept of participation in out-of-area operations was completely abandoned. It called for maintaining the readiness to participate in out-of-area operations in order to contribute to strengthening of a stable international order. It was envisaged that the Polish Armed Forces would be assigned the appropriate capabilities to participate in such missions as the Polish Military Contingents. It should also be noted that the defence concept emphasized the requirement for a deliberate approach to technical modernisation in this respect. It postulated that weapon systems and military equipment, acquired for out of area operations, should be also capable of fulfilling the requirements for the defence of the territorial integrity of the state. According to the 2017 defence concept, the Polish Armed Forces were expected to become one of the most modern and largest armies in Europe by 2032. It would consist of five branches of services

Navy, Air Force, Land Forces, Territorial Defense Forces, and Special Forces. Such a recognition of the Territorial Defense Forces as an independent service equal to the Land Forces can be considered a departure from their traditional treatment as a part of the ground forces. However, it emphasised their importance in the overall defence efforts. Of the all services, the Land Forces and the Air Force, were considered crucial for Polish defence and thus deserving the most of development efforts. In general terms, the defence concept of 2017, placed an emphasis on multiplying firepower capabilities, and thus creating potential for military deterrence potential. The achievement of this goal was to be ensured by long-range precision fire systems that would enable the degradation of the enemy's combat potential while minimising civilian losses [5].

The defence concept of 2017 included a number of detailed requirements for each of the Polish Armed Forces' services. For the Land Forces, due to increased military threat from Belarus and the Kaliningrad Oblast, the need to establish a fourth operational division located in the eastern part of Poland was indicated. There was also the necessity to increase the autonomy of the divisions, which were to become once again truly combat-ready tactical formations. It was a clear departure from previous years, when divisional headquarters were skeleton establishments merely for the supervision of training without combat support or combat service support units assigned to them on a permanent basis. The concept called for strengthening of the Special Forces for the purposes of actions to defend the territorial integrity of states and participation in operations outside the country. In case of the Territorial Defense Forces, it was assumed that they would first be fully developed already during peacetime. The concept also called for increasing the firepower capabilities of the Territorial Defense Forces so that they were able to carry out a broader set of missions. Ultimately, the Territorial Defense Forces were to consist of 53,000 soldiers in 18 brigades. The main mission of the Territorial Defense Forces during defensive operations was to cooperate with operational forces mainly as light infantry. The Territorial Defense Forces were also planned to be adapted to repel hybrid threats and support crisis management. In the 2017 defence concept, reference was made to the Navy. Its main task by 2032 was to prepare the defence of the Polish coast and prevent the enemy from controlling the southern Baltic Sea. Because of specific requirements related to the defence of the territorial integrity of the state, the concept provided for an increase in the role of engineers and other support units. The field capabilities of operational masking were to be developed, as well as the capabilities for engineering support for river crossing. The concept also included notions of cyber forces that would coordinate security and combat in cyberspace. The concept called for the command and control capabilities to ensure the flow of data between all command levels in a highly contested battlefield environment. By 2032, the Polish Armed Forces were to be able to obtain information using advanced surveillance, reconnaissance and target acquisition capabilities. The concept envisaged an increased use of unmanned ISTAR capabilities as well as national satellite platforms.

The 2017 defence concept contained detailed declarations on increasing the firepower capabilities, which were also considered a key to effective military deterrence. Certain categories of kinetic and electronic destruction systems and their subordination within the armed forces were indicated. The concept called for development and an increased numbers of long-range field artillery and rocket systems for the Land Forces. This would enable, in combination with new attack helicopters, an effective fire manoeuvre for the Land Forces. By 2032, new air defence missile sets, purchased under the "Narew" and "Wisła" programs, were to be introduced into service. The concept of 2017 called for reinforcement of kinetic fires by electronic warfare capabilities. The Air Force, equipped with long-range precision weapons and fifth generation combat aircraft, was considered a key player in military deterrence. The concept advocated an increase in the number of combat aircraft for the Air Force. According to the defence concept, the Navy was to have increased defence capabilities due to additional coastal missile units, a developed reconnaissance system based on manned and unmanned platforms, modern mine warfare capabilities, and new submarines. Integrated strike and reconnaissance capabilities acquired for individual services were ultimately meant to contribute to the establishment of the Polish anti-access/area denial (A2AD) system.

