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CHALLENGES TO CIVIL PROTECTION IN TIMES OF FUTURE WARS

ABSTRACT: Ukraine which is experiencing the war is an exemplification of the state that requires urgent military, material (e.g.: reconstruction of infrastructure) and first of all humanitarian aid. The aim of the paper is to identify task for civil protections in the future war environment and consequently suggest how to organize the civil protection to face the new realities. The emergency/humanitarian operations in Ukraine prove that delivering any aid should be coordinated by the centers/units consisting of the representatives of all sectors responsible for



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providing security to citizens. This units would ensure higher effectiveness and minimize/eliminate tasks duplication. The method applied for this research is a case study of the Russian - Ukrainian war (2022) with a focus on civilians, critical infrastructure and assistance provided as the referral points of the analysis. The concept of ecosystem as a multi-actor network and the concept of fractal organization are the theoretical base for the analysis.

KEYWORDS: future war, critical infrastructure, civil protection, The Russian – Ukrainian war, restructuring civil protection

INTRODUCTION

Future conflicts including hybrid conflicts, combine the asymmetric, information and rebellious elements together, and civilians, critical infrastructure, civil infrastructure are strategic targets¹. The war reality has become a new challenge also for civil protection.

Tasks for civil protection in emergency situations include: search and rescue operations, forest and urban firefighting, medical personnel deployment, distributing medical equipment and medicines, water purification, providing temporary emergency shelter, safe repatriation of citizens. Yet, the scale of aid required may be much bigger as intensified deliberate destruction of civil infrastructure in the urbanized areas will increase uncontrolled mass migration from the affected areas. The humanitarian help for refugees will be needed then also in the neighboring countries where the victims flow.

Ukraine is an exemplification of the state that requires urgent military, material (e.g.: reconstruction of infrastructure) and first of all humanitarian aid. The emergency/humanitarian operations in Ukraine prove that delivering any aid should be coordinated by the centers/units consisting of the representatives of all sectors responsible for providing security to citizens. This units would ensure higher effectiveness and minimize the tasks duplication. This paper is devoted to the discussion on the nature of future war and its consequences for civilians which are multiplied and intensified by damages of civil infrastructure which is a strategic target of military operations. The findings provide objective foundations to recommend organizational changes in the civil protection structures.

METHODOLOGY

The aim of the paper is to identify challenges and task for civil protections in the future war environment and consequently suggest how to organize the civil protection to face the new realities. The research problem is: what challenges for civil protection systems do the military operations of future wars create? The specific problem questions that should be answered in the research process are:

¹ W. Kawka, *Uwarunkowania użycia środków niezabijających nowej generacji jako elementów systemu infrastruktury krytycznej w środowisku zagrożeń hybrydowych*, „Problemy Techniki Uzbrojenia” Zeszyt 159 nr 1/2022, p.9-11.

- What are the features of conflicts defined in the future war concept?
- What are the consequences of future wars for civilians and critical infrastructure?
- What task for and how should civil protection system be prepared in case of future war?

The method applied for this research is a case study of the Russian - Ukrainian war (2022) with a focus on civilians, critical infrastructure and assistance provided as the referral points of the analysis. The concept of ecosystem as a multi-actor network allows to identify character of the future war ecosystem which is non-linear, lacks equilibrium, is influenced by the social or cultural trends, constantly evolves and building its resilience is a continuous process. As each ecosystem, the ecosystem of future wars in which civil protection entities operates consists of two inseparable components: a particular physical environment built from infrastructure and technology and a set of actors (civilians, soldiers, governments, business sector, NGOs, states, organized crime groups, militias) that are in constant interaction and are interdependence. The relations between them are shaped by power, regulations, history, money, contract or knowledge². Whereas both the concepts of multi-actor networked ecosystem and the concept of a fractal organization helps to design the multi-sector unit within the structures of the State Disaster Risk management Center. The multi sector (multi-actors networked) unit consists of the representatives of entities responsible for providing security. The unit would be responsible for coordination humanitarian help for civilians and contacts with the Emergency Response Coordination Center. A fractal organization is formed by multiple in(ter-)dependent organizations which share a common (primary) driver, or by multiple branches, departments, or projects within a larger organization. A fractal organization has at least three tiers. The first tier includes the **constituents** (i.e., organizations, branches, departments or projects), the second tier - **function-specific representatives to** share learning and to make decisions and agreements on behalf of function-specific domains. Whereas the third tier consists of a **cross-functional representatives who** make and evolve agreements in response to requirements of the overall body of constituents³.

² M. Tsujimoto, Y. Kajikawa, J. Tomitab, Y. Matsumoto, *A review of the ecosystem concept — Towards coherent ecosystem design*, Technological Forecasting & Social Change, Vol.136, November 2018, pp. 49-58.

³ Sociocracy3.0, A Practical Guide to Sociocracy 3.0, "Fractal organization"(accessed: 04.09.2023). <https://patterns.sociocracy30.org/fractal-organization.html> (accessed: 04.09.2023).

FUTURE WAR – A THEORETICAL ANALYSIS

War is a product of human culture and a reflection of its geographical location, social, economic, political and technological development⁴. The factors causing social divisions and consequently wars are: race, ethnicity, religions or social class (Crusades in 11th -13th centuries, WW I and WW II, Islamic fundamentalism). The methods of resolving conflict and waging wars have been changing⁵. The analysis of the past and present battlefields, methods, means and resources resulted in formulating some theoretical concepts about wars and allows to make some projections about future wars. In the beginning battles between tribes were brutal and had a form of rituals of violence in which warriors could prove their heroism. As the tribes evolved into states it appeared that the war incurred hidden costs, could lead even to self-destruction so that it should have been fought more rationally. Yet, the ideal strategy of being supremely rational and emotionally balanced, striving with minimum bloodshed and loss of resources gives way to more unconventional, dirtier strategies of guerilla warfare and terrorism⁶. The history seems to have come full cycle:

“[...] we appear, instead, to be plunging into a new dark age of tribal hate, planetary desolation, and wars multiplied by wars. How we deal with this threat of explosive violence will, to a considerable extent, determine how our children live or, perhaps, for that matter, die”⁷. We are to experience a radical diversification of the kinds of wars⁸.

