Civil-Military Cooperation Centre of Excellence
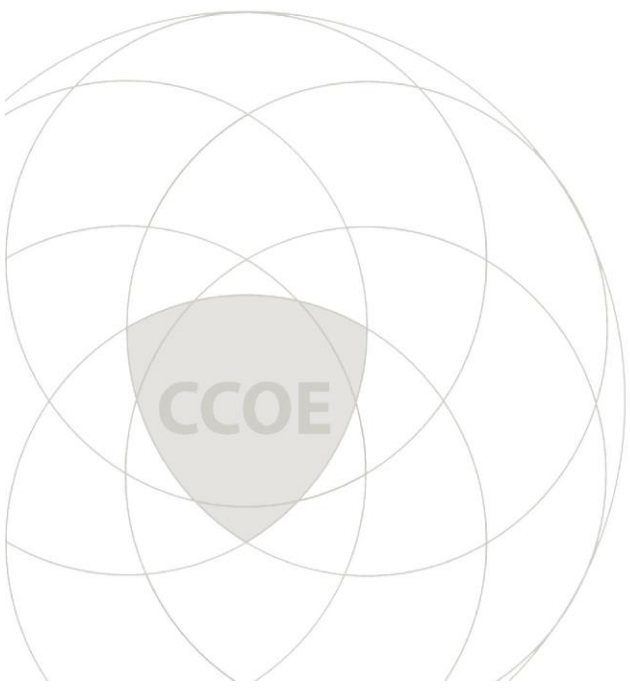
Case Study

UKRAINE

A Preliminary Analysis

Initial Study

Abstract

The full scale Russian Federation's invasion of Ukraine as of 24th February 2022 displays a scenario that can be considered the closest to what NATO (North Atlantic Treaty Organisation) can expect from a potential collective defence scenario. In NATO, the necessity for a greater level of preparedness and society resilience is included in Article 3 of the Washington Treaty. The process that should lead to the activation of a collective defence scenario is addressed in Articles 4 & 5. The current war in Ukraine highlights the necessity of preparing adequate responses to shocks, hybrid aggressions and armed attacks that might be inflicted on member states of the Alliance.

Therefore, it is crucial for NATO to gather insights, observations, identify lessons and finally draw lessons learned from this war to better understand the impact of military operations on the Civil Environment (CivEnv), and vice versa, how civil factors can affect and enhance armed force's preparedness and resilience in peacetime and their military operations during crises. These findings are subject to this analysis, with the goal of drawing conclusions that might be implemented into the NATO CIMIC, thus enhancing civil-military resilience and deterrence of the whole Alliance.

The Russian Federation's war in Ukraine and the Ukrainian approach to Civil-Military Cooperation (CIMIC) highlights the need to integrate civil factors before, during and after planning and executing military operations and the importance of CIMIC capabilities. It is crucial to have a comprehensive understanding of the operating environment (CUOE) as a significant factor in conducting successful operations.

Since the 2016 NATO Warsaw Summit, member states have acknowledged the paramount role played by Resilience[1], defined as a society's ability to resist and recover easily and quickly from shocks (such as a natural disaster, failure of critical infrastructure, or a hybrid or armed attack) and combines both Civil Preparedness and

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[1] https://www.nato.int/cps/en/natohq/official_texts_133169.htm

military capacity. Resilience represents the link between civil society and the armed forces. Therefore, it is vital to enhance CIMIC capabilities in NATO countries. Robust Resilience through Civil Preparedness (RtCP) in Allied nations is essential to NATO's collective security and reinforces the credibility of NATO's deterrence and defence. Resilience is, first and foremost, a national responsibility, and each member needs to be sufficiently robust, adaptable to support the entire spectrum of crisis envisaged by the Alliance and contribute to nations' ability to sustain alliance activities. In this context, RtCP is the sum of Civil Preparedness, military capacities and the complementing effects.

The adversary may use hybrid tactics, before and still during the crisis, to target this resilience or to create conditions that affect the resilience of a nation – specifically but not exclusively the civil population. To counter these tactics, nations are required to implement a broad spectrum of measures that involve preparation, absorption, redundancies, recovery, and adaptation. The NATO Resilience Committee and its planning groups have facilitated and supported national efforts in developing regional assessments and sector-specific criteria and guidance to assist national authorities in their effort to meet the ambition established by the seven Baseline Requirements of Resilience (7 BLR). This enjoys high attention, as the current state between the Alliance and the Russian Federation exceeds visibly and significantly the stage of peace and stability towards competition and beyond.

This study intends to map the civil situation in Ukraine and aims to use the findings to understand how CIMIC activities, in this case, how Ukraine applied their CIMIC concept to prepare themselves for a potential conflict and executed it during the conflict, can respond to challenges and shape the CIMIC capability in the Alliance's territory. By assessing the current situation in Ukraine, the CCOE tries to identify CIMIC related lessons that might be offered to contest the alliance approach.

The objective of this analysis is to assist the Alliance and its member state authorities in their preparedness considerations and their decision-making processes, prior to, during, and after the deployment of major force packages and it is intended to

encourage the planning, design, integration and deployment of CIMIC capabilities in all spheres of a nation's defence.

Table of Content

List of Abbreviations

AFU	Armed Forces of Ukraine
AJP 3.19	Allied Joint Publication 3.19
BCM	Billion Cubic Metres
BLR	Baseline Requirements
CivEnv	Civil Environment
CIMIC	Civil-Military Cooperation
COIN	Counter Insurgency
DOTMLPF-I	Doctrine, Organisation, Training, Materiel, Leadership and Education, Personnel, Facilities, Interoperability
EASA	European Union Aviation Safety Agency
EU	European Union
IDP	Internally Displaced Persons
KIA	Killed in Action
MIA	Missing in Action
NATO	North Atlantic Treaty Organisation
NCO	Non-Commissioned Officer
ROW	Remnants of War
RtCP	Resilience through Civil Preparedness
STRATCOM	Strategic Communication
TDF	Territorial Defence Forces
TUMI	Transformative Urban Mobility Initiative
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
UXO	Unexploded Ordnance
VFTC	Voluntary Formations of Territorial Communities
WHO	World Health Organisation

Chapter 1 – Introduction

The imperative for a deeper integration of the analysis and assessment of the Civil Environment (CivEnv) had already become clear from observations during missions in the past. During missions in the former Yugoslavian Republic countries starting in 1995, such as Implementation Force, Stabilisation Force and Kosovo Force, CIMIC contributed to maintain a secure CivEnv, facilitate reconstruction and Internally Displaced Persons (IDP) return processes and initiated a development resulting in the NATO CIMIC doctrine. Since 2001 and during the two decades long involvement in Afghanistan, with the International Security Assistance Force and Resolute Support missions, NATO was confronted with new challenges regarding the capacity of the Alliance to perform security force assistance and CIMIC in support of Stability and Reconstruction operations.

Since the 2014 Russian Federation illegal annexation of Crimea and by backing insurgency in eastern Ukraine, NATO returned to deterrence and defence as their main tasks and, although collective defence has always been associated with Article 5 of the North Atlantic Treaty, the current security environment has increased the need for further enhancement of resilience in the civil society, which resulted in renewed focus on Article 3 of the North Atlantic Treaty. Article 3 highlights the importance of civil preparedness and national resilience in order to maintain and develop the defence capacities of the Alliance[2]. Security of NATO relies on the principles of layered resilience, which consist of military, military-civilian, and civilian resilience.

CIMIC is defined as "A military joint function that integrates the understanding of the civil factors of the operating environment and that enables, facilitates and conducts civil-military interaction, to support the accomplishment of missions and military strategic objectives in peacetime, crisis and conflict."[3]

This underscores the significance of CIMIC as a foundational element in both national and collective deterrence, defence, and resilience efforts. Additionally, the contemporary definition of CIMIC has evolved, broadening its scope to encompass not only conflict-related activities but also peacetime preparedness. The outbreak of the recent conflict in Europe has underscored the imperative of embracing a more expansive understanding of CIMIC,

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[2]
https://www.nato.int/cps/en/natohq/topics_132722.htm#:~:text=Article%203%20helps%20to%20give,crises%20envisaged%20by%20the%20Alliance.
[3] As of 4 August 2022, NATO's Military Council Joint Standardization Board (MCJSB) approved the new definition for Civil-Military Cooperation (CIMIC)

emphasizing the need to deploy CIMIC capabilities in the realms of preparedness and resilience.

The full scale invasion of the Russian Federation in Ukraine on February 24, 2022, is certainly not only a conventional one but is accompanied way before the outbreak of the conventional campaign by a hybrid war with the aim to destabilise the Ukrainian government, economy, infrastructure and morale. The war is not just aiming against the Armed Forces of Ukraine (AFU) but foremost against the population and the will and capability of the society to withstand the attacks on them. It is fought through the countervalue strategy, against targets that are not purely military, but rather civilian infrastructure such as hospitals, power-plants and -grids and city centres with the specific goal not to undermine the enemy military force, but its support by the population. The Russian Federation anti-Ukraine propaganda is encouraging Russian minorities to rise against their government, aiming to strengthen the narrative provided by Moscow and legitimise their liberation by supporting the separatist population as a reason for the campaign. This is the case of Crimea and Donbas from 2014 onwards, where hybrid operations and the use of irregular militias, as well as unmarked soldiers (Little green men) contributed to the erosion of Ukrainian institutions and allowed the Russian Federation to gain control over Crimea and the outbreak of insurgency in the Donbas region. However, Ukrainian resilience was built up over eight years of "preparation" and readjusting, military and civilian measures to better withstand further actions by the Russian Federation against Ukraine after the invasion and concomitant illegal annexation of Crimea and the establishment of control over the Donbas by Russian proxies in 2014.

The persistent NATO, EU and national support to Ukraine has led the Russian Federation to amplify its hybrid activities against these supranational organisations, countries and societies pursuing to undermine their will to support Ukraine.
The Russian Federation attempted to take advantage of social and cultural linkages as well as the estimated weaknesses of the Ukrainian government, when beginning its invasion, much as it did effectively in 2014 with the annexation of Crimea and the occupation of the Donbas by proxy and covered forces. This was accompanied by hybrid activities to undermine the cohesion of Ukrainian instruments of power, military and the population by distributing fake information, negative propaganda and, in the course of the war, lethally attacking civil infrastructure and the population. The operation launched by the Russian Federation wasn't directed only at eliminating the AFU and their capacity to resist, but also directed against the Ukrainian society as a whole. It intends to eliminate Ukraine as an independent state,

integrating it into the Russian Federation, subject of Moscow's authority. The war had, therefore, not only the AFU as a target, but also its citizens. That is why the Ukrainian defence concept relied on the theory of the whole society playing an active role in the resistance of the nation, because the war they were going to face was not intended only in purely military terms. All of this demonstrates that the CivEnv is not just severely impacted but also actively contributes to the whole spectrum of conflict, from peacetime to war.

