

REGIONAL PERSPECTIVE: HOW DO WESTERN BALKANS COUNTRIES STAND IN PROTECTING THE CI?





Author: Jon Limaj

About the Emerging Threats Programme

The Emerging Threats Programme has been designed as a response to evolving domestic, regional, and international security threats. Its primary aim is to consolidate and provide a better understanding of emerging threats that consistently move away from traditional conceptualizations of security challenges. Given the extent of evolving threats related to cybersecurity and disinformation, this programme seeks to build upon internal organizational capacities to provide evidence-based expertise to operationalize institutional responses to these challenges. Evidence-based research in relation to the Emerging Threats Programme focuses on: critical infrastructure, cybersecurity, disinformation and hybrid security challenges. While needs assessment(s), monitoring and research remain fundamental actions to be developed in the programme, KOSS aims to utilize expertise generated to directly enhance the capacities of executive institutions and agencies to respond effectively to cybersecurity challenges and disinformation. The programme will be developed through:

- State of the art evidence-based research related to emerging threats such as cybersecurity, critical infrastructure protection, hybrid threats and disinformation;
- Awareness-raising campaigns and targeted advocacy to improve the level of understanding of challenges related to cybersecurity, critical infrastructure protection, hybrid threats and disinformation in Kosovo;
- Awareness-raising campaigns and targeted advocacy to improve the level of understanding of challenges related to cybersecurity.

For more information, contact us at: EmergingThreats@qkss.org

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Executive Summary

The report explores the critical infrastructure (CI) environment in the six countries of the Western Balkans (WB), respectively: Albania, North Macedonia, Montenegro, Bosnia and Herzegovina, Serbia, and Kosovo. The report analyses the main vulnerabilities of the region with respect to protection of critical infrastructure, shaped by factors such as ethnic tensions, historical conflicts, demographic shifts, and environmental challenges.

It identifies the primary types of critical infrastructure crucial for the region's economic development and social stability: energy, transportation, telecommunications, water and sanitation, healthcare, and emergency services. However, it highlights the lack in maintenance, protection measures, and coordination, leaving the infrastructure open to potential risks.

Analysing the policy framework, it highlights similarities between the European Union (EU) and the Western Balkans (WB). Following the development of resilient strategies post-9/11, the EU places a strong focus on ensuring the security of critical infrastructures. The WB countries, in their addition process to the EU, have signed a Joint Action Plan

on Counter-Terrorism, aligning themselves with EU standards. Despite variations in the definition of critical infrastructure across the WB nations, efforts are underway to establish efficient protection systems.

The analysis of national laws reveals that four countries of the Western Balkans: Kosovo, Albania, Montenegro, and Serbia—have adopted specific critical infrastructure laws, while in Bosnia and Herzegovina there is a relevant law only on the entity level, but not on a state level. In general, they are following the EU trajectory on Critical Infrastructure Protection. North Macedonia is in the process of drafting a CI law. While acknowledging the progress made, this report emphasizes the need for continued political and professional cooperation to harmonize CI protection methodologies in the Western Balkans. The analyses shows how crucial it is for the Western Balkans to protect their critical infrastructure. As the Western Balkans work towards joining the EU, it's essential to put in place strong protection systems. These measures play a key role in fostering economic growth, maintaining social stability, and enhancing overall resilience.

Key Points:

1 Regional Risks:

Facing escalating cyber-threats, exemplified by recent cyber-attacks on governmental and financial institutions.

2 Types of Critical Infrastructure:

Energy, transportation, telecommunications, water and sanitation, healthcare, and emergency services are vital for economic development and social stability.

3 Policy Framework:

Signing of the Joint Action Plan on Counterterrorism. Despite the fact that CI definitions differ from one another, the need for continued cooperation is still evident.

4 National Laws Analysis:

Four WB countries have adopted specific CI laws, while Bosnia and Herzegovina follows a law on the security of critical infrastructure. North Macedonia is in the process of drafting a law. highlights the continuous requirement for political and professional collaboration to establish standardized methodologies for safeguarding critical infrastructure.