Nowadays, the armies fight in three dimensions simultaneously. At the first dimension they confront the adversary with different organizational structures, armament and different tactics. The second dimension represents the adversary with similar organization, weaponry and equipment. In the third dimensions the armies fight the asymmetric adversary who has the archaic equipment but also the latest technological solutions and no formal structures or rules⁹.

⁴ M. Wrzosek, *Wojny przyszłości. Doktryna, technika, operacje militarne*, Fronda, Warszawa 2018, s. 10.

⁵ L. Chojnowski, *Bezpieczeństwo człowieka i społeczeństw w procesie dziejowym*, Akademia Pomorska w Słupsku, Słupsk 2018, pp. 67-68.

⁶ R. Greene, *The 33 strategies of war*, Penguin Group 2007, p. 13.

⁷ A. Toffler, H. Toffler, *War and anti-war. Making sense of today's global chaos*, The Time warner Co., New York 1993, p. 1.

⁸ A. Toffler, H. Toffler, *War and anti-war. Making sense of today's global chaos*, The Time warner Co., New York 1993, p.94.

⁹ M. Wrzosek, *opc. cit.*, p.10.

Similarly, the 4th generation war concept identifies dispersion of the battlefield, maneuver, technology and social factors as the main features of the war¹⁰:

- Dispersion of the battlefield - will include the whole of the enemy's society and will require actions by very small groups of combatants;
- Decreasing dependence on centralized logistics. Dispersion and importance of speed will require the armies to live off the enemy;
- Maneuver. Mass may become a disadvantage as it will be easy to target, therefore it gives way to small, highly maneuverable, and agile forces;
- The goal is to collapse the enemy internally rather than physically destroying him. The population's support for the war and the enemy's culture will be the targets.

Complexity of a present and future battlefield is captured by the well-known in the past concept of 'hybrid wars'. Adversaries (states, state-sponsored groups, or self-funded actors) blend various approaches to war which are appropriate to their military cultures, historical legacies, geographic realities, and economic capacities. They exploit modern lethal systems such as encrypted command systems, man-portable air-to-surface missiles and simultaneously encourage protracted insurgencies and their ambushes, improvised explosive devices (IEDs), and coercive assassinations. Given its multilayered structure, the war in Vietnam is the example of the hybrid war. It was a civil war within South Vietnam between the communists and other parties, as well as between North and South Vietnam. It was also an Asian regional war in which North Vietnam, South Vietnam, Laos, Cambodia, Thailand, the Philippines, Australia, New Zealand, China, and the Republic of Korea all were engaged against the background of the East–West ideological war¹¹. Also, the Vietnamese strategy is hybrid as it combines political and military elements as well as morale and legitimacy. The conventional arms and tactics were supported by irregular guerrilla and counterinsurgency warfare, agitation and propaganda and targeted terror¹². However, for that very strategic synergy, this war is also categorized rather

¹⁰ W. S. Lind, J. F. Schmitt, J. W. Sutton, G. I. Wilson, *The Changing Face of War: Into the Fourth Generation*, Marine Corps Gazette October 1989, pp. 22-26.

¹¹ K. Lowe, *Hybrid War in Vietnam* [in:] *Hybrid Warfare Fighting Complex Opponents from the Ancient World to the Present*, ed. W. Murray and P. R. Mansoor, CUP 2012, pp. 254-288.

¹² J. Schmid, *Hybrid warfare in Vietnam – how to win a war despite military defeat*, "ISPAIM Monitor Strategic" 3-4/ 2020, pp. 54 – 67.

as a compound war – “that had significant regular and irregular components fighting simultaneously under unified direction”¹³.

Hybrid wars blur the lines between modes of war. They are not waged by states that apply a defined approach but states or groups that select from the whole spectrum of tactics and technologies and blend them in innovative ways¹⁴. Innovation gives the advantage.

Along the new strategic concepts it is technology that drives innovations. It creates and will in the future more and more complex battlefield. Directed energy may permit small elements to destroy targets they could not attack with conventional energy weapons. The growth of robotics, remotely piloted vehicles, low probability of intercept communications, and artificial intelligence may on one hand enhance potential of tactics, but on another increase vulnerability, e.g.: to computer viruses. Robotic weapons played only a small part in the Gulf War and were under human control. Pioneer RPVs—small, unarmed, pilotless planes used in Kuwait and Iraq were under the control of "tele-operators" located miles away. Robots were in action, but humans made the decisions. “The problem with remotely controlled robotic weapons is” – as Alvin and Heidi Toffler explain – “that they depend on vulnerable communications [...] If communication breaks down, or is disrupted, or sabotaged, or, worse yet, manipulated by the enemy, the robot becomes useless or potentially self-destructive”¹⁵. The solution would be robots which are autonomous and able to learn from their own experience. The document prepared on May 2023 by the Congressional Research Service (CRS) revises the US policy on autonomy in weapons systems (Lethal autonomous weapon systems (LAWS)). It reads: “The U.S. government does not currently support a ban on LAWS and has addressed ethical concerns about the systems in a March 2018 white paper, “Humanitarian Benefits of Emerging Technologies in the Area of Lethal Autonomous Weapons.” The paper notes that “automated target identification, tracking, selection, and engagement functions can allow weapons to strike military objectives more accurately and with less risk of collateral damage” or civilian casualties”¹⁶. At present autonomous robotic systems are defensive, e.g.:

¹³ T. Huber, *Compound Wars: The Fatal Knot*, Fort Leavenworth, KS: Command and General Staff College, 1996.

¹⁴ F.G. Hoffman, *Hybrid Warfare and Challenges*, JFQ / issue 52, 1st quarter 2009.

¹⁵ A. Toffler, H. Toffler, op. cit., p. 133.

¹⁶ K. M. Saylor, *Defense Primer: U.S. Policy on Lethal Autonomous Weapon Systems*, “Focus Congressional Research Service”, IF11150 · VERSION 10 · UPDATED; <https://crsreports.congress.gov>. (Accessed: 04.09.2023).