The general vision for development of the Polish Armed Forces presented in the 2017 defence concept paved the way for more detailed plans that outlined and prioritised modernisation efforts [10]. Although the plans for technical modernisation were prepared for a decade and updated every four years, this was not the case in 2017. The modernisation plan for the period between 2017 and 2026 came two years late. On February 28, 2019, the Minister of National Defence approved the "Plan of technical modernisation of the Armed Forces for 2017–2026". The plan called for new equipment to be delivered first to units in the Eastern part of Poland. Most of sixteen programs described in this plan was a continuation of purchases already underway, such as for the Patriot missile systems, the Krab cannon howitzer, the Rak self-propelled mortars, and the HIMARS multiple rocket launchers. Among the new programs, the main priority was the purchase of thirty-two multi-role fifth-generation aircraft to replace the aging Su-22 and MiG-29 models [12]. The second priority were Narew short-range surface to air missile systems. The third priority were attack helicopters, which were meant to replace the worn-out Mi-24 helicopters [11]. The plan also envisaged significant funds for cyber defence. Although the modernisation plans seemed ambitious and were backed with significant financial resources, the Minister of National Defence remained cautious. He publicly pointed at the

fact that despite the record amount of funds, it would be impossible to meet all the modernisation needs of the armed forces, which were estimated to be twice as high as those included in the technical modernisation plan.

In October 2019, the Minister of National Defence approved the “Technical Modernisation Plan for 2021-2035, including 2020”. In order to streamline the modernisation process, the planning period was extended from ten to fifteen years to enable the creation of a legal basis for concluding long-term contracts [13]. Although the plan is classified, there is enough publicly available information from the Ministry of Defense to shed light on its content. The key modernisation program remains the purchase of thirty-two fifth generation F-35 aircraft. Poland declared that it would make efforts to participate in the “loyal wingman” program for the design and development of a stealth unmanned aircraft to pair with manned combat aircraft. Such a combination of manned and unmanned aerial platforms is believed to increase the capability to attack heavily defended targets while increasing survivability of manned platforms [15]. The newest iteration of the technical modernisation plan calls for the purchase of additional F-16 aircraft for the Polish Air Force. It should be noted that the technical modernisation plan for 2021-2035 includes a program for the comprehensive development of capabilities for multi-level and integrated satellite and image reconnaissance. Under the new “Observer” program, the Polish Armed Forces will acquire satellites, microsatellites, reconnaissance aircraft, and a wide range of unmanned aircraft systems. The programs of medium-range anti-aircraft and anti-missile missile systems and short-range anti-aircraft missile systems will be continued. The Technical Modernisation Plan for 2021-2035 also provides for the purchase of attack helicopters for the Land Forces and the continuation of the multiple rocket systems program capable of hitting targets up to 300 kilometres away. The Navy is to acquire new surface ships and submarines. The plan includes bridging solution to allow the acquisition of two submarines in the near future to ensure continuity of training. Pursuant to the new technical modernisation plan, the purchase of Krab howitzers, Rak self-propelled mortars and KTO Rosomak will continue. The plan calls for the reinforcement of anti-tank capabilities by purchasing modern, light anti-tank guided missile launchers. Additionally, the Ministry of Defense wants to acquire several dozen missile “tank destroyers” for the anti-tank regiment in close vicinity of the Suwalki Corridor. It was also announced that the post-Soviet and worn-out BWP-1 infantry vehicles would be withdrawn from the Land Forces and replaced with a new Polish Borsuk Infantry Fighting Vehicles. The modernisation plans include cluster air munitions with intelligent sub ammunition enabling targeting large mechanized and armoured units, as well as aircraft and helicopters on landing sites. The newest modernisation plan intends to acquire unmanned search and strike systems, the so-called loitering munition under “Gladius” program. There are also plans to develop the cyber.mil program. It will use the latest national cryptographic technologies to allow for the effective defence of Polish cyberspace.