Introduction to the Critical Infrastructure in WB and the regional risk profile

Critical infrastructure systems include energy infrastructure, transportation systems, telecommunications, water and wastewater systems, healthcare facilities, financial services, emergency services, food and agriculture, government facilities and national monuments. These systems are central to society because these systems provide vital support and essential services to the economic development, security, inclusion, and welfare of our citizens. These systems rely on each other and are interconnected.

Just like Kosovo, the other Western Balkans (WB) countries such as Albania, North Macedonia, Montenegro, Bosnia and Herzegovina, and Serbia share complex regional risks, such as ethnic tension, as well as border and other bilateral disputes. All of these countries are developing democracies, and most of them have yet to fully recover from the aftermath of the Yugoslav wars in the 1990s. Also, due to recent demographic changes as well as climate change, the Western Balkans are vulnerable to natural and man-made disasters. The high environmental pollution and degradation, floods, erosion, earthquakes, dam security, water scarcity, cyber-attacks, and terrorist threats are some of the main concerns of this region. More so ever, as it was a difficult rebound from the COVID-19 pandemic, the Western Balkans nowadays are facing challenges as a result of the Ukraine war, such as high prices of food and energy and the overall high inflation rates in the region.

Some of the latest disaster events on the Western Balkan critical infrastructure are the earthquake in 2019, in Albania where the infrastructure sector experienced high damages and losses; the Flash floods in North Macedonia, 2016 where there were also high

losses and damages in infrastructure; Bosnia and Herzegovina, 2014 and Serbia 2014 also experienced high losses due to floods. This trend of disaster events is expected to grow further due to the impact of climate change that causes extreme weather events in most areas of the WB region, particularly extreme drought- and heat-related events. There are also new risks and threats in the region such as the continuous migrant and refugee crisis that resulted in most of the 1.4 million migrants and refugees that reached the EU transited to the Western Balkans Route.

As for the future risks and threats to the security of critical infrastructure in the Western Balkans region, several events that have already occurred with intensified frequency and deepened impacts can be identified.. There was a series of cyber-attacks on Albanian governmental and financial institutions, sites, and portals during the summer and autumn of 2022, then massive cyber-attacks on Montenegrin online government information platforms, in August 2022 that placed the essential infrastructure (banking, water and electrical power systems) at high risk and some similar events in North Macedonia (DDoS attacks to the State Electoral Commission site during the July 2020 elections, email threats for placed bombing devices in 876 educational and 42 other institutions during the period October 2022 – March 2023 and ransomware attacks to governmental institutions such as Health Insurance Fund in February 2023¹). The Western Balkans region faces various challenges in maintaining and protecting its critical infrastructure, including energy, transport, banking systems, health, water supply, food production, and digital infrastructure.

There is a continuous increase of cyber-

attacks on the region, considering the current geo-political and security context in the broader region, the fact that the part of countries from the region is NATO member

countries such as Albania, North Macedonia, and Montenegro so there is an immense need to apply adequate resilience building actions and measures.

The main types of Critical Infrastructure in the Western Balkans countries

Critical infrastructure plays a vital role in the region's economic development and social stability. However, poor maintenance and inadequate protection measures leave infrastructure susceptible to potential risks. It is important to note that outdated protection approaches and the lack of coordination between different systems, which makes the preparedness for emerging crises not sufficient. The critical infrastructure contributes significantly to the economic development of WB Countries, by enabling businesses to operate efficiently while also ensuring social stability by providing basic services that citizens rely on. The main types of Critical Infrastructure in the Western Balkans are:

- Energy infrastructure (electricity generation, transmission, and distribution) is critical for powering homes, businesses, and industries. It also supports the development of renewable energy sources that can reduce dependence on fossil fuels.
- Transportation infrastructure (roads, railways, airports, and ports) is essential for connecting people and goods across the region. It facilitates trade and tourism while also supporting emergency response efforts.
- Telecommunications infrastructure (internet networks, mobile phone networks, and broadcasting systems) is vital for communication between individuals as well as between businesses and governments. It also supports e-commerce and digital services that can drive economic growth.
- Water and sanitation infrastructure (water treatment plants, sewage systems, and irrigation networks) is necessary for providing clean drinking water to citizens while also managing wastewater in a safe manner.
- Healthcare infrastructure (hospitals, clinics, laboratories, and medical supply chains) is critical for providing medical care to citizens during emergencies as well as during routine health needs.
- Emergency services infrastructure (police stations, fire departments, civil protection agencies) is essential for responding to natural disasters or man-made crises.