Phalanx - a rapid-fire, computer-controlled, radar-guided gun that can defeat anti-ship missiles and other close-in threats on land and at sea, the PATRIOT's - phase-arrayed radar system which has a range in *excess of 150 kilometers (km)* and the capacity to track up to 100 targets. Offensive systems are under an operator's control¹⁷.

Remote, "smart" weapon with AI combine reconnaissance and strike functions. Highly mobile elements composed of soldiers armed with high technology weapons will target the opponent's critical physical and political infrastructure as well as civilian society. States continue developing ICT capabilities for military purposes, and it is distinctly probable that they will be used in the future conflicts¹⁸. Cyberoperations are the reality. They affect not only military infrastructure, command and control systems but also states' critical civilian infrastructure, such as nuclear plants, electricity grids and water distribution/treatment systems which are becoming more complex and reliant on networks of connected devices. The failure of one critical infrastructure may trigger a destructive chain reaction. Transport, public sector services, telecommunications and critical manufacturing industries: oil rigs, ships, satellites, airliners, airport and port systems are also vulnerable. For example, in 2013, Iranian hackers breached the Bowman Avenue Dam in New York and gained control of the floodgates.

Rapid development and free access to technologies set the trend of democratization of technology, which is well illustrated by the terrorist raid on Mumbai (2008). Terrorists operated in an autonomous group, flat structure, remotely commanded from Karachi operations room monitoring Twitter and Internet feeds, which made connectivity a critical element in an operation. This way they created large-scale Twitter and Internet traffic that provided the feedback for their command *node*¹⁹.

Technologically advanced, overpopulated and multicultural urban ecosystems seem to be well-designed space for battlefields. Cities, especially metropolises are "hubs of communication, powerhouses of industry and commerce, nerve centers of administrative and political power and sites of cultural production and exchange that are bound within

¹⁷ R. H. Latiff, *Wojna przyszłości*, PWN, Warszawa 2018, s. 62.

¹⁸ Organization for European Economic Co-operation, *Annual Progress Report*, 2022, para. 9.

¹⁹ D. Kilcullen, *Out of the mountains. The coming age of the urban guerrilla*, Hurst & Company, London 2013, p. 63.

transnational networks²⁰. The cities are the heart of development, economic growth and enrichment of their citizens but at the same time they are generators of tensions and frictions which compel future military interventions²¹. Tensions are generated in a confined areas where people struggle for survival and compete for basic resources living in housing with poor sanitation with ineffective governance and policing (slums, favelas). These cities are named “feral cities” (R. Norton 2003) and discussed in the context of “fragile states” – the ones that lack credible representations, stable legal standards, control over coercive actions by a state, state territory and borders. The control of slums and shanty towns is taken over by organized crime groups which have their own distribution system, political and financial networks and coercive means. In Sao Paulo in May 2006 First Command of the Capital (PCC) gang group was alleged for launching 1,300 attacks and associated with riots in prisons at the same time. In 2010 in Rio the government was negotiating with the prison drug gang when over 3000 police officers and military personnel were used to end city violence evolving from one favela. In July 2017 also in Rio de Janeiro relatives of police officers protested after the death of an officer during an operation at a nearby shantytown²². In November 2017 violence continued to increase due to fighting between the security forces and criminal gangs. The Robert Muggah’s statement that the cities are “the new frontier of warfare” is by no means rational²³.

Armed forces can be engaged in the city conflict in many ways²⁴:

- In a humanitarian aid or noncombat evacuation operations that can turn into conflict;
- When governments send military advisors, special operation forces, law enforcement support to the cities in conflict;
- In Peacekeeping or peace enforcement and mass atrocity response in urban areas after state collapse or civil war;
- When expeditionary operations bring retaliatory attacks in home territory – members of immigrant community engage in attacks against Western cities motivated by militias in their countries of origin.

²⁰ S. Goebel, D. Keene, *Cities into Battlefields*, Routledge 2011, p. 3.

²¹ L. Freedman, *The future of war*, Penguin Books 2018, p. 257.

²² BBC News, <https://www.bbc.com/news/world-latin-america-40700670> , „Rio de Janeiro: Police protest over rising Brazil violence” (accessed: 05.09.2023).

²³ L. Freedman, op. cit., p. 256.

²⁴ D. Kilcullen, op. cit., p. 265.

– In war between states.

The last case can be illustrated by the Vietnam War when the Vietcong and the regular north Vietnamese forces launched a surprise attack against cities of south Vietnam (Tet offensive or new Year's offensive) on New Year's Day 1968. They took over for over a month the old imperial city of Hue and nearly all the villages of the Mekong Delta. Although the plan to provoke a mass uprising of the south Vietnamese population failed, the Tet offensive became the turning point of the war. The US army achieved a defensive victory in this battle however, the morale of its soldiers was shaken²⁵. Cities disaggregate combat into a series of short-range engagements, which enables to prevail in close combat (close-quarter battle which can occur in confined areas as well in or around structures, on ships, on land, in the air, in dense rainforests and involves two-way fights within maximum visual or sensor distance)²⁶.

Involving armed forces in a full-scale aggression still may happen, yet it is becoming too costly in the nuclear era thus unfavorable an option to choose. Grey zone conflicts have become a trend – tactics and confrontations which use non-military or non-kinetic means to achieve political objectives. Gray zone is an area between peace and war, where activities like: political and election meddling, cyber threats and attacks, economic coercion, use of proxies, and military actions are well exploit. These kinds of conflicts move slowly but persistently towards its objectives rather than expect explicit results within some timeline²⁷. The ambiguity of international law, the ambiguity of actions and attribution, or the fact that the impact of the activities does not justify a response by governments cause the conflict evolve below the threshold of major war²⁸. The gray-zone is not new; however, the states are equipped in new technologies which enable them to operate and avoid clear categorization, attribution, and detection²⁹ (e.g.: 2015, Russia accused of attacking Ukraine's power grid through cyberspace;

²⁵ J. Schmid, *Hybrid warfare in Vietnam – how to win a war despite military defeat*, "ISPAIM Monitor Strategic" 3-4/ 2020, pp. 54 – 67.

²⁶ D. Kilcullen, p. 264.