The reconstruction and renovation of the AFU and of the state resilience capacity, undertaken by Ukraine with the support of NATO and the EU, has greatly enhanced the preparedness of the military and the society. The capacity of the Ukrainian military and institutions to withstand the Russian invasion, violent shocks and to build an effective capacity for resilience of the civilian society and of the armed forces, enabled by a thorough assessment and understanding of the state's and UKR armed forces' failures in 2014, clearly demonstrates that the understanding of the CivEnv and the role it plays in the overall campaign is not just necessary, it is rather indispensable. In the eight years leading to the invasion, Ukraine took the effort to increase and enhance the resilience of its society and their armed forces, establishing a comprehensive approach to national defence. CIMIC has assumed a new, vital role in enhancing the defence capacities of Ukraine in a conventional-war scenario at large scale operations. Having NATO hitherto concentrated on CIMIC in the context of out-of-area missions, it is important to reshape the way the Alliance understands CIMIC and the assessment of the CivEnv in order to apply mentioned concepts to internal threats and defensive scenarios.

With this in mind, this preliminary analysis aims to analyse the 7 Baseline Requirements (7 BLR) and their impact on the population and the impact on Ukrainian combat effectiveness, with the intention of identifying fields for improvement of CIMIC in the appreciation as a joint function in peacetime, crisis and conflict. The assessment of the Ukrainian approach to CIMIC will ultimately lead to the possible integration of the latter into the NATO CIMIC framework, identifying where and how the Alliance could integrate, and thus enhance, its CIMIC doctrine and the defence capabilities of member states. By assessing the role played by CIMIC in Ukraine, NATO could gain important real-time lessons that would, ultimately, contribute to the resilience and collective defence capabilities of the Alliance.

The aim of this analysis is to provide food for thought to member state authorities within the Alliance by offering insights for their preparedness considerations and decision-making

processes. This assistance is intended to extend across the phases before, during, and after the deployment of major force packages. The focus is on fostering an environment that encourages the planning, design, integration, and deployment of CIMIC capabilities across various aspects of a nation's defence.

Primarily directed towards the CIMIC capabilities of the Alliance, as well as Allied Command Operations and Transformation, the Joint Force Commands J9, and higher tactical NATO Allied Commands, this paper also extends its relevance to elements within Ministries of Defence of NATO member states. This includes those engaged in enhancing societal resilience, preparing the Armed Forces, and understanding the mutual interdependencies between civil and military defence. Additionally, the insights from this paper may be of interest to research institutes engaged in military and strategic studies. The overall intention is to offer practical and accessible support to a diverse range of stakeholders involved in enhancing defence capabilities and strategic resilience within the NATO framework.

Chapter 2 – Resilience in Ukraine

In September 2021 the Government of Ukraine released its National Resilience Concept[4]. This Concept takes advantage of the 7 BLR defined by NATO[5]:

1. Continuity of government and critical government services;

2. Resilient energy supplies;

3. Ability to deal with uncontrolled movement of people;

4. Resilient food and water resources;

5. Ability to deal with mass casualties;

6. Resilient telecommunications system;

7. Resilient transportation system.

8. To the 7 BLR defined by NATO, Ukraine added the Social Resilience incl. Information Resilience and Financial and Economic Resilience

The 'commitment to enhance resilience' was adopted by NATO members at the 2016 Warsaw summit, stating that being resilient to evolving security challenges "requires Allies to maintain and protect critical civilian capabilities, alongside and in support of military capabilities, and to work across the whole of government and with the private sector."[6]

Ukraine reflected the relevance to enhance the resilience of the baseline requirements with the law "On the Fundamentals of National Resistance", which was signed by President Zelenskyy on July 29, 2021.[7] The Territorial Defence Forces (TDF) play a pivotal role in the Ukrainian resilience approach and act as a switchboard between civil and military factors within the operating environment The TDF, an organisation with a core of full-time employees, is distributed politically over districts, and is composed of three parts: military, civil-military, and civil. The legislation established Voluntary Formations of Territorial Communities (VFTC) as part of the civil-military component. Adult Ukrainian nationals were meant to be able to join the TDF and the national Resistance Movement through these organisations with the aim of "increase the level of stability and defence capability of the state, to provide the defence of

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[4] National Security and Defence Council (NSDC) "Introduction of a National Resilience System", August 20, 2021

[5] PO(2021)0372 "Revised Baseline Requirements, Resilience Guidelines and Evaluation Criteria", 15 October 2021

[6] Shelest, H., (2022), Defend. Resist. Repeat: Ukraine's lessons for European defense, European Council of Foreign Relations, page. 11

[7] Про основи національного с... | on July 16, 2021, № 1702-IX (rada.gov.ua)

Ukraine with an all-encompassing character, and to help ensure the readiness of the citizens of Ukraine for national resistance".[8]

The following paragraphs describe the situation with regards to the BLR in Ukraine as above:

2.1. Continuity of government and critical government services

Situation:

After the start of the Russian Federation's war against Ukraine, President Zelensky, in a video on social media, officially declared a state of martial law on all Ukrainian territory. The law of Ukraine "On the legal regime of martial law", which came into force on 1 January 2022 with the last amendment, states in Article 3 that in the conditions of martial law, the President of Ukraine and the Verkhovna Rada (Parliament) of Ukraine act exclusively on the basis, within the limits of their powers and in the manner prescribed by the Constitution and laws of Ukraine. The same applied to the Cabinet of Ministers of Ukraine, other state authorities, military command, military administrations, the Verkhovna Rada of the Autonomous Republic of Crimea, the Council of Ministers of the Autonomous Republic of Crimea and local self-government bodies: they shall exercise the powers granted to them by the Constitution, and other laws of Ukraine.

Ukraine has set this into action plans in order to guarantee the continuity of government and the protection of its key members. Details regarding these plans are unknown and confidential. Nevertheless, it is possible to assess the measures undertaken by the Ukrainian government in order to maintain the efficiency of the power structure. President Zelensky refused to leave the nation and stayed in Kyiv, even when the Russian Army was approaching.[9] This decision has contributed to Ukraine's ability to maintain and increase public support for Ukrainian national resistance in the nation and abroad. Furthermore, a clear line of presidential succession has been ensured, which proves to be an important measure enabling a broader national resistance strategy, since part of the Russian plan was to subjugate Ukraine by installing a more sympathetic, pro-Russia, regime.[10] Explicitly communicating a plan for leadership succession to the Ukrainian public could also help ensure that Ukrainian leaders, rather than Russian-chosen ones, gain rapid acceptance from the Ukrainian and the global audience, should a full occupation scenario unfold.

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[8] The law of Ukraine on the Foundations of National Resistance.

[9] https://edition.cnn.com/europe/live-news/ukraine-russia-putin-news-03-05-22/h_22156e13e8682a2e45659e68483c1e72

[10] https://www.rand.org/blog/2022/03/what-is-continuity-of-government-and-why-does-it-matter.html

Protecting national political centres of gravity, the continued legitimacy of the state, and the legitimacy and credibility of the political leadership, may help to maintain the support and credibility of the resistance, protect and ensure the rule of law, and promote accountability of the resistance actors to law. During the 2014 incursion into eastern Ukraine, the Russian operatives sought to consolidate political control by seizing government buildings, holding rigged referendums, and ensuring the ascension of pro-Russian figures into local governance structures. Unfortunately for Ukraine, these efforts largely succeeded. The 2022 invasion of Ukraine, though waged on a far more devastating scale, also ultimately centres on Moscow's desire to assert political control.

Assessment:

The Ukrainian government has successfully taken steps to deny the Russian Federation its political objectives, while protecting the enduring independence and sovereignty of the Ukrainian state. It was fundamental to maintain the functionality of government institutions and services to the population after resisting the initial shock. Ukraine has been able to do that.[11] Ukrainian national, regional and local institution kept working and were able to deliver essential services and support to the population, which greatly enhanced the possibility of society and AFU to pose a solid resistance against the invading forces. The Ukrainian finance system kept operating, delivering salaries and pensions, and the post service remained operational in vast parts of the nation despite being attacked by Russian proxies. Furthermore, the Ukrainian government has undertaken financial support measures to the population that because of the war remained unemployed and displaced.

Providing active support to the population and maintaining key state functions operational is extremely important in order to face aggression and maintain the support of the civil organisations and enabler to the armed forces' efforts to especially withstand the initial massive attacks on logistics and infrastructure. The ability of a nation's armed forces to withstand an invasion requires the support and cohesion of the civil society in a whole of government and society approach. Ukraine has understood the importance of this point and has actively taken steps to avoid another 2014 scenario, where institutions resigned in front of the Russian Federation's hybrid aggression.

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[11] https://www.euractiv.com/section/europe-s-east/opinion/the-ukrainian-state-did-not-collapse-as-russia-planned/

Conclusion

There are several lessons that NATO could embrace to enhance member states' resilience. First of all, establish a clear, transparent, policy on the continuity of government that can promptly be activated, shall the emergency situation arise. Secondly, NATO countries should undertake the necessary measures to keep the services to the population active and operational – synchronised with defence efforts in a pre-planned and frequently exercised with all relevant stakeholder of a comprehensive defence/ security approach (such as territorial entities and the state, provincial and regional authorities and agencies). This is not only important in extreme cases such as an invasion, but also in more unclear, hybrid attacks that might undermine the activity of a state. Maintaining the operability of a government is the most crucial step for enhancing the resilience of a state and, consequently, of the whole Alliance. Thus, NATO should undertake initiatives in order to establish and create material, coordination and political tools at the NATO level structure that could be provided to its members in cases of emergency.

2.2.   Resilient Energy Supplies

Situation

Energy in Ukraine is mainly extracted from gas and coal, followed by nuclear power and oil. The coal industry has been disrupted by the conflict because the heart of the heavy industry and coalmining lies in the Donbas and the eastern part of the Ukraine which is either under Russian occupation or under fire. Most of the gas and oil are imported, but since 2015 energy policy has prioritised diversifying the energy supply. The primary fuel has traditionally been coal, which dropped to 30 percent in 2018. Natural gas (28 percent) and nuclear power (24 percent), followed by 10 percent of electricity generated from renewable sources.[12]

The largest nuclear power plant in Europe, the Zaporizhzhia Nuclear Power Plant, is located in Ukraine and came under heavy attacks in the first weeks of the invasion and is currently under occupation. Until the 2010s, all of Ukraine's nuclear fuel came from the Russian Federation, but now needs to be imported from other sources.

In 2020, Ukraine transited more natural gas than any other nation in the world. It remains the main transit route for Russian natural gas sold to Europe, earning Ukraine about $3 billion a year in transit fees, making it the nation's most lucrative export service. Although gas transit is declining, over 40 billion cubic metres (bcm) of Russian gas flowed through Ukraine in 2021,

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[12] International Energy Agency, Ukraine Energy Profile, 2020.

which was about a third of Russian exports to other European countries. Ukraine has a diversified energy mix, and fuel takes up no more than a third of the nation's energy sources. Since the invasion of the Ukraine, the Russian Federation continuously attacked the Ukrainian energy infrastructure to reduce the resilience of energy supply and the populace support of their government. Since the invasion of the Ukraine, the Russian Federation continuously attacked the Ukrainian energy infrastructure to reduce the resilience of energy supply and the populace support of their government. In autumn 2022, the Russian Armed Forces started a massive air-campaign against critical energy infrastructures in Ukraine, aiming to undermine the society's capacity to resist and keep the nation's key sectors operative.

On June 6th, 2023, the Russian Armed Forces destroyed the Kakhovka Hydroelectric Power Plant (KHPP) dam in Kherson Oblast, causing massive flooding of the Dnipro River delta, with incalculable damages to urban centres and the environment to the river shorelines of the Oblast.

