NEW THREATS AND VULNERABILITIES REGARDING NATIONAL SECURITY IN THE CONTEXT OF THE CONFLICT IN UKRAINE

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The events that took place at the end of the twentieth century led to important transformations that determined the need to reconfigure the geopolitical and geostrategic environment in terms of risk diversity, threats and interests of the actors involved. Russia is a key element in establishing the new security architecture as it seems to focus all necessary forces and means on maintaining its influence in Eastern Europe. In this article, I will address not only the main security threats and vulnerabilities deduced from Russia's military operation in Ukraine, whose purpose is to reconfigure the security environment and restore the new world order, namely the Black Sea region, but I will also refer to the weapons of the mass destruction, cyber-attacks, climate change and, last but not least, the flow of refugees. All these new risks and threats to national security demonstrate once again Romania's strategic role in shaping global security architecture. Strengthening Romania's national security is a key element in the coming years in the unpredictable context of the regional security environment.

Keywords: geopolitics; weapons of mass destruction; cyber-attacks; climatic changes; refugee flow.

The security environment has changed dramatically since 2014, while threats and risks continue to be a major challenge for the Alliance, ranging from terrorism to security challenges posed by pandemics, climate change, and migratory flows.

Black sea region

The Black Sea region faces numerous threats either conventional or unconventional. These security issues make the region volatile, insecure, and unstable. The conflict between Russia and Ukraine, as well as the potential conflicts between the zonal states are the basic threats to regional security.

Russia has a strong and robust conventional military armament, which is a threat to NATO, but the issue is particularly acute for the Eastern flank through the operations taking place in Ukraine (NATO 2020, 25). Russia's actions in the Black Sea area led to the occupation of Snake Island located 50 km off the coast of Romania, proving once again that the area is vulnerable. At present, it is necessary to revise the Montreaux Convention of 1936, which specifies the access to the Black Sea as it favors Russia over NATO.

Although Russia is a declining power through EU economic and social measures, it has proven to be capable of territorial aggression and it is likely to remain a major threat which NATO and implicitly Romania will face in the next decade.

While Russian aggression in Ukraine continued, Russia's aggressive behavior intensified, according to Mediafax, through large-scale naval exercises with dozens of ships in Black Sea, to demonstrate its attacking power. All these actions have led to severe deterioration of the region, adversely affecting national security.

Russia routinely engages in immediate military intimidation operations in close proximity to Romania, while increasing its scope regarding threats to airspace and, last but not least, to the freedom of navigation in the Atlantic.

Faced with such an actor, NATO will have to be diligent, manifest solidarity and maintain a permanent dialogue if the Russian leaders choose a longer path design (NATO 2020, 48). NATO must maintain adequate conventional and nuclear military capabilities and show greater flexibility so as to deal with aggression within the Alliance, including in spots where Russian forces are directly or indirectly active, especially on the Eastern flank.

Consequently, Romania needs to step up its efforts to ensure that their financial commitments and military contributions are in line with

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NATO's strategic needs and are able to ensure effective balance.

Mass destruction weapons proliferation (WDM)

Romania continues to be a pole of interest for states with interests in developing capabilities in the field of weapons of mass destruction and carrier and / or conventional military vectors in high-risk areas, not only as a potential supplier of military equipment, but also from the perspective of using our country mainly as transit space or re-export point to other destinations (Romanian Intelligence Service 2020, 9).

The proliferation of WDM and carrier vectors will show increasing trends, on the one hand, as a result of conflict situations in the neighborhood, and on the other, on the background of the progressive technological growth and the increased interest of the states involved in the development of projects in WDM (China and Russia are constantly investing in their development) for obtaining expertise from abroad, in order to increase the indigenous capacities of production / research-development (Romanian Intelligence Service 2020, 9).

Weapons control, disarmament and non-proliferation play an important role in promoting peace in the Euro-Atlantic Region and maintaining a stable international order.