²⁷ Mazarr, Michael J., *Understanding Gray Zone Conflict. Mastering The Gray Zone: Understanding A Changing Era Of Conflict*, Strategic Studies Institute, US Army War College, 2015, pp. 55–78. JSTOR, <http://www.jstor.org/stable/resrep12018.9>. Accessed 20 Aug. 2023.

²⁸ A. Robertson, *What is Grey Zone confrontation and why is it important?*, 2022; <https://cove.army.gov.au/article/what-grey-zone-confrontation-and-why-it-important>. (accessed: 04.09.2023).

²⁹ C.G. Starling, *Today's wars are fought in the 'gray zone.' Here's everything you need to know about it.*, Atlantic Council, 2022; <https://www.atlanticcouncil.org/blogs/new-atlanticist/todays-wars-are-fought-in-the-gray-zone-heres-everything-you-need-to-know-about-it/> (accessed: 04.09.2023).

2017, the WannaCry ransomware attack disturbed the operating of the UK NHS, and the SolarWinds hack resulted in leakage of huge amounts of sensitive data³⁰). Russia's grey zone tactics of Crimea takeover, 2014 included: economic manipulation, disinformation, proxies, diplomatic manipulation, and military action³¹.

Technologically advanced solutions, critical infrastructure and the landscape characteristics matter but are insufficient to succeed, which was proved during the wars in Vietnam, Iraq and Afghanistan. Strategic success requires both respecting "the other" history and culture along the well trained and equipped troops to secure populations, control civic unrests and deal with the root causes of societal violence³². The information warfare is a powerful tool both to complete the military operations and control society. Information warfare was known in the past, yet it has become a typical feature of contemporary military conflicts since information is used as a weapon or target. For leaders a major challenge will be handling the information overload and simultaneously realizing the operational and strategic objectives. Disturbing information flow, blocking access to information sources can damage command and control systems in a way that operation can be delayed, ineffective or impossible at all (Persian Gulf War 1991). Moreover, disseminating false information or delay the right one can give the advantage. It is still a mystery how "Newsweek" could publish the gen. Schwarzkopf's land component operation diagram a day before the operation. The diagram was original. The question what was the intention of this publication is still left unanswered³³. Information warfare, psychological warfare, disinformation and media manipulation may be the powerful operational and strategic weapons. The press conference at which NATO officer informed (deliberately mislead) the public that the F-117 pilot had been rescued and was going to appear was being delayed and eventually cancelled. The pilot did not arrive. In fact, at the time of the conference the rescue operation was carried on to save the pilot's life. The information stopped the chase (Yugoslavia 1999)³⁴. For contemporary society emotions and opinions matter and

³⁰ C. Beckett, *Getting to grips with grey zone conflict*, Ministry of Defense; <https://stratcommand.blog.gov.uk/2021/04/26/getting-to-grips-with-grey-zone-conflict/> (accessed: 04.09.2023).

³¹ A. Robertson, op. cit.

³² W. Murray and P. R. Mansoor, *Hybrid Warfare Fighting Complex Opponents from the Ancient World to the Present*, CUP 2012, p. 2-3.

³³ M. Wrzosek, op. cit., p. 191.

³⁴ Ibidem.

facts do not. If this behavior is applied for political and military purposes it may generate unnecessary violence. Watching innocent people dying in the Middle East or Ukraine is heartbreaking, yet these reports should include also the context³⁵.

The war engages non-state actors, organized crime groups, terrorists and militias on a par with state actors. The consequences for civilians are strongly emphasized in the concept of new wars by Mary Kaldor:

“[...] new wars, as I explain in the introduction, are wars in which the difference between internal and external is blurred; they are both global and local and they are different both from classic inter-state wars and classic civil wars³⁶.

The human-unfriendly areas with shortage of resources and damaged life-sustaining infrastructure will drive uncontrolled mass migration and “sub-national, persistent and diffused violence”³⁷ towards civilians. The effective response both to this growing illegitimacy of wars needs to apply a variety of instruments: political, military, civil or economic ones at the international level and definitely should hold adversaries to account for respecting the human rights and the rule of law³⁸.

The Russian-Ukrainian war can serve as the example of the conflicts in which these discussed characteristics of future war can be identified with its impact on infrastructure and civilians, which constitutes the subject of the analysis.

CIVILIANS AND INFRASTRUCTURE AS A MILITARY TARGET

The Russian Federation which borders Ukraine destabilizes this country most. The period of time from 2013-2023 clearly illustrates the bilateral relations of these states in various dimensions. For years Russia has had the same goal: to maintain Ukraine dependency, only it has used different strategical means to achieve this goal. When in 2004 the Orange Revolution of protestants and anti-Russian forces ousted pro-Russian president and its Cabinet from power, Russians did not accept the changes in Ukraine and loss of control over the Ukrainian politics. They used this situation as an excuse for Crimea annexation and hybrid operations on

³⁵ R. H. Latiff, op. cit., p. 152.

³⁶ M. Kaldor, *New and old wars*, Stanford University Press 2007, p. 3.

³⁷ Ibidem.

³⁸ Ibidem.

the whole territory of Ukraine. Methods and instruments used by Russia against Ukraine: economic and political pressure, information warfare, propaganda, terrorist operation and military operations against civilians, infrastructure and natural environment in Ukraine, illustrate modern war which has not been experienced in present times. Russia's military operations, to a large extent, are targeted at civilians, military forces, economy and critical infrastructure since these elements determine how successful the military operations are, how the economy and civilians' function. Unfortunately, Russian operations play havoc with civilians who are not engaged in war and infrastructure facilities for civilians and Ukrainian economy. Therefore, they are analyzed further in the paper.