Assessment

Lack of coal for Ukraine's coal-fired power stations due to the War in Donbas and a shutdown of one of the six Zaporizhzhia Nuclear Power Plant reactors led to rolling blackouts throughout the nation in December 2014.

Although the Russian Federation continuously attacked the Ukrainian energy infrastructure, the attacks failed as Ukraine has proven to be able to withstand the effects of the attacks and proved to be extremely efficient in quickly repair the damaged structures, bringing them back to operativity in a short time. Energy Minister German Galushchenko reported that thanks to the combined work of air defence systems and technical measures, it has been possible to preserve the integrity of the energy system and to restore the energy supply.[13]

On June 6th, 2023, the Russian Armed Forces destroyed the Kakhovka Hydroelectric Power Plant (KHPP) dam in Kherson Oblast, causing massive flooding of the Dnipro River delta, with incalculable damages to urban centres and the environment to the river shorelines of the Oblast. The destruction of the dam caused the loss of an important energy source and furthermore triggered a water supply crisis with potentially serious consequences for the population of the Kherson Oblast and Crimea, as well as suppressed the main water supply for the agriculture sector in the area, which, as shown during the grain crisis, is vital for several countries of the world.[14]

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[13] https://www.reuters.com/world/europe/russian-forces-strike-ukraine-air-raid-sirens-wail-across-country-2023-02-10/

[14] https://www.reuters.com/world/europe/ukraine-warns-over-impact-kakhovka-dam-collapse-farmland-2023-06-07/

International support provided Ukraine with tools that proved critical to maintain the energy supply online. The EU alone provided Kyiv with more than 500 generators and repair kits.[15] European support could not consist in providing Ukraine with its energy, as the interconnection capacity of Ukrainian to European grids is limited. In this regard, there is the intention to improve the interconnection of the Ukrainian grid to the European one, which would improve the amount of energy European countries might divert to Ukraine.[16]

Conclusion

Since the military depends on civilian energy networks, ensuring the security of critical energy infrastructures and supply chains is important. Ukraine understood this well, and that is also why Kyiv has put effort into maintaining energy grids online, not only to ensure the resilience of the society but also to better support the armed forces in their resistance against the Russian Armed Forces. The destruction of the Kakhovka dam has potentially a great impact on the military operations of both, the Ukraine and the Russian Federation, thus showing that armed forces must take into account the possibility that civilian infrastructure might, depending on the situation, advantage or disadvantage military operations and the combat efficiencies. Ukraine has undertaken several measures in order to diversify and guarantee the security of its energy sources, elements that prove vital in order to withstand aggression. Even though NATO is not an energy agency and energy issues are matters covered by the member states, it could coordinate common efforts in order to improve the resilience and interoperability of allied energy infrastructures. Member states should enhance the material and cyber protection of their energy grids, as well as cooperate with other members of the alliance in order to make their energy supply more resilient, in the condition to promptly divert energy to meet other countries' need in case of emergency.

2.3. Ability to deal with uncontrolled movement of people

Situation

The ability to manage the uncontrolled displacement of people has a twofold significance. First, it is essential to maintain control, as much as possible, over the mass displacements from crisis territories and there after the evacuation of civilians and their temporary relocation to temporary shelters. Civilian mass movements can hamper freedom of movement and freedom of manoeuvre of military operations. Second, military operations can endanger

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[15] https://www.euronews.com/my-europe/2022/11/17/temporary-shelters-generators-sent-to-ukraine-ahead-of-winter-but-much-more-needed-eu-says
[16] https://cepa.org/article/ukraine-energy-grid-resilience-continues-despite-invasion/

civilian populace be it local population, refugees or IDP. It is, therefore, essential to de-conflict civilian mass movements with military operations. CIMIC is to contribute by providing an up-to-date civilian situation showing current IDP and refugee camps, establish and maintain liaison with civil authorities as well as non-military organisations dealing with the displaced persons on the move and assess current and expected mass movements of IDPs and refugees.

This task has been and is still carried out mainly by the TDF, whose task, among others, is to maintain order and security within Ukraine in cooperation with or instead of local administration. The AFU are in charge of evacuating civilians to safer places and, in coordination with state and local authorities, identifying camps and hosting structures for temporally IDP. On the other hand, the support of the government is also essential, which, in cooperation with neighbouring countries and the various agencies on the ground (Non-Governmental Organisations, International Organisations), keeps track of the displacements and makes arrangements to support them.

Assessment

The intensification of the warfighting in Ukraine since 2022 has resulted in massive increase of civilian casualties and the destruction of civilian infrastructure, forcing people to flee their homes in search of safety protection and help[17]. Since the beginning of the conflict, millions of refugees have crossed the borders of Ukraine to seek shelter in neighbouring countries, and even more have fled their homes, cities and regions as IDP to safer parts of the nation. The civilian population of Ukraine, especially in regions that suffered from fighting and destruction, is in need of protection and support. To assist civil authorities in providing first aid, identification of safe places and shelters are CIMIC tasks carried out by Ukrainian CIMIC elements. They identify evacuation routes and the facilities that are available to offer the first shelter to IDP.

Given the urgency and scale of the humanitarian need, multi-agency community refugee assistance is being implemented to support the efforts of host countries. United Nations (UN), and Non-Governmental Organisations together with other relevant partners elaborated the Regional Refugee Response Plan[18] to assist host governments in ensuring safe access to territories for refugees and third-country nationals fleeing Ukraine, in line with international standards.

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[17] Global map: Internal displacement updates | IDMC (internal-displacement.org)
[18] https://data.unhcr.org/en/documents/details/97958

Conclusion

The military plays an important role in dealing with the uncontrolled movement of people– especially in permissive environments directly threatened by the hostile military. They offer the first response when evacuating, escorting to safer places and identifying safe locations that can host displaced people – especially in permissive environments directly threatened by preplanning and exercising these activities with the governmental organisations in charge and supporting humanitarian organisation as well as the hostile military. Although it is undisputed that the main goal of the armed forces is to fight the battle and win the war – and it is not to take over the task and mission of governmental/non-governmental humanitarian organisations, the armed forces must enhance their preparedness to deal with such situations, by preplanning and exercising these activities with the governmental organisations in charge and supporting humanitarian organisation as well as pre-emptively identifying safe places, shelters and possible evacuation routes, as well as taking into account the amount and kind of material that shall be allocated for such operations. Even though armed forces offer the first response, in the medium-long term it is usually humanitarian agencies and civilian institutions that manage humanitarian crises and should take over. Therefore, coordination between the military, institutions and organizations must be enhanced in order to guarantee that the switching process takes place as efficiently as possible.

2.4. Resilient food and water resources

2.4.1 Food

Situation

The food situation in Ukraine, especially in rural areas, deteriorated significantly after the Russian attacks. Damage to civilian infrastructure, including the presence of landmines, unexploded ordnance (UXO), and restrictions on the movement of people and goods, prevent farmers from ploughing, harvesting and selling their crops and livestock products[19]. In addition, damage includes partial or complete destruction of the machinery, and significant losses of equipment, storage facilities, livestock and perennial crops. To evaluate the damages, the situation, and the need for humanitarian aid and other resources, the Food and Agriculture Organization of the UN has conducted a nationwide rural household survey[20] in Ukraine, investigating 5,230 rural households across the nation. The analysis is part of a series of

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[19] https://www.tni.org/en/article/ukrainian-agriculture-in-wartime
[20] UKRAINE Strategic priorities for 2023 Restoring food systems and protecting food security (December 2022) Available at: Ukraine: Strategic priorities for 2023 (fao.org)

complementary assessments that aim at providing a comprehensive understanding of the impact of the war on Ukraine's agriculture sector and identifying possible programming and policy responses. The key findings of this survey are impressive: in rural areas, one out of four respondents reduced or completely stopped their production. This translates into a substantial decrease in household income that has forced most families to spend more than 50 percent of their income on food items alone. In oblasts on the frontline, there is an average expenditure of 75 percent on food items resulting in decreased spending on health care, veterinary care, fertiliser, and feed.

Assessment

Ukraine grows enough food to feed 400 million people worldwide, including 50 percent of the world's supply of sunflower oil, 10 percent of the world's supply of grain, and 13 percent of the world's supply of corn. For the time being, up to 30 percent of Ukraine's crop areas will not be planted or harvested in 2023 because of the war, which has a strong impact on food security, especially in the Middle East and Africa. Besides this, after the Russian Federation invaded the nation, mountains of grain accumulated in silos because ships were on site but unable to get to and from Ukrainian ports as a result of the Russian sea blockade and the aim to cut of UKR from the Black Sea, while land routes were unable to make up the difference.

The Russian Federation invasion triggered a worldwide food crisis, with the risk of causing food shortages and famines, especially in the Middle East and Africa. The situation, which remains still critical, had been solved by grain deals on shipment, which the Ukraine and the Russian Federation had signed with the mediation of Türkiye but expired in July 2023 and wasn't prolonged so far.[21]

Conclusion

International cooperation proves to be essential in ensuring that food supplies remain accessible. In this regard, it is essential that nations prepare contingency plans in order to avoid the abovementioned situation. Furthermore, CIMIC, in its support of the CivEnv task, can prove to be essential, particularly when providing aid to civilians involved in combat areas or that suffered food shortages. In this regard, CIMIC elements should take into account the possibility that such situations might arise, and thus have to show readiness and preparedness to intervene.

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[21] https://www.consilium.europa.eu/en/infographics/ukrainian-grain-exports-explained/

2.4.2 Water

Situation

Although Ukraine appears geographically as a region particularly rich in rivers and lakes, in reality, it is in a water-scarce situation. Among the European countries, Ukraine ranks 17th in terms of water availability, as a result of the high level of pollution of surface water that makes it unusable for consumption and cultivation. In Ukraine, the largest users of water are energy, metallurgy, and agriculture.

Surface sources still account for 80 percent of the entire drinking water supply, while groundwater accounts for 13.8 percent of the nation's total water consumption and is mainly used for domestic water supply, agriculture, and manufacturing.

Assessment

The critical nature of the situation prompted the UN Security Council to pass a resolution on the harmfulness of destruction and involvement of water infrastructure in theatres of war. The war has damaged water infrastructure, including treatment plants, pipelines, and pumping stations. In addition, according to the Ukrainian Hydrometeorological Centre, water levels in most of Ukraine's rivers have continued to decline. Forecasts for the future are also not very encouraging.

Conclusion

Ukraine's approach to resilient water resources stands as a testament to its commitment to sustainable development and environmental stewardship. In addition to the ongoing war, Ukraine is facing numerous challenges such as aging infrastructure and pollution. Therefore, Ukraine faces on the one hand the challenge to protect its infrastructure against continuous attacks and on the other hand needs to address persisting issues and ensure the long-term sustainability of Ukraine's water resources. This includes continued investment in infrastructure modernization, adoption of innovative technologies, and active engagement with stakeholders at all levels.

2.5. Ability to deal with mass casualties.

Situation

Access to health services has been hampered by military action due to damage to infrastructure[22], loss of personnel, security problems, mass population displacement, increased costs of health inputs, and the population's reduced ability to pay for health care. The need for routine health services has changed as a result of population movements, with varying regional effects.