By 2030, Russia is likely to have completed the modernization cycle of a wide range of its nuclear forces. These forces, together with the conventional ones pose a serious problem as are a threaten to NATO and implicitly to allies' security. NATO has been actively involved in this issue for many years and is making effective and verifiable efforts regarding the control of nuclear weapons and, last but not least, disarmament efforts.

The threat posed by nuclear weapons is a key element through which Russia seeks to increase the reluctance of Central and Eastern European countries and beyond regarding the implementation of measures that would affect its level of security, as in the case of the NATO anti-missile shield.

In response to Russia's actions, for instance, Germany plans to buy the interceptor Arrow 3, for long-range threats, while the US and Israel have approved the sale.

Arrow 3 is an extremely maneuverable system designed to provide air defense by intercepting ballistic missiles when they are still outside the atmosphere of Earth. It is considered one of the best interceptors in the world due to it its innovative technological capabilities.

Cyber-attacks

Cyber-attacks are currently evolving; they are launched by state actors and are characterized by incisiveness, having as center of gravity compromising IT&C infrastructures in strategic areas. Cyber actors have diversified tools of action, including innovative malware applications – undetectable by existing cyber security solutions on the market - elements of infrastructure and malware solutions assigned to other entities or open source.

At the national level, the threat has had a growing trend and the main actors are represented by:

● entities associated with some state actors;

● cybercrime groups;

● ideologically motivated hacker groups (Government General Secretariat 2021, 5).

In other cases, the adversaries acted for: conducting cyber-attacks against private businesses; the rental or use of local command and control servers (C2) in Romania for conducting cyber-attacks globally (Romanian Intelligence Service 2020, 8).

The actions of the entities associated with some state actors are of a strategic nature, the purpose being to take over and control the networks and computer systems in order to steal information of interest, disrupt or partially or completely destroy the functionality of some critical infrastructure, and, last but not least, influence socio-political processes.

The threats of cybercrime groups have increased in recent years, the motivation being of financial nature. The main applications used to this end are the following: *ransomware malware* (it is malicious software intentionally designed to prevent a user or organization from accessing files on their own computer, attackers demanding payment as a ransom for unlocking access) and *infostealer* which targets state/private networks and computer systems.

According to the information provided by the EU Cyber Security Agency, the higher redemption demand increased from EUR 13 million in 2019
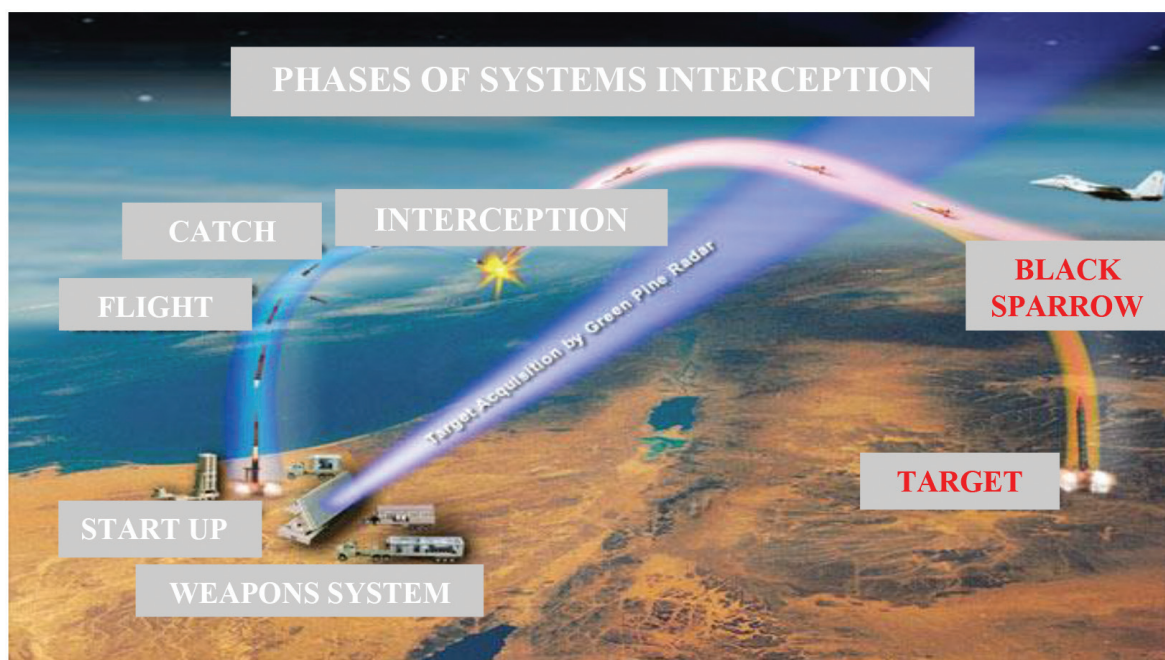
Figure no. 1 The phases of missile interception by the Arrow system
Source: https://www.wikiwand.com/en/Arrow_(Israeli_missile)