Civilians of Ukraine in the Russian Federation War – case study

The Russian Federation war have a dramatic impact on Ukrainian civilians especially if considered Crimea annexation, Donbass and Lugansk occupation and situation of civilians after the outbreak of war in 2022. The first group of civilians experienced the war since 28th Feb. 2014 – the beginning of Russian military operations at Crimea. The Russian government sent in undercover Special Forces (*little green men*) to Crimea to prepare the ground for regime change, working with pro-separatist forces. In late February 2014, Russian forces entered the country and seized key government and media structures. The Russian Government initially denied they were Russian soldiers only to explain later on that they only protected the local Russian speaking community. They confused international public opinion and delay its response. In March 2014 they organized a referendum which was claimed by the Russians to be an 'act of self-determination' with 97% of votes for joining Russia and a turnout of 83%. Two days later, "Treaty of Accession" was signed. By March 2014 Crimea was annexed by the Russian Federation³⁹. In April the second phase of the Russian-Ukrainian conflict began. On the 7th April the crisis staff was established after the Donetsk People's Republic (DPR) was created. On 11th May the referendum was organized on accession of DPR to the Russian Federation. 12th of April 2014 marks the beginning of military conflict at Donbass. 27th April 2014 in Lugansk armed people occupied buildings and created Lugansk People's Republic. According to the statistics of the State Statistical Office of Ukraine in 2001 Crimea was populated by 2.4 mil.

³⁹ A. Robertson, op. cit.

citizens the majority of whom were Russians (60.40 %), Ukrainians (24.01 %) and Crimea Tatars (10.21 %) ⁴⁰. Both Crimea populations and part of citizens of Donbass and the Lugansk Republics lost their freedom. Total population of the Donetsk People's Republic was 2.26 mil. whereas of the Lugansk People's Republic - was about 1.4 mil. ⁴¹. The Russian "special military operation" and occupations of these territories caused that the population is deprived of any protection from the Ukrainian states and European Union.

In February 2022 the Russian invasion created rapidly growing migration crisis. Most migrants from Ukraine were women and children. The internal migration affected about 5.3 mil. people. Many people are stuck in the distressed areas as they do not want to or they are not able to leave ⁴². At the end of June 2023 almost 4.07 mil. the non-Europeans who escaped from Ukraine because of the Russian invasion of 24th Feb. 2022 received the temporary protected status (TPS) in the EU countries. The countries which accepted the biggest number of migrants are: Germany (1133420 people; 28 % of total), Poland (977 740; 24 % of total) and The Czech Republic (349 140; 9 % of total) ⁴³. The Polish Border Guards reported arrival of 30.3 hundred of migrants from Ukraine to Poland on Wednesday 16th August 2023. Since the beginning of the war over 14.64 mil. people fled from war to Poland. On the previous day, on the other hand 31.6 hundred migrants from Ukraine left Poland. 12.902 mil. people altogether have returned to Ukraine since the beginning of the war ⁴⁴.

Although the war is waged on the territory of one country its impact is regional. Trade restrictions, increase in crime and arms trade destabilize the neighboring countries. The Russia-Ukraine war is categorized as long war which definitely leads to demoralization of society and political elite which develop pathological and criminal behaviors and may lead to civil unrests.

⁴⁰ Państwowy Komitet Statystyki Ukrainy. Apis 2001. Źródło: *ukrstat.gov.ua статистична інформація* (accessed: 10.08.2023).

⁴¹ *Численность населения Луганской Народной Республики на 1 января 2020 года* (accessed: 9.07.2020).

⁴² European Civil Protection and Humanitarian Aid, https://civil-protection-humanitarian-aid.ec.europa.eu/where/europe/ukraine_en (accessed: 16.08.2023).

⁴³ Strona internetowa Forsal.pl, <https://forsal.pl/swiat/aktualnosci/artykuly/9223396,jakie-panstwa-przyjely-najwiecej-uchodzcow-z-ukrainy-mapa.html>, „Jakie państwa przyjęły najwięcej uchodźców z Ukrainy? [MAPA]” (accessed 10.08.2023).

⁴⁴ Strona internetowa 300Gospodarka, *Ilu uchodźców z Ukrainy jest w Polsce*, <https://300gospodarka.pl/news/uchodzcy-z-ukrainy-w-polsce-liczba> (accessed: 16.08.2023).

Experience of war will antagonize even more both societies and strengthen nationalistic or hostile attitudes. Moreover, the Russia-Belarus social and political relations have also changed. The war creates a breeding ground for social pathologies such as: drug addiction, aggression, nationalism and chauvinism, which touches especially soldiers who are directly engaged in the conflict. It is highly probable that they may have difficulties to re-assimilate in their communities when the war ends⁴⁵. The war engages also the youngest who do not have other option to live their lives or they are prepared to serve their country. The last case is well exemplified by The Young Army project - Russian Minister of Defense Sergei Shoigu's idea announced in mid-2016 and implemented with the state mandate. The Young Army movement provides the youth military training and patriotic education to prepare them for challenges. The incentive for this idea was the Ukrainian youth who engaged in Orange Revolution of 2004-05 and in other political protests. The Kremlin responded to the threat of a "color revolution," with groups of high-school and college-age students such as Nashi (Наши), which were to express political support for the Kremlin and subdue youth protests within Russia⁴⁶.

The war has created challenges in all spheres of life, emotional, moral, physical and psychological with long – lasting consequences. They all are the concerns of civil protection organizations. Civilians are exposed to gunfire, military aggression, mines, family separation, theft, eviction and human trafficking. The most dramatic situation is observed at the Eastern and Southern Ukraine (along the front line) and in the areas which are not controlled by the state. Millions of Ukrainians have no access to basic facilities and services: water, electricity, heating, food, health care especially psychological and psychiatric care and treatment (stress, depression, post-traumatic stress disorder). Another type of threats touches women, girls, children and the elderly, disabled, and LGBTIQ+. It is estimated that about 3.6 mil. people, mainly girls and women require help and protection against sexual assault⁴⁷.

⁴⁵ R. Artymiak, *Wojny i konflikty w xx wieku [w:]*: *Konflikty współczesnego świata*, red. R. Borkowski (red.), AGH Uczelniane Wydawnictwo Naukowo-Dydaktyczne, Kraków 2001, pp. 49-51.; Strona „Rzeczpospolitej”, <https://www.rp.pl/konflikty-zbrojne/art38338941-szef-rosyjskiego-msw-oskarza-kijow-o-narkotyzowanie-rosjan>; <https://www.rp.pl/konflikty-zbrojne/art38157321-ukrainski-zolnierz-rosjanie-nacieraja-po-gnijacych-szczatkach-kolegow> (accessed: 04.09.2023).