Table 1: Identified Critical Infrastructure sectors and sub-sectors in the Western Balkan Countries**Western Balkans Countries**

Kosovo	<p>Dangerous goods (production and storage/processing of chemical, biological, radiological and nuclear materials);</p> <p>Energy (production, transmission, distribution, storage);</p> <p>Financial services (banking, stock exchange, payment and insurance systems);</p> <p>Food and agriculture (production, processing, storage);</p> <p>Government institutional facilities;</p> <p>Health care and public health (health care, production of medical products);</p> <p>Information and communication technology (electronic communication, video and audio broadcasting, information systems, telecommunication, data transmission);</p> <p>National values;</p> <p>Public services (emergency services, protection and rescue, civil administration services, authorities government functions, postal and courier services, public order, justice and correctional service, armed forces);</p> <p>Transportation (road, rail, air); and</p> <p>Water and wastewater (supply, reservoirs and dams).</p>
Albania	<p>Power generation, transmission and distribution systems; production, refining, treatment, storage and distribution of gas through pipelines; oil and production of its products, storage and distribution through pipelines;</p> <p>Telecommunications (networks, systems);</p> <p>Water supply;</p> <p>Agriculture, production and distribution of food;</p> <p>Public health (hospitals, health centers and ambulances);</p> <p>Transport systems (fuel supply, railway network, airports, ports, domestic transport);</p> <p>Financial services (banking, clearing);</p> <p>Security and defense services.</p>

**North
Macedonia**

Energy (production, including dams, mining, transmission, storage, transportation of energy and energy, distribution, etc.);

Transport (road, rail, air and water traffic);

Banking systems and infrastructure of the financial markets;

Health (health care, production, trade and control over medicines);

Water supply (water supply and drainage systems);

Food (food production and supply, commodity reserves);

Production, storage and transportation of dangerous substances (chemical, biological, radiological and nuclear materials);

Public services (ensuring public order and peace, protection and rescue, emergency medical assistance) and

Digital infrastructure, communication and information technologies (electronic communications, data transmission, information devices and installations, audio and audiovisual media services, etc.).

Serbia

Energy;

Traffic;

Water and food supply;

Health care;

Finance;

Telecommunication and information technologies;

Environmental protection and
functioning of state bodies.

Montenegro

Energy;

Transport;

Water supply;

Health;

Finance;

Electronic communications;

Information and communication technologies;

Environmental protection;

Functioning of state bodies and

Other areas of public interest.

Bosnia and Herzegovina	<p>Industry, energy and mining (input resources, facilities, transmission systems, storage, transport of products, energy and energy, distribution systems);</p> <p>Information and communication infrastructure (electronic communications, data transmission, information systems, provision of audio, and audio and video media services);</p> <p>Traffic (road, rail and air traffic and inland waterway traffic);</p> <p>Health care (health care, production, transport and supervision of medicines);</p> <p>Communal activities, (communal infrastructure facilities (especially in the field of production and delivery of water treatment, wastewater treatment and disposal, production and delivery of thermal energy, waste disposal from residential and commercial premises);</p> <p>Water management (regulatory and protective water management facilities);</p> <p>Food and beverages (production and supply of food and beverages, food and beverage safety system, inventories);</p> <p>Finance (banking, stock exchanges, investments, systems insurance and payments);</p> <p>Production, storage and transport of hazardous materials (chemical, biological, radiological and nuclear materials);</p> <p>Public services;</p> <p>Education;</p> <p>Cultural and natural assets;</p>
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The policy framework of Critical Infrastructure Protection (Strategies and Practices) in WB and the Alignment with the EU