In April 2022, the Law on Defense of the Homeland was adopted. It creates conditions for the further development of the Polish Armed Forces. The financing of national defence will be raised to three percent of the GDP, the number of armed forces will increase, and the concept of universal defence will be implemented. Besides those changes to the basic regulations concerning national defence, a number of ad hoc decisions related to the development of the armed forces have been made. Requirements related to the development of the Polish Armed Forces were influenced recently not only by an increased military threat posed by Russia. Poland needs to compensate for military capabilities that were provided to Ukraine. Modifications to the concept of the development of the armed forces that took place after Russia’s armed attack on Ukraine in February 2022 are associated with the acceleration of the implementation of some of the previous plans, an increase in the planned number of acquired weapons systems, and an increase in the number of armed forces. Due to the classified nature of a large part of the decisions made, it is now possible to refer to only to some of the latest concepts. Thanks to increased financing and the introduction of voluntary basic military service, it may be possible, in the next few years, to increase the number of armed forces to the level of 250,000 professional soldiers and approximately 50,000 soldiers of the Territorial Defense Forces. The creation of additional two divisions of the Land Forces was also publicly declared recently [15].

#### **4. Implementation of the Development Plans**

When assessing the degree of implementation of the plans for the development of the armed forces in the context of their correlation with changes in the military threat from Russia after 2014, it is worth referring to the plans for the development of the armed forces and technical modernisation in force in the analysed period. Immediately before the Russian aggression against Ukraine in 2014 and the occupation of Crimea, the implementation of the “Program for the development of the Armed Forces of the Republic of Poland in 2013-2022” and one of the partial plans developed on the basis of the “Plan for the technical modernisation of the Armed Forces in 2013-2022” were started in Poland. “. At the time of adoption of both documents, fourteen operational programs were established in the armed forces, which largely were meant to build capabilities and capacity to defend the territorial integrity of the state in the event of conventional armed aggression [21]. Many of the programs transferred to consecutive iterations of the modernisation plans for 2017-2026 and 2021-2035. While majority of development and modernisation goals have been achieved, some of the programs faced delays and reductions of the weapon systems purchased [20].

The implementation of the air defence system program was meant to ensure the acquisition of new Wisła medium-range air and anti-missile defence systems, Narew short-range anti-aircraft systems and the modernisation of very short-range anti-aircraft systems (VSHORAD) under the Poprad, Grom-Piorun, and Pilica programs. In 2018, an agreement was signed for the purchase of two MIM-103 Patriot medium-range anti-aircraft missile batteries with PAC-3MSE missiles. The delivery of those systems will take place in 2022 and 2023. In the second phase of the Wisła program, the purchase of another six batteries is expected to be delivered by the end of 2026. The plans for the technical modernisation of VSHORAD-class anti-aircraft missile and artillery systems were fully implemented. This was largely due to the Polish defence industry, which was able to produce all components of these weapons systems. The worst situation is with the acquisition of short-range anti-aircraft systems, which are meant to eventually replace the modernized post-Soviet air defence systems, those being the SA-3, SA-6 and SA-8 [16]. It was only after the outbreak of the war in Ukraine that the first two fire units of the CAMM (Common Anti-Air Modular Missiles) system were ordered for delivery in September 2022 and at the turn of 2022 and 2023. It will increase the capability of short range air defence against aircraft and missiles, but there will be no sufficient capacity to provide effective air defence to all prioritized defended assets.

The purchase of fifth-generation stealth fighters by Poland was included in modernisation plans for 2017-2026 and then again for 2021-2035. It was directly motivated by the growing military threat from Russia. Russian advanced air defence systems were believed to be able to hinder the combat usage of older combat aircraft of the Polish Air Force, such as the F-16, MiG-29, or Su-22. On January 31, 2020, an agreement was concluded for the purchase of thirty-two multi-role F-35A aircraft for the Air Force. The F-35 aircraft were selected due to the needs of a defence operation related to the defence of the territorial integrity of the state. It was decided that the F-35A aircraft are the only serial stealth aircraft currently available on the market that will allow Poland to effectively counter the enemy with advanced anti access/area denial (A2AD) systems. Deliveries of F-35A aircraft to Poland will be carried out in the years from 2024 to 2030. Annual deliveries will be in the range of 4 to 6 units. In the period from 2024-2025, six F-35A aircraft will remain in the United States for the flight training and instruction of technical personnel for the Polish Air Force. The arrival of the first aircraft to the country is expected at the turn of 2025/26 [12].