⁴⁶ M.R.Finch, *Young Army Movement. Winning the Hearts and Minds of Russian Youth*, "Military review, The Professional Journal of U.S. Army", September-October 2019, <https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/September-October-2019/Finch-Young-Army/> (accessed: 04.09.2023).

⁴⁷ Strona internetowa 300Gospodarka, <https://300gospodarka.pl/news/uchodzcy-z-ukrainy-w-polsce-liczba> (accessed: 16.08.2023).

The Russian-Ukrainian war created serious humanitarian challenges. International community is extremely concerned about breaking International Humanitarian Law (IHL) and committed war crimes. On the 24th August 2023 at the United Nations Rosemary DiCarlo, Under-Secretary-General for Political and Peacebuilding Affairs confirmed numbers of at least 9,444 civilians killed — including 545 children — and nearly 17,000 injured, [...] the real figures are likely much higher”. [...] And, since Moscow’s 17 July withdrawal from the Black Sea Grain Initiative, the fighting has only escalated. Detailing Russian Federation attacks against Ukraine’s ports, cultural heritage and civilian infrastructure [...] the UN still does not have the necessary access to verify allegations of violations against children in the territory of Ukraine under Moscow’s control or in the Russian Federation itself⁴⁸. It is estimated that in 2023 17.6 mil. people will require the humanitarian help⁴⁹.

Critical infrastructure of Ukraine in The Russian Federation War – case study

Critical infrastructure has always been an intended or unintended target in conflicts. When it is damaged, essential services for civilians are disturbed or blocked: electricity, healthcare, water and food production and distribution, wastewater treatment and waste disposal. The damage of networks of electricity-, fuel- and gas-related infrastructure causes the chain reaction of disturbances in provision of all essential services. Electricity supply ensures the delivery of water and sanitation, solid waste disposal and the cold chain (the storage and transportation in specific temperatures of food and medicine). Whereas, supplies of safe water, sanitation, and electricity are crucial for hospitals and food production. Lack of water and sanitation, food, heating and healthcare can cause outbreaks of diseases and death⁵⁰.

Since the very beginning of the invasion on Ukraine Russia uses its missile arsenal to cause maximum damage destroying so far over 702 critical infrastructure facilities⁵¹. The main target

⁴⁸ United Nations, <https://press.un.org/en/2023/sc15395.doc.htm>, „Deportation, Treatment of Ukraine’s Children by Russian Federations Takes Centre Stage by Many Delegates at Security Council Briefing” (accessed: 05.09.2023).

⁴⁹UOCHA, <https://www.unocha.org/ukraine>, “Ukraine” (accessed: 15.09.2023).

⁵⁰ E. Giorgou, A. Zeith, *When the lights go out: the protection of energy infrastructure in armed conflict*, Humanitarian Law & Policy Blog, 4/20/23, <https://blogs.icrc.org/law-and-policy/2023/04/20/protection-energy-infrastructure-armed-conflict/> (accessed: 05.09.2023).

⁵¹ Strona internetowa wGospodarce.pl, <https://wgospodarce.pl/informacje/121304-ukraina-rosja-zniszczyla-ponad-700-obiektow-infrastruktury-krytycznej>, „Ukraina/ Rosja zniszczyła ponad 700 obiektów infrastruktury krytycznej”

has been energy infrastructure: 40% of it has been damaged and temporarily off, 10% was completely destroyed and the remaining infrastructure operates only on 50% power⁵². On 20th October 2022 Russian attacked energy facilities and caused a nationwide blackout in Ukraine. Marie Struthers, Amnesty International comments:

“The strategy behind Russia’s latest warfare tactics is unmistakable. In bombing Ukraine’s critical civilian infrastructure, including energy facilities, the Russian army clearly intends to undermine industrial production, disrupt transportation, sow fear and despair and deprive civilians in Ukraine of heat, electricity and water as the cold grip of winter approaches”⁵³. At 5th April 2023, attacks on Ukraine’s energy infrastructure has caused over \$10 billion in damages and left over 12 million people with no or limited electricity, water supply and heating systems⁵⁴. Since the beginning of the invasion Ukraine's critical infrastructure has been hit over 3,000 times⁵⁵.

The tactics of the Russian military, cyber attackers have been changing and adjusted to the military goals. At the beginning of the invasion the attacks at the Ukrainian critical infrastructure were intended to destroy it and consequently weaken the resistance against the adversary and spread chaos. With time Russian hackers have focused on espionage in every sector, mainly military and technological and specialized in given areas. Sandworm Group destroys data, infrastructure and basic services. InvisiMole steals confidential data and uses them against

(accessed 23.02.2023 r.)

⁵² Strona internetowa Instytutu Europy Środkowej, <https://ies.lublin.pl/komentarze/rosyjska-wojna-na-wyniszczenie-zmasowane-ataki-na-ukrainska-infrastruktura-krytyczna-i-ich-skutki/>, „Rosyjska wojna na wyniszczenie. Zmasowane ataki na ukraińską infrastrukturę krytyczną i ich skutki” (accessed 14.08.2023 r.).

⁵³ Amnesty International, <https://www.amnesty.org/en/latest/news/2022/10/ukraine-russian-attacks-on-critical-energy-infrastructure-amount-to-war-crimes/>, „Ukraine: Russian attacks on critical energy infrastructure amount to war crimes” (accessed: 05.09.2023).

⁵⁴ United Nations, <https://ukraine.un.org/en/226425-damage-ukraine%E2%80%99s-power-gas-and-heating-infrastructure-exceeds-10-billion-according-new>, “Damage to Ukraine’s power, gas, and heating infrastructure exceeds \$10 billion, according to new assessment by UN Development Programme and World Bank” (accessed: 05.09.2023).

⁵⁵ M. Bagwe, *Ukraine's Critical Infrastructure Hit 3,000 Times Since 2022*, <https://www.bankinfosecurity.com/ukraines-critical-infrastructure-hit-3000-times-since-2022-a-22393>

politicians, diplomatic missionaries and ambassadors, military production entities. Armageddon group concentrates on security and defense sector organizations⁵⁶.