The basis of legislation for the protection of critical infrastructure in the European Union (EU) can be traced to the policies against terrorism, such as the communication issued by the European Commission, in 2004, in the aftermath of the 9/11 terrorist attacks against the United States.¹ The Communication on Critical Infrastructure Protection (CIP) in the Fight against Terrorism of the European Commission, outlines recommendations on how to improve the European prevention, preparedness, and response to terrorist attacks involving Critical Infrastructures (CI). Subsequently, the European Commission published the European Program for Critical Infrastructure Protection (EPCIP), in 2006. The general objective of this EPCIP is to improve the protection of critical infrastructures in the EU which will be achieved by the creation of an EU framework concerning the protection of critical infrastructures set out in this Communication.

The EPCIP Action Plan organizes CIP activities around three work streams. (i) While Work Stream 1 focuses on the strategic aspects of EPCIP and the development of measures that can be applied horizontally across all CIP work; (ii) Work Stream 2 is dedicated to the protection of European Critical Infrastructures (ECIs) at a sector level. It involves specific measures and actions tailored to different sectors to ensure the resilience of CIs across Europe; (iii) Work Stream 3 provides support to Member States in their efforts to protect their National Critical Infrastructure (NCIs). This stream focuses on assisting individual countries in developing and implementing effective CIP strategies for their own critical infrastructures³. Following the above, in 2008, the EU Council Directive 2008/114/EC was adopted. This Directive established a procedure

for the identification and designation of European critical infrastructures ('ECIs') and a common approach to the assessment of the need to improve the protection of such infrastructures⁴. This directive is in effect from January 12, 2009, until October 17, 2024, and should have been implemented in national regulation on January 12, 2011 at the latest.

The six Western Balkans countries are in the accession process to become members of the EU, and in this process, they have contractual obligations to transpose in their national legislation EU acquis and other standards. Accordingly, in 2018 the European Commission and the representatives of the six WB countries signed a Joint Action Plan on Counter-Terrorism for the Western Balkans⁵, which includes certain regional and national actions regarding the critical infrastructure e.g., improved CI protection, improved protection of cyberspace and continued invitation of the representatives from the six economies to be part of the external dimension of EPCIP and its project and capacity development activities for CI protection.

The governments of six Western Balkan countries use different definitions of CI. In this regard, according to the Law on Critical Infrastructure, 2018 Kosovo defines the CI as: "Systems and assets, whether physical or virtual, are so vital to the Republic of Kosovo that the disruption, incapacity, or destruction of such systems and assets would have a debilitating impact on security, economy, public health, or any combination of those".⁶

On the other hand, Albania's Law on Civil Protection⁷ defines CI as: "The physical structures, networks and other assets necessary for the economic and social functioning of a society or community". North Macedonia has a wider definition of CI

such as: "Physical or virtual assets, systems, facilities, networks or their parts that perform vital functions of society, and which are of essential importance and the interruption of their work or their destruction would have a significant impact or serious consequences for national security, the health and life of people, the environment, the safety of citizens, economic stability, that is, the functioning of the state"⁷.

To build the resilience of CI, another aspect to consider is its categorization. Such categorisation into sectors and subsectors is done following the EU- Directive on the Resilience of Critical Entities, 2020. Again, Western Balkan countries have identified different CI sectors and respective sub-sectors. This is done through various approaches from Western Balkan countries, mainly following the EU approach but also considering the national contexts and priorities.

Albania has identified the following group of CI sectors and sub-sectors, as per Law on Civil Protection, 45/2019, as shown in the above table. It is worth noticing that both Kosovo and Albania have identified the same CI sectors such as energy, telecommunications, water supply, agriculture, public health, transport systems, and financial services. On the other hand, there are specific sectors unique to each country. Unique CI sectors for Kosovo (compared to those for Albania) are dangerous goods, national values, and public sectors. On the other hand, unique CI sectors for Albania (compared to those for Kosovo) are power generation (transmission and distribution systems), Production, refining, treatment, storage and distribution of gas through pipelines, Oil production (and its products, storage, and distribution through pipelines), security and defence services.

When comparing Kosovo and North Macedonia CI we can notice that both countries share similar CI sectors such as energy, transport, and public services.