Despite the precautions taken by the government and all the external support received, due to the ongoing hostilities, mines, and ammunition remnants in former combat areas hamper access and endanger humanitarian workers. The provision of humanitarian aid is extremely limited in areas under the control of the Russian Armed Forces where volunteers are providing assistance. Few attacks directly targeted aid agencies, but collateral damage to humanitarian infrastructure and goods occurred; humanitarian workers were killed and wounded on both sides of the frontline. The World Health Organization (WHO) has strongly condemned acts of violence against health centres, which are violations of international humanitarian and human rights law[23].

Assessment

Access to health facilities and transportation remain the most problematic issue for people in Ukraine.[24] The situation remains critical for those who are living in temporarily occupied territories and active combat areas.

At the same time, the WHO remarks that the Ukrainian national health system remains operative and resilient, being able to provide health care despite being often the target of Russian missile strikes and attacks. In order to guarantee the resilience of health care facilities, international aid has proven to be vital. Supporting countries and organisations have provided supplies that have ensured the operability of hospitals and other health structures.

The AFU are meant to conduct an assessment of the CivEnv to inform the population about areas affected by military activities. Furthermore, the AFU exchange information with local authorities for the identification of cases of death and wounding of civilians, with the ultimate goal of identifying trends and causes of harm to the population, thus making proposals to

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[22] Hospitals are on the strike list of Russia: https://edition.cnn.com/2023/02/21/europe/report-hospital-ukraine-attacks-russia-invasion-intl-dg/index.html

[23] https://apps.who.int/gb/ebwha/pdf_files/WHA76/A76_ACONF4-en.pdf

[24] https://www.who.int/europe/news/item/24-10-2022-accessing-health-care-in-ukraine-after-8-months-of-war--the-health-system-remains-resilient--but-key-health-services-and-medicine-are-increasingly-unaffordable

military authorities regarding the better response to be provided for preventing and reducing civilian casualties.

Conclusion

CIMIC can play a role in preventing and dealing with mass casualties, as one of its main tasks is identifying and locating safer places for the population and organising evacuation routes from combat-related areas which requires an in depth understanding of the CivEnv. Therefore, it is essential that CIMIC elements assess, as efficiently as possible, all the factors in one particular operational zone that might prevent civilian casualties.

2.6.　Resilient Telecommunication Networks

Situation

During the first months of the war, the war has caused considerable damage and destruction of the communication infrastructure in more than 10 out of 24 regions of Ukraine[25], which has significantly deteriorated the state of connectivity and vital information exchange in the nation. Widespread destruction of critical systems and facilities, and the failure of telecommunication services causing severe damage and service interruption for millions of households as well as private and public institutions. A complete and exhaustive evaluation and estimation of the destruction and recovery needs will not be possible until the full liberation of the occupied regions. Thanks to efforts to maintain the nation's internet connectivity, the overall communication resilience in Ukraine has been maintained through the strong and continuing commitment of mobile operators Kyivstar, Vodafone and Lifecell, as well as the State Commission for Special Communications and the National Commission of Electronic Communications.

The Ukraine Government considers the restoration of the communication infrastructure as a high priority, as it has the potential to boost the economy and social life in the nation. Since the start of the war, Ukraine's public and private sectors have been involved in the repair of telecommunication and critical networks. To increase the resilience of its telecommunications system and the availability for military purposes, Ukraine has taken a number of measures, including:

- Diversification of telecommunications infrastructure: Ukraine has been working to diversify its telecommunications infrastructure to reduce its reliance on former Russian

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[25] https://www.reuters.com/world/europe/un-releases-report-ukraine-telecoms-damage-by-russia-2023-01-06/

networks. This has included building new fibre optic cables and satellite networks to connect to international networks.

- Strengthening cybersecurity: Ukraine has been working to strengthen its cybersecurity measures to protect against cyber-attacks, which have been a significant threat to its telecommunications infrastructure. This has included the establishment of a national cybersecurity agency and the development of a national cybersecurity strategy.

- Redundancy and backup systems: Ukraine has been building redundancy and backup systems into its telecommunications infrastructure to ensure that it can continue to operate in the event of disruptions. This has included the use of backup power systems, redundant network infrastructure, and geographically dispersed data centres.

- International cooperation: Ukraine has been working with international partners to increase the resilience of its telecommunications infrastructure. This has included cooperation with the EU and NATO to develop joint cybersecurity initiatives and establish international communication channels in a crisis. As telecommunication networks heavily rely on transnational systems, their capability to remain online and work must be considered as a multinational task to be achieved in cooperation with other nations. In this regard, NATO can prove vital assistance in supporting member nations to keep their networks running. It is furthermore of the greatest importance as those systems relies on the efficiency of the Alliance to coordinate common responses to crises and aggressions.

Assessment:

Overall, while Ukraine's telecommunication networks possess notable strengths, addressing existing challenges is essential to enhance resilience. Protection against Russian attacks on telecommunication infrastructure as well as investments in the modernization, cybersecurity measures, and regulatory reform are critical priorities. Additionally, fostering collaboration between government agencies, telecommunications companies, and international partners can strengthen resilience efforts and ensure the uninterrupted flow of communication, even in the face of unforeseen disruptions. By addressing these challenges proactively, Ukraine can bolster the resilience of its telecommunication networks and better withstand future threats and challenges.

Conclusion

Ukraine's telecommunication networks demonstrate a mix of strengths and challenges. Despite advancements in technology and diverse infrastructure, Russian caused attacks and

cybersecurity risks remain significant concerns. Collaboration among stakeholders is vital to address vulnerabilities and ensure uninterrupted communication services. Strides in network resilience are essential for supporting economic development and societal connectivity. Continued efforts to bolster infrastructure, cybersecurity defences, and regulatory frameworks are imperative for navigating future challenges.

2.7. Transportation System

The transportation system in Ukraine operates by land, water and air, thus including rail, road, sea, river and air transportation networks. Since the beginning of the invasion, all these infrastructures were affected by several damages due to the continuous Russian strikes, and whenever the damages weren't caused by Russian Armed Forces, own/friendly fires.

2.7.1 Air

Situation

Airports have immense strategic value during a conflict. According to the Great Circle Mapper[26], Ukraine has 55 airports.

Only hours after Russian troops invaded Ukraine, airlines were encouraged to "exercise care" inside the Russian Federation as fuel costs soared, Ukraine closed its airspace[27], and airlines struggled to adjust to the situation in Europe. According to the European Union Aviation Safety Agency (EASA), Ukrainian skies as well as the airspace of the Russian Federation and Belarus within 100 nautical miles of Ukraine's border, might pose concerns.

During the first day of the invasion, Ukraine's Central Military Command reported that the Russian Armed Forces bombed several airports, including Kyiv Boryspil, Nikolaev, Kramatorsk, and Kherson. Although the strikes were received, many airports are still working, and their functionality supports the Ukrainian effort. Already in the early stage of the invasion 12 out of 29 civilian airports suffered damage or destruction including airports that had recently undergone infrastructure upgrades, such as Dnipro and Odesa[28].

Assessment

In the current situation, the once vibrant and bustling air transportation system has been forcibly repurposed, primarily catering to military needs amidst the ongoing conflict. This

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[26] Search for Location - Great Circle Mapper (gcmap.com)

[27] https://safeairspace.net/ukraine/

[28] https://www.kmu.gov.ua/storage/app/sites/1/recoveryrada/eng/recovery-and-development-of-infrastructure-eng.pdf

transformation, dictated by the pressing demands of warfare, has effectively side-lined the system's civilian and commercial functions.

The destruction of airports and airfields decreased the capacity to handle goods including humanitarian assistance significantly. It inflicted upon these vital nodes of transportation has dealt a severe blow to Ukraine's ability to handle not only military logistics but also the flow of essential goods, including crucial humanitarian aid desperately needed by affected populations. The only marginal availability of civilian air transport capacities forces auxiliary and supply good to be transported by alternative means such as rail- and landlines[29].

Conclusion

The destruction and closure of airports in Ukraine have immediate and far-reaching consequences, affecting civilian air transport, humanitarian aid delivery, economic activities, and overall logistics. The situation emphasizes the interconnectedness of military and civilian infrastructure and underscores the importance of international responses to address both immediate challenges and long-term infrastructure resilience. If the attacks come to an end, then the situation needs to be reassessed and the reconstruction of the civil infrastructure must be initiated in close cooperation between military and civilian entities. A system needs to be to establish to coordinate the usage of the available capabilities for humanitarian assistance and military support.

2.7.2   Water

Situation

According to Marineinsight, the principal seaports in Ukraine are Odessa, Chronomorsk, Yuzhny, Berdiansk and Mariupol.[30] The last two, overlooking the Sea of Azov, fell into Russian hands and together with the ports of Skadovsk and Kherson, were formally declared closed by the Agriculture Ministry of Ukraine on 2 March 2022 "until Ukraine regains control over" them[31]. All of these seaports were repeatedly shelled during the last year. As it's known, due to Turkish intercession, a humanitarian corridor was opened in June 2022 for the export of Ukrainian grain, which was necessary to avert a food crisis, especially in the most fragile nations. However, the Black Sea Grain Initiative was accepted under certain conditions.

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[29] https://airlinkflight.org/responses/ukraine/
[30] https://www.marineinsight.com/know-more/5-major-ports-of-ukraine/
[31] https://minagro.gov.ua/news/chastina-morskih-portiv-v-ukrayini-timchasovo-pripinyaye-svoyu-robotu

Conditions that the Russian Federation, according to the Centre for Transport Strategies[32], the Ministry of Infrastructure[33], and the American Chamber of Commerce of Ukraine[34], has been exploiting since November 2022 in connection with other tactical methods, such as attacks on energy infrastructure, in order to sabotage the export allowed by the humanitarian corridor by reducing the number of inspections in the Bosphorus Strait on the one hand, and taking advantage of the halt in operations due to de-energisation on the other[35]. While Ukraine's maritime exports are limited to a "corridor".

Inland waterway only plays a subordinate role, mostly on the Danube and Dnieper rivers. Shipping is limited in winter because all rivers freeze over and icebreakers are only limited available. In addition, ongoing fighting along the Dnieper and especially the destruction of the Kakhovka dam reduced the ability to use this transport route significantly. However, due to the limited usage of the Black Sea as transport route, shipping on the Danube is increasing, especially for the transport of grain.

Assessment

The blockade of Ukrainian seaports and especially grain shipments show the lack of usability of the Black Sea as a sea line of communication and the influence on the Ukrainian economy. As the limitation of grain and cooking oil export by Russian activities limits the economic endurance to maintain war capabilities as well as having an impact on shortages of supply to Africa – which increase their instability and puts pressure on the international community to mitigate those risks. In addition, Ukraine may aim for an improvement of the usability of inland waterways as an alternative.