Civilian infrastructure of cities is also under *missile and shelling attacks* - Kiev, Kharkov, Donbass, Dnieper, Mykolaiv, Zhitomir, Melitopol, Mariupol, Zaporozhye, Bahmut. The list of damaged facilities includes: residential buildings, educational institutions (1400 schools, 865 kindergartens and 505 universities), 907 cultural facilities, 168 sports facilities, 157 tourist facilities and 95 places of worship⁵⁷. Hospitals, healthcare centers, blood collection points, land and sea transport infrastructure, storage infrastructure and ICT infrastructure are continuously targeted. Donieck, Kharkov and Kiev suffer extreme damages of transport infrastructure: damaged bridges, roads, railways and railway stations. Russia carried out *missile and shelling attacks* also at airports. In spite of that they operate. Whereas Black Sea ports are paralyzed⁵⁸. Civilians feel the effect of Russians' attacks and urgently need the humanitarian help, especially those in the frontline zone, where the situation is most dramatic.

The European Union Civil Protection Mechanism and Polish Assistance.

In October 2001, the European Commission established the EU Civil Protection Mechanism to improve coordination of civil protection operations carried out in collaboration by the EU countries and 9 participating states. The European Union responses to the Russian invasion on Ukraine and coordinates, so far, the largest EU civil protection mechanism operation.

⁵⁶ Ibidem.

⁵⁷ Strona internetowa Money.pl., <https://www.money.pl/gospodarka/wielkie-straty-ukrainy-po-rosyjskiej-inwazji-wynosza-tyle-ile-roczny-budzet-polski-6859372401543872a.html>, „Wielkie straty Ukrainy po rosyjskiej inwazji. Wynoszą tyle, ile roczny budżet Polski”, (accessed: 14.08.2023).

⁵⁷ Strona Polskiej Agencji Prasowej, <https://www.pap.pl/aktualnosci/news%2C1217985%2Cstraty-w-infrastrukturze-ukrainy-zniszczonych-min-300-mostow-i-23-tysiace>, „Straty w infrastrukturze Ukrainy” (accessed: 05.09.2023).

⁵⁸ Strona Polskiej Agencji Prasowej, <https://www.pap.pl/aktualnosci/news%2C1217985%2Cstraty-w-infrastrukturze-ukrainy-zniszczonych-min-300-mostow-i-23-tysiace>, „Straty w infrastrukturze Ukrainy” (accessed: 16.08.2023)

All EU countries, as well as Iceland, North Macedonia, Norway, Serbia and Türkiye, are providing medical supplies, power generators, shelter items, vehicles, specialized equipment for public health risks such as chemical, biological, radiological and nuclear threats. The EU has mobilized also its strategic rescEU reserves. The assistance is worth about €670 million. The EU also coordinates evacuations of Ukrainian patients in urgent need of medical treatment and has opened a medical hub in Rzeszów (Poland)⁵⁹.

Poland is one of countries which support Ukraine strongly as a state and society. Poland has provided Ukraine with arms and other military equipment worth circa \$1.7 billion⁶⁰. Polish government supports also Ukrainian government with any activities that could materialize the association agreement with the EU and transformation process – decentralization of education, public finances, fighting corruption, development of national and regional crisis management systems as well as educating professional clerical staff in Ukraine.

Poland assists Ukraine with creating the civil protection system, providing Polish solutions and good practice. Ukrainian local governments (ua. Територіальна громада) create the structures of volunteer fire fighting units which could effectively provide assistance to local people. The Russian aggression is a test for newly formed voluntary fire service⁶¹.

26 March 2022 the President of the Republic of Poland signed the *Act amending the act on assistance to citizens of Ukraine as a consequence of the armed conflict on the territory of Ukraine*. Ukrainian citizens who left their homeland as a result of Russian aggression are entitled to legally stay in Poland for 18 months starting from 24 February 2022. This applies to persons who comes to Poland from Ukraine and declares their intention to stay on the territory of Poland⁶². Caritas Poland has provided help to Ukrainian refugees and has responded to the humanitarian requests of its sister organizations in Ukraine – the Roman Catholic Caritas-SPES

⁵⁹ European Council, <https://www.consilium.europa.eu/en/policies/eu-response-ukraine-invasion/eu-solidarity-ukraine/#civpro>, „EU solidarity with Ukraine” (accessed: 05.09.2023).

⁶⁰ Notes from Poland, <https://notesfrompoland.com/2022/06/15/poland-has-given-ukraine-military-aid-worth-at-least-1-7bn-expects-allies-to-help-fill-the-gaps/>, “Poland has given Ukraine military aid worth at least \$1.7bn, expects allies to help fill the gaps”(accessed: 05.09.2023).

⁶¹ Strona Fundacji Solidarności Międzynarodowej, <https://solidarityfund.pl/2022/05/16/wspieramy-ukraine-w-reformie-systemu-ochrony-ludnosci-cywilnej/>, „Wspieramy Ukrainę w reformie systemu ochrony ludności cywilnej” (accessed: 05.09.2023).

⁶² Website of the Republic of Poland <https://www.gov.pl/web/udsc-en/the-law-on-assistance-to-ukrainian-citizens-in-connection-with-the-armed-conflict-on-the-territory-of-the-country-has-entered-into-force>, „Amendment to the law on assistance to Ukrainian citizens in connection with the armed conflict on the territory of the country” (accessed: 05.09.2023).

and Greek Catholic Caritas Ukraine. At the Caritas Poland website, the help is counted in the following numbers: 2 million people – the number of refugees from Ukraine with help from Caritas since the beginning of the war, 597 million PLN – the value of humanitarian aid provided by Caritas, 31,000 Caritas volunteers provided aid for refugees, 32 Migrant and Refugee Assistance Centers continue to support those in need and 83,000 Packages for Ukraine worth 29 million PLN were prepared by Poles⁶³. Polish society is also sensitive to the Ukrainian refugees' situation and horrors of the war. It is estimated that Poles rendered assistance worth 9-10 mil. PLN which included volunteering, financial and material help, and accommodation⁶⁴.