While Kosovo emphasizes the protection of national values in its critical infrastructure, North Macedonia places significant importance on its banking systems and financial markets infrastructure. Additionally, Kosovo's CI includes sectors like information and communication technology and water and wastewater, while North Macedonia's includes aspects like health and food production.

Analysis of the national laws of CI protection in the Western Balkans shows that four specific laws were adopted for establishing CI systems and transposing parts of the EU Directive 2008/14/EC. The laws are adopted by Kosovo, Albania, Montenegro, Bosnia and Herzegovina, and Serbia. North Macedonia has Drafted a Law on the Critical Infrastructure, 2022⁸.

The Republic of Kosovo adopted the "Law on Critical Infrastructure", in 2018 (more on this law in the following). Albania has adopted "Law on Civil Protection, 2019. Montenegro adopted the "Law on Determination and Protection of Critical Infrastructure", in 2019. Serbia, in 2018 adopted the "Law on Critical Infrastructure". Bosnia and Herzegovina adopted the "Law on the Security of Critical Infrastructure. in 2019. North Macedonia has a Law on the Critical Infrastructure, 2022. Still, CI protection in the Western Balkans is a long journey, but real steps were taken to draft these Laws as per the guidelines of the EU. Also, in these states following the law's adoption, working groups were also appointed in order to guide the law's implementation. Based on the above we can conclude that there is a good will to establish an efficient system of Critical Infrastructure in the Western Balkans. The area needs political and professional cooperation to harmonize the methodologies for critical infrastructure protection.⁹

Suggestions for the resilience of the critical infrastructure in Kosovo and Western Balkans

Considering the distinct circumstances of each country, it is essential to customize the recommendations according to the specific context and requirements of each nation. An integrated strategy that incorporates technological solutions, policy formulation, and community involvement will be crucial for strengthening the resilience of critical

infrastructure in Kosovo and the Western Balkans region.

To make sure the critical infrastructure in Kosovo and the Western Balkan countries can bounce back from challenges, considering what we've discussed above, we can point to some of the following recommendations:

- Align the definitions and categorizations of critical infrastructure across Western Balkan countries to ensure consistency in understanding and implementing protection measures.
- Facilitate regional collaboration and information-sharing mechanisms among Western Balkan nations to enhance coordinated responses to cross-border threats, such as cyber-attacks and natural disasters.
- Develop and implement strategies to protect critical infrastructure resilience against natural disasters by integrating climate change considerations into protection frameworks.
- Encourage collaboration between public and private sectors in Western Balkan countries to enhance critical infrastructure protection, leveraging resources, expertise, and technological advancements.
- Invest in training programs and capacity-building initiatives for relevant professionals, including law enforcement, emergency responders, and cybersecurity experts, to strengthen the overall effectiveness of critical infrastructure protection efforts.
- Continuously align critical infrastructure protection practices in Western Balkans with EU standards and best practices, leveraging the Joint Action Plan on Counterterrorism.

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About KCSS

Established in April 2008, the Kosovar Center for Security Studies (KCSS) is a specialized, independent, and non-governmental organization. The primary goal of KCSS is to promote the democratization of the security sector in Kosovo and to improve research and advocacy work related to security, the rule of law, and regional and international cooperation in the field of security.

KCSS aims to enhance the effectiveness of the Security Sector Reform (SSR) by supporting SSR programs through its research, events, training, advocacy, and direct policy advice.

Advancing new ideas and social science methods are also core values of the centre. Every year, KCSS publishes numerous reports, policy analysis and policy briefs on security-related issues. It also runs more than 200 public events including conferences, roundtables, and debates, lectures – in Kosovo, also in collaboration with regional and international partners. A wide-range of activities includes research, capacity-building, awareness raising and advocacy. KCSS's work covers a wide range of topics, including but not limited to security sector reform and development; identifying and analyzing security risks related to extremism, radicalism, and organized crime; foreign policy and regional cooperation; and evaluating the rule of law in Kosovo. This year, KCSS celebrated its 15th Anniversary. For more details about KCSS, you can check on the following official platforms:



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