An important part of the technical modernisation program since its iteration for 2013-2022 was the operational program of combat support helicopters, security, and VIP transport. The program was planned to acquire 70 multi-role helicopters constituting a platform for specialized versions of helicopters for the Land Forces, Special Forces, and the Navy. This program was closed in October 2016 after the conclusion of offset agreement negotiations with Airbus Helicopters. The acquisition of new helicopters is carried out under separate agreements with manufacturers of specialized helicopters. In 2019, four S-70i helicopters for Special Forces were purchased and delivered as part of urgent operational requirement. Four AW101 Merlin helicopters have also been ordered for the Navy, which will be delivered in the first half of 2023. In December 2021, another four S-70i Black Hawk helicopters were ordered for the Special Forces. Two of them are to be delivered in 2023. In July 2022, a contract was signed for thirty-two AW 149 multi-role helicopters for the Land Forces [10]. Helicopters in various specialized versions are to be delivered between 2023 and 2029. Although, the helicopters needed for the armed forces have already been ordered, the delay may be in excess of at least five years compared to the original modernisation plans.

The operational program of modernisation of the Armoured and Mechanized Forces, due to the number of equipment, is associated with the greatest challenges. The acquisition of 105 Leopard 2A5 tanks in 2013 along with the modernisation of the previously purchased Leopard 2A4 increased the capabilities of the Armoured Forces. However, it was necessary to maintain the T-72 tanks and their Polish development version of the PT-91 in service due to the creation of the fourth division of the Land Forces. After the handover of about 240 T-72 tanks to Ukraine in spring 2022, it became necessary to acquire new tanks. On April 5, 2022 Ministry of Defense signed a contract for 250 M1A2SEPV3 Abrams main battle tanks, which should be delivered by the end of 2026. At the same time, Poland will acquire 116 older used M1 Abrams tanks, which will be delivered in 2023. Currently, training is underway in Poland with the use of 26 M1 Abrams tanks on loan by the US armed forces. On July 27, 2022 in Warsaw, Deputy Prime Minister Mariusz Błaszczak approved the framework agreement related to the acquisition of a total of 1,000 K2 tanks and its Polish development version K2PL from South Korea. The delivery dates for the first 180 K2 tanks are set for 2022-2025, while the delivery of 820 K2PL tanks will start in 2026 and production in Poland will start in the same year. From 2026, it is also planned to standardize the configuration of the first 180 K2 tanks to the K2PL standard. In the longer term, Poland plans to develop a new generation tank as part of cooperation with the South Korean defence industry. On August 26, 2022, executive contracts were signed for the delivery of 180 South Korean K2s [24]. The deliveries are planned until 2025 and will start this year with ten K2 tanks. On the other hand, no progress has been made in the modernisation of the Mechanized Forces, which are still using around a thousand, basically never modernized, Soviet-made BWP-1 infantry fighting vehicles. About 40 BWP-1s were handed over to Ukraine. Work on the tests of the Polish Borsuk infantry fighting vehicle did not start until April 2022. With the start of serial production in 2023 or 2024, it would be possible to retool one battalion in the first year and two in the next. This situation prompts

a search for an infantry fighting vehicle for the Land Forces abroad.

The modernisation of Field Artillery, envisaged in the technical modernisation plans for 2013-2022 and 2017-2026, has allowed the Land Forces to significantly increase its fires in recent years. The introduction of four 155 mm Krab self-propelled howitzer squadrons into armament is scheduled for completion in 2024. One squadron (18 howitzers) was handed over to Ukraine in May 2022. The initially planned acquisition of three long-range missile squadrons (70 to 300 km) has been limited to ordering one HIMARS squadron in 2019, which will be delivered by 2023. On May 26, 2022, Poland submitted a detailed order (i.e., a Letter of Request) to the US side for the procurement of 486 launchers for the needs of more than 80 HOMAR system batteries. According to the adopted schedule, the start of deliveries is expected from 2025. On August 26, 2022, executive contracts were signed for the delivery 212 K9A1 howitzers. Deliveries of howitzers are expected in the years 2022-2026. The twenty-four K9A1 howitzers will be delivered to the Polish Armed Forces by the end of 2022 [18]. There are ongoing talks on purchasing Korean multiple rocket systems to reinforce long-range fires for the Land Forces.