Conclusion

The Ukrainian waterway situation reflects a vital component of the transportation infrastructure. The blockade of Ukrainian seaports, particularly affecting grain shipments, reveals significant vulnerabilities in maritime trade routes and emphasizes the need for strategic diversification. Addressing these vulnerabilities requires a multi-faceted approach,

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[32] https://en.cfts.org.ua/articles/the_same_rules_for_everyone_or_an_open_sea_what_will_happen_to_ukraines_seaports_

[33] Спільна заява віцепрем'єр-міністра з відновлення України – міністра розвитку громад, територій та інфраструктури України Олександра Кубракова та міністра закордонних справ України Дмитра Кулеби щодо перешкоджання судноплавству в Чорному морі з боку Росії - Новини - Міністерство ровитку громад, територій та інфраструктури України (mtu.gov.ua)

[34] Бізнес закликає сторони Чорноморської зернової ініціативи – ООН та Туреччину – сприяти її стабільній роботі, продовженню і розширенню, та забезпечити вільне торговельне судноплавство в Чорноморському регіоні - Американська торговельна палата в Україні (chamber.ua)

[35] Two ports of the "grain initiative" resumed operation after de-energization | Ekonomichna Pravda (epravda.com.ua) and Адміністрація морських портів України/Ukrainian Sea Ports Authority | Odessa | Facebook

including diplomatic efforts, infrastructure resilience, and exploration of alternative transport routes to enhance economic security and mitigate international risks. However, in the current situation, the usage of the seaports and the Black Sea as Sea line of communication will foreseeably be denied by the Russian fleet.

2.7.3 Road

Situation

The Transformative Urban Mobility Initiative (TUMI) states that more than 15.000 km of roads and at least 350 bridges and bridge crossings were destroyed or made unusable[36]. Despite constant attacks by Russian Armed Forces, Ukraine's critical road system is significantly operational. State agencies like the Ministry of Communities, Territories and Infrastructure Development and Ukravtodor[37], the State Agency of Automobile Roads, prioritise critical services and military support.

Ukrainian CIMIC TDF and civil administration systematically deconflicted the use and occupation of the road network for evacuation efforts while simultaneously identifying strategic choke points to impede the advance of Russian forces. This aims to streamline traffic flow for safe civilian evacuation routes while strategically obstructing key avenues of approach for the Russian military.

Assessment

Before the invasion, the Ukrainian authorities had realised that the nation's ability to modernise its transport infrastructure using state-of-the-art traffic technology would be crucial to its ability to prosper economically, and several projects were already in the pipeline to achieve this very goal: Roads are a focal point of the fighting and at a strategic level are of enormous importance. They are clearly the first escape routes for the civilian population, which is precisely why they were immediately targeted for the attempted seizure of Kyiv in order to prevent the evacuation of civilians, forcing the government to surrender under the pressure of the frightened people. By delineating clear pathways for evacuation and pinpointing critical junctures for defensive measures, this system enhances both civilian safety and military preparedness. However, this use of available road networks for both military and civil transport carries the risk of mutual influence and restriction.

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[36] https://www.transformative-mobility.org/campaigns/ukraine
[37] State Agency of Automobile Roads (Ukravtodor) — Reforms Delivery Office (rdo.in.ua)

Conclusion

Ukraine's road infrastructure is a critical component of its transportation network, with high relevance on Ukrainian side as Line of Communication (LoC) to ensure Freedom of Movement and speedy deployment of AFU as well as LoC for civilian traffic in both directions (Transport of goods and help to the one and movement of IDP in the opposite direction).

On the other side , the road network is crucial for the Russian forces to foster their advance. However, it can be assumed that the attacks on the road network will continue due to its importance for military transport and the morale of the population. In addition, to ensure the de-confliction of civil and military use require a constant civil – military exchange and joint deconfliction.

2.7.4   Rail

Situation

Before the invasion, the nation was trying to modernise its railway infrastructure. Half of the entire locomotive fleet available in Ukraine had been built before the 1970s. Railways play an important part in the military, as they are essential for logistics and for the continuous supply to the frontline. This is particularly the case of the Russian Armed Forces, which have shaped its own logistic on the backbone of railways.

The Ukrainian railway fleet, therefore, appears as an old but functioning remnant of the past that has done and is still doing its bit in the fight against the Russian Federation. The importance of rail transportation has significantly increased in the last year. Rail routes are one of the most effective ways of evacuation[38], and since the full-scale invasion began, it has brought almost 7 million[39] people to safety from crisis areas such as in the south and centre to safer areas in the west and/or neighbouring nations. Having the capacity to evacuate the population by train promptly is an important factor for the armed forces, as the evacuation of civilians could be an activity with strong involvement of CIMIC units. In addition, the railroad is also playing a key role in transporting goods for export. Before the war, 50% of Ukraine's imports and exports passed through its sea port of Odesa. Since Russia began its blockade of the Black Sea coast, Ukraine has increasingly been trying to export goods like wheat, coal, steel, and chemical products to the West by rail

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[38] The others two are automobile evacuation and combined evacuation.
[39] According to data from Ukrzaliznytsia

Assessment

The importance of transportation by rail is utmost valid for the rapid removal of the wounded from war zones, thanks to the setting up of ambulance trains[40]. Additionally, despite not yet being able to sustain it, transportation by rail has become strategically important in the transport of grain, given the limitations in maritime transport. In summary, the railways are clearly one of the most efficient means of supplying troops on the front lines, distributing humanitarian aid in war zones and ensuring the transport of good to the people in need.

Conclusion

Ukraine's rail network remains a vital artery for transportation, supporting both military and civil purposes. An efficient coordination of military and civilian authorities is essential to guarantee that the needs of both civilian and armed forces are met. Despite attacks, the rail network facing challenges from aging infrastructure and funding constraints before the war, but its functionality and connection to the Trans European Network for Transport needs to be ensured with the support of donors like e.g. USAID.[41]

2.8. Societal Resilience incl. Information Resilience, Financial and Economic Resilience

2.8.1. Societal Resilience

Situation

Despite the lingering effects of historical conflicts, economic instability and political tensions, Ukrainian society demonstrates remarkable resilience against the continuous attacks of the Russian forces. It showed that the threat of the Ukrainian independence and sovereignty enhanced the societal resilience and hope of the population despite a higher level of distress and perceived threats. This is achieved mainly through a strong sense of community, cultural heritage, and solidarity. In this context, civil society organizations play a crucial role in fostering resilience by providing support networks and promoting social cohesion.

The resilience of Ukrainian society is evident in its ability to withstand external pressures and preserve national unity. Upholding national values, promoting inclusive policies, and increasing trust between citizens and institutions after years of struggling with corruption are essential for nurturing societal resilience in Ukraine. The AFU play an essential role in

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[40] https://edition.cnn.com/travel/ukraine-railways-still-running-two-years/index.html
[41] https://www.usaid.gov/news-information/press-releases/dec-04-2023-usaid-partners-ukrainian-railways-support-integration-european-rail-network

maintaining the societal resilience. Their success on the battlefield promotes national identity and cohesion and their support to the population is a major contribution to regaining the trust in national institutions.

Furthermore, their direct involvement in community development projects, such as rebuilding infrastructure and providing medical assistance, fosters a sense of solidarity and mutual support among civilians and strengthens the bond between the military and the population.

Assessment

Ukraine's resilience to Russia's war came as a surprise to politicians, experts, and the general public worldwide. While many scholars point to national unity, an increasingly salient component of this debate is resilience at all levels. Ukraine demonstrated its preparedness to absorb shocks, adapt to new circumstances, and stay robust without losing the ability to fulfil their basic functions.

Ukraine recorded solid progress last year in its long struggle with corruption.[42] The Ukrainian authorities have taken several steps against corruption including establishing a new anti-corruption architecture, embracing digitalization, and conducting ambitious reforms in key sectors such as government procurement, banking, and energy.

Conclusion

Ukrainian societal resilience is evident in its ability to persevere amidst not just military attacks by the Russian Federation. Ukrainians exhibit resilience through solidarity, innovation, and civil engagement. Nurturing this resilience requires continued support for civil society, inclusive policies, and international collaboration. Upholding democratic values, fighting corruption and promoting social cohesion are essential for fostering long-term resilience in Ukraine and could be used as a blueprint for other nations.

2.8.2. Information Resilience

Situation

The weaponization of information has been part of the Russian Federation's hybrid operations in Ukraine since 2014. The rapid rise in internet coverage and social media consumption makes the current invasion different. Ukraine is "the most wired nation ever to be invaded," with 75 percent of its population using the internet and 92 percent having access to 4G mobile networks. Following its invasion, the Russian Federation unleashed a full-scale propaganda

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[42] https://www.transparency.org/en/cpi/2023

campaign, relying on a mix of official state media sources, anonymous accounts in social media, and its paid army of internet trolls to flood comments sections and discussion forums on news websites and online sources. The disinformation narratives have broadly sought to demoralize Ukrainians in their defence efforts, exploit societal splits and sow new divisions, and to poison trust in the independent media and public institutions. In the newly occupied regions in the south and east, the Kremlin's propaganda agents together with local collaborators actively promote the messages of Ukraine's inevitable defeat and mission to defend locals against the "Nazi regime" in Kyiv. Government institutions play an important role in counteracting negative information influences and in establishing a positive narrative that might enhance the social cohesion of the population and the state's resilience.

Assessment

Since 2014, the pro- Russian narrative and information influences have been able to play a role in destabilizing Ukraine and creating a positive narrative in Europe for the invasion of Crimea and the insurgency in the Donbas region.

However, the Ukraine society was, surprisingly for the RUS invaders, immune against their narrative of an unjust Kiev government, the ideology of two brother populace reunited in the RUSKI MIR and the whole narrative of belonging to RUS. The RUS lost dramatically the cognitive and narrative warfare. Furthermore, since the Russian invasion, Ukraine has been able to master the information war and successfully establish its narrative against the Russian narration. This process consisted not only of a "rally 'round the flag" based on the increased popularity of President Zelensky and his government but was also based on a broader support for the AFU.

AFU has put effort into improving its image among the population and establishing a good relationship with civilians, understanding that it is a key element that enhances the effectivity of the armed forces and the cohesion of the population in withstanding the invasion.

Conclusion

Exposing and countering the Russian Federation's media influence and pro-Russian narrative to gain sympathisers has been a leitmotif for the Ukraine in the last years. It is therefore of paramount importance that the Ukraine continues the investment in their information and social resilience, in order to not allow the Russian Federation, as well as other competing nations, to increase their influence. Furthermore, they should put efforts into maintaining the positive view on the armed forces, in order to maintain or increase trust between civilians and the military and therefore increase their resilience.

2.8.3. Financial and Economic Resilience

Situation

In the first year of the war, Ukrainian Gross Domestic Product dropped by 30 - 35 percent while poverty rates rose to 24 percent[43] and inflation to 26%[44]. Such economic data fully reflect the dramatic situation of the war, indicate the effects on the nation as well as the population. Ukrainian institutions and society have been able to adapt to the new situation by promptly switching from a peacetime economy to a wartime economy, allowing the nation to resist and adapt to the new circumstances. After the 2022 retreat of the Russian Armed Forces, only some regions in the east and in the south remain occupied, while the other parts have had the opportunity to operate in an essentially war-free zone. Nevertheless, economic conditions remain extremely difficult as the widespread destruction prevents people from conducting normal life and missile attacks spread terror and damage to territories that are not on the front line.

Assessment

The stark economic indicators as of 2022, with a 35 percent drop in the Ukrainian Gross Domestic Product, concurrent with a 35 percent unemployment rate, and significant spikes in inflation (26 percent) and poverty (25 percent), illustrate the severe impact of the war on Ukraine's economy and its populace. These statistics underscore the urgent need for comprehensive economic recovery measures. The ability of Ukrainian institutions and society to swiftly transition from a peacetime to a wartime economy reflects a commendable level of adaptive resilience. This adaptability has been instrumental in enabling the nation to withstand the challenges posed by the ongoing conflict. Post the 2022 retreat of the Russian Armed Forces, certain regions in the east and south remain occupied, while other parts have returned to a semblance of normalcy in a war-free environment. This highlights the asymmetrical impact of the conflict, with some areas continuing to grapple with occupation and destruction.