to EUR 62 million EUR in 2021, and the average redemption paid has doubled: from EUR 71,000 in 2019 to EUR 150,000 in 2020. It is estimated that in 2021 the global damage caused by ransomware reached EUR 18 billion - 57 times more than in 2015.

Threats of ideologically motivated hacker groups are currently insignificant and have as their main target computer systems with a low level of cybersecurity. These following threats: *defacement*, *distributed denial of service* (DDos) and *SQL injection* have been and are currently used against Russia by the group called *Anonymous*. Their management can only be achieved by implementing policies and measures of cyber security, which is constantly adaptable to cyber-attacks (Romanian Intelligence Service 2020, 14). At the same time, it is necessary to develop procedures for testing and auditing the level of cyber security, and last but not least updating software and hardware technologies.

Another measure would be to set up national certification mechanisms, compliance and standardization to identify existing security risks and vulnerabilities (Romanian Intelligence Service 2020, 10). It is imperative to reduce the risks posed by cyber-attacks thus consolidating Romania's level of cyber security through development and efficiency cooperation formats at strategic, tactical and operational level.

Climate change

Climate change is one of the defining challenges of the times and has serious implications for the security and economic interests of all thirty members of the Alliance. As expected effects: increasing resource deficit, nutrition globalization, and insecurity of water resources (NATO 2020, 41). Climate change has long been known as a threat multiplier and it is increasingly recognized as a „shaping threat" that is dramatically altering the environments in which allied militaries will have to operate in the coming decades. In addition to climate-related risks to military infrastructure and force training, more extreme weather events can also increase the potential for conflict and migration within and beyond NATO's immediate vicinity.

According to the 2021 global risk report, extreme weather is the number one risk and more dangerous than mass destruction, cyber-attacks and infectious diseases, with implications for air, land and maritime operations (Heise 2021, 3).

Air operations

Climate change will affect air operations, as follows:

● aircraft performance during take-offs and landings directly depends on air temperature, pressure (airfield altitude) and wind; at the same time, the increase in temperatures due to climate change degrades the performance of an

aircraft (e.g.: transport planes and helicopters in Afghanistan);

● the frequency and intensity of sand and dust storms will increasingly impede on operations due to flight restrictions;

● cargo planes – should avoid areas of heavy turbulence; mission planning will still be affected;

● overheating of military aircraft and logistics equipment at air bases, which implies increased logistical effort and higher energy consumption;

● changes in the main wind directions at airports must also be taken into account and may require structural changes such as changing the direction of runways;

● in the Arctic Region, they will generate the need to modify supply routes and airfields, consequently search and rescue procedures must be adapted. Future UAV missions will require stable data links and robust GPS systems for control and enforcement procedures.

Land operations

Operating in increasingly extreme climates will pose a major challenge for military personnel (e.g.: reduced drinking water supply due to desertification in certain regions). Extreme weather conditions also cause faster „wear and tear" of military equipment (e.g.: Afghanistan's arid environment caused weapons to „jam" more often). At the same time, they have significant implications for military logistics (e.g.: floods, snow/ice or storms could block operational supply routes).