Operational programs related to combating threats at sea were implemented to a limited extent. In 2014, the modernisation program of the coastal anti-mine systems was among those accelerated due to the Russian-Ukrainian crisis. As a consequence, the second missile squadron was introduced and the expansion of the naval missile unit equipped with the Naval Strike Missile was completed, which increased the ability to counter surface targets. There has been no major breakthrough in the modernisation of the surface forces, with the exception of the mine-fighting forces. By the end of 2022, three Kormoran II minehunters should be put into service, and three more will be ordered. In 2022, a program to build three multipurpose frigates was initiated, with plans to introduce them into service by 2031. The Navy also failed to acquire new submarines [19]. From mid-2021, the Polish Navy has only one Kilo-class submarine, which only covers the basic training needs to maintain competencies in submarine warfare. As the two new submarines are to be put into service by 2034, it may be necessary to look for bridging capabilities or reckon with the consequences of losing a capability in submarine warfare.

The implementation of technical modernisation plans for unmanned aerial systems took place after 2014 with certain obstacles. The unmanned micro, mini, short range, and MALE class unmanned systems included in the technical modernisation program for 2013-2022 were to increase the tactical level of observation and target targeting capabilities for the artillery of the Land Forces and ensure the ability to recognize and immediately combat time sensitive targets in deep operations. Until 2017, the introduction of the Fly Eye UAS to the armament list was undertaken, while none of the new unmanned aerial systems programs have entered the organizational phase, despite the Polish private defence industry having sufficient competences in the development of mini and short range UAVs. Modernisation accelerated after 2017. In 2018, an agreement was signed for four PGZ-19R short-range UAS tactical sets. In 2021, a contract was signed for the supply of four medium-range Bayraktar tactical sets and 25 mini UAS sets [14]. As part of an urgent operational need, efforts were made to acquire the MALE UAS M-9 Reaper, which, however, did not invalidate the plans to acquire four sets of this class under the existing technical modernisation programs. The Polish Armed Forces have made notable progress in fielding loitering munitions. In November 2017, the Territorial Defense Forces purchased ten Warmate systems with ten loitering munitions each. In May 2022, an agreement was signed for the supply of an undisclosed number of Warmate systems, estimated at four to five hundred munitions. Polish Land Forces have also started the acquisition of "several hundred" Gladius BSP-U unmanned aerial vehicles that will provide artillery units with long-range precision strike capability in coming years [22].

## 5. The Way Ahead

The prospects of development for the Polish Armed Forces can be seen through the prism of the evolving military threat from Russia but also through the state's capabilities and technological progress. It is also worth referring to the different periods of planning and development of the armed forces, perceiving them in the short, medium and long term. The threat posed by Russia will not disappear in the next few years. Depending on how the situation in the war with Ukraine unfolds, Russia will be eventually able to strengthen its military potential. Although it will not be comparable to NATO's potential, one should take into account the numerical superiority of Russia's armed forces over the countries of NATO's eastern flank in the regional dimension [23]. With the persistent rhetoric of hostility to the collective West, there will therefore be an increased risk of accidental escalation resulting from military incidents. The military threat will be linked to a wide spectrum of hybrid threats, such as information attacks or instrumentalised migration. For this reason, it is rational to strengthen the potential of the Polish Armed Forces and their ability to undertake immediate territorial defence of the state. A much less likely scenario is a regime change in Moscow, the withdrawal of troops from Ukraine, the war reparations for Kyiv, and the renewal of cooperation with the West. Even in such a situation, it would be unjustified to abandon the development plans of the Polish Armed Forces. Russia could use the period of a detente in relations with the West to rebuild its military potential and, therefore, regain its ability to engage in aggressive military actions in its neighbourhood.



The current development plans focus on the rapid development of the capabilities of the Polish Armed Forces to defend the territorial integrity of the state and the replacement of forces and capabilities that have been or will be transferred to Ukraine as part of military aid. As new capabilities are acquired, there may be a need to reflect on the target size of the armed forces and their organisation. It cannot be ruled out that, if the implementation of the current plans for technical modernisation, it will not be necessary to maintain 300,000 armed forces in peacetime because the defence needs will be secured by fewer forces, but with new generation equipment. State capabilities will be of significant importance for the assessment of the development prospects of the Polish Armed Forces. There is a need for reflecting on the possibilities of financing the development of the armed forces, the potential of the defence industry, and the demographic projections for society. The 2023 increase in the national defence budget by three percent of the Gross Domestic Product creates stable financial conditions. Financing is to be increased by the Armed Forces Support Fund in addition to the budget itself, which provides additional funds for the development of the armed forces and technical modernisation. The experience of the past twenty years confirms that the consensus of stable financing of national defence works, regardless of changes in political options in power. The challenge, therefore, will not be the availability of defence funds, but the way in which they are allocated [27]. Increasing the size of the professional armed forces in peacetime will increase personnel costs, both in terms of wages and pensions. This may lead to the wider introduction of more flexible forms of territorial or reserve military service, analogous to solutions applied in other countries. Reducing the military threat from Russia, even in the subjective perception of the ruling political elite, may result in the desire to reallocate some of the national defence funds to social programmes. Such actions should not affect the currently implemented technical modernisation programmes but may affect the medium-term plans, and even more so, the long-term plans for the development of the armed forces to some extent.