Despite the partial withdrawal of Russian forces, the economic conditions persistently pose challenges. The widespread destruction impedes normal life, and missile attacks, even in non-frontline territories, contribute to an atmosphere of fear and further damage.

The economic downturn, combined with ongoing conflict-related challenges, has likely led to significant humanitarian consequences. The impact on the general population's well-being, access to basic necessities, and overall quality of life necessitates urgent attention.

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[43] https://www.economicsobservatory.com/ukraine-whats-the-global-economic-impact-of-russias-invasion
[44] https://tradingeconomics.com/ukraine/inflation-cpi

Conclusion

The assessment underscores the urgent need for a comprehensive strategy focusing on post-war economic recovery, reconstruction, and rehabilitation efforts. Prioritizing rebuilding infrastructure, restoring normalcy in daily life, and addressing the widespread economic challenges should be at the forefront of recovery initiatives. Given the scale of economic decline and the widespread destruction, international support and collaboration will be vital for effective recovery. Collaborative efforts involving international organizations, humanitarian agencies, and donor nations will be essential in addressing both immediate needs and long-term reconstruction.

2.9. **Summary**

The ongoing conflict in Ukraine vividly demonstrates the intricate relationship between a nation's resilience and the success of military operations. This underscores the paramount importance of Civil Factor Integration (CFI), notably the BLR, into the planning and execution of operations, a core activity of CIMIC.

CIMIC in the AFU as well as in the TDF contributes to collaborative efforts to equip military forces with critical resources, expertise, and support from civilian sectors, bolstering their resilience on the battlefield. By assessing the BLR and their effects, CIMIC ensures that military operations are better aligned with the needs and realities of civilian communities, thereby enhancing their success and fostering acceptance in the population. Concurrently, military operations play a vital role in contributing to mitigate shortfalls in in all BLR as described above and thus contributing to strengthen the Ukrainian societal resilience. This reciprocal relationship highlights the interconnectedness between military and civilian spheres in the Ukraine, emphasizing the necessity of comprehensive approaches that prioritize cooperation and coordination between them.

As a joint function, CIMIC coordinates and ensures the CFI of the Operating Environment. Given the example of Ukraine, information requirements oriented along the BLR can be observed and constitute the requirement for a robust analysis and an accurate assessment to inform decision-making. The Ukraine scenario exemplifies the need for the earliest coordination of civil-military activities among various military and non-military actors at the earliest possible moment. Establishing the appropriate levels of interaction and coordination mechanisms already in peacetime becomes imperative for planning, executing missions and

orchestrating military means in peacetime, crisis, and even conflict, enabling a targeted society to withstand, absorb, and recover from potential shocks.

Chapter 3 – CIMIC Capabilities of the Armed Forces of Ukraine

The capacity to withstand the Russian Federation's invasion relies mainly on the effectiveness of the AFU and the application of a whole of government and society approach with a strong emphasis on preparation and surviving the first strikes. The occupation of the Crimea and the Donbas insurgency in 2014 indicated difficulties in the preparedness and effectiveness of Ukraine to deter both hybrid threats and conventional, low-intensity attacks. For Ukraine and the AFU was only a question when and not if at all – subsequently the preparations has been focused and comprehensively.

Furthermore, the occupation highlighted the hybrid nature of the Russian Federation's aggression and thus the necessity to implement a broader, comprehensive approach to security. The war in the Donbas as of 2014 showcased for example that CIMIC teams had a better access to contest areas where population was reluctant to interact with the AFU. The newly applied CIMIC teams created such access and by that were better suited to collect, assess and integrate civil factors in the overall operating environment. The strong interconnections of the attacks, targeting both civilian and military domains, led to the difficulties of AFU to face such challenges. After the occupation of the Crimean Peninsula and pro-Russian proxies seizure of large parts of the Donetsk and Luhansk Oblasts, Ukraine started several reforms of their defence policy and armed forces. This process has been supported by NATO members with material and doctrinal as well as training support, which has helped Ukraine to modernize their armed forces.

In Ukraine, CIMIC in the AFU[45] remains a function carried out mainly by the ground forces, whereas the involvement of the Navy and Airforce remains marginal. The main reference in Ukraine for CIMIC is the Doctrine on Civil-Military Cooperation and the Methodical Manual for armed forces on CIMIC Issues, published in 2020 and 2019. Both are based on the experiences of the Donbas fights and on those of the armed forces of NATO nations, as well as on the NATO CIMIC doctrines, such as the AJP-3.19.

Nowadays, CIMIC plays a significant role in the effectiveness and preparedness of the armed forces since it is the connection between the military and civilian actors and agencies that might prove to be key factors for deterring and withstanding aggressions[46].

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[45] Based on interviews and presentations given by Ukrainian Officers during various occasions
[46] https://voxukraine.org/en/voluntary-formations-of-the-territorial-defense-forces-of-the-armed-forces-of-ukraine-are-key-to-national-resistance-and-should-be-treated-as-such

A key element of the reform of the AFU has been the introduction of a J9 Directorate in the General Staff and the creation of units in the ground forces with a specific CIMIC function. Furthermore, the establishment of the Territorial Defence Forces, with a civil-military structure, has the purpose of enhancing the preparedness of AFU, providing them with a key element in synchronising military and non-military activities.

In the following, the AFU are explained in more detail, especially with regard to CIMIC. The information available to the CCOE for this paper were provided directly from the J9 Directorate of the AFU.

3.1.   Strategic Level

The hybrid war conducted by the Russian Federation since 2014, targeting the military and society as a whole, posed Ukraine with challenges of a different nature, that requires a broader, comprehensive defence approach to be adopted in order to deter and withstand such aggressions. This has led ultimately to a greater focus on societal defence, in order to both address military-related issues and aggressions to the civilian cohesion and capacity to resist.

This is the reason why the needs for CIMIC to be completely integrated into the General Staff of the AFU system has been identified in 2014, and it became a stronger reality in April 2020, when the Ukrainian CIMIC Directorate became an integral part of the AFU.

The Ukrainian J9 Directorate is able to be fully engaged in establishing and coordinating civil-military relations and activities. At the strategic level, the J9 Directorate is mainly tasked to direct CIMIC activities and provide CIMIC doctrinal development and guidance. It organises the measures for decreasing civil casualties and coordination of humanitarian activities, plans the organisation of returning people to their homes, and Missing and Killed in Action (MIA, KIA) search and recovery activities.

The J9 Directorate is best positioned to assess, assist and coordinate civil resilience and resistance efforts and serves as the primary link for communication between non-military actors and the military inside and outside of Ukraine. It started with the effective contribution to the early stages of the planning process, i.e. shared understanding of the operational environment spanning holistic domains, providing the basis for continuous learning and situational awareness. The BLR represent key tools for assessing, evaluating and improving the resilience of a nation. They serve primarily as civilian tools, but, as it has been shown, they

are vital for the armed forces as well. The enforcement of the BLR is, necessarily, a joint civil-military task and has therefore to be seen as part of a comprehensive approach to defence, where the civilian sphere supports the military and the other way around.

CIMIC contribution at the strategic level consists also of the establishment of interaction at the respective level with all the civilian authorities and government bodies that might be relevant to the operations of the AFU.

The J9 Directorate in the AFU has become an example of a probable new CIMIC contribution to the activity prior to, during, and after the planning and execution of an operation. They were challenged with transferring the perception as well as its own mindset and the consequent effort from the "support to the civil environment", which was carried out since 2014, to the "support to the force" starting from 2022. Furthermore, Ukraine CIMIC is taking part in STRATCOM, in the so-called war of narratives, in order to consolidate Ukraine's approach from the political to the tactical level.

3.2. Operational Level

Key elements of CIMIC in Ukraine are the Civil-Military Administrations, which, created on all levels, ranging from the Oblast to the village, are temporary state entities meant to ensure the livelihood of communities in case the governing authorities are incapable to exercise their powers. Those Administrations were first established during the Donbas insurgency in 2014 in the Donbas and Luhansk region and after the 2022 invasion, they were established in all other Oblast of Ukraine.

CIMIC liaison officers are fully integrated in the administration of each oblast. The government of Ukraine has the capacity to create Civil-Military Administrations that enhance the coordination of the AFU and civilian institutions. The CIMIC liaison officers have mainly two roles, on a horizontal and on a vertical level. Horizontally, communicating with the other CIMIC operational levels and the other administrations from which they receive tasks and requests of information. Vertically, they are linked to the J9 Directorate in the General Staff of AFU providing reports and assessments of the situation of their oblast. CIMIC elements at the operational level serve the double purpose of support to the CivEnv and support to the force. On the one hand, Civil-Military Administrations are meant to take over in areas where civilian authorities are no longer able to provide for the population. They coordinate and manage the necessary aid that civilians might need. On the other hand, their goal is to ensure that the

civilian environment of the operational area is completely and fully assessed to maximise the armed forces' combat efficiency.

One of the main tasks the operational level is tasked for, is the coordination of voluntary support to the AFU, e.g. with manpower or useful equipment. This task is covered by the TDF, which are organized regionally, and have a strong awareness of the territory. The TDF are a formation composed partially by the AFU but in majority by the army reserve and volunteers. Being composed like this, the TDF represent a linking pin between the armed forces and the society. The territoriality of this formation greatly contributes to this.

3.3. Tactical Level

CIMIC brigade elements are responsible for the actuation of CIMIC tasks provided by the strategic through the operational headquarters. They take part in the decision-making and planning process of the unit, providing the commander with insights on the CivEnv, with the ultimate goal to increase the situational awareness on the territory of the brigade and thus enhance the efficiency of combat units. Decisions taken by the AFU J9 Directorate are translated into effects to be achieved and deriving actions to be conducted effectively at the tactical level. For this reason, since the beginning of hostilities, Ukrainian CIMIC has been engaged in planning, organising, and coordinating CIMIC activities with a key role in coordination between the AFU and local and regional administrations and in providing for continuous assessment of the CivEnv with a special focus on the protection of critical infrastructure for the support of the continuity of government activities and people's daily lives. In addition, while coordinating the effort with non-military actors such as United Nations High Commissioner for Refugees (UNHCR) and border authorities of neighbouring countries, it enables the Government to track refugees and IDP in order to plan evacuation routes.

In order to assess and evaluate the civil situation, CIMIC units collect data about needs and capabilities on a local level. This enables the operational level to enhance their understanding of the operating environment. In an effort to reduce civil casualties, CIMIC units coordinate the evacuation of civilians and take part in resistance movements by identifying key leaders, local strengths and weaknesses, and windows of opportunity. Being the coordination mechanism between division headquarters and local authorities, CIMIC units are tasked to identify infrastructure repurposed for military units to be accommodated, fulfilling specific requirements. Once identified, the CIMIC unit reaches out and contacts the local authorities, requesting permission and creating a legally binding contract. Within the tactical level, CIMIC

Special Operation Forces, as a preventive measure should the Russian Armed Forces succeed in advancing on the territory, identify key leaders in civil society in order to have an interlocutor to give indications to, who is respected and trusted in that specific community to enhance civil resistance ability.