Navy operations

NATO's maritime capabilities in the Arctic will face a number of challenges due to the combination of extremely cold air temperatures, high wind speeds, ice obstacles, large waves, and increased exposure to radiation. Weapons systems and ammunition must be adapted to extreme temperature conditions and such requirements can be anticipated, if necessary, through simulation. On the other hand, in warmer waters the situation is just as dire, with increased salinity in the Gulf of Aden causing the turbines of several UK frigates to fail (Heise 2021, 4). Oceanographic processes (i.e. cooling of the subpolar Atlantic) are associated with changes in precipitation patterns and additional factors of sea level rise; these will have implications for maritime reconnaissance and surveillance.

In 2014, NATO adopted the Green Defence Framework, which aims to reduce the impact on the environment of its military operations and improve NATO's resilience through investment in green technologies that reduce fuel and energy consumption. Michael Ruehle, director of the hybrid and security challenges department for NATO's energy policy, highlighted the main problems the alliance had been facing over time such as damage to its equipment and facilities caused by extreme drought or flood. At the same time, he also stated that „being greener means being stronger", but warned that the green transition would not be free because the improvement of equipment „involves years of development" and implementation (Rühle 2021, 5).

In this sense, Romania must intensify its financial efforts so as to purchase military equipment according to NATO requirements.

Refugee flow

Russia's aggression against Ukraine has triggered one of the biggest humanitarian aid crises in Europe. Following the research conducted by the International Organization for Migration (IOM) between 09.03 and 16.03.2022, out of the 2,000 internally displaced persons they surveyed:

- almost 30% had come from Kyiv, over 36% had fled Eastern Ukraine and 20% had come from the North;

- almost 40% were now in Western Ukraine, with less than 3% in Kyiv;

- only 5% left their homes in anticipation of the invasion, the vast majority fleeing either at the beginning of the war, or when it came to their area.

IOM estimates that more than half of the displaced persons are women and many are considered particularly vulnerable because they are pregnant, have a disability or are victims of violence.

Refugees also travel to neighboring Western countries, such as Poland, Romania, Slovakia, Hungary and Moldova.

The UN says that as of March 21, 3.5 million people have left Ukraine:

✓ Poland received 2,113,554 refugees;

✓ Romania, 543,308;

✓ Moldova, 367.913;

✓ Hungary, 317.863;

✓ Slovakia, 253.592;

✓ Russia, 252.376.

✓ Belarus, 4.308 (IOM Ukraine 2022, 1-4).

According to Romanian MFA statements, about 80,000 refugees remained on the territory of Romania and so far the situation has been effectively managed by civil society, the state, and NGOs.

With the increase in the flow of refugees (over 1 million), Romania must turn to strategic reserves and, last but not least, to EU support for crisis management, so as to be able to provide assistance to European standards.

Conclusions

Romania is in a strategic context defined by geopolitical instability, highlighting the intensification of strategic competition between actors with global interests.

The Black Sea area is an area of strategic interest for major global players. This situation takes place in the context of the relative decline of power of some actors on the international political scene, amid the reconfiguration of strategic options and the promotion of certain isolationist / coercive policies in international relations. In view of these, as well as the aggression of Ukraine by the neighboring Russia, the emergence of zonal conflicts could be a cause for concern in Romania.

Last but not least, the technological field is in full swing, cyber-attacks are growing, having as major effects misinformation (fake news about military actions, deployments of forces and means, etc.), all within asymmetric and hybrid actions, generating new challenges for Romania and its allies.

The social environment is influenced by an asymmetric population growth, emphasizing the phenomenon of aging, pollution and, last but not least, the phenomenon of migration. Romania is facing an influx of Ukrainian refugees from conflict zones, which has both economic and social implications.

In the context of the vulnerabilities of the security environment, Romania is forced to strengthen cooperation with the United States to ensure national security in the event of aggressive actions in the neighborhood.

Romania must invest sufficiently in financial, technical and human resources, necessary to intensify the Alliance's response capacity building efforts on the Eastern flank in the face of escalating geopolitical conflicts caused by various social, economic, and cultural interests.

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