DEVELOPMENT OF CIVIL PROTECTION - RECOMMENDATIONS FOR POLAND

The assistance provided to Ukrainians is unprecedented in its scale and quality. The European Union and partner states contributed to strengthening the Ukrainian defense capacity and mitigating the impact of war on civil populations. Poland serves as a logistic hub, provides military support, accepted 2 mil. refugees. Whereas the European Union supports the frontline states and Moldova as a partner state. However, the ongoing war develops in a war of attrition and therefore further support for the Ukrainian army and civil protection is of top importance. The existing mechanisms, solutions and good practices which are close at hand are effective. Yet, the better results could be expected when new and additional instruments are employed to respond to the current needs. Supporting civil protection and providing humanitarian aid will be crucial also after the war ends.

⁶³ Caritas, <https://caritas.pl/ukraine/> , „Year of support. Caritas helps Ukraine” (accessed: 05.09.2023).

⁶⁴ Strona internetowa Polskiego Instytutu Ekonomicznego, <https://pie.net.pl/polacy-mogli-wydac-nawet-10-mln-pln-na-pomoc-udzielana-uchodzcom-z-ukrainy-w-pierwszych-miesiacach-wojny/> „Polacy mogli wydać nawet 10 mld PLN na pomoc udzielaną uchodźcom z Ukrainy w pierwszych miesiącach wojny” (accessed:27.07.2022).

Recommendations for Poland

Ukraine is actually the first state that is forced to activate civil protection system after WWII as a result of the war taking place on its territory. The challenges for civil protection are numerous, complex and specific for the 21st century. Besides protection from missile and shelling attacks the civil protection faces the problems with maintaining access to digital services, ICT services and security of their cyberspace. It should be also considered that resilience of the state during military conflicts depends not only on the military strength but also on other uniformed services and well-trained reserved soldiers for civil protection, well prepared civilians and well secured infrastructure especially shelters⁶⁵. Effective coordination of all these entities collaborating together requires well designed structures with command and control and operational systems. These structures should be organized in a form of a multi-sector unit of experts and practitioners at each administrative level (local, regional, state) of the State Disaster Risk Management Centre (fractal arrangement). These experts and practitioners will represent each security service (including armed forces for instance engineering units of The Air Forces⁶⁶), entity, NGOs, social services providing humanitarian aid. Their responsibilities would be coordination of all the tasks related to humanitarian aid at all phases of disaster risk management (mitigation, preparedness, response, and recovery) to fill in the systemic gaps and shortages in the field. Since these units will be strictly human-centered, they could serve as a direct communication channel with the Emergency Response Coordination Center (EU Civil Protection mechanism) to ensure immediate response and smooth, time- and cost-effective fulfillment of tasks. The influx of Ukrainian refugees to Poland can serve as the examples when such coordination was required. This wave of war migrants caused disturbances which were difficult for the state alone to deal with. Spontaneous

⁶⁵ J.M. Raubo, <https://infosecurity24.pl/bezpieczenstwo-wewnetrzne/zabezpieczenie-ludnosci-cywilnej-lekcja-z-ukrainy>, „Zabezpieczenie ludności cywilnej. Lekcja z Ukrainy”, InfoSecurity24.pl, (accessed: 15.09.2023).

⁶⁶ S. Kowalkowski, W. Kwaka, G. Piela, *Formacje inżynieryjne sił powietrznych w Systemie Zarządzania Kryzysowego Rzeczypospolitej Polskiej – diagnoza i propozycje zmian w świetle badań własnych*, „Wiedza Obronna” 2022, Vol. 278 No. 1, p. 42-47.

response of Poles, the state and local governments support⁶⁷ and European Union assistance⁶⁸ could have been even more effective if all these efforts had been coordinated⁶⁹.

It is difficult to make projection for the future security environment of the Central Europe and Poland, yet necessity to develop effective civil protection, create shelters (which has been reduced) and provide defense education for civilians is unquestionable. These actions involve reorganization, strengthening planning and increasing investments.

CONCLUSION

Future wars create complex and unpredictable reality (ecosystem) with the latest technologies at hand, various methods and instruments that can be selected and used in various and innovative way, where the line between military and non-military means and forces is blurred, control of a given territory give way to control of “hearts and minds” to gain advantage, ongoing conflict is still below the threshold of war, and the civilians are a crucial element in a multi-actor (state, non-state, guerilla, NGOs, business partners, crime groups, militias) network of relations shaped by power, culture and economic interdependence. City dwellers can be the critical asset as they become the means, targets and victims in conflicts. Overpopulated and multicultural metropolises with technologically advanced infrastructure are a well-designed, adaptive field to wage these wars, where military forces, mind-controlled killer robots and militias well integrate in a social fabric and attack networks of ICT infrastructure, and electricity-, fuel- and gas-related infrastructure disturbing provisions of all essential services, and consequently increase mass and uncontrolled migration. Civil protection needs to be prepared to face all these identified challenges (training civilians, preparing shelters, planning operations for crisis situations, implementing and modifying these plans when needed) as well as those unpredictable ones. The multi-sector units dedicated solely to humanitarian help at the local, regional and national level which cooperate with the EU

⁶⁷ Strona internetowa „Rzeczpospolitej”, <https://www.rp.pl/transport/art35835921-fala-uchodzcow-zaczyna-juz-paralizowac-polskie-dworce>, „Fala uchodźców zaczyna już paraliżować polskie dworce” (accessed: 06.09.2023).

⁶⁸ Website of the Republic of Poland, <https://www.gov.pl/web/funds-regional-policy/support-for-poland-to-help-refugees-from-ukraine>, “Support for Poland to help refugees from Ukraine” (accessed: 06.09.2023).

⁶⁹ Strona internetowa Gazety Prawnej, <https://www.gazetaprawna.pl/perlysamorzadu/artykuly/8665348,jak-samorzady-poradzily-sobie-z-kryzysem-uchodzcyim-i-co-jeszcze-je-czeka.html>, „Jak samorzady poradziły sobie z kryzysem uchodźczym i co jeszcze je czeka?” (accessed: 06.09.2023).

Emergency Response Coordination Centre could meet the needs of civilians entangled in the future war realities.

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