The effectiveness of the CIMIC units is also demonstrated by the collection of information that, on a daily or weekly basis, depending on the degree of necessity of the area in which they operate, report any facts on the specific territory to the CIMIC officers who at the operational level are embedded in the civil administration structure.

CIMIC units at the tactical level represent the first line of contact with civilians. This proves to be extremely important as, on the one hand, it establishes the ground for an efficient understanding of the CivEnv and having the possibility to organise shelters and evacuation routes. On the other hand, it allows civilians to take part in the resistance process against the invasion. In the first weeks of the war, as Russian units were advancing towards Sumy, the TDF, composed mainly of newly recruited volunteers, were the only ones to withstand enemy forces. The battle that began saw a broad participation of civilians, which engaged in the creation of barricades and other obstacles, but more importantly, provided the armed forces with important information on the location and movements of opposing units. After failing to seize the city, the Russian units withdrew from Sumy.

3.4. Summary

The effectiveness of Ukraine's response to the Russian Federation's invasion is grounded in a comprehensive whole-of-government and society approach. This involves active coordination and collaboration between military and civilian entities, emphasizing preparation and resilience at various levels.

CIMIC emerges as a critical element in Ukraine's preparedness and effectiveness. At all levels, from strategic to tactical, CIMIC facilitates coordination between the military and civilian sectors, ensuring a seamless integration that contributes to the success of military operations and enhances societal resilience.

The experience of Ukraine underscores the evolving nature of contemporary threats, especially hybrid warfare. The Russian Federation's aggression, combining both military and civilian targets, highlights the need for a broader, comprehensive defence approach. This

includes not only military capabilities but also a strong emphasis on societal defence, coordination with non-military actors, and strategic planning in peace time, crisis and conflict scenarios.

Chapter 4 – Identified lessons and their application for NATO[47]

The unprecedented crisis which emerged in 2014 in Ukraine, in a nation next to NATO's eastern flank and a NATO partner nation and that substantially contributed to NATO operations abroad (e.g. Afghanistan, Balkans), set in motion a renovation process not only in Ukraine but in NATO itself. NATO has fully recognised the challenge of the need for much broader resilience in the face of hostile acts below the level of war. This refocusing began at the 2016 Warsaw Summit with the formulation of 7 BLR for national resilience.[48] The 2020 NATO Warfighting Capstone Concept described "layered resilience" as one of the five "development imperatives" to ensure success in an era of persistent competition below the threshold of article V of the NATO treaty. Layered Resilience requires a broader approach to deterrence and defence and a broader focus on actors and agencies that, being also not military, can enhance the resilience and effectiveness of a nation and its armed forces.

Based on these findings, the view of civil military cooperation was also adjusted. As one of the eight joint functions in the NATO Joint Function Framework, CIMIC now has greater importance.

The Joint Functions Framework is useful for coordinating military and non-military activities. It helps determine the roles and influence of stakeholders in different domains and identifies which non-military actors need to be influenced and how. With NATO's eight interconnected joint functions, commanders and their staff can quickly streamline planning processes across all domains.

In non-military contexts, CIMIC plays a significant role, as evident from its definition[49]:

„CIMIC is a military joint function that integrates the understanding of the civil factors of the operating environment and that enables, facilitates and conducts civil-military interaction to support the accomplishment of missions and military strategic objectives in peacetime, crisis and conflict."

Understanding the civilian factors in an operational environment requires knowledge of all actors, their intentions, capabilities, and other relevant non-military factors. We call this knowledge management "Civil Factor Integration", which involves integrating all factors into our planning processes and the commander's and staff's comprehensive knowledge. This

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[47] These findings are based on several interviews, questioners and briefings by Ukrainian CIMIC officers to the author team. However, due to the circumstances the mentioning of UKR individuals and individual reports remains closed hold.

[48] Hall, Sandeman, "NATO's Resilience: The first and last line of defence, LSE Ideas, May 2022.

[49] As of 4 August 2022, NATO's MCJSB approved the new definition for CIMIC

knowledge is essential for tailored interaction with non-military actors and is part of the essential requirement for understanding the operating environment. As part of the CFI, we prepare usable advice for future interaction with non-military actors using professional CIMIC analysis and assessment skills. Based on this CIMIC advice, "civil-military interaction" with stakeholders and other non-military actors can occur at different intensities, ranging from consultation to collaboration and integration. Determining the correct intensity and level of interaction is also an outcome of civil factor integration.

CIMIC is responsible for integrating the understanding of the civil factors of the operating environment by facilitating civil-military interaction and analysing non-military factors.

Consequently CIMIC must be understood more than ever as a joint function in the associated framework. For CIMIC staff, this means that their profession's importance in analysis and assessment has increased and they need to present it in a way that the staff and the commander can use. Additionally, this capability must be available seamlessly from the strategic to the tactical level. It's important to understand that the function CIMIC is not only conducted by specialised CIMIC staff. All military personnel contribute to determining the situation, which is equally important than the assumed exclusive abilities of individual field workers. This is what the CIMIC joint function has in common with other joint functions.

In order to adequately understand the areas in which the observations made in Ukraine can be translated into recommendations, it is first necessary to identify a framework that defines the areas in which these key findings can be applied. The NATO DOTMLPF-I framework (Doctrine, Organisation, Training, Material, Leadership and Education, Personnel, Interoperability) is an ideal tool in the Ukrainian case, not only because it encompasses different application areas, but also because it is a framework that already exists within the NATO structure, and therefore allows new concepts to be included and related to elements that are already widely present in the Alliance. This framework shall be applied to the Ukraine case, specifically to the CIMIC elements, in order to conduct an assessment of CIMIC during the war in Ukraine and draw possible conclusions that might improve NATO CIMIC.

4.1.   Initial lessons identified for the capability of CIMIC

CIMIC proves its utility and relevance, by establishing relationships of trust, cooperation, collaboration, and especially dialogue with all military and non-military actors on the ground. It contributes to a better understanding of the CivEnv and encompasses the identification, analysis, and assessments of civil factors of the operating environment in order to contribute

to the decision-making process (DMP)[50]. Therefore, it is essential for every NATO member to develop the capabilities for assessing the CivEnv in order to provide armed forces with the information and tools that are required to enhance preparedness and efficiency. Furthermore, the constant assessment of the CivEnv, the identification of sensible targets both when it comes to critical infrastructure, the Protection of Civilians, Cultural Property Protection, the acknowledgment of the actual needs of the population and so on, are extremely useful to determine the strengths and weaknesses of a specific society, its capabilities to cope with shocks in order to prioritise and organise their enhancements. While it would be optimal if the government increases the resilience of its institutions, it is crucial that the same is done for the community of people.

As resilience depends on different factors and actors, it is extremely important that national governments develop the capabilities to effectively coordinate all the efforts involved in enhancing the nation's resilience. It is not and cannot be a task carried by one actor but must be a joint effort that comprehends the society as a whole. For this purpose, NATO has been acting in the last years, particularly since the 2014 Wales and 2016 Warsaw Summits, as a facilitator and coordinator agent, developing the instruments to assist member states in enhancing their resilience, regarded not only as a national but also as a multinational common goal.

In order to contribute to enhancing and maintaining the level of national resilience, nations should further develop a strategic plan to prepare society for implementing on a large scale basic and crisis preparation. CIMIC, as a point of contact, facilitator and connector between the civil and the military domain, does provide a valuable contribution to this. Decreasing the probability of external influence, disinformation, and misinformation awareness through mass and social media is essential for the high rank of societies as well as educational institutions. In the interest of building a more conscious society, CIMIC could participate in exercises which are organised by security/law enforcement agencies with civil society in emergency situations.

Analysing the possible lessons learned from the Ukrainian experience, based on reports by analysts and government forces, point to the need to rely on a decentralised system, to ensure that it is more efficient and more responsive to shocks. CIMIC involves performing tasks like obtaining, analysing, and reporting information about the CivEnv identifying and assessing civil key indicators and sensitive factors that have a crucial bearing on the planning and

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[50] AJP 3.19 "Allied Joint Doctrine for Civil-Military Cooperation" Study Draft 2, February 2023

conduct of operations; fostering force acceptance and transparency; helping to inform the civil society in the operating area in accordance with the communication effort led by strategic communications; and facilitating access to non-military resources. Support to the military force by the civilian capabilities can be better facilitated by liaison and most of the other specific enhancements fall below the paramount knowledge of the CivEnv that has to be continuously implemented. *"The earlier and the better connected we are with the civil environment, the better our understanding of it will be, and the more effective our actions in convincing our partners, deterring our potential contradictors, countering the opponent's narrative, and protecting our legitimacy, credibility, freedom of movement and action will be"[51]*.

4.2. Doctrine

The AFU have taken, since 2014, several steps in order to renew their doctrine, to adapt it to the new circumstances brought by the Russian Federation's hybrid aggression on Crimea and Donbas. The goal of this was to abandon the old, proving ineffective, Soviet doctrine, and to create a new doctrinal framework based on the one of NATO. This has been possible because of the partnership with NATO and the doctrinal, training and material support provided by NATO nations to Ukraine, which has allowed Ukraine to effectively withstand the Russian Armed Forces during the 2022 invasion. CIMIC is a fundamental part of this renovation process. AFU have recognized the need for a J9 Directorate to be integrated into the General Staff structure, and in order to perform this, they have relied on the current NATO CIMIC doctrine, adopting the Allied Joint Publication 3.19 as the core of their CIMIC doctrine and field manuals. The J9 directorate of the AFU has been created in 2020.

On the other hand, the contingency of the situation in Ukraine has forced Ukrainian institutions and AFU to adapt to the particular circumstances they were facing, thus finding a way of dealing with war, Counter Insurgency (COIN) and hybrid threats, that has not completely been generated by the NATO doctrine introduced in the last years. This has created a dynamic environment for synchronisation and exercise on the field of new CIMIC concepts, which are worth analysing, to enhance NATO CIMIC capabilities.

4.3. Organisation

Ukraine manages CIMIC as a core function of the AFU and the TDF, which are part of the former. On the different levels, the strategic, operational and tactical CIMIC elements take part

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[51] Lieutenant Colonel Jeanne Pierre Conjeaud (FRA-A) HQ NRDC-ESP G9 CIMIC.

in the planning and decision-making process of the units and the military authorities. The same applies for permanently liaised or even co-located CIMIC elements with the civilian authorities and administrations for pre-planned or short term coordination and troubleshooting. Thus, they are in constant exchange of data and information with other units, military and civilian bodies. This is particularly important in order to avoid duplication and enhance the synchronisation of all the actors involved.

4.4. Training

After the Russian Federation's initial invasion of Ukraine in 2014, the AFU gained important combat experience in fighting Russian-led forces in the Donbas region. This led to a large proportion of trained and experienced veterans among Ukraine's population. These veterans were quickly mobilized into Ukraine's new TDF without the need for lengthy training. The high level of experience and training among recruits meant they were able to operate artillery, tank, and support systems that traditionally require more time for reservists or volunteers to master. These units have been crucial in supporting regular AFU units and enabling them to spearhead operations and counteroffensives.[52]

NATO nations have contributed to the training of the AFU according to NATO standards. This is part of the decision of Ukraine of abandoning the old Soviet military structure, fill the NATO – Ukrainian partnership with life, participating in NATO out of area missions and thereby enhance interoperability and modernising it as per NATO standards. Although the efforts to provide quality and combined arms training, Ukraine is struggling to replace losses with troops that just did minimum training. Training programs of the Alliance have been able to reduce this struggle and guarantee a NATO level of training to newer Ukrainian servicemen.
CIMIC brigade elements advise the commander, as well as other servicemen of the unit, for CIMIC tasks, providing the knowledge and capability to operate better in the CivEnv.