The development of the Polish armed forces should be considered in conjunction with the development of the Polish defence industry. Currently, a large part of the industry focuses on the operation and modernisation of post-Soviet equipment and only a part on the development of new military technologies. The Polish arms industry has advanced production capabilities for modern unmanned aerial systems, including loitering munitions, reconnaissance and command systems, and very short-range air defences [17]. However, capabilities of the production of weapon systems in Poland are limited, especially in terms of the numbers of the artillery systems and armoured personnel carriers that can be produced. Poland does not produce tanks, combat helicopters or infantry fighting vehicles. The latest plans for technical modernisation, including military and technical cooperation with South Korea, provide opportunities for the development of the Polish defence industry and for the lower production of major weapon systems for Land Forces in the medium and long term. At the same time, those plans seem contrary to concepts for defence cooperation within the European Union [28]. The potential of the private defence industry in Poland in terms of the development of new military technologies, production and export of advanced weapon systems is noticeable. However, you should be aware that not the entire defence industry will go through such a transition and some of the unforeseen defence industry companies will collapse.

Plans to increase the size of the armed forces must confront demographic challenges as well. Polish society is aging and this trend will only deepen. Already, the armed forces are increasing their recruitment and retention efforts in order to have a sufficient number of active duty personnel. Experts indicate that it may also be difficult to recruit troops to reach 300,000 troops, taking into account these demographic conditions [26]. In the long term, the armed forces may be forced to compete for better-qualified workforce with high-tech industry or services.

## **6. Conclusions**

Russian aggression against Ukraine in 2014 has acted as a turning point in efforts aimed at the development and technical modernisation of the Polish Armed Forces. It reversed the trend of reduction of the size of the armed forces and resulted in a more balanced approach to military capabilities needed for expeditionary operations and conventional defence of the state territory. Despite ambitious modernisation plans, a lack of substantial achievement in the development and modernisation of Polish Armed Forces in previous decades did not allow for an effective and timely response to the changed security environment caused by Russian aggression in 2014. Political decisions stalled the acquisition of military helicopters and unmanned aircraft systems between 2015 and 2018. Selective technical modernisation resulted in acquisition of high tech weapon systems by Polish Armed Forces but precluded fielding the numbers needed to defend against potent conventional adversary by 2022. At the same time, a solid foundation for territorial defence was laid by creating a separate service and reinforcing the special forces units. The Russian war against Ukraine, which began in February 2022, accelerated efforts to introduce new weapon systems and increase Poland's capabilities for conventional defence. With more funds readily available, Poland decided to acquire several major weapon systems and increase the size of its armed forces. Plans for coming decade may see Polish Armed Forces armed with state-of-the-art Western weapon systems, optimized for high intensity conflict against state adversaries. However, the estimated costs

of the planned development of the Polish Armed Forces seem too high to be sustained in the long term. Therefore, a compromise between ambitious plans and fielded capabilities will most likely be needed to seek the right balance of capabilities to address the evolving military threat. Polish experience suggests that the adaptation of military forces to an evolving security environment will pose several challenges. As the development of military capabilities remains a lengthy and resource-consuming process, the adaptation tends to be somehow delayed and not fully relevant to the nature and scope of the changes in the security environment. The perseverance and coherence of development efforts, along with stable financing, create another challenge. Efforts related to development of the Polish Armed Forces after 2014 witnessed similar challenges. With a dramatic change of threat assessment resulting from Russian aggressive behaviour, there was a need for substantial changes to concepts of the Polish Armed Forces development. Ambitious plans, curbed by limited available resources, slowed down modernisation and development of Polish Armed Forces prior to February 2022. The sense of existential threat posed by Russian aggression against Ukraine resulted in increased financing for armed forces development. Depending on security environment developments, some of the development plans for Polish Armed Forces may not fully materialise and compromise solutions may need to be adopted.

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