4.5. Material

The support of the CivEnv by the armed forces and their CIMIC elements with the task to organise civil capabilities to perform support task to military activities, is extremely important to prevent the deterioration of civilian life quality and guarantee that civilian structures and government bodies can keep running, despite being damaged by combat operations and

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[52] Ukraine Military Performance and Outlook, Congressional Research Service, November 2022.

targeted by enemy attacks. For this reason, armed forces need to be able to allocate resources for the purpose of supporting the CivEnv. This can involve providing vehicles, communication, construction and medical equipment.

These tasks or at least the coordination of them are carried out by CIMIC elements, based on previous decisions of the military headquarters and general staff. The ultimate goal is to re-establish the conditions for civilian authorities to be able again to run administrative bodies and providing for the needs of the population.

In order to put armed forces and their CIMIC elements in the condition to operate in support of the CivEnv, it is extremely important to consider the possibility and the extent to which military resources might be redirected to tasks that are not strictly related to combat operations. This should be taken into account and could mean that armed forces might need to have extensive resources and capacities.

4.6. Leadership

CIMIC is an integral part of the decision-making process of the unit to which CIMIC is attached and that at all levels. The commander of the brigade, during the planning process, takes into account the considerations and proposals of the unit's CIMIC group for instance. These proposals have the aim of contributing to enhance the situational awareness of the CivEnv and of contributing to minimize the impact of military operations on the CivEnv and vice versa. One of the key elements of AFU's flexibility and readiness has been the adoption of NATO-style command principles, such as the delegation of authority to local commanders and the application of mission command instead of the order driven approach. These Soviet-style command principles, still used by the Russian Armed Forces, consist of rigid, centralized commands that don't leave much space for independent action by local commanders, thus reducing combat effectivity and readiness. By adopting NATO command doctrines, Ukraine has put effort into developing the leadership skills of the officers and Non-Commissioned Officer (NCO) at all levels.

4.7. Personnel

Adaptability and agility are essential to meet the new operational challenges. Modern crises and conflicts are often not related to the military only and therefore require assistance from outside the armed forces. Personnel requirements are not strictly military-related but include the participation and the cooperation of military and civilian actors to conduct successful operations. A successful resolution to the conflict will depend on a mutual understanding when

it comes to purpose, resolve, capabilities, and motivation of both the military and the non-military actors. In order to achieve this, the professionalisation of the armed forces plays a major role. After 2014, Ukraine decided to abandon its conscription and move to an army run by professional servicemen.[53]

In order to enhance CIMIC capacities, it is important that military personnel has the capabilities to understand the key factors of the CivEnv, have a comprehensive picture of it and interact with it. NATO has already introduced CIMIC staff elements and units that, shall facilitate the contributions to Civil Military Interactions and thus can increase operational effectiveness and efficiency.

Since 2014, Ukraine has undertaken several measures in order to develop and enhance the capabilities of its armed forces. One of the main challenges has been the professionalisation of the military personnel, which had been set as a goal in order to standardise the AFU to the NATO model.[54] The creation of a NATO-style joint staff, based on the J-structure, has been achieved by 2020, which also resulted in the creation of a J9 Directorate in the General Staff.

Ukraine has also established a national guard corps, the TDF, which, even though officially paramilitary, is effectively part of the AFU. The decision was made to build up reserve forces in the eventuality of a full-scale military invasion. The nation now has a tiered system of military reserves, comprising an estimated total of 900,000 reservists, who have served in the previous years.[55]

Furthermore, in the course of the last few years, NCOs have played a major role in the reform of the AFU. Ukraine has identified the importance of NCOs as mid-level cadres, the military level between high-ranking commanders and soldiers. By switching to a more NATO-like NCO doctrine, Ukraine has overcome these structural issues resulting from the old Soviet-era structure.

A potential subject to be explored rests with the question to employ a CIMIC Capability known in NATO as Functional Specialist. In the military, a Functional Specialist refers to an individual who possesses specialized knowledge and skills in a specific functional area or disciplines alien to the military or just available in limited numbers within military establishments. Based on the developments and dynamics being observed in Ukraine, a few areas to employ

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[53] https://www.fpri.org/article/2018/08/the-ukrainian-military-from-degradation-to-renewal/
[54] https://www.president.gov.ua/en/news/glava-derzhavi-zatverdiv-strategichnij-oboronnij-byuleten-uk-70713
[55] https://carnegieendowment.org/2018/02/22/ukraine-s-toughest-fight-challenge-of-military-reform-pub-75609

Functional Specialists stick out: civil administration, public services, medical services, reconstruction, agriculture, water management, logistics, planning, and analysis, etc.

Relying on external expertise is necessary and unavoidable, as CIMIC comprehends variegated capabilities that might be difficult to be handled by CIMIC elements at unit and staff levels alone.

4.8. Facilities

Identifying facilities and structures that might be needed for both support of the force and of the CivEnv, including those necessary to maintain the nations resilience, is a key CIMIC task. CIMIC elements of the AFU are meant to identify these structures for the evacuation and location of temporarily displaced persons, as well as civilian structures that might be required by the armed forces prior to, during and after combat operations.
Identification and pre-coordinated their usage with the civilian authorities of such structures is extremely important, as it allows to swiftly take the initiative that enhances the efficiency of the armed forces and avoids further civilian casualties.

4.9. Interoperability

Interoperability is the ability to act together coherently, effectively and efficiently to achieve tactical, operational and strategic objectives. Procedures, as well as human interoperability, are key dimensions in CIMIC, as it requires the cooperation and joint effort of several, different departments, agencies and forces.
Ukraine has been able to achieve a high level of interoperability, by introducing NATO concepts and guidelines into their doctrines and by being able to swiftly adapt its armed forces to NATO training standards in the last years. Furthermore, the capacity shown during the war to introduce and operate weapon systems and materials of several different nations is also proof of the flexibility of the AFU, which enables them to operate a composite military system while maintaining combat efficiency.
The AFU possess a range of capabilities that can facilitate interoperability with civil organizations, particularly in addressing humanitarian challenges amid conflict. Using their logistical infrastructure and personnel, the armed forces are well-equipped to coordinate and support various civilian efforts. Additionally, the AFU have demonstrated a commitment to collaboration and partnership with civil organizations, leveraging their expertise and local knowledge to ensure that aid reaches those most in need.

Chapter 5 – Conclusions

5.1. Resilience in national defence

The current situation in Ukraine confronts NATO and nations with a fundamental aspect of the evolution of CIMIC. For Ukraine, this means that it is about the integration of key civil factors in an overall holistic defence concept, planning and execution of military activities as well as understanding the needs of the population, the capabilities and the weaknesses in coordination with the institutions and all relevant actors of the theatre.

The 7 BLR plus the additional one as described and analysed in chapter 2, represent the resilience framework at the national, political-strategic level. Nevertheless, their effect on the armed forces, their preparedness and their operability are significant. In the context of national defence, it is clear that while it is required to ensure the highest grade of preparedness of the armed forces, it is also necessary to guarantee that the society and civilian institutions are prepared to withstand shocks and aggressions.

5.2. CIMIC in combat zones

The Center for Civilians in Conflict (CIVIC), a non-governmental organisation based in Washington, DC and with offices e.g. in Kyiv or Bruxelles promulgated its report on "The Role of Civil-Military Cooperation in the Protection of Civilians (POC)" in October 2023.[56] In this report, CIVIC emphasises the importance of CIMIC in the AFU and TDF at all levels. Although with a focus on POC and Human Security with all the associated sub-topics, the report highlights challenges and identified shortfalls of CIMIC when facing a full-scale war. It gives valuable recommendations on the refinement of CIMIC strategies and training to enhance the effectiveness of CIMIC in combat zones.

Civilians and the military play a complementary role in the process of national resilience. It is therefore important that armed forces are in the condition to efficiently deal with issues related to the CivEnv in the area of operations. CIMIC is the instrument to do so. It provides armed forces with the means to integrate the CivEnv into their planning and execution processes, with the ultimate goal to create synergies and avoid mutual interferences. In addition, the Ukrainian TDF are of pivotal importance as a permanent and well-established link between professional armed forces and the local admin and civilian capacities. They are the switchbox for CIMIC into the local and regional civil capacities to increase situational awareness. With

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[56] https://civiliansinconflict.org/wp-content/uploads/2023/10/The-Role-of-Civil-Military-Cooperation-in-Protection-of-Civilians-The-Ukraine-Experience.pdf

the purpose of identifying fields of improvement for CIMIC procedures and tools in NATO, the fourth chapter aimed to assess the role and challenges of CIMIC in the Russian-Ukrainian War in the context of the DOTMLPF-I framework.

5.3. CIMIC in the Layered Resilience

CIMIC in Ukraine is the emblem of how CIMIC can start to be implemented for the military to support the entire society in a comprehensive security understanding by the mutual two-lane support. and the activities to increase its efficiency of withstanding an attack on the nation. This is very much a proof of the rationality of NATO's Layered Resilience Concept, where military resilience and civil resilience are looked at as two connected layers of resilience. The concept highlights the conceptual interdependencies and interrelations with each other. The 7 BLR are the framework for enhancing civil preparedness for shocks and aggressions. CIMIC represents its implementation into the military sphere. With its latest revision, the NATO AJP 3.19 relates the conceptual foundation of the Layered Resilience Concept to CIMIC and makes it relevant for CIMIC activities. Once approved, the AJP 3.19, as well as the Layered Resilience Concept, need to be transferred into national concepts. Effectively translating such concepts from the NATO level into national level is mandatory to enhance the resilience of member nations and the Alliance.

Ukraine has shown that the capacity to involve both armed forces and society in the nation's defence is paramount to face aggression. While CIMIC, as a joint function, is supposed to link the military environment with the civil one, working with its own population became a strength because both, people on the military and the civil side were more committed and willing to cooperate. The understandable emotional involvement of military personnel, what became clear since the invasion, is that CIMIC's involvement in its own society is extremely needed and contributes to the current success.

5.4. CIMIC in operations

Besides the contingency plans, which are fundamental aspects for the continuity of society, will and capability to continue the fight, there must be an effective assessment on civil society. Only by having a deep understanding and awareness of its own capabilities, strength, and weaknesses, a society can become resilient and ready to face every crisis. CIMIC is crucial to ensures the situational awareness of the CivEnv at all military levels, link the military with the civil part of society to mitigate recognised capability gaps and contributed to minimize mutual interference on both sides.

CIMIC will help commanders and their staff to better understand the civil factors of the operating environment so that they are able to effectively integrate these factors in operational planning and finally in the decision making process. Civil Military Interaction will enhance the framework of coordination and cooperation with all non-military actors and sets the condition for better understanding the civil environment and integrate CIMIC activities in operations effectively.